



1 Proximity Sensors

1.1 Inductive Sensors

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Choosing the Right Sensor in Five Steps

Selecting the appropriate sensor depends on the application and the material of the object to be detected.

If the object is metal, we recommend an inductive sensor.

If the object is plastic, paper or fluid (oil or water-based), granular or powder, we recommend a capacitive sensor.

If the object contains a magnet, a magnetic field sensor is suitable.

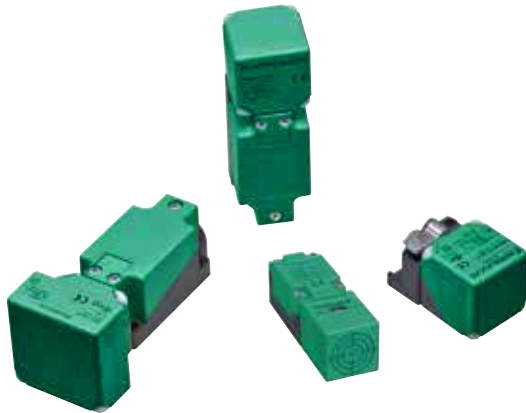
You can find more background information on the physical effect of the different types of proximity sensors at the start of each relevant chapter.

Find the ideal sensor for your application in five steps:

- Step 1: Housing design
- Step 2: Operating distance
- Step 3: Mounting conditions
- Step 4: Electric data and connections
- Step 5: General specification and special features

Step 1: Housing design

Rectangular/cube sensors



This housing shape features the same mounting hole dimensions that are used for mechanical end position sensors. The limit switch housing style consists of a stable housing base (PBT or metal) that is fastened to the mounting surface for customer wiring. The top component is sealed with a gasket against the housing base. The top component contains the switching amplifier and sensor that can be positioned in five directions, i.e., the active surface can face forward, to the right, left, top, or down.

The cube style family also includes the L series, which is extremely compact and provides quick disconnect and mounting. The active surface can be adjusted in 15° steps on two levels. The connection is via V1 plug connector.

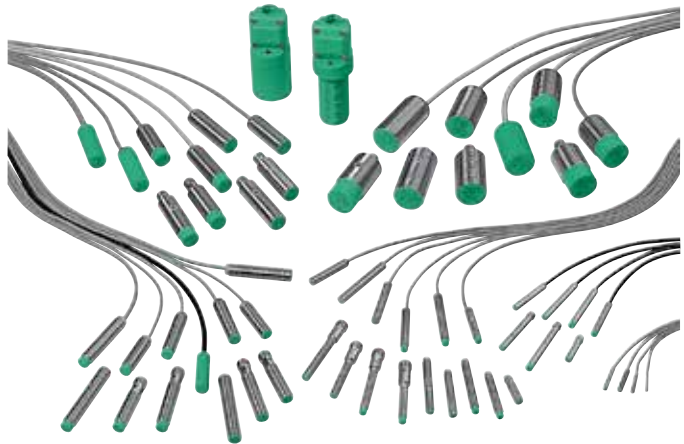
Type	Dimensions (front) mm	Settings (head)
Limit switch	40 x 40 or 55 x 55	Adjustable by 90°
Mini limit switch	30 x 30	Adjustable by 90° and in increments of 15°
L series	40 x 40	Adjustable by 90° and in increments of 15°

Flat pack (FP)



Flat pack proximity sensors have a large front area (80 mm x 80 mm) and therefore a long operating distance. They consist of two parts. The base contains the terminal compartment and the top contains the sensor coil system and the electronics, which are encapsulated in casting resin. The top is always made from PBT and the bottom can be either PBT or cast metal. They conform with the mounting hole arrangement (housing design ID80) defined in European standard EN 60947.

Cylindrical sensors



This sensor style has the active zone on the front face in an axial direction. Cylindricals are available in diameters of 3 mm (unthreaded) or 4 mm (threaded) up to 30 mm (threaded) or 40 mm smooth (with terminal housing) and provide the user with a wide range of sizes and connection styles.

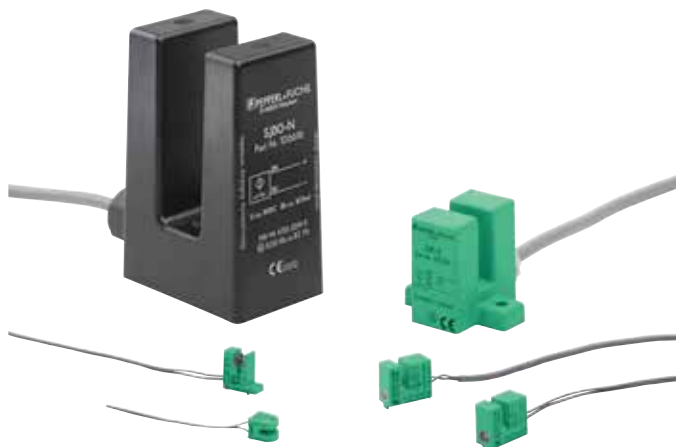
Surface mount proximity sensors



These proximity sensors are mounted to the required surface. Different versions are available with the active zone aligned upwards or forwards.

The housing is usually made of PBT.

Slot-shaped inductive proximity sensors



These sensors have a U-shaped or slot-shaped housing made out of PBT. The electromagnetic AC field is generated between two coils that are positioned opposite each other in the sides of the U. The switching function is triggered when the object (metallic target) enters the area between the coils.

Ring-shaped inductive proximity sensors



These proximity sensors are shaped as a ring to detect metal objects that pass through the loop. The electromagnetic AC field is concentrated inside the ring. The switching function is triggered when a metallic object moves into the ring.

The housing is made of PBT.

Inductive PMI positioning systems



Based on the very precise evaluation of multiple coil systems, the F90, F110, and F112 inductive positioning systems are able to determine exact positions along linear travel ranges. The PMI360D inductive positioning system is optimized for continual angle determination on valve actuators and valves. Inductive positioning systems provide analog output signals relative to position. See the *Positioning Systems* section.

Step 2: Operating distance

The sensing range is the most important parameter for a proximity sensor and is primarily determined by the sensor diameter (coil or capacitor). The dimensions and material composition of the target as well as the ambient temperature are also influencing factors. For magnetic proximity switches, the alignment and field strength of the magnets are the key criteria to determining the sensing range.

Definition of the operating distance

Standard EN 60947-5-2 defines the sensing range for all types of proximity sensors other than slot and ring-shaped housing designs.

There are two options for actuating a proximity sensor:

- Through an axial approach (head on)
- Through a radial approach (side approach)

The following definitions apply first of all to axial actuation.

Nominal sensing range s_N

The nominal sensing range (according to EN 60947-2-5 "Rated Sensing Range") is a standard value for defining the operating distance. It does not take into account production tolerances or changes through external influences such as voltage and temperature.

Standard measuring plate (target)

The following sensing ranges are determined using a standard target. This target is square with a thickness of 1 mm and is made of steel, e.g., type FE 360 (ST37) with a smooth surface.

Its side lengths are either

- 1 x inner circle diameter of the active area or
- 3 x s_N .

The greater value applies in each case. The standard target must be grounded for capacitive proximity sensors.

Example 1:

M18 proximity sensor
5 mm sensing range
3 x operating distance = 15 mm < diameter

Therefore, the actuator dimensions must be 18 x 18 x 1 mm

Example 2:

M18 proximity sensor
8 mm sensing range
3 x operating distance = 24 mm

Therefore, the target dimensions must be 24 x 24 x 1 mm

This standard measuring plate (target) is the optimal actuator for the operation.

A reduction in the dimensions or change in material composition reduces the sensing range.

Actual sensing range s_r

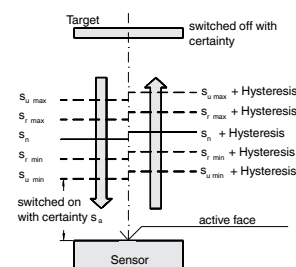
The sensing range of an individual proximity sensor measured at ambient temperature of $23 \pm 5^\circ\text{C}$, at a voltage within the operating voltage range and the defined mounting conditions:

$$0.9 \cdot s_N \leq s_r \leq 1.1 \cdot s_N$$

Usable sensing range s_U

The sensing range of an individual proximity sensor, measured at an ambient temperature range between -25°C and $+70^\circ\text{C}$, with a supply voltage between 85% and 110% of the rated operational voltage:

$$0.9 \cdot s_r \leq s_U \leq 1.1 \cdot s_r$$



Assured sensing range s_a

Distance from the active area where actuation of the proximity switch is assured under defined conditions:

$$0 < s_a \leq 0.81 \cdot s_n$$

Repeatability R

Repeat accuracy is the change in the actual sensing range s_r , measured over a period of eight hours at a housing temperature of $23 \pm 5^\circ\text{C}$ ($73 \pm 9^\circ\text{C}$), any level of relative humidity, and a supply voltage of $U_e \pm 5\%$ or any voltage within the rated operational voltage range $\pm 5\%$:

$$R \leq 0.1 \cdot s_r$$

Hysteresis H

Hysteresis is the distance between the switching points when the measuring plate approaches and moves away from the proximity sensor. This value is specified relative to the actual operating distance s_r , measured at an ambient temperature of $23 \pm 5^\circ\text{C}$ ($73 \pm 9^\circ\text{C}$), and the rated operational voltage:

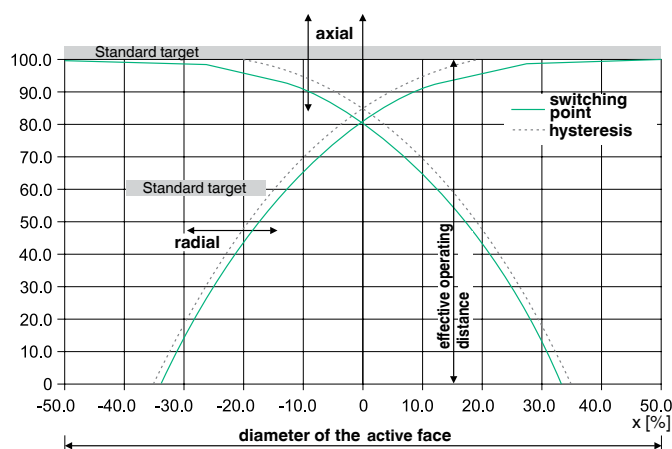
$$H \leq 0.2 \cdot s_r$$

Switched off

A proximity sensor is switched off with certainty when the distance between the target and the active sensor face is at least three times the rated sensing range s_n .

Laterally/radially approaching objects

In addition to an axial approach, target objects can approach a proximity sensor radially, through the active zone. When targets approach radially, a different sensing range is obtained depending on the axial distance. This relationship is described by the response curves shown.



Different target sizes

Inductive sensors are often activated by machine parts. These very rarely have the same size and shape as the standard measuring plate to which the sensor's technical data applies. The real application sensing range depends on the size of the metal used to attenuate the sensor.

Generally, the sensing range increases only marginally with a larger object surface, but reduces significantly for smaller objects.

If the application target is different in size to the standard measuring plate, it is recommended that you verify the sensing range of the selected sensor.

Different actuator materials

In addition its dimensions, the material composition of the target is also important. This is described by the reduction factor. The reduction factor specifies by what factor the operating distance reduces based on different materials compared to steel FE 360 (St37) for inductive proximity sensors and against a grounded plate for capacitive proximity sensors. The lower the reduction factor, the shorter the sensing range for the material in question. Since the reduction factor for inductive proximity sensors depends upon the housing and shielding material, this factor varies from type to type. Please use the value in the respective data sheet.

For inductive proximity sensors, the conductivity/permeability ratio of the target is the parameter for the reduction factor. Some typical reduction factor values are provided below:

Material	Reduction factor
Construction steel	1
Aluminum foil	1
Stainless steel	0.85
Aluminum	0.4
Brass	0.4
Copper	0.3

Step 3: Mounting conditions

Inductive and capacitive sensors can be flush mounted or non-flush mounted.

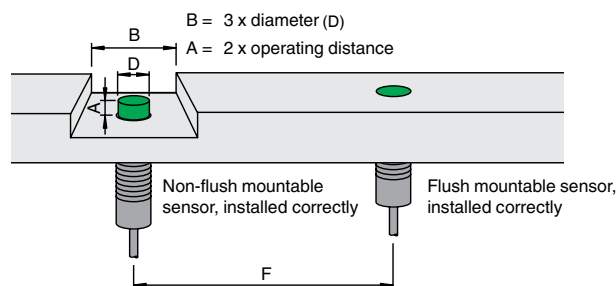
Sensors that cannot be flush mounted

Non-flush proximity sensors have the greatest sensing range relative to sensor diameter. The coils used to generate electromagnetic fields in inductive proximity sensors are placed in a ferrite core to produce a directed field. But for non-flush sensors, a portion of this field is radiated laterally. A lateral effect can also be observed in capacitive proximity sensors.

In order to prevent these high-range products from being damped by their environment, a metal-free space must be left around the sensor element. The space must conform to the minimum requirements shown below.

Sensors that can be flush mounted

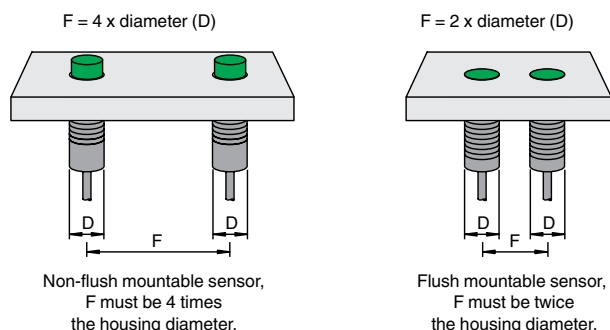
Flush inductive and capacitive proximity sensors can be installed without leaving a distance between the mounting surface and the sensor face. The advantage is that they are better mechanically protected and less prone to errors than non-flush types. The flush mounting is possible because of the addition of an internal shield designed into the sensor. Flush sensors are generally called flush mountable or embeddable sensors.



Further details on the mounting conditions are included in the technical data for the sensors.

Mutual interference

The minimum distance (F) must be maintained in order to prevent mutual interference between adjacent sensors. Proximity sensors with altered frequencies are available on request in case these distances cause application-related problems. When using alternate frequencies between sensors, they can be mounted adjacent to each other. Contact technical support for application-related assistance.



If the application does not allow a minimum distance to be maintained, flush mount sensors with offset oscillation frequencies are available upon request.

These sensors can then be mounted directly beside each other.

Step 4: Electric data and connections

In addition to the sensing range, other important criteria include sensor parameters such as the type and level of supply voltage. An overview of the output circuits for our sensors is included in this catalog beginning with the *Sensor Connections/Sensor Outputs* section.

In terms of supply voltage, our wide product range includes DC, AC, and AC/DC sensors.

Step 5: General specification

The **idle current** I_0 specifies the power consumption of the proximity sensor. It is measured without load. It is also termed supply current.

The **operating current** I_L (design operating current I_e according to EN 60947-5-2) specifies the maximum load current for continuous operation.

The **short-time current** I_K is the current that may occur for a short time when switching on, without damaging the proximity sensor. It is also termed surge current.

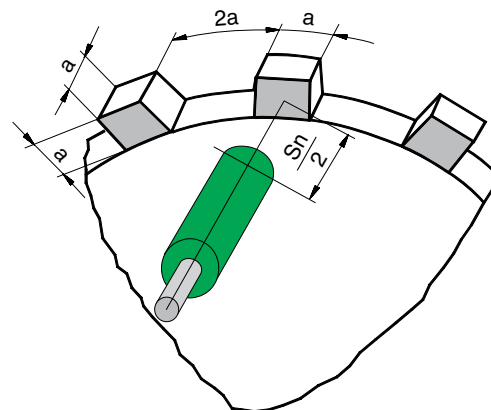
The **residual current** I_R is the current that flows through the load with the proximity sensor open. It is also termed leakage current.

The **operating voltage** U_B is indicated by the maximum and minimum values for the supply voltage, i.e., 10...30 VDC. The proximity sensor can be operated safely in this area. The rated voltage is specified for NAMUR proximity sensors.

The **voltage drop** U_d is measured across the conducting proximity sensor output.

The **switching frequency** f is the maximum number of changes from dampened to non-dampened state in Hertz (Hz), see also the figure in accordance with EN 60947-5-2.

The spacing between targets should be twice the width of the target. The width of the target should be equal to or greater than the diameter of the sensor face. The maximum switching frequency for each sensor is shown in the sensor data sheets.



Measuring vane to determine the maximum switching frequency.

The **harmonic voltage**, also referred to as ripple or residual ripple, is the AC voltage (peak-to-peak) that is superimposed over the operating voltage and specified as a percentage of the arithmetic average value. Pepperl+Fuchs' sensors feature max. 10% of the residual ripple and comply with standard DIN EN 60947-5-2.

Permissible interference voltage

Short-term voltage peaks on the supply lines can damage unprotected proximity sensors. Transient protection on all sensors by Pepperl+Fuchs suppresses noise pulses in accordance with EN 60947-5-2.

The **time delay before availability** t_V is the time taken until a proximity sensor is ready for operation once the operating voltage has been switched on. Pepperl+Fuchs proximity sensors feature max. 300 ms and comply with EN 60947-5-2.

Switch-on pulse suppression

All proximity sensors are equipped with this feature, which suppresses a fault signal at the output when the operating voltage is switched on during time t_V .

Short-circuit current limitation

With short-circuit current limitation, which is included in most proximity sensors by Pepperl+Fuchs, if the current trip value is exceeded the output is periodically blocked and released again until the short-circuit is fixed (pulsing).

The permissible **ambient temperature** is the temperature range within which the proximity sensor operates properly. The following apply to the Pepperl+Fuchs standard series:

-25 °C to +70 °C or -11 °F to +158 °F.

Degree of protection

Depending on the requirements, proximity sensors by Pepperl+Fuchs are IP65, IP67, IP68 or IP69K protected, depending on the model selected.

Permissible shock and vibration load

The shock resistance test is carried out at 30 times ground acceleration and 11 ms duration. The vibration resistance test is conducted at a resonance frequency between 10 and 55 Hz and 1 mm amplitude (IEC 60068-2-6).

Permissible tightening torque [Nm] (mounting)

	Stainless steel	Brass	PBT	PPS
M5 x 0.5	3.0	-	-	-
M8 x 1	10.0	3.0	-	-
M12 x 1	15.0	10.0	0.75	-
M18 x 1	30.0	30.0	1.5	5
M30 x 1.5	30.0	30.0	3.0	10

Special Sensor Features for Special Applications

Reduction factor 1

Unlike standard inductive sensors, reduction factor 1 sensors have no reduction in sensing distance when detecting nonferrous metal targets. Traditional proximity sensors may incur sensing range reductions between 50 and 70% when detecting metals such as aluminum, brass or copper. Reduction factor 1 sensors allow the user to detect various metals at the same range as a standard ferrous target.

Reduction factor 1 sensors are inductive type sensors, equipped with a special oscillator design enabling the reliable detection of metals at the specified distance, independent of metal characteristics. At the center of the design are two air-core coils, allowing the sensor electronics to adapt to the metal characteristics and trigger the output consistently at the sensor rated distance. This design also guarantees maximum operating distances and material independent detection of all metals.



Benefits:

- Same operating distance for all metals
- Maximum operating distance from 2 mm to 75 mm
- Electric magnetic field immunity
- Weld-spark resistant models available
- Complete portfolio of cylindrical and cubic housing designs

Weld-immune sensors

Sensors are used in some demanding environments—that means strong magnetic fields, showers of sparks and hot, embedding weld slag. Pepperl+Fuchs has worked with manufacturers around the world to provide weld-immune sensors that can consistently perform in unyielding environments. We're proud to say that we've taken durability, resilience and precision to a higher level in weld-cell automation. Designed to be robust and reliable, our family of inductive weld-immune sensors can solve virtually any weld-sensing application.



Pile Driver

Since its introduction in 1997, the Pile Driver product family has become known as "The World's Toughest Proximity Sensor." Unlike traditional designs that utilize a plastic sensing face, Pile Drivers feature a durable, 100% stainless steel sensing face and barrel. Models are available in 8, 12, 18, and 30 mm diameters, with DC and AC/DC supply configurations, and in extended range and weld-immune versions.



Sensors with e1 certification

Commercial vehicles represent an important application area for sensor technology. Sensors for diggers, cranes, agricultural machinery, refuse, or fire trucks are some of the many applications for sensor technology. Some applications, such as ships and fork lift trucks, may also require specially adapted products.

For each application, all requirements must all be taken into consideration before applying the components. In addition to the basic sensor function, optimal mechanical integration into the overall system is also required, as well as application-specific sealing of the devices and resistance to temperature and environment influences. In some cases, special connectors usually found in vehicles may be integrated into the sensors.

Furthermore, the pertinent standards for the vehicles must be taken into consideration. This includes stringent EMC requirements, which are required in vehicle or ship-building environments. Over recent years, Pepperl+Fuchs has worked on many customer-specific developments where it has demonstrated its ability to integrate these requirements into sensors, both efficiently and cost effectively for high volumes. Many reputable companies within this sector choose our products.

Due to their robustness, inductive proximity sensors in cylindrical housings are most often specified for this market, but Pepperl+Fuchs also offers inductive sensors for analog position measurement as well as inclination sensors used in the mobile environment.

e 1

Pressure-resistant sensors

Pressure-resistant proximity sensors are suitable for use in hydraulic cylinders. They are suitable for operating pressures up to 500 bar and peak pressures up to 800 bar on the active area.

The pressure resistance is achieved by means of a ceramic front face that is an integral part of the stainless steel housing. A groove is also incorporated into the housing (O-ring).



Sensors for Position Feedback to Valve Actuators

Sensors for Box Installation

The term "box solution" refers to the integration of sensor technology into an accessory box that generates the mechanical coupling of the sensors on adjustment drives of different dimensions.

This solution was developed to prevent the sensors from being directly exposed to the environment, therefore permitting the use of standard sensors.

Most reputable drive manufacturers offer standard boxes that are fitted with Pepperl+Fuchs sensors, either with or without visual indication.

Features:

- *Versatile – the box offers individual connection options*
- *Reliable – the installation is integrated into the box such that it is resistant to manipulation and prevents dust build-up*
- *Safe – the box complies with the accident prevention regulations*
- *Simple – it is mounted using preadjusted sensors*
- *Compliant – the connection identification of MSR devices complies with standard DIN 45140 T.1 and the mechanical mounting complies with VDI/VDE 3845*

Standard sensors

For box installation, Pepperl+Fuchs offers cylindrical standard sensors with short housing lengths up to 40 mm and slot sensors with a slot width of 3.5 mm, along with sensors from the V3 series. These are square-shaped sensors in standard dimensions for mechanical micro switches. Standard DC versions and NAMUR versions are available with an extended temperature range (up to -50 °C to +100 °C).



Slot-shaped



V3 series

Position feedback sensors for box installation

The F25 sensor series by Pepperl+Fuchs offers an effective alternative for position feedback on valve actuators.

They combine two coil systems as "double sensors" in one housing, significantly reducing the mounting and maintenance effort.

Backed by decades of experience, Pepperl+Fuchs offers a wide range of sensors and actuators for the F25 Series that are suitable for both the box solution and for direct mounting on the adjustment drive.



Features:

- *Double sensor - the sensor has two active zones*
- *Safe – it is finger safe, in compliance with the accident prevention regulations*
- *Variable – it can be mounted directly to the drive or the valve, via a bracket or in a box*
- *Simple – mounting requires no adjustments or additional settings*
- *Practical – several sensors can be stacked for more than two set points if necessary*

Cylindrical



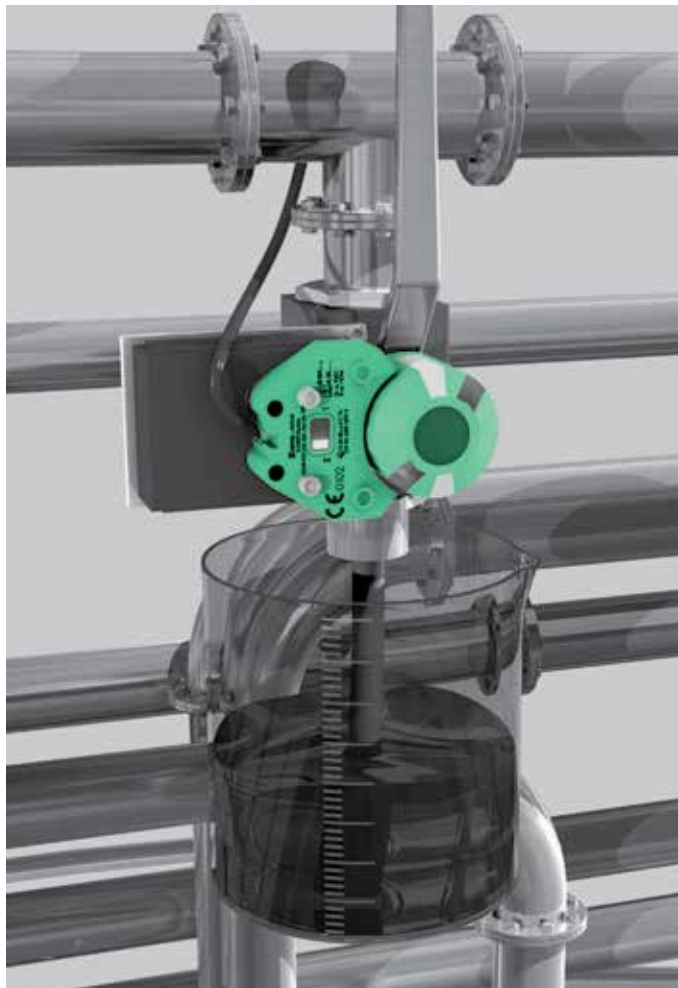
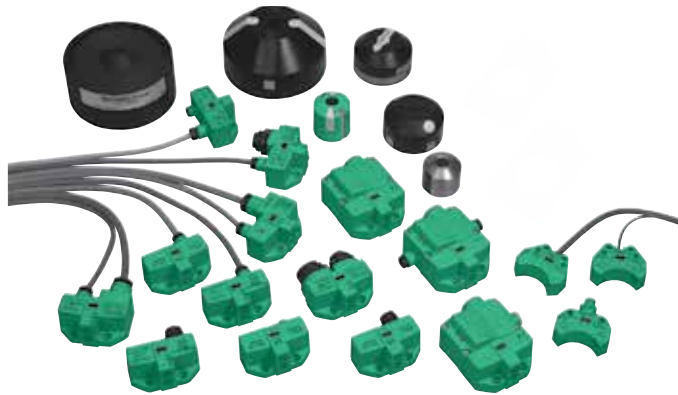
Sensors for Direct Mounting

Are you looking for a stable and robust, open-construction position feedback solution that enables the sensor and actuator to be directly mounted?

The F31 and F31K series are ideally suited for direct mounting to drives without the need for additional mounting materials. Using just two targets, you can determine the position of all standard drives regardless of their size and make.

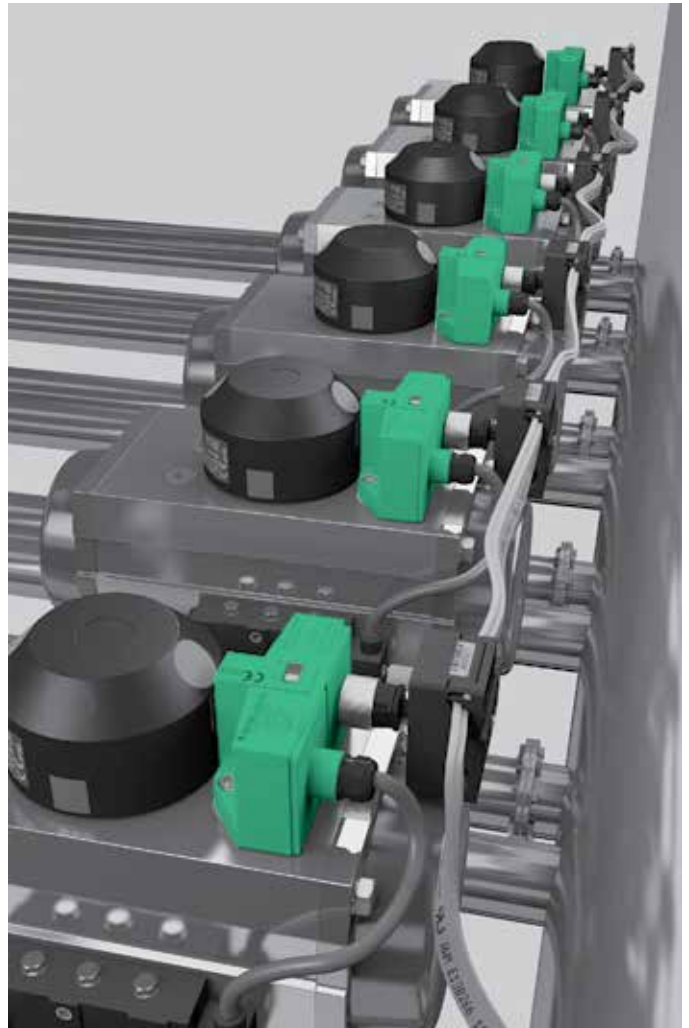
Versions without valve connections and versions with one or two valve connections are also available. The valve can be controlled directly via the sensor connection simplifying the mounting effort and reducing cabling costs.

Pepperl+Fuchs also offers an attractive open solution –the F25 sensor series– for position feedback of manually operated ball valves and flaps.



Features:

- *Safe* - the dimensions of the sensor and the distances between sensors and actuators are selected to prevent risk of injury during operation (certified by TÜV)
- *Variable* - the sensors are suitable for all standard drives regardless of size and make
- *Fixed* – the adjustment is retained thanks to mounting holes in the sensor housing for easy sensor replacement
- *Universal* – both left- and right-rotating drives can be read
- *Clear* – the assignment of the actuator to the hole pattern for the drive is clear and the drive position is clearly visible
- *Versatile* – you can choose between a cable connection, plug connection (V1, V16, or V18), and terminals
- *Transparent* – the switching states, supply voltage, and valve control can be displayed clearly using LEDs



Refer to General Notes Relating to Product Information

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Model number, inductive standard sensors

N B B 10¹⁾ - 30 G M 50 - E2 - C - V1 -FA } Food & Beverage
-FB }

1
.1

Proximity Sensors, Inductive Sensors

Cylindrical
usable
threaded length
(mm)

M Metal
(brass, nickel plated)
K Plastic
KK Plastic terminal block
H Stainless steel
1.4435/AISI 316L
S Stainless steel
1.4305/AISI 303

G Threading

Diameter in mm

Rectangular type
F1, F9, F10, F11, F17, F23, F24, F25,
F29, F31, F33, F41, V3, F46

M Mini limit switch

L2 L2 series

U Limit switch

FP/FPS Surface switch

Operating distance
0.6 mm ... 100 mm

B flush

N non-flush

B Basis line

C Comfort line

E Extended operating range

M Metal face

R Reduction factor 1

N Inductive standard sensor

IA Inductive analog sensor

S Inductive slot sensor

R Inductive ring sensor

Electrical Output

A, A0	4-wire, DC, NPN, antivalent
A2	4-wire, DC, PNP, antivalent
B3	AS-Interface Spec. 2.0
B3B	AS-Interface Spec. 2.1
E, E0	3-wire, DC, NPN, NO
E1	3-wire, DC, NPN, NC
E2	3-wire, DC, PNP, NO
E2B	3-wire, DC, PNP, NO, bistable
E3	3-wire, DC, PNP, NC
E4	3-wire, DC, NPN, NO or NC
E5	3-wire, DC, PNP, NO or NC
E8	4-wire, DC, PNP, dual, NO
I3	3-wire, DC, PNP, analog
N, N0	NAMUR, NC
N3	NAMUR, bistable
N4	NAMUR, dual, NC
1N, N1	NAMUR, NO
U	2-wire, AC/DC, programm. wiring
U8	2-wire, AC/DC, dual, NO
U0	2-wire, AC/DC, NC
US	2-wire, AC/DC, NO
W	2-wire, AC, programm. wiring
W4	2-wire, AC, programm. wiring
W0	2-wire, AC, NC
WS	2-wire, AC, NO
Z0	2-wire, DC, NO
Z1	2-wire, DC, NC
Z2	2-wire, DC, NC or NO
Z3	2-wire, DC, NO
Z4	2-wire, DC, NO
Z5	2-wire, DC, NC

} reverse polarity
protected

} voltage polarity
independent

Special Features

C	Welding field resistant
DW	Rotation speed monitoring
D	Pressure-proof
FE	Iron
NE/FE	Iron/nonferrous
P or NFE	nonferrous
SN	Safety function
T	Higher temperatures up to 100 °C
150, 200, 250	Maximum applicable temperature

Connection Elements

V1	M12 x 1 device connector for DC proximity switches
V3	M8 device connector for DC proximity switches
V5	Faston connector
V13	M12 x 1 device connector for AC proximity switches
V16	Rd24 x 1/8 device connector for dual sensors in F31 housing
V18	M18 x 1 device connector for valve connection (F31 housing)

¹⁾ The switching interval followed by a P (eg. 20P) indicates a selective switching behavior of the sensor.
The nominal distance refers to aluminum..



Properties

- Ø3 mm housing, smooth barrel
- Up to 1 mm, flush mountable
- DC, 3-wire switching output
- Cable and pigtail versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 10 mA
Installation	flush mountable
Reverse polarity protection	✓
Load current	0 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Housing material	Stainless steel 1.4305 / AISI 303

Model Number

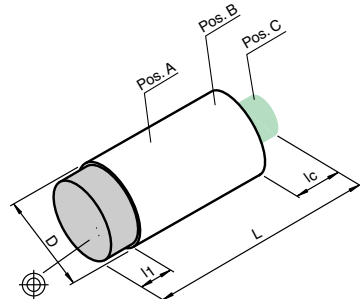
		NBB0,6-3M22-E0	NBB0,6-3M22-E1	NBB0,6-3M22-E2	NBB0,6-3M22-E3	NBB1-3M22-E0	NBB1-3M22-E2	NBB0,6-3M22-E0-0,3M-V3	NBB0,6-3M22-E2-0,3M-V3	NBB1-3M22-E0-0,3M-V3	NBB1-3M22-E2-0,3M-V3
Rated operating distance	0.6 mm	●	●	●	●	●	●	●	●	●	●
	1 mm					●	●				
Output type	NPN	●	●	●	●	●	●	●	●	●	●
	NC										
	NPN	●	●	●	●	●	●	●	●	●	●
	NO										
	PNP										
	NC										
	PNP										
	NO										
Switching frequency	0 ... 700 Hz	●	●	●	●	●	●	●	●	●	●
	0 ... 1300 Hz										
	0 ... 1400 Hz	●	●	●	●	●	●	●	●	●	●
Connection type	cable PUR, 2 m	●	●	●	●	●	●	●	●	●	●
	cable PVC, 2 m										
	Cable connector M8 x 1, 3-pin with PVC cable 300 mm							●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V										

Dimensions

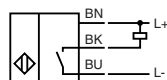
Length L [mm]	22
Diameter D [mm]	3
Cap length l ₁ [mm]	0
Connector length l _c [mm]	0
LED position	Pos. A



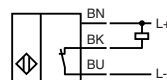
Electrical Connection



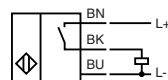
NBB0,6-3M22-E0
NBB1-3M22-E0



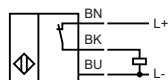
NBB0,6-3M22-E1



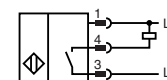
NBB0,6-3M22-E2
NBB1-3M22-E2



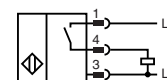
NBB0,6-3M22-E3



NBB0,6-3M22-E0-0,3M-V3
NBB1-3M22-E0-0,3M-V3



NBB0,6-3M22-E2-0,3M-V3
NBB1-3M22-E2-0,3M-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Properties

- Ø4 mm housing, smooth barrel
- 0.8 mm and 1.5 mm sensing ranges
- DC, 3-wire switching output
- Cable, pigtail and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	0.8 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Switching frequency	0 ... 3000 Hz
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Housing material	Stainless steel 1.4305 / AISI 303

Model Number

		NBB0,8-4M25-E0	NBB0,8-4M25-E1	NBB0,8-4M25-E2	NBB0,8-4M25-E3	NBB0,8-4M25-E0-0,3M-V3	NBB0,8-4M25-E2-0,3M-V3	NBB0,8-4M25-E0-V3	NBB0,8-4M25-E2-V3	NBB1,5-4M25-E0-V3
Output type	NPN NO	•				•		•		•
	NPN NC		•						•	
	PNP NO			•			•		•	
	PNP NC				•					•
No-load supply current	≤ 10 mA			•	•		•			
	≤ 12 mA	•	•			•		•	•	•
	0 ... 100 mA	•	•			•		•	•	•
Load current	0 ... 100 mA	•	•			•		•	•	•
	0 ... 200 mA			•	•		•		•	•
	0 ... 200 mA			•	•		•		•	•
Connection type	Connector M8 x 1, 3-pin							•	•	•
	cable PVC, 2 m	•	•	•	•					
	Cable connector M8 x 1, 3-pin with PVC cable 300 mm					•	•			

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	•	•	•	•	•	•	•	•	•

Dimensions

Length L [mm]	25	40	45
Diameter D [mm]	4	4 / 8	
Cap length l ₁ [mm]	0		
Connector length l _c [mm]	0	5	
LED position	Pos. A	Pos. B	

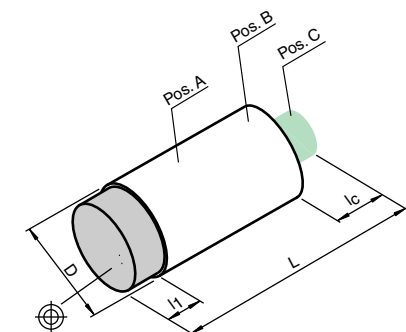
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 4

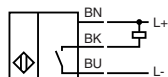
Mounting bracket, 4 mm



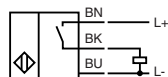
Electrical Connection



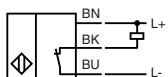
NBB0,8-4M25-E0



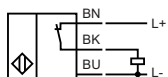
NBB0,8-4M25-E2



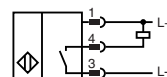
NBB0,8-4M25-E1



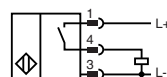
NBB0,8-4M25-E3



NBB0,8-4M25-E0-0,3M-V3
NBB0,8-4M25-E0-V3
NBB1,5-4M25-E0-V3



NBB0,8-4M25-E2-0,3M-V3
NBB0,8-4M25-E2-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)





Properties

- Ø4 mm housing
- Up to 1 mm, flush mountable
- DC, 3-wire switching output
- Cable and pigtail versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Load current	0 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Housing material	Stainless steel 1.4305 / AISI 303

Model Number

		NBB0,6-4GM22-E0	NBB0,6-4GM22-E1	NBB0,6-4GM22-E2	NBB0,6-4GM22-E3	NBB1-4GM22-E0	NBB1-4GM22-E2	NBB0,6-4GM22-E0-0,3M-V3	NBB0,6-4GM22-E2-0,3M-V3	NBB1-4GM22-E0-0,3M-V3	NBB1-4GM22-E2-0,3M-V3
Rated operating distance	0.6 mm	•	•	•	•	•	•	•	•	•	•
Output type	1 mm										
	NPN NC		•								
	NPN NO	•									
	PNP NC				•						
	PNP NO			•							
Switching frequency	0 ... 700 Hz										
	0 ... 1300 Hz		•								
	0 ... 1400 Hz	•		•	•	•	•				
Connection type	cable PUR, 2 m	•	•	•	•	•	•	•	•	•	•
	Cable connector M8 x 1, 3-pin with PVC cable 300 mm							•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V										

Dimensions

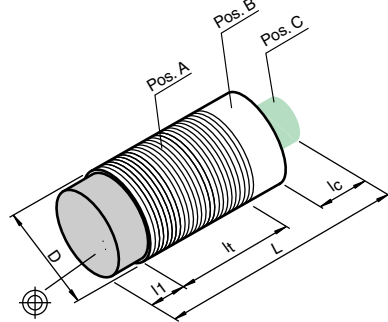
Length L [mm]	22
Diameter D [mm]	M4 x 0.5
Thread length l _t [mm]	22
Cap length l ₁ [mm]	0
Connector length l _c [mm]	0
LED position	Pos. A

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

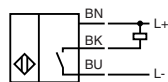
BF 4 Mounting bracket, 4 mm



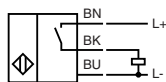
Electrical Connection



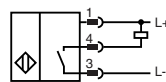
NBB0,6-4GM22-E0
NBB1-4GM22-E0



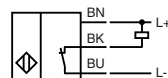
NBB0,6-4GM22-E2
NBB1-4GM22-E2



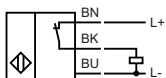
NBB0,6-4GM22-E0-0,3M-V3
NBB1-4GM22-E0-0,3M-V3



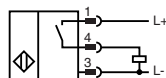
NBB0,6-4GM22-E1



NBB0,6-4GM22-E3



NBB0,6-4GM22-E2-0,3M-V3
NBB1-4GM22-E2-0,3M-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Properties

- Ø5 mm housing
- Up to 1.5 mm, flush mountable
- DC, 3-wire switching output
- Cable, pigtail and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Switching frequency	0 ... 3000 Hz
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

Rated operating distance	0.8 mm	
	1.5 mm	
Output type	NPN	NO
	NPN	NC
	PNP	NO
	PNP	NC
No-load supply current	≤ 10 mA	
	≤ 12 mA	
	≤ 15 mA	
Load current	0 ... 100 mA	
	0 ... 200 mA	
Connection type	Connector M8 x 1, 3-pin	
	cabl PVC, 2 m	
	Cable connector M8 x 1, 3-pin with PVC	
	cabl 300 mm	



Approvals and Certificates

UL approval	cULus Listed, General Purpose	
CSA approval	cCSAus Listed, General Purpose	
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	

Dimensions

Length L [mm]	25	35	32
Diameter D [mm]	M5 x 0.5	M5 x 0.5 / 8	
Thread length l _t [mm]	25	21	20
Cap length l ₁ [mm]	0		
Connector length l _c [mm]	0	10	6
LED position	Pos. A	Pos. B	Pos. A

Note: M5 x 0.5 / 8 indicated: barrel thread / connector end diameter (mm)

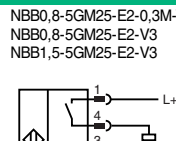
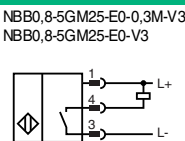
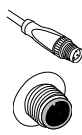
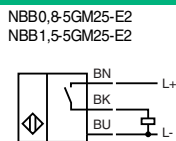
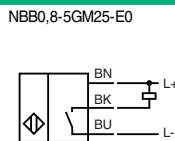
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

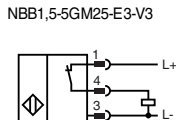
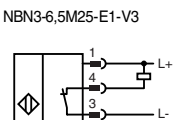
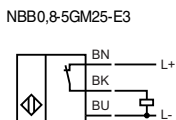
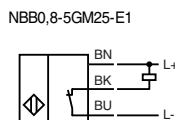
BF 5	Mounting bracket, 5 mm
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled

Electrical Connection



Wire colors in accordance with EN 60947-5-2

1		BN	(brown)
3		BU	(blue)
4		BK	(black)





Properties

- Ø6.5 mm housing, smooth barrel
- 1.5 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 60 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Load current	0 ... 100 mA
Short-circuit protection	✓, self-checking
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67

Model Number

			NJ1,5-6,5-40-E0	NJ1,5-6,5-40-E2	NJ1,5-6,5-40-E0-V3	NJ1,5-6,5-40-E2-V3
Output type	NPN	NO	●		●	
	PNP	NO		●		●
Switching frequency	0 ... 2500 Hz		●		●	
	0 ... 500 Hz			●		●
Switching state indication	LED, yellow		●	●	●	●
Connection type	Connector M8 x 1, 3-pin				●	●
	cable PUR, 2 m		●	●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)				

Dimensions

Length L [mm]	40	44
Diameter D [mm]	6.5	6.5 / 8
Cap length l ₁ [mm]		0
Connector length l _c [mm]	0	6
LED position	Pos. C	Pos. A
	Pos. B	

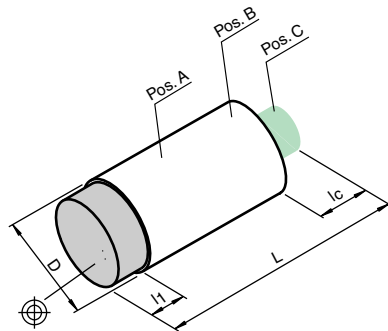
Note: 6.5/ X indicated: barrel diameter / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

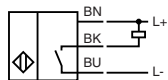
BF 6,5	Mounting bracket, 6.5 mm
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled



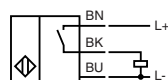
Electrical Connection



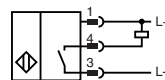
NJ1,5-6,5-40-E0



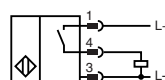
NJ1,5-6,5-40-E2



NJ1,5-6,5-40-E0-V3



NJ1,5-6,5-40-E2-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Properties

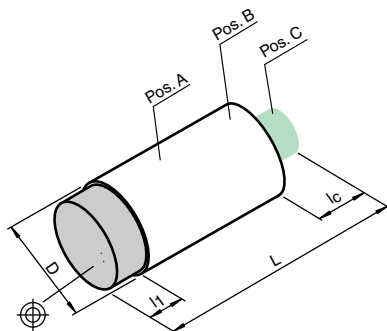
- Ø6.5 mm housing, smooth barrel
- 1.5 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Additional Products

In this series, we offer the following additional products:

NBB1,5-6,5S30-E2-0,3M-V3

Technical data like NBB1,5-6,5S20-E2-V3 but:
Cable connector M8 x 1, 3-pin, PVC 30 cm
Length L [mm]: 35 mm



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓
Switching state indication	LED, yellow
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

	NPN	NO	NBB1,5-6,5S16-E0	NBB1,5-6,5S16-E2	NBB1,5-6,5S35-E0	NBB1,5-6,5S35-E2	NBB1,5-6,5S20-E2-V3	NBB1,5-6,5S20-E3-V3	NBB1,5-6,5S40-E0-V3	NBB1,5-6,5S40-E1-V3	NBB1,5-6,5S40-E2-V3	NBB1,5-6,5S40-E3-V3	NBB1,5-6,5S50-E2-V3
Output type	NPN	NO	•	•	•	•	•	•	•	•	•	•	•
	PNP	NC											
	PNP	NO		•	•	•	•	•	•	•	•	•	•
	PNP	NC											
No-load supply current	≤ 10 mA		•	•	•	•	•	•	•	•	•	•	•
	≤ 11 mA												
	≤ 2 mA												
	≤ 7 mA												
Switching frequency	0 ... 1500 Hz												
	0 ... 2000 Hz												
	0 ... 5000 Hz												
	0 ... 6000 Hz												
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		•	•	•	•	•	•	•	•	•	•	•
	-25 ... 85 °C (-13 ... 185 °F)												
Connection type	connector (M8 x 1), 3-pin												
	cable PUR, 2 m												
	cable PVC, 2 m												



Approvals and Certificates

CCC approval CCC approval / marking not required for sensors rated ≤ 36 V

Dimensions

Length L [mm]	16	35	20	40	50
Diameter D [mm]	6.5			6.5 / 8	
Cap length I ₁ [mm]			0		
Connector length I ₂ [mm]	0	9	5		
LED position	Pos. C			Pos. B	

Note: 6.5 / X indicated: barrel diameter / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 6,5

V3-GM

V3-WM

V3-GM-BK2M-PUR-U

V3-WM-BK2M-PUR-U

Mounting bracket, 6.5 mm

Female connector, M8, 3-pin, field attachable, straight

Female connector, M8, 3-pin, field attachable, angled

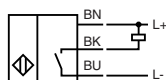
Female cordset, M8, 3-pin, PUR cable, straight

Female cordset, M8, 3-pin, PUR cable, angled

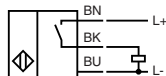
Electrical Connection



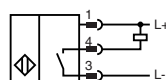
NBB1,5-6,5S35-E0



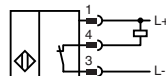
NBB1,5-6,5S16-E2



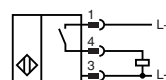
NBB1,5-6,5S40-E0-V3



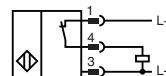
NBB1,5-6,5S40-E1-V3



NBB1,5-6,5S20-E2-V3
NBB1,5-6,5S40-E2-V3
NBB1,5-6,5S30-E2-0,3M-V3
NBB1,5-6,5S50-E2-V3



NBB1,5-6,5S40-E3-V3
NBB1,5-6,5S20-E3-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Properties

- Ø6.5 mm housing, smooth barrel
- 2 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush
Type of voltage	DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 3000 Hz
Load current	0 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBB2-6,5M30-E0	NBB2-6,5M30-E2	NBB2-6,5M25-E0-V3	NBB2-6,5M25-E1-V3	NBB2-6,5M25-E2-V3	NBB2-6,5M25-E3-V3
Output type	NPN	NO	●		●			
	NPN	NC				●		
	PNP	NO		●			●	
	PNP	NC						●
Operating voltage	10 ... 30 V		●	●			●	●
	5 ... 30 V				●	●		
Connection type	Connector M8 x 1, 3-pin				●	●	●	●
	cable PVC, 2 m		●	●				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V							

Dimensions

Length L [mm]	30	35
Diameter D [mm]	6,5	6,5 / 8
Cap length l ₁ [mm]		0
Connector length l _c [mm]	0	6
LED position	Pos. C	Pos. B

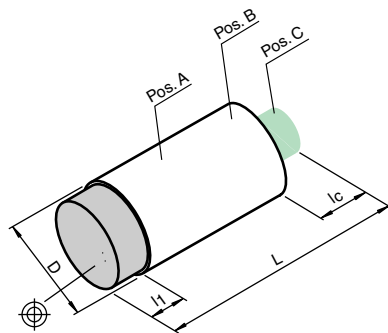
Note: 6.5/ X indicated: barrel diameter / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

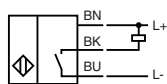
BF 6,5	Mounting bracket, 6.5 mm
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled



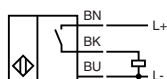
Electrical Connection



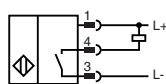
NBB2-6,5M30-E0



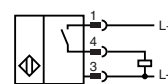
NBB2-6,5M30-E2



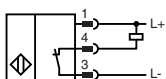
NBB2-6,5M25-E0-V3



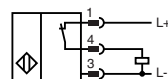
NBB2-6,5M25-E2-V3



NBB2-6,5M25-E1-V3



NBB2-6,5M25-E3-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Properties

- Ø6.5 mm housing, smooth barrel
- 3 mm, quasi-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Installation	quasi-flush
Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1500 Hz
Load current	0 ... 200 mA, above 50 °C ≤ 150 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

	NEB3-6,5M45-E0	NEB3-6,5M45-E1	NEB3-6,5M45-E2	NEB3-6,5M45-E3	NEB3-6,5M45-E0-V1	NEB3-6,5M45-E1-V1	NEB3-6,5M45-E2-V1	NEB3-6,5M45-E3-V1	NEB3-6,5M50-E0-V3	NEB3-6,5M50-E1-V3	NEB3-6,5M50-E2-V3	NEB3-6,5M50-E3-V3
Output type	NPN NO	•			•				•			
	NPN NC		•			•				•		
	PNP NO			•			•				•	
	PNP NC				•			•				•
Connection type	Connector M12 x 1, 4-pin	•	•	•	•	•	•	•	•	•	•	•
	Connector M8 x 1, 3-pin cable PUR, 2 m	•	•	•	•	•	•	•	•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	•	•	•	•	•	•	•	•	•	•	•

Dimensions

Length L [mm]	45	65	60
Diameter D [mm]	6.5	6.5 / 12	6.5 / 8
Cap length l_1 [mm]		0	
Connector length l_c [mm]	0	8	7
LED position		Pos. A	

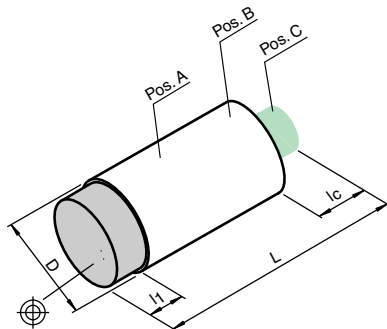
Note: 6.5/ X indicated: barrel diameter / connector end diameter (mm)

Accessories

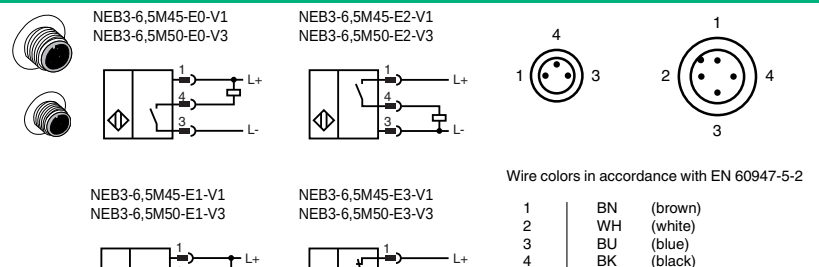
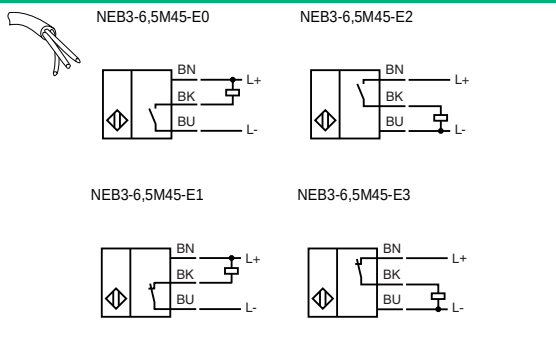
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 6,5	Mounting bracket, 6.5 mm
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



Electrical Connection



Refer to General Notes Relating to Product Information

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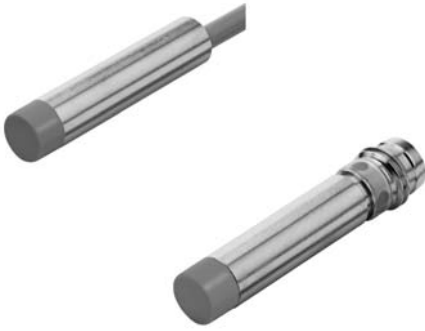
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PEPPERL+FUCHS
SENSING YOUR NEEDS



Properties

- Ø6.5 mm housing, smooth barrel
- 3 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Installation	non-flush
Type of voltage	DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 2000 Hz
Load current	0 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBN3-6,5M30-E0	NBN3-6,5M30-E2	NBN3-6,5M25-E0-V3	NBN3-6,5M25-E1-V3	NBN3-6,5M25-E2-V3
Output type	NPN	NO	●		●		
	NPN	NC				●	
	PNP	NO		●			●
Operating voltage	10 ... 30 V		●	●			
	5 ... 30 V				●	●	●
Connection type	Connector M8 x 1, 3-pin				●	●	●
	cable PVC, 2 m		●	●			

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V					

Dimensions

Length L [mm]	30	29
Diameter D [mm]	6.5	6.5 / 8
Cap length l ₁ [mm]		4
Connector length l _c [mm]	0	6
LED position	Pos. C	Pos. B

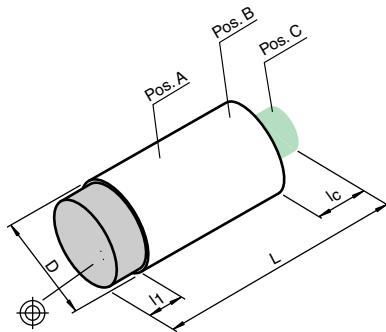
Note: 6.5 / X indicated: barrel diameter / connector end diameter (mm)

Accessories

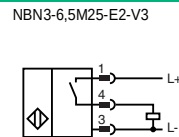
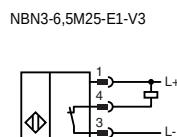
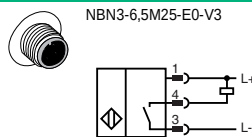
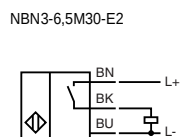
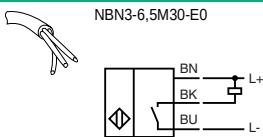
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 6,5	Mounting bracket, 6.5 mm
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled



Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Properties

- Ø6.5 mm housing, smooth barrel
- 6 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	6 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 750 Hz
Load current	0 ... 200 mA, above 50°C ≤ 150 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NEN6-6,5M45-E0	NEN6-6,5M45-E1	NEN6-6,5M45-E2	NEN6-6,5M45-E3	NEN6-6,5M45-E0-V3	NEN6-6,5M45-E1-V3	NEN6-6,5M45-E2-V3	NEN6-6,5M45-E3-V3	NEN6-6,5M45-E0-V1	NEN6-6,5M45-E1-V1	NEN6-6,5M45-E2-V1	NEN6-6,5M45-E3-V1
Output type	NPN	NO	●				●				●			
	NPN	NC		●				●				●		
	PNP	NO			●				●				●	
	PNP	NC				●				●				●
Connection type	Connector M12 x 1, 4-pin										●	●	●	●
	Connector M8 x 1, 3-pin						●	●	●	●				
	cable PUR, 2 m		●	●	●	●								

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V													

Dimensions

Length L [mm]	45	60	65
Diameter D [mm]	6.5	6.5 / 8	6.5 / 12
Cap length l ₁ [mm]		4	
Connector length l _c [mm]	0	6	8
LED position		Pos. A	

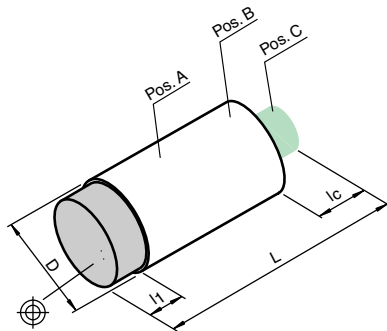
Note: 6.5/ X indicated: barrel diameter / connector end diameter (mm)

Accessories

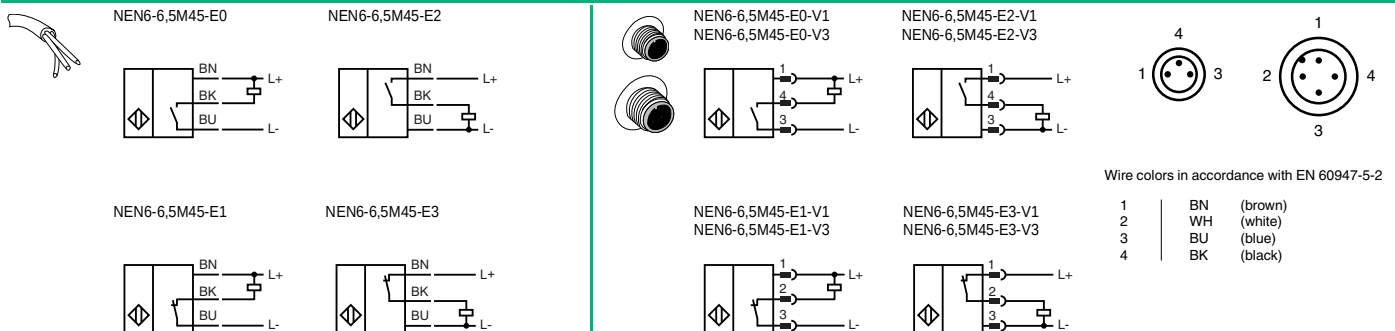
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 6,5	Mounting bracket, 6.5 mm
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



Electrical Connection



Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
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Properties

- Ø8 mm housing
- 1.5 mm, flush mountable
- DC, 2-wire switching output
- Cable and connector versions

Additional Products

In this series, we offer the following additional products:

NBB1-8GS50-Z0-T

Rated operating distance: 1 mm

Installation: flush

Output type: DC, NO

Operating voltage: 15 ... 34 V

Ambient temperature: -25 ... 100 °C (-13 ... 212 °F)

Housing material: Stainless steel 1.4305 / AISI 303

Connection type: cable PUR, 2 m

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Type of voltage	DC
Operating voltage	5 ... 60 V
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 1200 Hz
Load current	2 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

			NCB1,5-8GM40-Z0	NCB1,5-8GM40-Z1	NCB1,5-8GM50-Z0-V3	NCB1,5-8GM50-Z1-V3
Output type	DC	NO	●	●	●	●
	DC	NC		●		●
Connection type	Connector M8 x 1, 3-pin		●	●	●	●
	cable PUR, 2 m		●	●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●

Dimensions

Length L [mm]	40	51
Diameter D [mm]	M8 x 1	
Thread length l _t [mm]	40	48
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	6
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 8

EXG-08

V3-GM

V3-GM-BK2M-PUR-U

V3-WM-BK2M-PUR-U

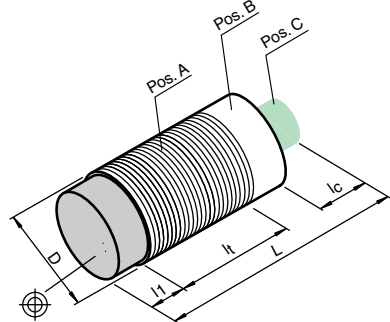
Mounting bracket, 8 mm

Quick mounting bracket with stop

Female connector, M8, 3-pin, field attachable, straight

Female cordset, M8, 3-pin, PUR cable, straight

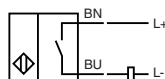
Female cordset, M8, 3-pin, PUR cable, angled



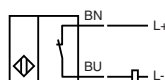
Electrical Connection



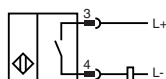
NCB1,5-8GM40-Z0
NBB1-8GS50-Z0-T



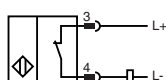
NCB1,5-8GM40-Z1



NCB1,5-8GM50-Z0-V3



NCB1,5-8GM50-Z1-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Properties

- Ø8 mm housing
- 2 mm, non-flush mountable
- DC, 2-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	5 ... 60 V
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 1200 Hz
Load current	2 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

			NCN2-8GM40-Z0	NCN2-8GM40-Z1	NCN2-8GM50-Z0-V3	NCN2-8GM50-Z1-V3
Output type	DC NO		●	●	●	●
	DC NC					●
Connection type	Connector M8 x 1, 3-pin				●	●
	cable PUR, 2 m		●	●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●

Dimensions

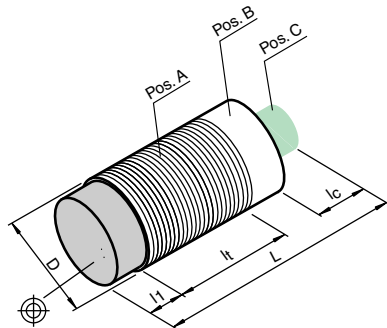
Length L [mm]	40	51
Diameter D [mm]	M8 x 1	
Thread length l _t [mm]	36	44
Cap length l ₁ [mm]	4	
Connector length l _c [mm]	0	6
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

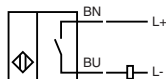
BF 8	Mounting bracket, 8 mm
EXG-08	Quick mounting bracket with stop
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight



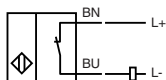
Electrical Connection



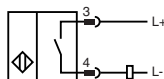
NCN2-8GM40-Z0



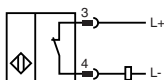
NCN2-8GM40-Z1



NCN2-8GM50-Z0-V3



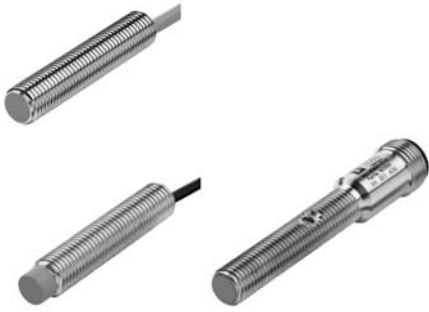
NCN2-8GM50-Z1-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)





Properties

- Ø8 mm housing
- 1.5 mm and 2 mm sensing ranges
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	DC
Operating voltage	10 ... 60 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Load current	0 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

		NJ1,5-8GM40-E0	NJ1,5-8GM40-E2	NJ2-8GM40-E0	NJ2-8GM40-E2	NJ1,5-8GM40-E0-V1	NJ1,5-8GM40-E2-V1
Rated operating distance	1.5 mm 2 mm	●	●	●	●	●	●
Installation	flush non-flush	●	●	●	●	●	●
Output type	NPN NO PNP NO	●	●	●	●	●	●
Switching frequency	0 ... 400 Hz 0 ... 500 Hz 0 ... 1500 Hz 0 ... 2500 Hz	●	●	●	●	●	●
Connection type	Connector M12 x 1, 4-pin cable PUR, 2 m	●	●	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●	●	●

Dimensions

Length L [mm]	40	54
Diameter D [mm]	M8 x 1	M8 x 1 / 12
Thread length l _t [mm]	40 36 36 36	35 40
Cap length l ₁ [mm]	0 4 4 4	0 0
Connector length l _c [mm]	0	6
LED position	Pos. A Pos. C Pos. A Pos. A	Pos. B Pos. A

Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

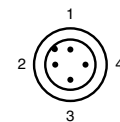
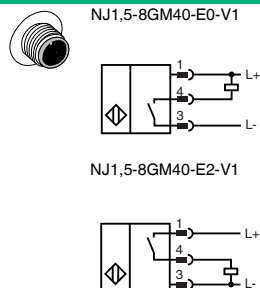
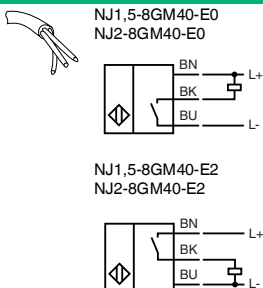
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 8	Mounting bracket, 8 mm
EXG-08	Quick mounting bracket with stop
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø8 mm housing
- 1.5 mm, flush mountable
- DC, 3-wire and 4-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Short-circuit protection	✓
Switching state indication	LED, yellow
Protection degree	IP67

Model Number

			NBB1,5-8GM16-E0	NBB1,5-8GM16-E2	NBB1,5-8GM16-E3	NBB1,5-8GM60-A0	NBB1,5-8GM60-A2	NBB1,5-8GM40-E0-V3	NBB1,5-8GM40-E2-V3	NBB1,5-8GM50-A0-V1	NBB1,5-8GM50-A2-V1
Output type	NPN	NO/NC									
	NPN	NO	•					•			
	PNP	NO/NC									
	PNP	NO		•							
	PNP	NC			•						•
No-load supply current	≤ 10 mA		•	•	•	•	•	•	•	•	•
	≤ 20 mA										
Switching frequency	0 ... 1500 Hz		•	•	•	•	•	•	•	•	•
	0 ... 3000 Hz										
	0 ... 6000 Hz			•	•						
Load current	0 ... 100 mA		•	•	•	•	•	•	•	•	•
	0 ... 200 mA			•	•						
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		•	•	•	•	•	•	•	•	•
	-25 ... 85 °C (-13 ... 185 °F)			•	•						
Housing material	Stainless steel 1.4305 / AISI 303		•	•	•						
	brass, nickel-plated					•	•	•	•	•	•
Connection type	Connector M12 x 1, 4-pin							•	•	•	•
	Connector M8 x 1, 3-pin							•	•		
	cable PVC, 2 m		•	•	•	•	•				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose		•	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V										

Dimensions

Length L [mm]	16	60	50	64
Diameter D [mm]	M8 x 1			M8 x 1 / 12
Thread length l _t [mm]	16	60	41	50
Cap length l ₁ [mm]	0			
Connector length l _c [mm]	0			6
LED position	Pos. C			Pos. A

Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 8

EXG-08

V1-G-BK2M-PUR-U

V3-GM-BK2M-PUR-U

Mounting bracket, 8 mm

Quick mounting bracket with stop

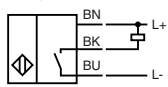
Female cordset, M12, 4-pin, PUR cable, straight

Female cordset, M8, 3-pin, PUR cable, straight

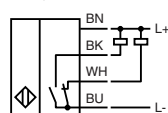
Electrical Connection



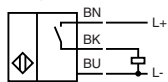
NBB1,5-8GM16-E0



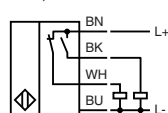
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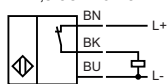
NBB1,5-8GM16-E2



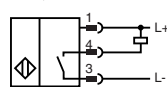
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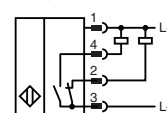
NBB1,5-8GM16-E3



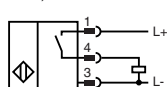
NBB1,5-8GM40-E0-V3



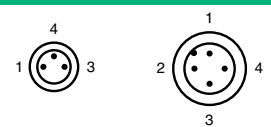
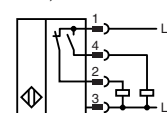
NBB1,5-8GM50-A0-V1



NBB1,5-8GM40-E2-V3



NBB1,5-8GM50-A2-V1



Wire colors in accordance with EN 60947-5-2

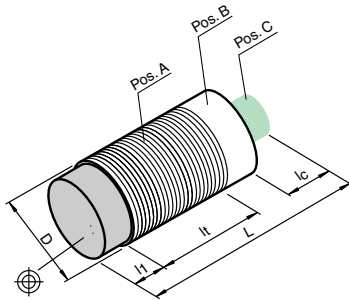
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Ø8 mm housing
- 1.5 mm and 2 mm sensing ranges
- DC, 3-wire switching output
- Cable and connector versions



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓
Switching state indication	LED, yellow
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

Rated operating distance	1.5 mm		•	•	•	•	•	•	•	•	•	•
	2 mm			•	•	•	•	•		•	•	•
Output type	NPN	NO		•								
	NPN	NC			•					•		
	PNP	NO	•			•		•	•			•
	PNP	NC					•			•		
No-load supply current	≤ 1 mA			•	•					•		
	≤ 7 mA		•			•	•	•	•		•	•
Switching frequency	0 ... 600 Hz			•	•					•		
	0 ... 1500 Hz		•							•		
	0 ... 2000 Hz											•
	0 ... 2500 Hz							•			•	
	0 ... 3500 Hz				•							
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)		•							•		
	-25 ... 85 °C (-13 ... 185 °F)			•	•	•	•	•	•		•	•
Connection type	Connector M8 x 1 , 3-pin									•	•	•
	Connector M12 x 1 , 4-pin cable PUR , 2 m		•	•	•	•	•	•				•



Approvals and Certificates

CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V
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Dimensions

Length L [mm]	30	35	35	35	35	35	44	45	45	49
Diameter D [mm]	M8 x 1									8/ 12
Thread length l _t [mm]	30	35	35	35	35	34	44	42	42	30
Cap length l _i [mm]	0									
Connector length l _c [mm]	0									6
LED position	Pos.	C			B		A			

Note: 8/12 indicated: barrel thread M8 x 1 / connector end diameter 12 mm

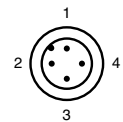
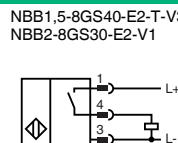
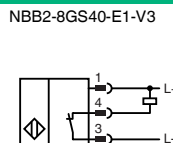
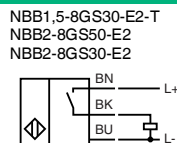
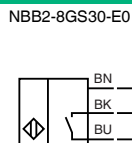
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

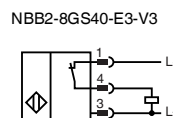
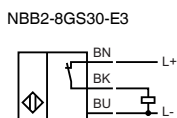
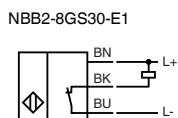
BF 8	Mounting bracket, 8 mm
EXG-08	Quick mounting bracket with stop
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM	Female connector, M8, 3-pin, field attachable, angled

Electrical Connection



Wire colors in accordance with EN 60947-5-2

1		BN	(brown)
3		BU	(blue)
4		BK	(black)





Properties

- Ø8 mm housing
- 2 mm, flush mountable
- DC, 3-wire switching output
- Connector version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1500 Hz
Load current	0 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	Multihole-LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4435 / AISI 316L
Protection degree	IP67
Connection type	M8 x 1 connector, 3-pin



Model Number

			NBB2-8GH20-E0-V3	NBB2-8GH20-E2-V3	NBB2-8GH25-E0-V3	NBB2-8GH25-E2-V3	NBB2-8GH40-E0-V3	NBB2-8GH40-E2-V3
Output type	NPN	NO	●	●	●	●	●	●
	PNP	NO						

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V							

Dimensions

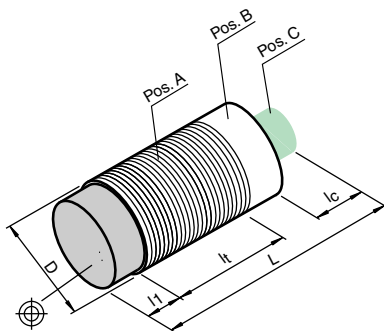
Length L [mm]	24	29	44
Diameter D [mm]		M8 x 1	
Thread length l _t [mm]	20	25	40
Cap length l ₁ [mm]		0	
Connector length l _c [mm]		6	
LED position		Pos. B	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 8	Mounting bracket, 8 mm
V3-GMV4A-5M-PUR	Female cordset, M8, 3-pin, PUR cable, straight
V3-WMV4A-5M-PUR	Female cordset, M8, 3-pin, PUR cable, angled

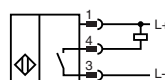
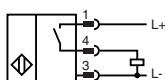


Electrical Connection



NBB2-8GH20-E2-V3
NBB2-8GH25-E2-V3
NBB2-8GH40-E2-V3

NBB2-8GH20-E0-V3
NBB2-8GH25-E0-V3
NBB2-8GH40-E0-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Properties

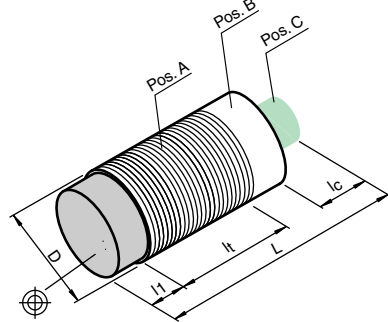
- Ø8 mm housing
- 2 mm, flush mountable
- DC, 3-wire and 4-wire switching output versions
- Cable, cable connector and connector versions

Additional Products

In this series, we offer the following additional products:

NBB2-8GM30-E2-0,3M-V3

Technical data like NBB2-8GM30-E2 but:
Connection type: cable connector M8 x 1, PVC, 300 mm



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush
Type of voltage	DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Load current	0 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBB2-8GM30-E0	NBB2-8GM30-E2	NBB2-8GM50-E0	NBB2-8GM50-E2	NBB2-8GM25-E0-V3	NBB2-8GM25-E1-V3	NBB2-8GM25-E2-V3	NBB2-8GM25-E3-V3	NBB2-8GM40-E3-V3	NBB2-8GM30-E0-V1	NBB2-8GM30-E2-V1	NBB2-8GM30-A0-V1	NBB2-8GM30-A2-V1	NBB2-8GM40-E0-V1	NBB2-8GM40-E2-V1
Output type	NPN	NO/NC															
	NPN	NO	•	•													
	NPN	NC															
	PNP	NO/NC															
	PNP	NO															
	PNP	NC															
Operating voltage	10 ... 30 V DC		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	5 ... 30 V DC																
Switching frequency	0 ... 1000 Hz																
	0 ... 1500 Hz																
	0 ... 2000 Hz																
	0 ... 3000 Hz																
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	-25 ... 80 °C (-13 ... 176 °F)																
Connection type	Connector M12 x 1, 4-pin																
	Connector M8 x 1, 3-pin																
	cable PVC, 2 m																

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V																

Dimensions

Length L [mm]	30	50	29	50	49	59
Diameter D [mm]	M8 x 1			M8 x 1 / 12		
Thread length l _t [mm]	30	50	25	40	30	40
Cap length l ₁ [mm]				0		
Connector length l _c [mm]	0			6		
LED position	Pos. C			Pos. B		

Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

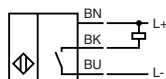
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector, straight
BF 8	Mounting bracket, 8 mm
EXG-08	Quick mounting bracket with stop
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight

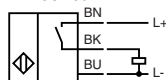
Electrical Connection



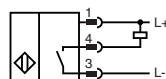
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NBB2-8GM50-E0



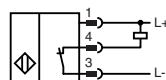
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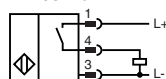
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NBB2-8GM40-E0-V1



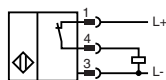
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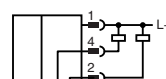
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NBB2-8GM30-E2-V1
NBB2-8GM40-E2-V1



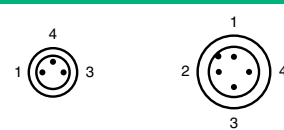
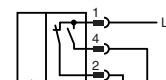
NBB2-8GM25-E3-V3
NBB2-8GM40-E3-V3



NBB2-8GM30-A0-V1



NBB2-8GM30-A2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø8 mm housing
- 2 mm, non-flush mountable
- DC, 4-wire switching output versions
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Load current	0 ... 100 mA
Short-circuit protection	✓, self-checking
Switching frequency	0 ... 1500 Hz
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NBN2-8GM60-A0	NBN2-8GM60-A2	NBN2-8GM50-A0-V1	NBN2-8GM50-A2-V1
Output type	NPN	•	•	•	•
	NO/NC				
	PNP				
Connection type	Connector M12 x 1, 4-pin	•	•	•	•
	cable PVC, 2 m				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	60	64
Diameter D [mm]	M8 x 1	M8 x 1 / 12
Thread length l _t [mm]	60	50
Cap length l ₁ [mm]		4
Connector length l _c [mm]	0	6
LED position	Pos. C	Pos. A

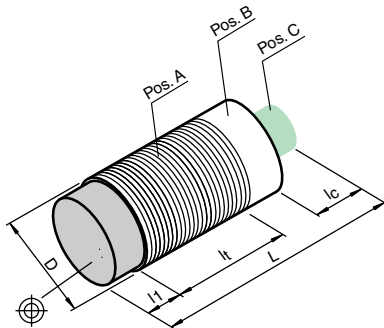
Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

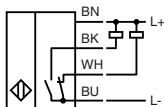
V1-W	4-pin, M12 female field-attachable connector, angled
BF 8	Mounting bracket, 8 mm
V1-G	4-pin, M12 female field-attachable connector, straight
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



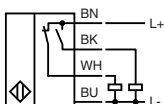
Electrical Connection



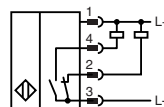
NBN2-8GM60-A0



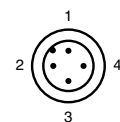
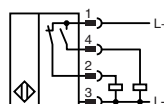
NBN2-8GM60-A2



NBN2-8GM50-A0-V1



NBN2-8GM50-A2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø8 mm housing
- 3 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Installation	non-flush
Type of voltage	DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Load current	0 ... 100 mA
Short-circuit protection	✓, self-checking
Switching frequency	0 ... 2000 Hz
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBN3-8GM30-E0	NBN3-8GM30-E2	NBN3-8GM25-E0-V3	NBN3-8GM25-E1-V3	NBN3-8GM25-E2-V3	NBN3-8GM25-E3-V3	NBN3-8GM30-E0-V1	NBN3-8GM30-E2-V1
Output type	NPN	NO	●		●				●	
	NPN	NC				●				
	PNP	NO		●			●			●
	PNP	NC						●		
Operating voltage	10 ... 30 V		●	●			●		●	●
	5 ... 30 V				●	●				
Connection type	Connector M12 x 1, 4-pin								●	●
	Connector M8 x 1, 3-pin cable PVC, 2 m		●	●				●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V									

Dimensions

Length L [mm]	30	30	29	29	29	29	49	49
Diameter D [mm]							M8 x 1 / 12	M8 x 1 / 12
Thread length l _t [mm]	30			21				26
Cap length l ₁ [mm]				4				
Connector length l _c [mm]	0				6			
LED position		Pos. C				Pos. B		

Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

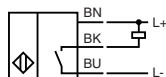
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 8	Mounting bracket, 8 mm
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

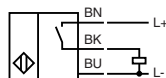
Electrical Connection



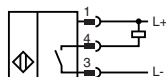
NBN3-8GM30-E0



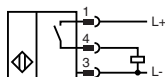
NBN3-8GM30-E2



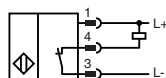
NBN3-8GM25-E0-V3
NBN3-8GM30-E0-V1



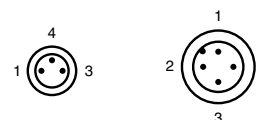
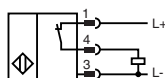
NBN3-8GM25-E2-V3
NBN3-8GM30-E2-V1



NBN3-8GM25-E1-V3



NBN3-8GM25-E3-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø8 mm housing
- 3 mm quasi-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- **Extended sensing range means fewer sensor/target impacts**

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Installation	quasi-flush
Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Switching frequency	0 ... 1500 Hz
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Protection degree	IP67
Housing material	brass, nickel-plated

Model Number

			NPN				PNP			
			NEB3-8G	NEB3-8G	NEB3-8G	NEB3-8G	NEB3-8G	NEB3-8G	NEB3-8G	NEB3-8G
Output type	NPN	NO	●			●			●	
	NPN	NC		●			●			●
	PNP	NO			●			●		●
	PNP	NC				●		●		
Connection type	Connector M12 x 1, 4-pin								●	●
	Connector M8 x 1, 3-pin					●	●	●	●	●
	cable PUR, 2 m		●	●	●	●				
										

Approvals and Certificates

UL approval	cULus Listed, General Purpose	
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V	

Dimensions

Length L [mm]	45	60	66
Diameter D [mm]	M8 x 1		M8 x 1 / 12
Thread length l _t [mm]	45		44
Cap length l ₁ [mm]		0	
Connector length l _c [mm]	0	6	10
LED position	Pos. A		

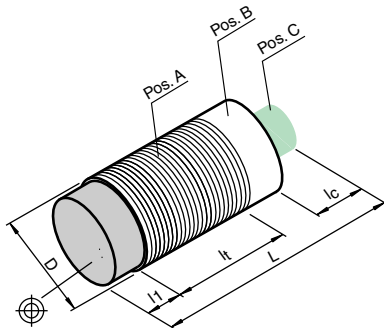
Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

Accessories

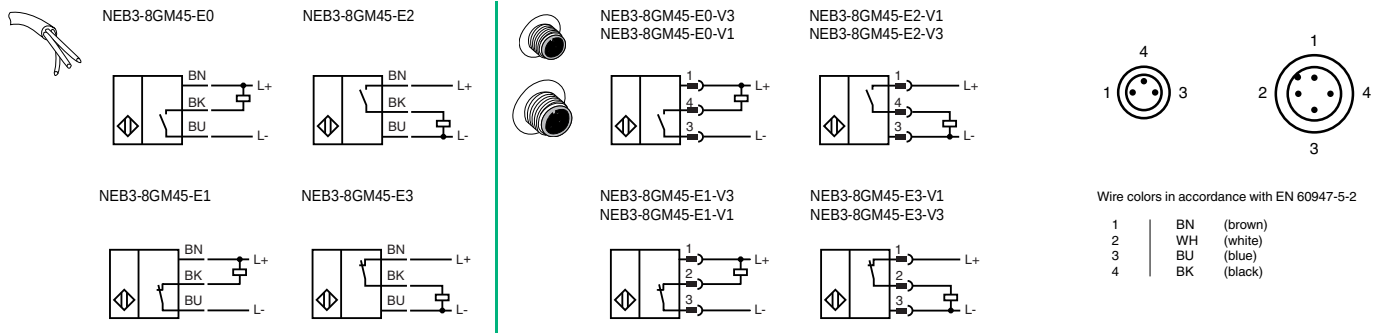
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 8	Mounting bracket, 8 mm
V1-G	4-pin, M12 female field-attachable connector, straight
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled



Electrical Connection



1
1.1

Proximity Sensors, Inductive Sensors, cylindrical

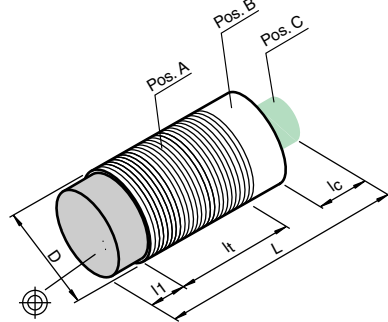


Properties

- Ø8 mm housing
- 4 mm, quasi-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	4 mm
Installation	quasi-flush
Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Output type	PNP NO
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching frequency	0 ... 500 Hz
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Housing material	chromium plated brass

Model Number

Connection type	Connector M8 x 1, 3-pin cable PUR, 2 m
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NEB4-8GM45-E2



NEB4-8GM50-E2-V3



Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•
CSA approval	cCSAus Listed, General Purpose	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

Length L [mm]	45	60
Diameter D [mm]	M8 x 1	
Thread length l _t [mm]	45	
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	6
LED position	Pos. A	

Accessories

These and more accessories can be found in chapter 10

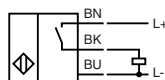
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 8	Mounting bracket, 8 mm
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled

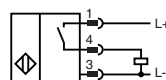
Electrical Connection



NEB4-8GM45-E2



NEB4-8GM50-E2-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø8 mm housing
- 6 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	6 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 750 Hz
Load current	0 ... 200 mA, above 50°C ≤ 150 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NEN6-8GM45-E0	NEN6-8GM45-E1	NEN6-8GM45-E2	NEN6-8GM45-E3	NEN6-8GM45-E0-V3	NEN6-8GM45-E1-V3	NEN6-8GM45-E2-V3	NEN6-8GM45-E3-V3
Output type	NPN	NO	●				●			
	NPN	NC		●				●		
	PNP	NO			●				●	
	PNP	NC				●				●
Connection type	Connector M8 x 1, 3-pin						●	●	●	●
	cable PUR, 2 m		●	●	●	●				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V									

Dimensions

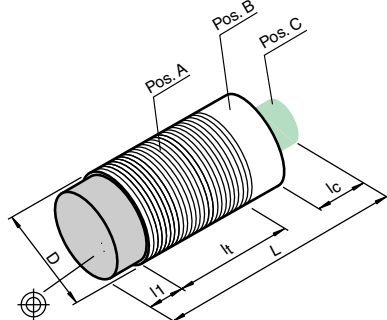
Length L [mm]	45	60
Diameter D [mm]	M8 x 1	
Thread length l _t [mm]	44	40
Cap length l ₁ [mm]	4	
Connector length l _c [mm]	0	6
LED position	Pos. A	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

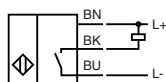
BF 8	Mounting bracket, 8 mm
V1-G	4-pin, M12 female field-attachable connector, straight
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled



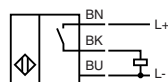
Electrical Connection



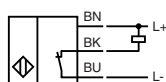
NEN6-8GM45-E0



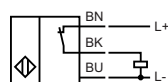
NEN6-8GM45-E2



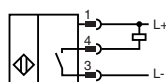
NEN6-8GM45-E1



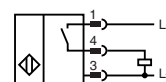
NEN6-8GM45-E3



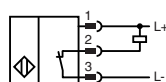
NEN6-8GM45-E0-V3



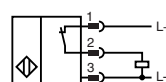
NEN6-8GM45-E2-V3



NEN6-8GM45-E1-V3



NEN6-8GM45-E3-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Ø8 mm housing
- 6 mm, non-flush mountable
- DC, 3-wire switching output
- Connector version

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	6 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 750 Hz
Load current	0 ... 200 mA, above 50°C ≤ 150 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP67
Connection type	Connector M12 x 1, 4-pin



Model Number

			NEN6-8GM45-E0-V1	NEN6-8GM45-E1-V1	NEN6-8GM45-E2-V1	NEN6-8GM45-E3-V1
Output type	NPN	NO	●			
	NPN	NC		●		
	PNP	NO			●	
	PNP	NC				●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	66
Diameter D [mm]	M8 x 1 / 12
Thread length l _t [mm]	40
Cap length l ₁ [mm]	4
Connector length l _c [mm]	8
LED position	Pos. A

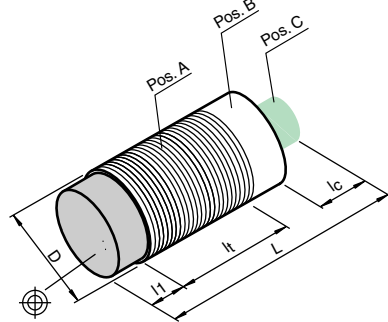
Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

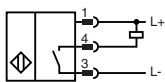
BF 8	Mounting bracket, 8 mm
V1-G	4-pin, M12 female field-attachable connector, straight
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled



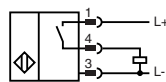
Electrical Connection



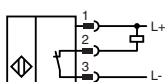
NEN6-8GM45-E0-V1



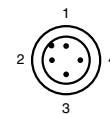
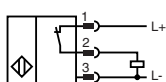
NEN6-8GM45-E2-V1



NEN6-8GM45-E1-V1



NEN6-8GM45-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø8 mm housing
- 1.5 mm, flush mountable
- AC, 2-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Type of voltage	AC
Operating voltage	24 ... 264 V AC
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 25 Hz
Load current	5 ... 100 mA
Switching state indication	LED, red
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67
Connection type	cable PVC, 2 m



Model Number

Output type

AC NO
AC NC

NJ1,5-8GM40-WO

●

NJ1,5-8GM40-WS

●

Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose

●

●

●

●

Dimensions

Length L [mm]	40
Diameter D [mm]	M8 x 1
Thread length l _t [mm]	30
Cap length l ₁ [mm]	0
Connector length l _c [mm]	0
LED position	Pos. B

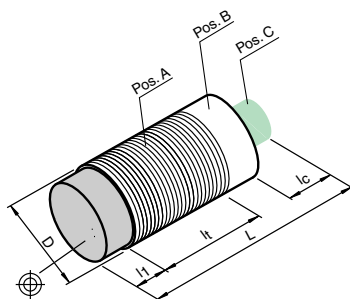
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 8

Mounting bracket, 8 mm

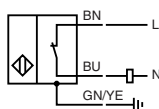
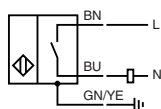


Electrical Connection



NJ1,5-8GM40-WS

NJ1,5-8GM40-WO





Properties

- Ø12 mm housing
- 2 mm and 4 mm sensing ranges
- DC, 2-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Type of voltage	DC
Load current	2 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Protection degree	IP67

Model Number

		NBB2-12GM40-Z0	NCB2-12GM40-Z0	NCB2-12GM40-Z1	NCB4-12GM35-Z4	NCB4-12GM35-Z5	NBB2-12GM40-Z0-V1	NCB2-12GM40-Z0-V1	NCB2-12GM40-Z1-V1	NCB4-12GM40-Z4-V1	NCB4-12GM40-Z5-V1	NCB4-12GM40-Z7-V1
Rated operating distance	2 mm	●	●	●	●	●	●	●	●	●	●	●
	4 mm	●	●	●	●	●	●	●	●	●	●	●
Output type	DC NO	●	●	●	●	●	●	●	●	●	●	●
	DC NC	●	●	●	●	●	●	●	●	●	●	●
Operating voltage	3.5 ... 30 V	●	●	●	●	●	●	●	●	●	●	●
	5 ... 60 V	●	●	●	●	●	●	●	●	●	●	●
Reverse polarity protection	✗, no	●	●	●	●	●	●	●	●	●	●	●
	✓, polarity independent	●	●	●	●	●	●	●	●	●	●	●
Switching frequency	0 ... 800 Hz	●	●	●	●	●	●	●	●	●	●	●
	0 ... 1000 Hz	●	●	●	●	●	●	●	●	●	●	●
Pre-fault indication	LED, red	●	●	●	●	●	●	●	●	●	●	●
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	●	●	●	●	●	●	●	●	●	●	●
	-40 ... 70 °C (-40 ... 158 °F)	●	●	●	●	●	●	●	●	●	●	●
Housing material	Stainless steel 1.4305 / AISI 303	●	●	●	●	●	●	●	●	●	●	●
	brass, nickel-plated	●	●	●	●	●	●	●	●	●	●	●
Connection type	Connector M12 x 1, 4-pin	●	●	●	●	●	●	●	●	●	●	●
	cable PUR, 2 m	●	●	●	●	●	●	●	●	●	●	●
	cable PVC, 2 m	●	●	●	●	●	●	●	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●	●	●	●	●	●	●	●
CCC approval / marking not required for sensors rated ≤36 V												

Dimensions

Length L [mm]	40	35	55
Diameter D [mm]	M12 x 1		
Thread length l _t [mm]	37	32	39
Cap length l ₁ [mm]	0		
Connector length l _c [mm]	0	6	
LED position	Pos. C		

Accessories

These and more accessories can be found in chapter 10

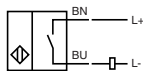
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12	Mounting bracket, 12 mm
EXG-12	Quick mounting bracket with stop
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

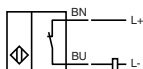
Electrical Connection



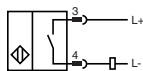
NBB2-12GM40-Z0
NCB2-12GM40-Z0
NCB4-12GM35-Z4



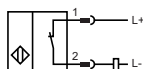
NCB2-12GM40-Z1
NCB4-12GM35-Z5



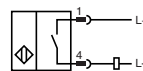
NBB2-12GM40-Z0-V1
NCB2-12GM40-Z0-V1



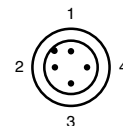
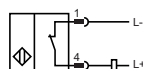
NCB2-12GM40-Z1-V1
NCB4-12GM40-Z5-V1



NCB4-12GM40-Z4-V1



NCB4-12GM40-Z7-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø12 mm housing
- 4 mm and 8 mm sensing ranges
- DC, 2-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	non-flush
Type of voltage	DC
Load current	2 ... 100 mA
Short-circuit protection	✓, self-checking
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67

Model Number

		NBN4-12GM40-Z0	NCN4-12GM40-Z0	NCN4-12GM40-Z1	NCN8-12GM35-Z4	NCN8-12GM35-Z5	NBN4-12GM40-Z0-V1	NCN4-12GM40-Z0-V1	NCN4-12GM40-Z1-V1	NBN4-12GM40-Z3-V1	NCN4-12GM40-Z3-V1	NCN8-12GM40-Z4-V1	NCN8-12GM40-Z5-V1	NCN8-12GM40-Z7-V1
Rated operating distance	4 mm	•	•	•	•	•	•	•	•	•	•	•	•	•
	8 mm	•	•	•	•	•	•	•	•	•	•	•	•	•
Output type	DC NO	•	•	•	•	•	•	•	•	•	•	•	•	•
	DC NC	•	•	•	•	•	•	•	•	•	•	•	•	•
Operating voltage	3.5 ... 30 V	•	•	•	•	•	•	•	•	•	•	•	•	•
	5 ... 60 V	•	•	•	•	•	•	•	•	•	•	•	•	•
Reverse polarity protection	✗, no	•	•	•	•	•	•	•	•	•	•	•	•	•
	✓, polarity independent	•	•	•	•	•	•	•	•	•	•	•	•	•
Switching frequency	0 ... 1000 Hz	•	•	•	•	•	•	•	•	•	•	•	•	•
	0 ... 750 Hz	•	•	•	•	•	•	•	•	•	•	•	•	•
	0 ... 800 Hz	•	•	•	•	•	•	•	•	•	•	•	•	•
Switching state indication	LED, yellow	•	•	•	•	•	•	•	•	•	•	•	•	•
	Multihole-LED, yellow	•	•	•	•	•	•	•	•	•	•	•	•	•
	all direction LED, yellow	•	•	•	•	•	•	•	•	•	•	•	•	•
Pre-fault indication	LED, red	•	•	•	•	•	•	•	•	•	•	•	•	•
Housing material	Stainless steel 1.4305 / AISI 303	•	•	•	•	•	•	•	•	•	•	•	•	•
	brass, nickel-plated	•	•	•	•	•	•	•	•	•	•	•	•	•
Connection type	Connector M12 x 1, 4-pin	•	•	•	•	•	•	•	•	•	•	•	•	•
	cable PUR, 2 m	•	•	•	•	•	•	•	•	•	•	•	•	•
	cable PVC, 2 m	•	•	•	•	•	•	•	•	•	•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•	•	•	•
CCC approval	Certified by China Compulsory Certification (CCC)	•	•	•	•	•	•	•	•	•	•	•	•	•
	CCC approval / marking not required for sensors rated ≤36 V	•	•	•	•	•	•	•	•	•	•	•	•	•

Dimensions

Length L [mm]	40	35	55
Diameter D [mm]			M12 x 1
Thread length l _t [mm]	32	27	34
Cap length l ₁ [mm]			5
Connector length l _c [mm]	0		6
LED position			Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12

AB-12

MH01-M12

V1-G

V1-G-BK2M-PUR-U

Mounting bracket, 12 mm

Right angled mounting bracket

Mounting bracket M12 - 1/2" rod type

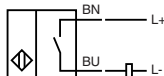
4-pin, M12 female field-attachable connector, straight

Female cordset, M12, 4-pin, PUR cable, straight

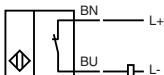
Electrical Connection



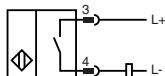
NBN4-12GM40-Z0
NCN4-12GM40-Z0
NCN8-12GM35-Z4



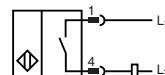
NCN4-12GM40-Z1
NCN8-12GM35-Z5



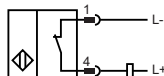
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NCN4-12GM40-Z0-V1



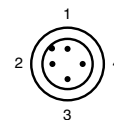
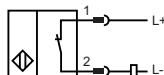
NBN4-12GM40-Z3-V1
NCN4-12GM40-Z3-V1
NCN8-12GM40-Z4-V1



NCN8-12GM40-Z7-V1



NCN4-12GM40-Z1-V1
NCN8-12GM40-Z5-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Ø12 mm housing
- 2 mm and 4 mm sensing ranges
- DC, 3-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 17 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP68 / IP69K
Connection type	cable PVC , 2 m



Model Number

		NBB2-12GK50-E0	NBB2-12GK50-E2	NBN4-12GK50-E0	NBN4-12GK50-E2
Rated operating distance	2 mm	•	•		
	4 mm			•	•
Installation	flush	•	•		
	non-flush			•	•
Output type	NPN NO	•		•	
	PNP NO		•		•
Switching frequency	0 ... 1200 Hz			•	•
	0 ... 1500 Hz	•	•		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	50
Diameter D [mm]	M12 x 1
Thread length l _t [mm]	40
Cap length l ₁ [mm]	1
Connector length l _c [mm]	0
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12

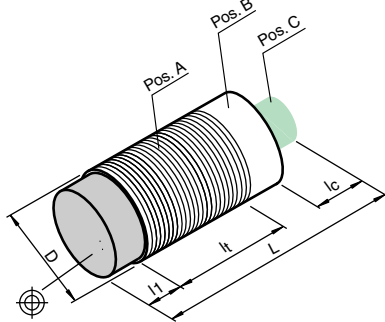
Mounting bracket, 12 mm

AB-12

Right angled mounting bracket

MH01-M12

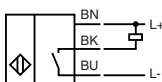
Mounting bracket M12 - 1/2" rod type



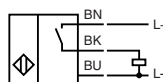
Electrical Connection



NBB2-12GK50-E0
NBN4-12GK50-E0



NBB2-12GK50-E2
NBN4-12GK50-E2





Properties

- Ø12 mm plastic housing
- 2 mm and 4 mm sensing ranges
- DC, 3-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	DC
Operating voltage	10 ... 60 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP68
Connection type	cable PUR, 2 m



Model Number

		NJ2-12GK40-E	NJ2-12GK40-E1	NJ2-12GK40-E2	NJ2-12GK40-E3	NJ4-12GK40-E	NJ4-12GK40-E1	NJ4-12GK40-E2	NJ4-12GK40-E3
Rated operating distance	2 mm	•	•	•	•				
	4 mm					•	•	•	•
Installation	flush	•	•	•	•				
	non-flush					•	•	•	•
Output type	NPN NO	•				•			
	NPN NC		•				•		
	PNP NO			•				•	
	PNP NC				•				•
Switching frequency	0 ... 2000 Hz	•	•	•	•	•	•	•	•
	0 ... 3000 Hz	•	•	•	•				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•
CCC approval	Certified by China Compulsory Certification (CCC)	•	•	•	•	•	•	•	•

Dimensions

Length L [mm]	40	40
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	35	35
Cap length l ₁ [mm]	1	
Connector length l _c [mm]	0	

Accessories

These and more accessories can be found in chapter 10

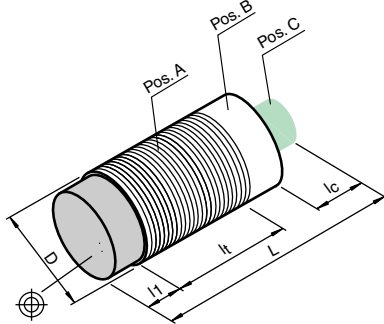
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12

Mounting bracket, 12 mm

AB-12

Right angled mounting bracket



Electrical Connection

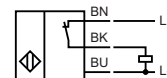
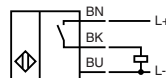
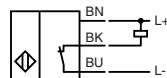
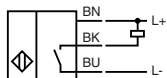


NJ2-12GK40-E
NJ4-12GK40-E

NJ2-12GK40-E1
NJ4-12GK40-E1

NJ2-12GK40-E2
NJ4-12GK40-E2

NJ2-12GK40-E3
NJ4-12GK40-E3





Properties

- Ø12 mm housing
- 2 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 60 V
Reverse polarity protection	✓
Switching frequency	0 ... 3000 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

Model Number			NJ2-12GM40-E	NJ2-12GM40-E1	NJ2-12GM40-E2	NJ2-12GM40-E3	NJ2-12GM40-E-V1	NJ2-12GM40-E2-V1	NJ2-12GM40-E3-V1
Output type	NPN	NO	●				●		
	NPN	NC		●					
	PNP	NO			●			●	
	PNP	NC				●			●
No-load supply current	≤ 11 mA		●		●		●	●	
	≤ 15 mA			●		●			●
Connection type	Connector M12 x 1 , 4-pin						●	●	●
	cable PUR , 2 m		●	●	●	●			
									

Approvals and Certificates

UL approval	cULus Listed, General Purpose							
CSA approval	cCSAus Listed, General Purpose							
CCC approval	Certified by China Compulsory Certification (CCC)							

Dimensions

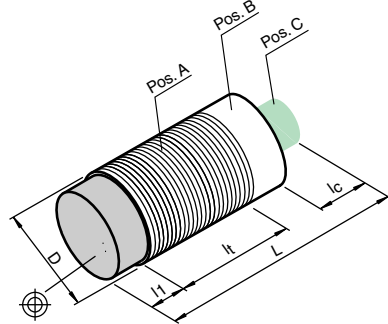
Length L [mm]	40	50
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	40	50
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	
LED position	Pos. A	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

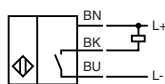
BF 12	Mounting bracket, 12 mm
EXG-12	Quick mounting bracket with stop
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



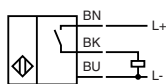
Electrical Connection



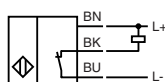
NJ2-12GM40-E



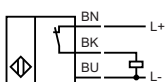
NJ2-12GM40-E2



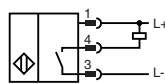
NJ2-12GM40-E1



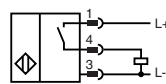
NJ2-12GM40-E3



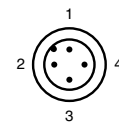
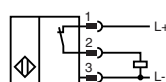
NJ2-12GM40-E-V1



NJ2-12GM40-E2-V1



NJ2-12GM40-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø12 mm housing
- 2 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NBB2-12GM30-E2	NBB2-12GM40-E0	NBB2-12GM40-E1	NBB2-12GM40-E2	NBB2-12GM30-E2-V1	NBB2-12GM40-E0-V1	NBB2-12GM40-E2-V1
Output type	NPN NO	•					•	
	NPN NC			•				
	PNP NO				•	•		•
Switching frequency	0 ... 1000 Hz	•	•	•	•	•	•	•
	0 ... 800 Hz	•				•		
Load current	0 ... 100 mA		•	•	•			
	0 ... 200 mA	•				•	•	•
Connection type	Connector M12 x 1, 4-pin					•	•	•
	cable PVC, 2 m	•	•	•	•			

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V							

Dimensions

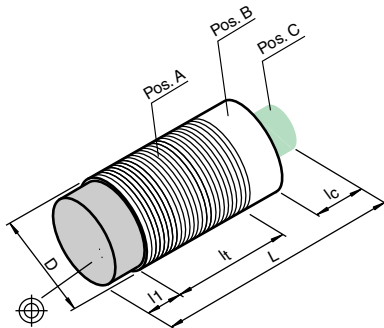
Length L [mm]	30	40	45	50
Diameter D [mm]	M12 x 1			
Thread length l _t [mm]	27	37	30	50
Cap length l ₁ [mm]	0			
Connector length l _c [mm]	0			6
LED position	Pos. C			

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

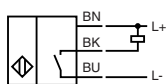
BF 12	Mounting bracket, 12 mm
EXG-12	Quick mounting bracket with stop
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



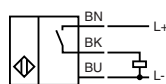
Electrical Connection



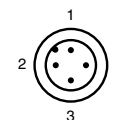
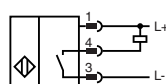
NBB2-12GM40-E0



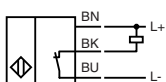
NBB2-12GM30-E2
NBB2-12GM40-E2



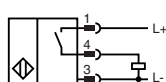
NBB2-12GM40-E0-V1



NBB2-12GM40-E1



NBB2-12GM30-E2-V1
NBB2-12GM40-E2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
SENSING YOUR NEEDS



Properties

- Ø12 mm housing
- 2 mm, flush mountable
- DC, 3-wire and 4-wire switching output
- Cable and connector versions

Additional Products

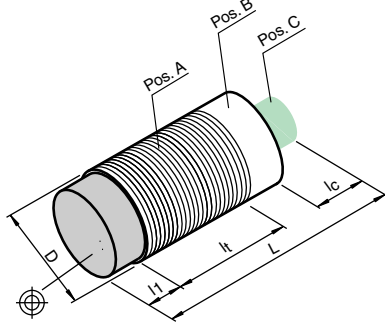
In this series, we offer the following additional products:

NBB2-12GM60-E2-T

Technical data similar to NBB2-12GM50-E2 but:
Operating voltage: 10 ... 65 V
No-load supply current: ≤ 10 mA
Load current: 0 ... 300 mA
Ambient temperature: -25 ... 100 °C (-13 ... 212 °F)

NBB2-12GM50-E2-T-V1

Technical data similar to NBB2-12GM50-E2-V1 but:
Operating voltage: 10 ... 65 V
No-load supply current: ≤ 10 mA
Load current: 0 ... 300 mA
Ambient temperature: -25 ... 100 °C (-13 ... 212 °F)



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBB2-12GM50-E0	NBB2-12GM50-E1	NBB2-12GM50-E2	NBB2-12GM60-A0	NBB2-12GM60-A2	NBB2-12GM50-E0-V1	NBB2-12GM50-E1-V1	NBB2-12GM50-E2-V1	NBB2-12GM60-E2-V1	NBB2-12GM60-A0-V1	NBB2-12GM60-A2-V1
Output type	NPN	NO/NC											
	NPN	NO	•					•					
	NPN	NC		•					•				
	PNP	NO/NC					•						•
	PNP	NO			•						•	•	
No-load supply current	≤ 15 mA												
	≤ 20 mA		•	•	•	•	•	•	•	•	•	•	•
Switching frequency	0 ... 1000 Hz												
	0 ... 1500 Hz		•	•	•	•	•	•	•	•	•	•	•
Switching state indication	LED, yellow		•	•	•	•	•	•	•	•	•	•	•
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		•	•	•	•	•	•	•	•	•	•	•
	-40 ... 70 °C (-40 ... 158 °F)									•			
Connection type	Connector M12 x 1, 4-pin							•	•	•	•	•	•
	cable PVC, 2 m		•	•	•	•	•						

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	•	•	•	•	•	•	•	•	•	•	•	•

Dimensions

Length L [mm]	50	50	50	60	60	65	65	65	70	70	70
Diameter D [mm]	M12 x 1										
Thread length l _t [mm]	50	50	50	60	60	50	50	50	40	70	70
Cap length l ₁ [mm]	0										
Connector length l _c [mm]	0			6			10		0		
LED position	Pos.:	C	C	C	C	C	C	C	-	C	C

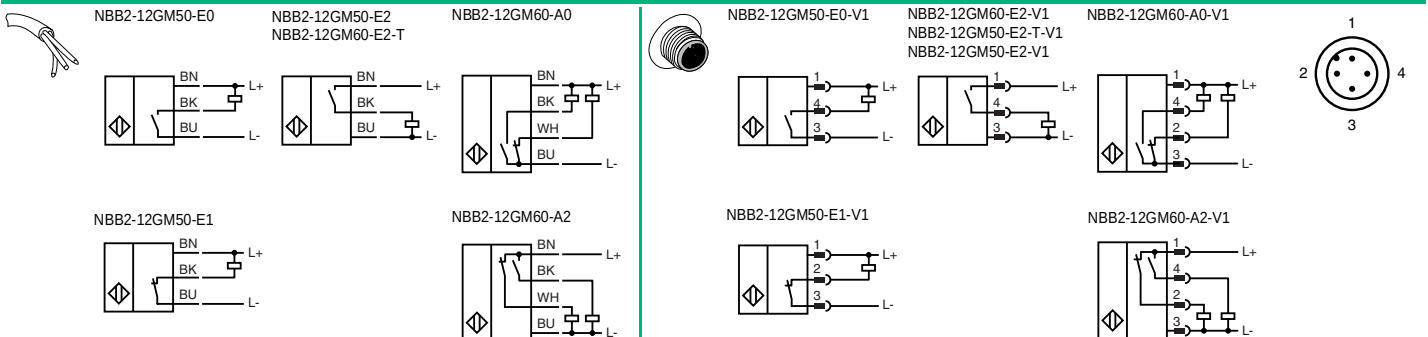
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12	Mounting bracket, 12 mm
EXG-12	Quick mounting bracket with stop
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

Electrical Connection





Properties

- Ø12 mm housing
- 4 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	4 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 60 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 2000 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

			NJ4-12GM40-E	NJ4-12GM40-E1	NJ4-12GM40-E2	NJ4-12GM40-E3	NJ4-12GM40-E-V1	NJ4-12GM40-E2-V1	NJ4-12GM40-E3-V1
Output type	NPN	NO	●				●		
	NPN	NC		●					
	PNP	NO			●			●	
	PNP	NC				●			●
Connection type	Connector M12 x 1, 4-pin								
	cable PUR, 2 m		●	●	●	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●	●	●	●	●

Dimensions

Length L [mm]	40	50
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	35	45
Cap length l ₁ [mm]	5	
Connector length l _c [mm]	0	
LED position	Pos. A	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12

AB-12

MH01-M12

V1-G

V1-W

V1-G-BK2M-PUR-U

V1-W-BK2M-PUR-U

Mounting bracket, 12 mm

Right angled mounting bracket

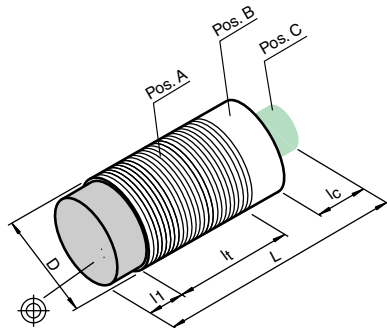
Mounting bracket M12 - 1/2" rod type

4-pin, M12 female field-attachable connector, straight

4-pin, M12 female field-attachable connector, angled

Female cordset, M12, 4-pin, PUR cable, straight

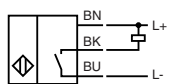
Female cordset, M12, 4-pin, PUR cable, angled



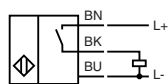
Electrical Connection



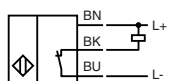
NJ4-12GM40-E



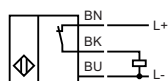
NJ4-12GM40-E2



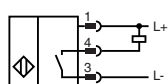
NJ4-12GM40-E1



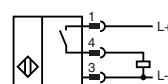
NJ4-12GM40-E3



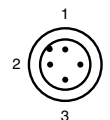
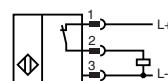
NJ4-12GM40-E-V1



NJ4-12GM40-E2-V1



NJ4-12GM40-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	4 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBB4-12GM30-E2	NBB4-12GM30-E3	NBB4-12GM40-E0	NBB4-12GM40-E2	NBB4-12GM30-E2-V3	NBB4-12GM30-E2-V1	NBB4-12GM30-E3-V1
Output type	NPN	NO	•						
	PNP	NO		•					
	PNP	NC			•				•
No-load supply current	≤ 15 mA		•	•	•		•	•	•
	≤ 20 mA					•			
Switching frequency	0 ... 1000 Hz		•	•			•	•	•
	0 ... 800 Hz				•	•			
Load current	0 ... 150 mA		•	•			•	•	•
	0 ... 200 mA				•	•			
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		•	•			•	•	•
	-40 ... 80 °C (-40 ... 176 °F)					•			
	-40 ... 85 °C (-40 ... 185 °F)				•				
Connection type	Connector M12 x 1, 4-pin							•	•
	Connector M8 x 1, 3-pin						•		
	cable PVC, 2 m		•	•	•	•			



Properties

- Ø12 mm housing
- 4 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Additional Products

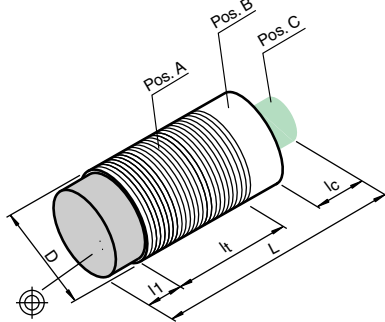
In this series, we offer the following additional products:

NBB4-12GM30-E2-T-V1

Technical data similar to NBB4-12GM30-E2-V1 but:
Load current: 0 ... 100 mA
Ambient temperature: -25 ... 100 °C (-13 ... 212 °F)

NBB4-12GM30-E0-V1

Technical data similar to NBB4-12GM30-E2-V1 but:
Output type: NPN, NO
No-load supply current: ≤ 7 mA
Switching frequency: 0 ... 400 Hz



Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V								

Dimensions

Length L [mm]	30	40	44	45
Diameter D [mm]	M12 x 1			
Thread length l _t [mm]	27	37	35	30
Cap length l ₁ [mm]	0			
Connector length l _c [mm]	0		9	6
LED position	Pos. C			

Accessories

These and more accessories can be found in chapter 10

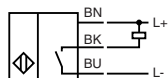
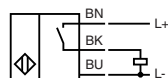
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12	Mounting bracket, 12 mm
EXG-12	Quick mounting bracket with stop
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V1-G	4-pin, M12 female field-attachable connector, straight
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V1-G-2M-PUR H/S	Female cordset, M12, 4-pin, irradiated PUR cable, straight
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight

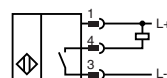
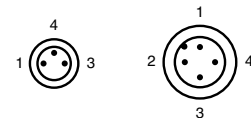
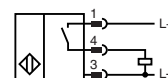
Electrical Connection



NBB4-12GM40-E0

NBB4-12GM40-E2
NBB4-12GM30-E2

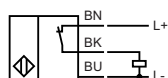
NBB4-12GM30-E0-V1

NBB4-12GM30-E2-T-V1
NBB4-12GM30-E2-V1
NBB4-12GM30-E2-V3

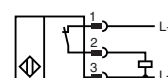
Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

NBB4-12GM30-E3



NBB4-12GM30-E3-V1





Properties

- Ø12 mm housing
- 4 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	4 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 800 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Protection degree	IP67

Model Number

		NBB4-12GM50-E0	NBB4-12GM50-E2	NBB4-12GM50-E3	NBB4-12GM50-E0-V1	NBB4-12GM50-E1-V1	NBB4-12GM50-E2-V1	NBB4-12GM50-E3-V1	NCB4-12GM50-E2-V1
Output type	NPN NO	•			•				
	NPN NC					•			
	PNP NO		•				•		•
	PNP NC			•				•	•
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	•	•	•	•	•		•	•
	-40 ... 70 °C (-40 ... 158 °F)						•		
Housing material	Stainless steel 1.4305 / AISI 303								•
Connection type	brass, nickel-plated	•	•	•	•	•	•	•	•
	Connector M12 x 1, 4-pin cable PVC, 2 m	•	•	•	•	•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V								

Dimensions

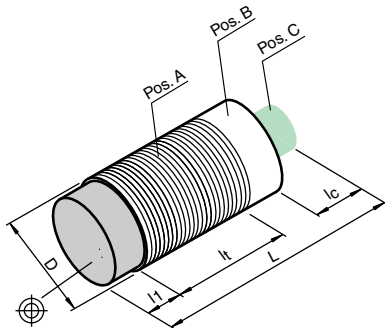
Length L [mm]	50	65
Diameter D [mm]		M12 x 1
Thread length l _t [mm]	47	49
Cap length l ₁ [mm]		0
Connector length l _c [mm]	0	6
LED position		Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

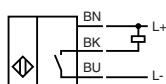
EXG-12	Quick mounting bracket with stop
BF 12	Mounting bracket, 12 mm
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



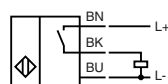
Electrical Connection



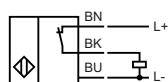
NBB4-12GM50-E0



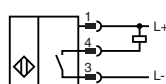
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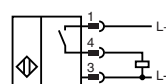
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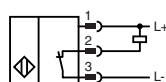
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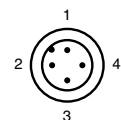
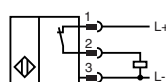
NCB4-12GM50-E2-V1
NBB4-12GM50-E2-V1



NBB4-12GM50-E1-V1



NBB4-12GM50-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
SENSING YOUR NEEDS



Properties

- Ø12 mm housing
- 4 mm, flush mountable
- DC, 4-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	4 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1500 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBB4-12GM50-A0	NBB4-12GM50-A2	NBB4-12GM50-A0-V1	NBB4-12GM50-A2-V1
Output type	NPN	NO/NC	●		●	
	PNP	NO/NC		●		●
Connection type	Connector M12 x 1, 4-pin				●	●
	cable PVC, 2 m		●	●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

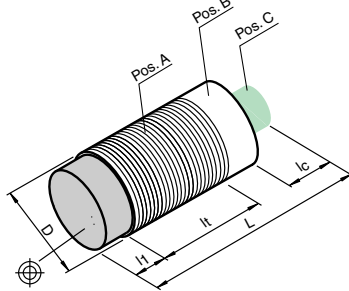
Length L [mm]	50	65
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	47	49
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	6
LED position	Pos. C	

Accessories

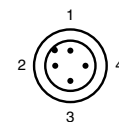
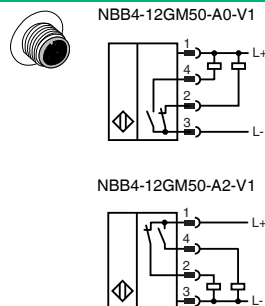
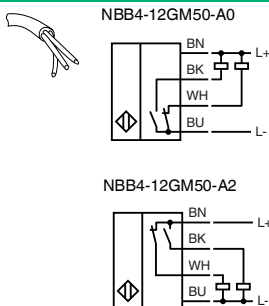
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12	Mounting bracket, 12 mm
EXG-12	Quick mounting bracket with stop
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø12 mm housing
- 4 mm, non-flush mountable
- DC, 4-wire switching outputs
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	4 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBN4-12GM60-A0	NBN4-12GM60-A2	NBN4-12GM35-A0-V1	NBN4-12GM35-A2-V1	NBN4-12GM60-A0-V1	NBN4-12GM60-A2-V1
Output type	NPN	NO/NC	●		●		●	
	PNP	NO/NC		●		●		●
No-load supply current	≤ 15 mA		●	●	●	●	●	●
	≤ 20 mA		●	●				
Switching frequency	0 ... 1000 Hz		●	●				
	0 ... 1200 Hz						●	●
	0 ... 800 Hz				●	●	●	●
Connection type	Connector M12 x 1, 4-pin				●	●	●	●
	cable PVC, 2 m		●	●				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V							

Dimensions

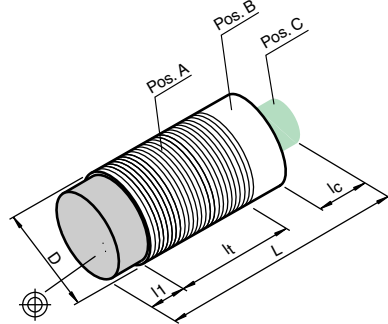
Length L [mm]	60	50	70
Diameter D [mm]		M12 x 1	
Thread length l _t [mm]	55	30	65
Cap length l ₁ [mm]		5	
Connector length l _c [mm]	0	6	0
LED position	Pos. C	Pos. B	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

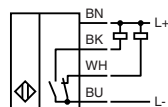
BF 12	Mounting bracket, 12 mm
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



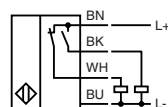
Electrical Connection



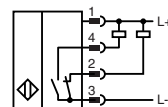
NBN4-12GM60-A0



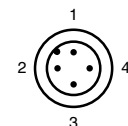
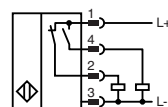
NBN4-12GM60-A2



NBN4-12GM35-A0-V1
NBN4-12GM60-A0-V1



NBN4-12GM35-A2-V1
NBN4-12GM60-A2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø12 mm housing
- 6 mm and 8 mm sensing ranges
- DC, 3-wire switching output
- Cable and connector versions

Benefits

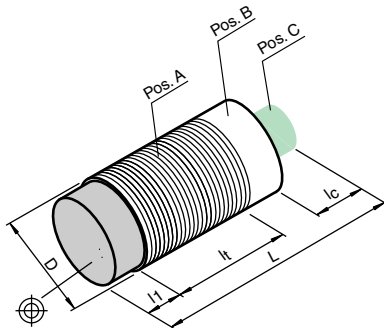
- Extended sensing range means fewer sensor/target impacts

Additional Products

In this series, we offer the following additional products:

NEB8-12GM50-E2-V1

Technical data like NEB6-12GM50-E2-V1 but:
 Rated operating distance: 8 mm
 Switching frequency: 0 ... 300 Hz
 Ambient temperature: -25 ... 70 °C (-13 ... 158 °F)
 Housing material: chromium plated brass
 CSA approval



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	6 mm
Installation	quasi-flush
Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 800 Hz
Load current	0 ... 200 mA, above 70°C ≤ 150 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

	NEB6-12GM50-E0	NEB6-12GM50-E1	NEB6-12GM50-E2	NEB6-12GM50-E3	NEB6-12GM50-E0-V1	NEB6-12GM50-E1-V1	NEB6-12GM50-E2-V1
Output type	NPN NO	NPN NC	PNP NO	PNP NC			
Connection type	Connector M12 x 1, 4-pin cable PUR, 2 m						

Approvals and Certificates

UL approval	cULus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Length L [mm]	50	60
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	49	40
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	6
LED position	Pos. A	

Accessories

These and more accessories can be found in chapter 10

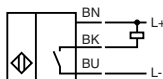
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12	Mounting bracket, 12 mm
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

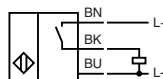
Electrical Connection



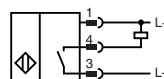
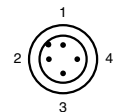
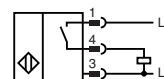
NEB6-12GM50-E0



NEB6-12GM50-E2

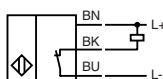


NEB6-12GM50-E0-V1

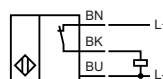
NEB6-12GM50-E2-V1
NEB8-12GM50-E2-V1

Wire colors in accordance with EN 60947-5-2

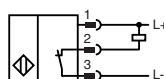
NEB6-12GM50-E1



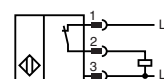
NEB6-12GM50-E3



NEB6-12GM50-E1-V1



NEB6-12GM50-E3-V1



1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Refer to General Notes Relating to Product Information

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Properties

- Ø12 mm housing
- 7 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	7 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 300 Hz
Load current	0 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	all direction LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBN7-12GM35-E2	NBN7-12GM35-E2-V1	NBN7-12GM35-E3-V1
Output type	PNP	NO	●	●	●
	PNP	NC			
Connection type	Connector M12 x 1, 4-pin		●	●	●
	cable PVC, 2 m				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

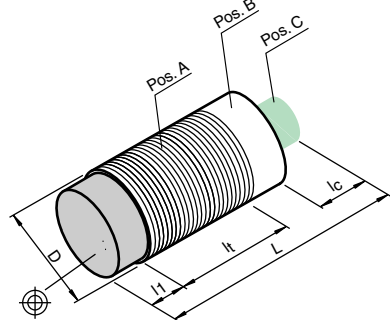
Length L [mm]	35	50
Diameter D [mm]		M12 x 1
Thread length l _t [mm]	27	30
Cap length l ₁ [mm]		5
Connector length l _c [mm]	0	6
LED position	Pos. C	Pos. B

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

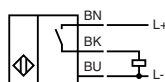
BF 12	Mounting bracket, 12 mm
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



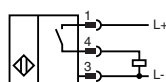
Electrical Connection



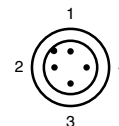
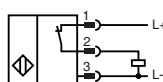
NBN7-12GM35-E2



NBN7-12GM35-E2-V1



NBN7-12GM35-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø12 mm housing
- 8 mm, non-flush mountable
- DC, 3-wire and 4-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	8 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 16 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1500 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NBN8-12GM50-E0	NBN8-12GM50-E2	NBN8-12GM50-A0	NBN8-12GM50-A2	NBN8-12GM50-E0-V1	NBN8-12GM50-E2-V1	NBN8-12GM50-A0-V1	NBN8-12GM50-A2-V1
Output type	NPN			•		•		•	
	NO/NC								
	NPN	•				•		•	
	NO								
Ambient temperature	PNP		•		•		•		•
	NO/NC								
	PNP								
	NO								
Connection type	Connector M12 x 1, 4-pin					•	•	•	•
	cable PVC, 2 m	•	•	•	•				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V								

Dimensions

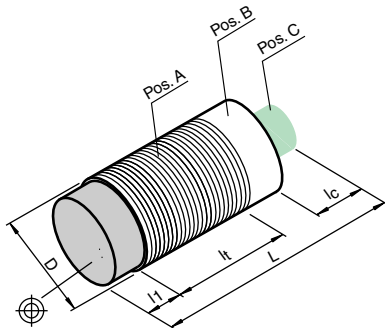
Length L [mm]	50	65
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	39	41
Cap length l ₁ [mm]	8	
Connector length l _c [mm]	0	6
LED position	Pos. C	

Accessories

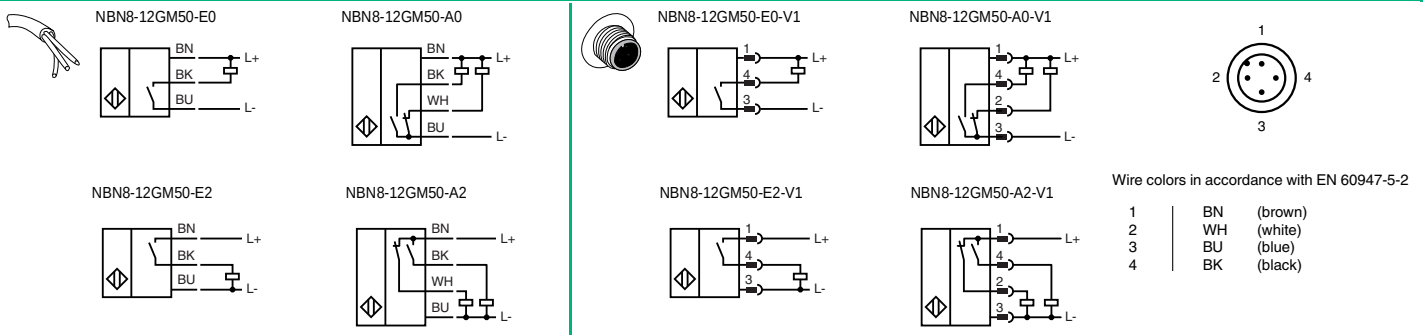
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12	Mounting bracket, 12 mm
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



Electrical Connection



Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
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Properties

- Ø12 mm housing
- 10 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	10 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 600 Hz
Load current	0 ... 200 mA, above 70°C ≤ 150 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NEN10-12GM50-E0	NEN10-12GM50-E1	NEN10-12GM50-E2	NEN10-12GM50-E3	NEN10-12GM50-E0-V1	NEN10-12GM50-E1-V1	NEN10-12GM50-E2-V1	NEN10-12GM50-E3-V1
Output type	NPN	NO	•				•			
	NPN	NC		•				•		
	PNP	NO			•				•	
	PNP	NC				•				•
Connection type	Connector M12 x 1, 4-pin		•	•	•	•	•	•	•	•
	cable PUR, 2 m		•	•	•	•				

Approvals and Certificates

UL approval cULus Listed, General Purpose

CCC approval CCC approval / marking not required for sensors rated ≤36 V

Dimensions

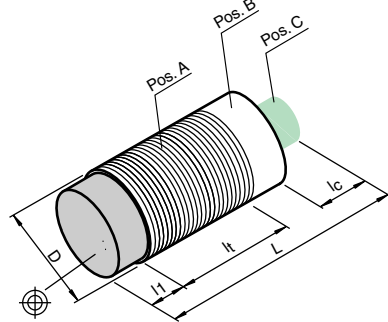
Length L [mm]	50	60
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	44	34
Cap length l ₁ [mm]	5,7	
Connector length l _c [mm]	0	6
LED position	Pos. A	

Accessories

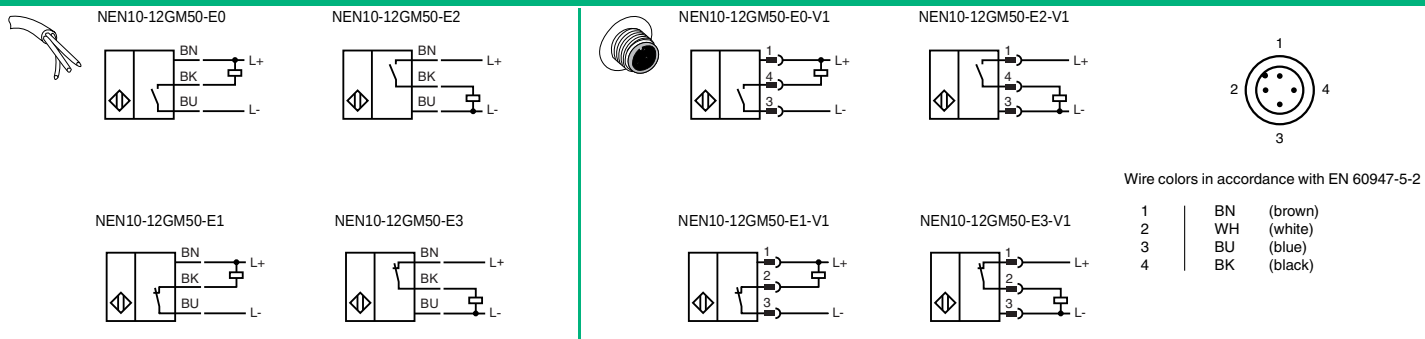
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12	Mounting bracket, 12 mm
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



Electrical Connection





Properties

- Ø12 mm housing
- 2 mm and 4 mm sensing ranges
- AC, 2-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	AC
Operating voltage	20 ... 253 V
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 20 Hz
Load current	5 ... 200 mA
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

		NJ2-12GM50-WS	NJ2-12GM50-WO	NJ4-12GM50-WS	NJ4-12GM50-WO	NJ2-12GM50-WS-V12	NJ4-12GM50-WS-V12
Rated operating distance	2 mm	●	●	●	●	●	●
Installation	flush	●	●	●	●	●	●
	non-flush			●	●		●
Output type	AC NO	●		●		●	●
	AC NC		●		●		
Connection type	Connector 1/2"-20 UN , 3-pin					●	●
	cable PVC , 2 m	●	●	●	●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●		●

Dimensions

Length L [mm]	50	60
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	50	45
Cap length l ₁ [mm]	0	5
Connector length l _c [mm]	0	5
LED position	Pos. A	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12

Mounting bracket, 12 mm

EXG-12

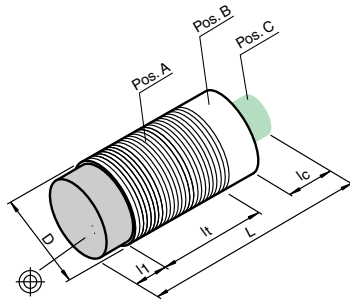
Quick mounting bracket with stop

AB-12

Right angled mounting bracket

MH01-M12

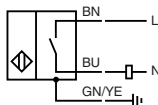
Mounting bracket M12 - 1/2" rod type



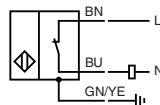
Electrical Connection



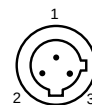
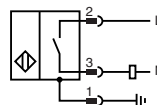
NJ4-12GM50-WS
NJ2-12GM50-WS



NJ4-12GM50-WO
NJ2-12GM50-WO



NJ2-12GM50-WS-V12
NJ4-12GM50-WS-V12



Wire colors

1	GN (green)
2	RD/BK (red/black)
3	RD/WH (red/white)





Properties

- Ø12 mm housing
- 2 mm and 4 mm sensing ranges
- AC, 2-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	AC
Operating voltage	20 ... 150 V
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 25 Hz
Load current	5 ... 200 mA
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NBB2-12GM60-WO	NBB2-12GM60-WS	NBN4-12GM60-WO	NBN4-12GM60-WS	NBB2-12GM60-WO-V12	NBB2-12GM60-WS-V12	NBN4-12GM60-WO-V12	NBN4-12GM60-WS-V12
Rated operating distance	2 mm	•	•			•	•		
	4 mm			•	•			•	•
Installation	flush	•	•			•	•		
	non-flush			•	•			•	•
Output type	AC NO		•		•		•		•
	AC NC	•		•		•		•	
Connection type	Connector 1/2"-20 UN , 3-pin					•	•	•	•
	cable PVC , 2 m	•	•	•	•				



Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•
CCC approval	Certified by China Compulsory Certification (CCC)		•				•	•	•

Dimensions

Length L [mm]	60		70	
Diameter D [mm]	M12 x 1			
Thread length l _t [mm]	60	55		50
Cap length l ₁ [mm]	0	5	0	5
Connector length l _c [mm]	0	15		12
LED position	Pos. A			

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

EXG-12

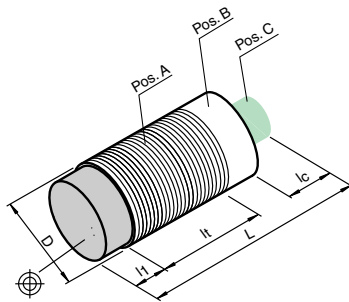
AB-12

MH01-M12

Quick mounting bracket with stop

Right angled mounting bracket

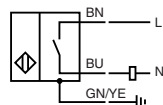
Mounting bracket M12 - 1/2" rod type



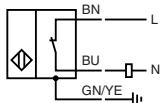
Electrical Connection



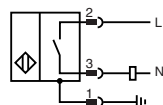
NBB2-12GM60-WS
NBN4-12GM60-WS



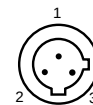
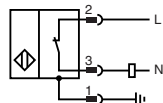
NBB2-12GM60-WO
NBN4-12GM60-WO



NBB2-12GM60-WO-V12
NBB2-12GM60-WS-V12
NBN4-12GM60-WS-V12



NBN4-12GM60-WO-V12



Wire colors

1	GN	(green)
2	RD/BK	(red/black)
3	RD/WH	(red/white)



Properties

- Ø12 mm housing
- 4 mm and 8 mm sensing ranges
- AC/DC, 2-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	AC/DC	NO
Type of voltage	AC/DC	
Operating voltage	20 ... 250 V AC/20 ... 300 V DC	
Reverse polarity protection	✓, polarity independent	
Switching frequency	30 Hz	
Load current	8 ... 200 mA AC/DC	
Short-circuit protection	✓	
Operating voltage display	LED, green	
Switching state indication	LED, yellow	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	
Housing material	brass, nickel-plated	
Protection degree	IP67	

Model Number

		NBB4-12GM75-US	NBN8-12GM75-US	NBB4-12GM65-US-V12	NBN8-12GM65-US-V12
Rated operating distance	4 mm	●		●	
	8 mm		●		●
Installation	flush	●		●	
	non-flush		●		●
Connection type	Connector 1/2"-20 UN, 3-pin			●	●
	cable PUR, 2 m	●	●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●

Dimensions

Length L [mm]		75		82	
Diameter D [mm]			M12 x 1		
Thread length l _t [mm]		72	64	65	64
Cap length l ₁ [mm]		0	8	0	8
Connector length l _c [mm]			0		8
LED position				Pos. B	

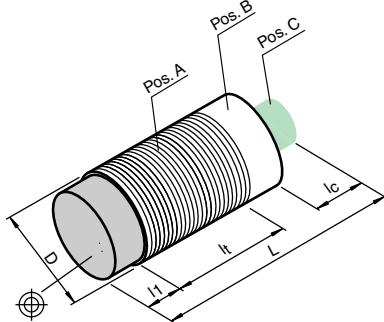
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-12
MH01-M12

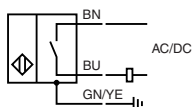
Right angled mounting bracket
Mounting bracket M12 - 1/2" rod type



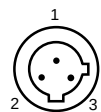
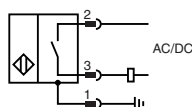
Electrical Connection



NBB4-12GM75-US
NBN8-12GM75-US



NBB4-12GM65-US-V12
NBN8-12GM65-US-V12



Wire colors

1	GN	(green)
2	RD/BK	(red/black)
3	RD/WH	(red/white)

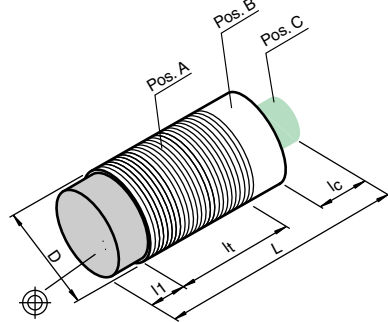


Properties

- Ø12 mm housing
- 6 mm, quasi-flush mountable
- DC, 3-wire analog output
- Connector version

Benefits

- Inductive position measurement
- Distance proportional analog value
- Suitable for positioning tasks



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Measurement range	0 ... 6 mm
Installation	quasi-flush
Type of voltage	DC
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Limit frequency (3dB)	1000 Hz
Short-circuit protection	✓
Adjustment tolerance zero point	≤ ± 10 % of full-scale value
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	chromium plated brass
Protection degree	IP67
Connection type	Connector M12 x 1, 4-pin



Model Number

		IA6-12GM35-U-V1	IA6-12GM50-IU-V1
Output type	analog voltage output	●	
	analog, current or voltage output		●
Operating voltage	10 ... 30 V	●	
	15 ... 30 V, residual ripple 20 % U _B		●
Output type	0 ... 5 V	●	
	0 ... 10 V / 4 ... 20 mA		●
Load resistor	≥ 500 Ω	●	
	voltage output: ≥ 500 Ω		●
	current output: ≤ 500 Ω		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

Length L [mm]	45	60
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	29	44
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	8	
LED position	45	60

Accessories

These and more accessories can be found in chapter 10

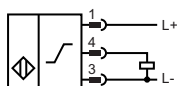
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12	Mounting bracket, 12 mm
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

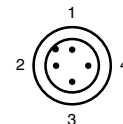
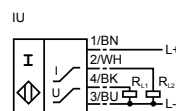
Electrical Connection



IA6-12GM35-U-V1



IA6-12GM50-IU-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø18 mm housing
- 5 mm, flush mountable
- DC, 2-wire switching output
- Cable and connector versions

Additional Products

In this series, we offer the following additional products:

NBB5-18GM40-Z3-V1

Technical data like NBB5-18GM40-Z0-V1 but: different wiring diagram, see Electrical Connection

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	5 mm
Installation	flush
Type of voltage	DC
Operating voltage	5 ... 60 V
Reverse polarity protection	✓, polarity independent
Load current	2 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Protection degree	IP67

Model Number

			NBB5-18GM40-Z0	NCB5-18GM40-Z0	NCB5-18GM40-Z1	NBB5-18GM40-Z0-V1	NCB5-18GM40-Z0-V1	NCB5-18GM40-Z1-V1	NCB5-18GM40-Z3-V1
Output type	DC	NO	●	●	●	●	●	●	●
	DC	NC							
Switching frequency	0 ... 350 Hz			●	●		●	●	●
	0 ... 500 Hz		●			●			
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		●	●	●		●	●	●
	-40 ... 70 °C (-40 ... 158 °F)					●			
Housing material	Stainless steel 1.4305 / AISI 303			●	●		●	●	●
	brass, nickel-plated		●			●			
Connection type	Connector M12 x 1, 4-pin					●	●	●	●
	cable PUR, 2 m			●	●				
	cable PVC, 2 m		●						



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●	●	●	●	●

Dimensions

Length L [mm]	40	55
Diameter D [mm]		M18 x 1
Thread length l _t [mm]	37	40
Cap length l ₁ [mm]		0
Connector length l _c [mm]	0	15
LED position		Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18

EXG-18

AB-18

MH01-M18

V1-G

V1-W

V1-W-BK2M-PUR-U

V1-G-BK2M-PUR-U

Mounting bracket, 18 mm

Quick mounting bracket with stop

Right angled mounting bracket

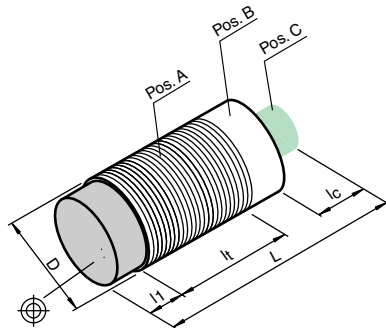
Mounting bracket M18 - 1/2" rod type

4-pin, M12 female field-attachable connector, straight

4-pin, M12 female field-attachable connector, angled

Female cordset, M12, 4-pin, PUR cable, angled

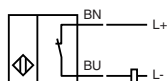
Female cordset, M12, 4-pin, PUR cable, straight



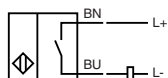
Electrical Connection



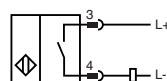
NBB5-18GM40-Z1



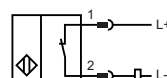
NBB5-18GM40-Z0
NCB5-18GM40-Z0



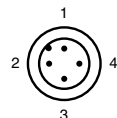
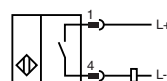
NBB5-18GM40-Z0-V1
NCB5-18GM40-Z0-V1



NCB5-18GM40-Z1-V1



NBB5-18GM40-Z3-V1
NCB5-18GM40-Z3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
SENSING YOUR NEEDS



Properties

- Ø18 mm housing
- 8 mm, flush mountable
- DC, 2-wire switching output
- Cable and connector versions

Benefits

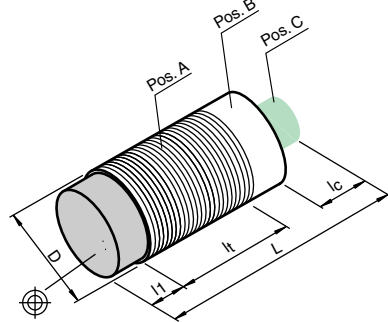
- Extended sensing range means fewer sensor/target impacts

Additional Products

In this series, we offer the following additional products:

NCB8-18GM50-Z7-V1

Technical data like NCB8-18GM50-Z5-V1 but: different wiring diagram, see Electrical Connection



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	8 mm
Installation	flush
Type of voltage	DC
Operating voltage	3.5 ... 30 V
Reverse polarity protection	✓
Switching frequency	0 ... 1000 Hz
Load current	2 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NCB8-18GM50-Z4	NCB8-18GM50-Z5	NCB8-18GM50-Z4-V1	NCB8-18GM50-Z5-V1
Output type	DC NO		•		•	
	DC NC			•		•
Pre-fault indication	LED, red		•		•	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		•	•		•
	-40 ... 70 °C (-40 ... 158 °F)				•	•
Connection type	Connector M12 x 1, 4-pin				•	•
	cable PVC, 2 m		•	•		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	48	65
Diameter D [mm]	M18 x 1	
Thread length l _t [mm]	45	50
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	15
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

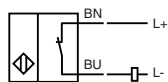
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18	Mounting bracket, 18 mm
EXG-18	Quick mounting bracket with stop
AB-18	Right angled mounting bracket
MH01-M18	Mounting bracket M18 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

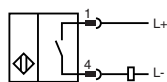
Electrical Connection



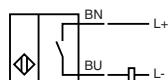
NCB8-18GM50-Z5



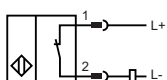
NCB8-18GM50-Z4-V1



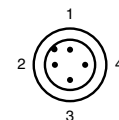
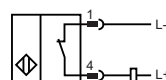
NCB8-18GM50-Z4



NCB8-18GM50-Z5-V1



NCB8-18GM50-Z7-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø18 mm housing
- 8 mm, non-flush mountable
- DC, 2-wire switching output
- Cable and connector versions

Additional Products

In this series, we offer the following additional products:

NBN8-18GM40-Z3-V1

Technical data like NBN8-18GM40-Z0-V1 but: different wiring diagram, see Electrical Connection

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	8 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	5 ... 60 V
Reverse polarity protection	✓, polarity independent
Load current	2 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67

Model Number

		NBN8-18GM40-Z0	NCN8-18GM40-Z0	NCN8-18GM40-Z1	NBN8-18GM40-Z0-V1	NCN8-18GM40-Z0-V1	NCN8-18GM40-Z1-V1
Output type	DC NO	●	●	●	●	●	●
	DC NC						
Switching frequency	0 ... 300 Hz		●	●		●	●
	0 ... 450 Hz				●		
	0 ... 500 Hz	●					
Housing material	Stainless steel 1.4305 / AISI 303		●	●		●	●
	brass, nickel-plated	●			●		
Connection type	Connector M12 x 1, 4-pin				●	●	●
	cable PUR, 2 m		●	●			
	cable PVC, 2 m	●					



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●	●	●

Dimensions

Length L [mm]	40	55
Diameter D [mm]	M18 x 1	
Thread length l _t [mm]	37	30
Cap length l ₁ [mm]	10	
Connector length l _c [mm]	0	15
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18-F

Mounting bracket with stop, 18 mm

BF 18

Mounting bracket, 18 mm

AB-18

Right angled mounting bracket

MH01-M18

Mounting bracket M18 - 1/2" rod type

V1-G

4-pin, M12 female field-attachable connector, straight

V1-W

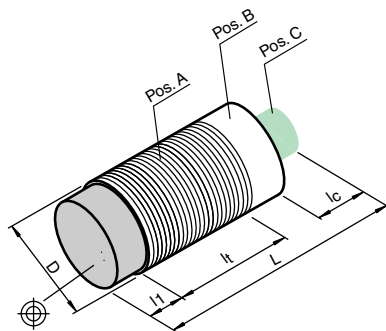
4-pin, M12 female field-attachable connector, angled

V1-W-BK2M-PUR-U

Female cordset, M12, 4-pin, PUR cable, angled

V1-G-BK2M-PUR-U

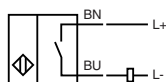
Female cordset, M12, 4-pin, PUR cable, straight



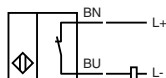
Electrical Connection



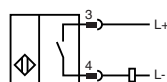
NBN8-18GM40-Z0
NCN8-18GM40-Z0



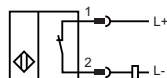
NCN8-18GM40-Z1



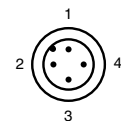
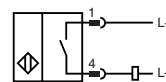
NBN8-18GM40-Z0-V1
NCN8-18GM40-Z0-V1



NCN8-18GM40-Z1-V1



NBN8-18GM40-Z3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
SENSING YOUR NEEDS



Properties

- Ø18 mm housing
- 12 mm, non-flush mountable
- DC, 2-wire switching output
- Cable and connector versions

Benefits

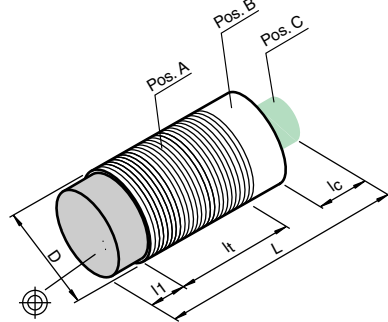
- Extended sensing range means fewer sensor/target impacts

Additional Products

In this series, we offer the following additional products:

NCN12-18GM50-Z7-V1

Technical data like NCN12-18GM50-Z5-V1 but: different wiring diagram, see Electrical Connection



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	12 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	3.5 ... 30 V
Reverse polarity protection	✗, no
Switching frequency	0 ... 1000 Hz
Load current	2 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NCN12-18GM50-Z4	NCN12-18GM50-Z5	NCN12-18GM50-Z4-V1	NCN12-18GM50-Z5-V1
Output type	DC	NO	●		●	
	DC	NC		●		●
Pre-fault indication	LED, red		●		●	
Connection type	Connector M12 x 1, 4-pin		●		●	
	cable PVC, 2 m		●	●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	48	65
Diameter D [mm]	M18 x 1	
Thread length l _t [mm]	35	40
Cap length l ₁ [mm]	10	
Connector length l _c [mm]	0	15
LED position	Pos. C	

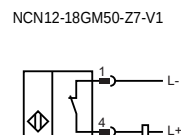
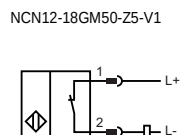
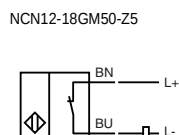
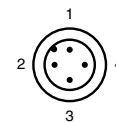
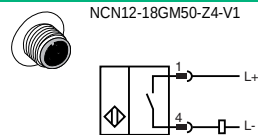
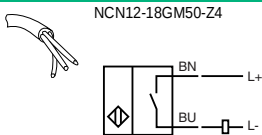
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18	Mounting bracket, 18 mm
AB-18	Right angled mounting bracket
MH01-M18	Mounting bracket M18 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

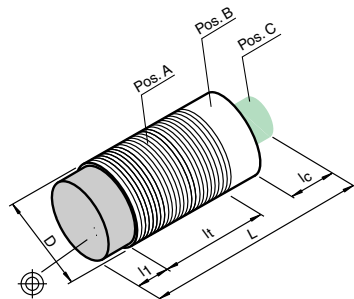
- Ø18 mm housing
- 5 mm and 8 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Cable version

Additional Products

In this series, we offer the following additional products:

NJ5-18GK50-A2

Technical data like NJ5-18GK50-E0 but:
 Output type: PNP, NO/NC
 No-load supply current: ≤ 15 mA
 Switching frequency: 0 ... 500 Hz
 Load current: 0 ... 400 mA
 Switching state indication: LED, yellow
 Protection degree: IP67



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	DC
Operating voltage	10 ... 60 V
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP68
Connection type	cable PVC, 2 m



Model Number

		NJ5-18GK50-E0	NJ8-18GK50-E0	NJ8-18GK50-E2
Rated operating distance	5 mm	•		
	8 mm		•	•
Installation	flush	•		
	non-flush		•	•
Output type	NPN NO	•	•	
	PNP NO			•
Switching frequency	0 ... 1000 Hz		•	•
	0 ... 650 Hz	•		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•
CCC approval	Certified by China Compulsory Certification (CCC)	•	•	•

Dimensions

Length L [mm]	50
Diameter D [mm]	M18 x 1
Thread length l _t [mm]	50
Cap length l ₁ [mm]	0
Connector length l _c [mm]	0

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18

AB-18

MH01-M18

Mounting bracket, 18 mm

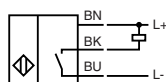
Right angled mounting bracket

Mounting bracket M18 - 1/2" rod type

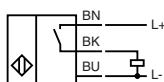
Electrical Connection



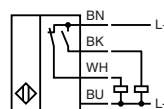
NJ5-18GK50-E0



NJ8-18GK50-E2



NJ5-18GK50-A2





Properties

- Ø18 mm housing
- 5 mm and 8 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	DC
Operating voltage	10 ... 30 V
Load current	0 ... 200 mA
Reverse polarity protection	✓
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Connection type	cable PVC, 2 m



Model Number

		NBB5-18GK50-E0	NBB5-18GK50-E2	NBN8-18GK50-A2	NBN8-18GK50-E0	NBN8-18GK50-E2
Rated operating distance	5 mm	●	●			
	8 mm					
Installation	flush	●	●			
	non-flush					
Output type	NPN NO	●				
	PNP NO/NC				●	
	PNP NO			●		
No-load supply current	≤ 15 mA	●	●		●	●
	≤ 25 mA			●		
Switching frequency	0 ... 1000 Hz	●	●		●	●
	0 ... 500 Hz			●		
Protection degree	IP68 / IP69K	●	●		●	●
	IP69K			●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V					

Dimensions

Length L [mm]	52	53	52
Diameter D [mm]		M18 x 1	
Thread length l _t [mm]		49	
Cap length l ₁ [mm]		1	
Connector length l _c [mm]		0	
LED position		Pos. C	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18

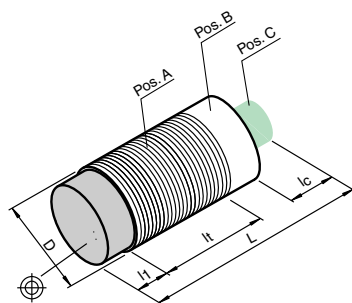
AB-18

MH01-M18

Mounting bracket, 18 mm

Right angled mounting bracket

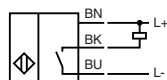
Mounting bracket M18 - 1/2" rod type



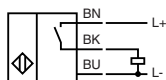
Electrical Connection



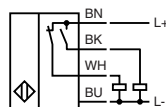
NBB5-18GK50-E0
NBN8-18GK50-E0



NBB5-18GK50-E2
NBN8-18GK50-E2



NBN8-18GK50-A2





Properties

- Ø18 mm housing
- 5 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	5 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBB5-18GM20-E2	NBB5-18GM40-E1	NBB5-18GM40-E2	NBB5-18GM20-E2-V1	NBB5-18GM40-E0-V1	NBB5-18GM40-E2-V1	NBB5-18GM40-E3-V1
Output type	NPN	NO							
	NPN	NC							
	PNP	NO							
	PNP	NC							
No-load supply current	≤ 15 mA								
	≤ 20 mA								
Switching frequency	0 ... 800 Hz								
	0 ... 1000 Hz								
Load current	0 ... 100 mA								
	0 ... 200 mA								
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)								
	-40 ... 70 °C (-40 ... 158 °F)								
Connection type	Connector M12 x 1, 4-pin								
	cable PVC, 2 m								

Approvals and Certificates

UL approval	cULus Listed, General Purpose								
CSA approval	cCSAus Listed, General Purpose								
CCC approval	CCC approval / marking not required for sensors rated ≤36 V								

Dimensions

Length L [mm]	20	40	40	35	50	50	50
Diameter D [mm]	M18 x 1						
Thread length l _t [mm]	17	37	37	20	39	39	39
Cap length l ₁ [mm]	0						
Connector length l _c [mm]	0				15		
LED position	Pos. C				Pos. A		

Accessories

These and more accessories can be found in chapter 10

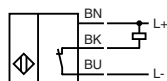
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18	Mounting bracket, 18 mm
BF 18-F	Mounting bracket with stop, 18 mm
EXG-18	Quick mounting bracket with stop
AB-18	Right angled mounting bracket
MH01-M18	Mounting bracket M18 - 1/2" rod type
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G	4-pin, M12 female field-attachable connector, straight
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

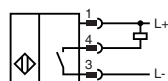
Electrical Connection



NBB5-18GM40-E1

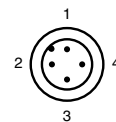
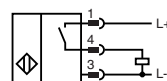


NBB5-18GM40-E0-V1

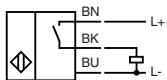


NBB5-18GM40-E2-V1

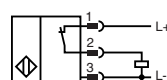
NBB5-18GM20-E2-V1



NBB5-18GM40-E2
NBB5-18GM20-E2



NBB5-18GM40-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	5 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 800 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NBB5-18GM50-E0	NBB5-18GM50-E2	NBB5-18GM50-E3	NBB5-18GM60-A0	NBB5-18GM60-A2	NBB5-18GM50-E0-V1	NBB5-18GM50-E2-V1	NBB5-18GM50-E3-V1	NBB5-18GM60-A0-V1	NBB5-18GM60-A2-V1
Output type	NPN										
	NO/NC										
	NPN										
	NO										
	PNP										
	NO/NC										
	PNP										
	NO										
	NC										
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)										
	-40 ... 70 °C (-40 ... 158 °F)										
Connection type	Connector M12 x 1, 4-pin										
	cable PVC, 2 m										

Approvals and Certificates

Protection class	II										
UL approval	cULus Listed, General Purpose										
CSA approval	cCSAus Listed, General Purpose										
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V										

Dimensions

Length L [mm]	50	60	65	70
Diameter D [mm]	M18 x 1			
Thread length l _t [mm]	47	60	50	60
Cap length l ₁ [mm]	0			
Connector length l _c [mm]	0		15	10
LED position	Pos. C			

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

EXG-18

BF 18

AB-18

MH01-M18

V1-G

V1-W

V1-G-BK2M-PUR-U

V1-W-BK2M-PUR-U

Quick mounting bracket with stop

Mounting bracket, 18 mm

Right angled mounting bracket

Mounting bracket M18 - 1/2" rod type

4-pin, M12 female field-attachable connector, straight

4-pin, M12 female field-attachable connector, angled

Female cordset, M12, 4-pin, PUR cable, straight

Female cordset, M12, 4-pin, PUR cable, angled

Properties

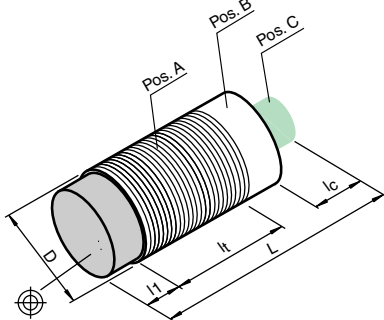
- Ø18 mm housing
- 5 mm, flush mountable
- DC, 3-wire and 4-wire switching output
- Cable and connector versions

Additional Products

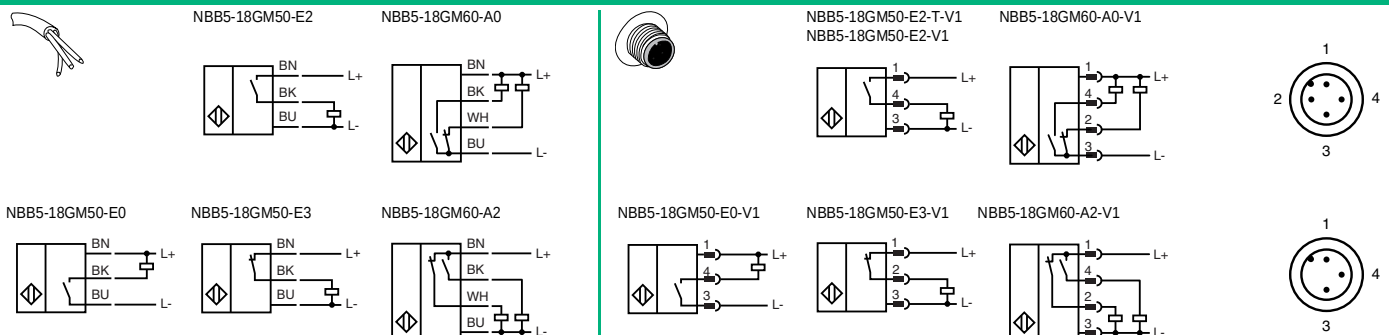
In this series, we offer the following additional products:

NBB5-18GM50-E2-T-V1

Technical data like NBB5-18GM50-E2-V1 but:
Ambient temperature: -25 ... 100 °C (-13 ... 212 °F)
Connection type: Connector M12 x 1, 3-pin



Electrical Connection



Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
SENSING YOUR NEEDS



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	8 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Switching frequency	0 ... 500 Hz
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

Output type	NPN	NO/NC	NBB8-18GM30-E2	NBB8-18GM30-E3	NBB8-18GM50-E0	NBB8-18GM50-E2	NBB8-18GM60-A0	NBB8-18GM60-A2	NBB8-18GM30-E2-V1	NBB8-18GM30-E3-V1	NBB8-18GM50-E0-V1	NBB8-18GM50-E2-V1	NBB8-18GM60-A0-V1	NBB8-18GM60-A2-V1
NPN	✓	NO												
PNP		NO/NC												
PNP	✓	NO												
PNP		NC												
No-load supply current	≤ 15 mA													
Load current	≤ 25 mA													
	0 ... 100 mA													
	0 ... 200 mA													
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)													
	-40 ... 70 °C (-40 ... 158 °F)													
Connection type	Connector M12 x 1, 4-pin													
	cable PVC, 2 m													

Properties

- Ø18 mm housing
- 8 mm, flush mountable
- DC, 3-wire and 4-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

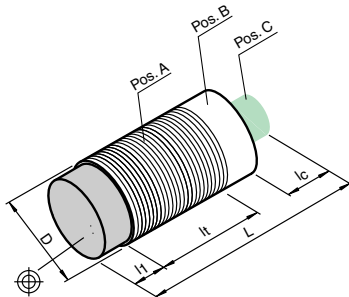
Additional Products

In this series, we offer the following additional products:

NCB8-18GM50-E2-V1

Technical data like NBB8-18GM50-E2-V1 but:
Housing material: Stainless steel 1.4305 / AISI 303

NBB8-18GM70-E2-V94

Technical data like NBB8-18GM30-E2 but:
Connection type: Connector 7/8"-16 UN, 4-pin

Approvals and Certificates

UL approval	cULus Listed, General Purpose	✓
CSA approval	cCSAus Listed, General Purpose	✓
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	✓

Dimensions

Length L [mm]	30	50	60	45	65	70
Diameter D [mm]	M18 x 1					
Thread length l _t [mm]	27	47	57	30	50	60
Cap length l ₁ [mm]	0					
Connector length l _c [mm]	0			15		10
LED position	Pos. C			Pos. B		

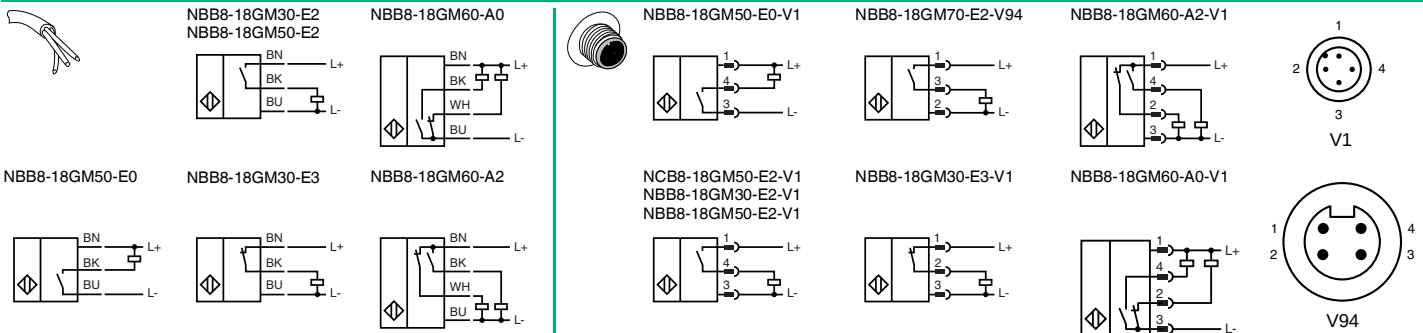
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18-F	Mounting bracket with stop, 18 mm
BF 18	Mounting bracket, 18 mm
EXG-18	Quick mounting bracket with stop
AB-18	Right angled mounting bracket
MH01-M18	Mounting bracket M18 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

Electrical Connection





Properties

- Ø18 mm housing
- 8 mm, non-flush mountable
- DC, 3-wire and 4-wire switching output
- Cable and connector versions

Additional Products

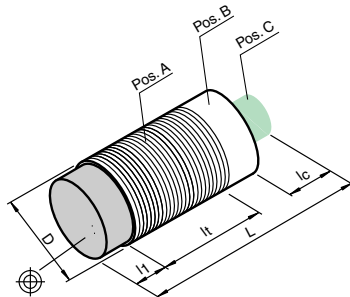
In this series, we offer the following additional products:

NBN8-18GM50-E2-T

Technical data like NBN8-18GM50-E2 but:
No-load supply current: ≤ 30 mA
Switching frequency: 0 ... 300 Hz
Ambient temperature: -25 ... 100 °C (-13 ... 212 °F)
Connection type: cable PUR, 2 m

NBN8-18GM50-E2-T-V1

Technical data like NBN8-18GM50-E2-V1 but:
No-load supply current: ≤ 30 mA
Switching frequency: 0 ... 300 Hz
Ambient temperature: -25 ... 100 °C (-13 ... 212 °F)
Connection type: Connector M12 x 1, 3-pin



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	8 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NBN8-18GM50-E0	NBN8-18GM50-E2	NBN8-18GM60-A0	NBN8-18GM60-A2	NBN8-18GM50-E0-V1	NBN8-18GM50-E2-V1	NBN8-18GM60-A0-V1	NBN8-18GM60-A2-V1
Output type	NPN	•	•	•	•	•	•	•	•
	NO/NC								
	NO								
	PNP								
	NO/NC								
	NO								
No-load supply current	≤ 18 mA	•	•	•	•	•	•	•	•
	≤ 20 mA								
Switching frequency	0 ... 500 Hz	•	•	•	•	•	•	•	•
	0 ... 700 Hz								
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	•	•	•	•	•	•	•	•
	-40 ... 70 °C (-40 ... 158 °F)								
Connection type	Connector M12 x 1, 4-pin								
	cable PVC, 2 m	•	•	•	•				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V	•	•	•	•	•	•	•	•

Dimensions

Length L [mm]	50	50	60	60	65	65	70	70
Diameter D [mm]	M18 x 1							
Thread length l _t [mm]	37	37	50	50	40	40	50	50
Cap length l ₁ [mm]	10							
Connector length l _c [mm]	0		15		10			
LED position	Pos.		C		A			

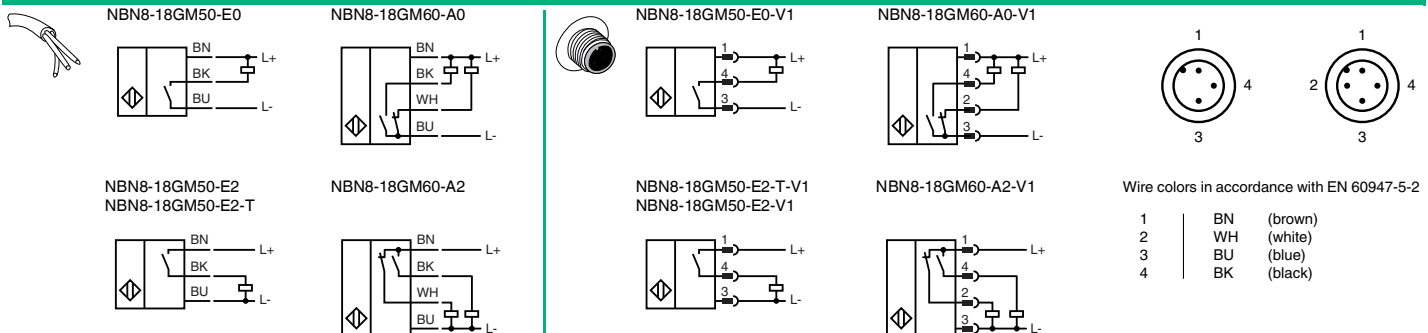
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18	Mounting bracket, 18 mm
AB-18	Right angled mounting bracket
MH01-M18	Mounting bracket M18 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

Electrical Connection



Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
SENSING YOUR NEEDS



Properties

- Ø18 mm housing
- 12 mm, non-flush mountable
- DC, 3-wire and 4-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	12 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

Output type	NPN	NO/NC	NBN12-18GM35-E2	NBN12-18GM35-E3	NBN12-18GM50-E0	NBN12-18GM50-E2	NBN12-18GM50-A0	NBN12-18GM50-A2	NBN12-18GM35-E2-V1	NBN12-18GM50-E0-V1	NBN12-18GM50-E2-V1	NBN12-18GM50-A0-V1	NBN12-18GM50-A2-V1
	NPN	NO											
	PNP	NO/NC											
	PNP	NO											
	PNP	NC											
No-load supply current	≤ 10 mA												
	≤ 12 mA												
	≤ 20 mA												
Switching frequency	0 ... 1000 Hz												
	0 ... 200 Hz												
	0 ... 300 Hz												
Load current	0 ... 100 mA												
	0 ... 200 mA												
Connection type	Connector M12 x 1, 4-pin												
	cable PVC, 2 m												



Approvals and Certificates

UL approval	cULus Listed, General Purpose	
CSA approval	cCSAus Listed, General Purpose	
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	

Dimensions

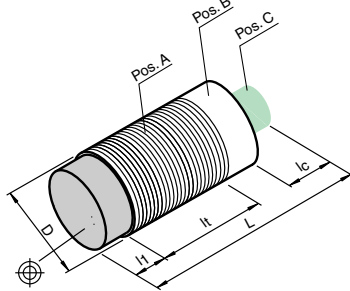
Length L [mm]	35.5	50	65
Diameter D [mm]		M18 x 1	
Thread length l _t [mm]	22.5	37	25
Cap length l ₁ [mm]		10	
Connector length l _c [mm]		0	15
LED position		Pos. C	

Accessories

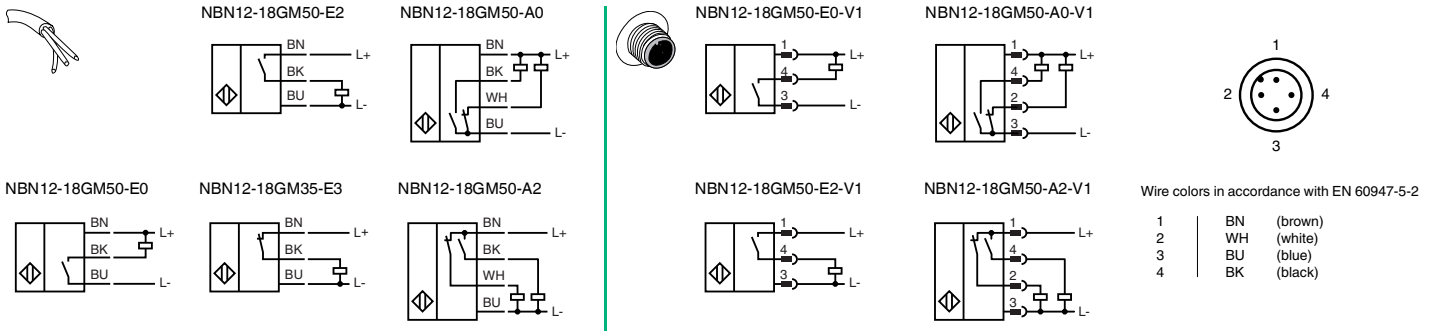
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18	Mounting bracket, 18 mm
BF 18-F	Mounting bracket with stop, 18 mm
AB-18	Right angled mounting bracket
MH01-M18	Mounting bracket M18 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight



Electrical Connection





Properties

- Ø18 mm housing
- 12 mm sensing range
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	12 mm
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 500 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67

Model Number

		NEB12-18GM50-E2	NEB12-18GM50-E2-V1	NEB12-18GM50-E3-V1	NEB12-18GM50-E-V1
Installation	flush	•	•	•	•
	quasi-flush				•
Output type	NPN NO	•	•		•
	PNP NO				
	PNP NC			•	
Housing material	chromium plated brass				•
	brass, nickel-plated	•	•	•	
Connection type	Connector M12 x 1, 4-pin		•	•	•
	cable PUR, 2 m	•			

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•
CSA approval	cCSAus Listed, General Purpose	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	

Dimensions

Length L [mm]	53	69	63.5
Diameter D [mm]	M18 x 1		
Thread length l _t [mm]	53	53	53
Cap length l ₁ [mm]		0	40
Connector length l _c [mm]	0	14	12
LED position	Pos.	C	C
		C	A

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18

AB-18

MH01-M18

V1-G

V1-W

V1-G-BK2M-PUR-U

V1-W-BK2M-PUR-U

Mounting bracket, 18 mm

Right angled mounting bracket

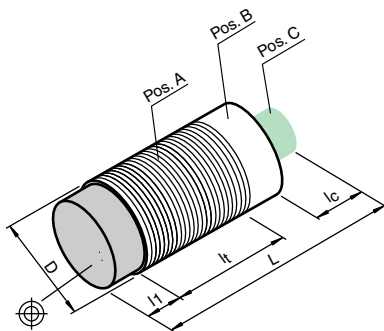
Mounting bracket M18 - 1/2" rod type

4-pin, M12 female field-attachable connector, straight

4-pin, M12 female field-attachable connector, angled

Female cordset, M12, 4-pin, PUR cable, straight

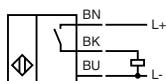
Female cordset, M12, 4-pin, PUR cable, angled



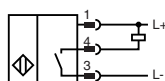
Electrical Connection



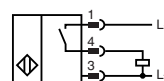
NEB12-18GM50-E2



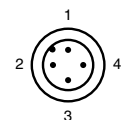
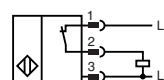
NEB12-18GM50-E-V1



NEB12-18GM50-E2-V1



NEB12-18GM50-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø18 mm housing
- 20 mm, non-flush mountable
- DC, 3-wire switching output
- Connector version

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	20 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 200 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67
Connection type	Connector M12 x 1, 4-pin



Model Number

Output type	PNP	NO	NEN20-18GM50-E2-V1	NEN20-18GM50-E3-V1
	PNP	NC	●	●

Approvals and Certificates

CCC approval	CCC approval / marking not required for sensors rated ≤36 V
--------------	---

Dimensions

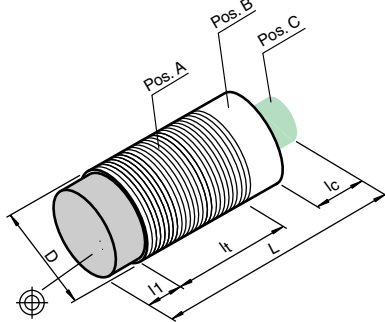
Length L [mm]	69
Diameter D [mm]	M18 x 1
Thread length l _t [mm]	43
Cap length l ₁ [mm]	10
Connector length l _c [mm]	14
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

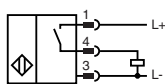
BF 18	Mounting bracket, 18 mm
AB-18	Right angled mounting bracket
MH01-M18	Mounting bracket M18 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



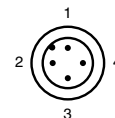
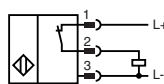
Electrical Connection



NEN20-18GM50-E2-V1



NEN20-18GM50-E3-V1



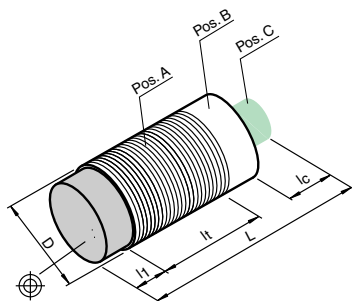
Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø18 mm housing
- 5 mm and 8 mm sensing ranges
- AC, 2-wire switching output
- Cable and connector versions



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	AC
Operating voltage	20 ... 253 V
Reverse polarity protection	✔, polarity independent
Switching frequency	0 ... 20 Hz
Load current	5 ... 200 mA
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67

Model Number

Rated operating distance	5 mm																																																																																																																																				
--------------------------	------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--

Approvals and Certificates

Approvals and Certifications		
UL approval	cULus Listed, General Purpose	        
CSA approval	cCSAus Listed, General Purpose	        
CCC approval	Certified by China Compulsory Certification (CCC)	

Dimensions

DIMENSIONS		mm					
Length L [mm]		60	70	80	70	60	70
Diameter D [mm]		M18 x 1					
Thread length l _t [mm]		60	50	60		40	50
Cap length l ₁ [mm]		0	10	0		10	
Connector length l _c [mm]		0		10	20	10	15
LED position	Pos.	C			B		

Accessories

These and more accessories can be found in chapter 10

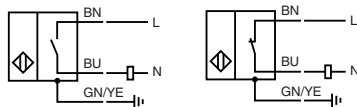
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18	Mounting bracket, 18 mm
EXG-18	Quick mounting bracket with stop
AB-18	Right angled mounting bracket
MH01-M18	Mounting bracket M18 - 1/2" rod type

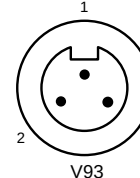
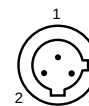
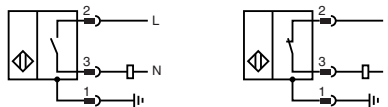
Electrical Connection



NBN8-18GM60-WS	NBN8-18GM60-WO
NBB5-18GM60-WS	NBB5-18GM60-WO



NBB5-18GM60-WS-V12	NBB5-18GM60-WO-V12
NBB5-18GM80-WS-V93	NBB5-18GM80-WO-V93
NBN8-18GM60-WS-V12	NBN8-18GM60-WO-V12
NBN8-18GM80-WS-V93	NBN8-18GM80-WO-V93





Properties

- Ø18 mm housing
- 5 mm and 8 mm sensing ranges
- AC, 2-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	AC	NO
Type of voltage	AC	
Operating voltage	20 ... 250 V	
No-load supply current	≤ 1.5 mA	
Switching frequency	0 ... 25 Hz	
Load current	5 ... 200 mA	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	
Housing material	PBT	
Protection degree	IP68	
Connection type	cable PVC , 2 m	



Model Number

		NBB5-18GK-WS	NBN8-18GK-WS
Rated operating distance	5 mm	●	
	8 mm		●
Installation	flush	●	
	non-flush		●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●

Dimensions

Length L [mm]	79	80
Diameter D [mm]	M18 x 1	
Thread length l _t [mm]	61	60
Cap length l ₁ [mm]	0	0.5
Connector length l _c [mm]	0	
LED position	-	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18

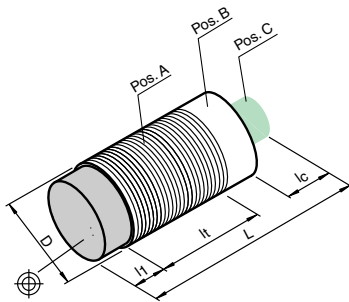
AB-18

MH01-M18

Mounting bracket, 18 mm

Right angled mounting bracket

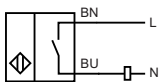
Mounting bracket M18 - 1/2" rod type



Electrical Connection



NBB5-18GK-WS
NBN8-18GK-WS



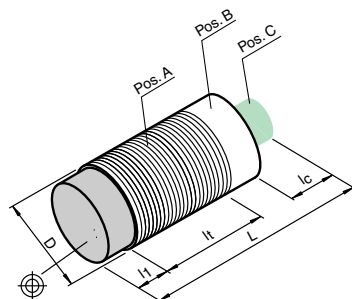


Properties

- Ø18 mm housing
- 8 mm and 15 mm sensing ranges
- AC/DC, 2-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	AC/DC	NO
Type of voltage	AC/DC	
Operating voltage	20 ... 250 V AC/20 ... 300 V DC	
Reverse polarity protection	✓, polarity independent	
Switching frequency	30 Hz	
Load current	4 ... 300 mA AC/DC	
Short-circuit protection	✓	
Operating voltage display	LED, green	
Switching state indication	LED, yellow	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	
Housing material	brass, nickel-plated	
Protection degree	IP67	

Model Number

		NBB8-18GM60-US	NBN15-18GM60-US	NBB8-18GM60-US-V12	NBB8-18GM55-US-V93	NBN15-18GM60-US-V12	NBN15-18GM55-US-V93
Rated operating distance	15 mm	●	●	●	●	●	●
Installation	flush	●	●	●	●	●	●
	non-flush		●			●	●
Connection type	Connector 1/2"-20 UN , 3-pin			●		●	
	Connector 7/8"-16 UN , 3-pin				●		●
	cable PUR , 2 m	●	●				●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●	●	●

Dimensions

Length L [mm]	63		70	75	70	75
Diameter D [mm]			M18 x 1			
Thread length l _t [mm]	62	52	60	55	50	45
Cap length l ₁ [mm]	0	10	0		10	
Connector length l _c [mm]	0		10	20	10	20
LED position			Pos. A			

Accessories

These and more accessories can be found in chapter 10

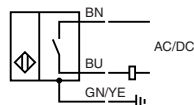
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18	Mounting bracket, 18 mm
EXG-18	Quick mounting bracket with stop
AB-18	Right angled mounting bracket
MH01-M18	Mounting bracket M18 - 1/2" rod type

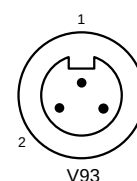
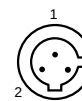
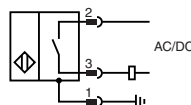
Electrical Connection



NBB8-18GM60-US
NBN15-18GM60-US



NBN15-18GM55-US-V93
NBB8-18GM55-US-V93
NBB8-18GM60-US-V12
NBN15-18GM60-US-V12





Properties

- Ø18 mm housing
- Up to 5 mm sensing ranges
- DC, 3-wire analog output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Measurement range	1 ... 5 mm
Installation	flush
Output type	Analog current output
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 12 mA
Linearity error	≤ ± 4 % of full-scale value
Load resistor	≤ 1000 Ω
Adjustment tolerance zero point	≤ ± 10 % of full-scale value
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NBB5-18GM60-I	NBB5-18GM60-I3	NBB5-18GM60-I-V1	NBB5-18GM60-I3-V1
Output type	0 ... 20 mA 4 ... 20 mA	●	●	●	●
Slope of output characteristic	4 mA / mm 5 mA / mm	●	●	●	●
Connection type	Connector M12 x 1, 4-pin cable PVC, 2 m	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	●	●	●	●

Dimensions

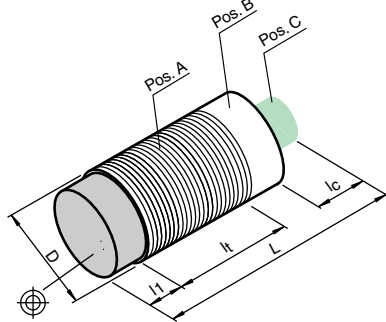
Length L [mm]	60	70
Diameter D [mm]	M18 x 1	
Thread length l _t [mm]	57	60
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	10
LED position	Pos. C	Pos. B

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

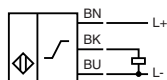
BF 18	Mounting bracket, 18 mm
AB-18	Right angled mounting bracket
MH01-M18	Mounting bracket M18 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



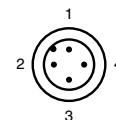
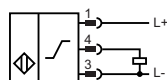
Electrical Connection



NBB5-18GM60-I
NBB5-18GM60-I3



NBB5-18GM60-I3-V1
NBB5-18GM60-I-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø30 mm housing
- 10 mm, flush mountable
- DC, 2-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	10 mm
Installation	flush
Type of voltage	DC
Operating voltage	5 ... 60 V
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 150 Hz
Load current	2 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Protection degree	IP67

Model Number

			NBB10-30GM40-Z0	NCB10-30GM40-Z0	NCB10-30GM40-Z1	NBB10-30GM40-Z0-V1	NCB10-30GM40-Z0-V1	NBB10-30GM40-Z3-V1	NCB10-30GM40-Z3-V1	NCB10-30GM40-Z1-V1
Output type	DC	NO	●	●	●	●	●	●	●	●
	DC	NC								
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		●	●	●	●	●	●	●	●
	-40 ... 70 °C (-40 ... 158 °F)						●			
Housing material	Stainless steel 1.4305 / AISI 303			●	●		●		●	●
	brass, nickel-plated		●					●		
Connection type	Connector M12 x 1, 4-pin					●	●	●	●	●
	cable PUR, 2 m			●	●					
	cable PVC, 2 m		●							

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●	●	●	●	●	●

Dimensions

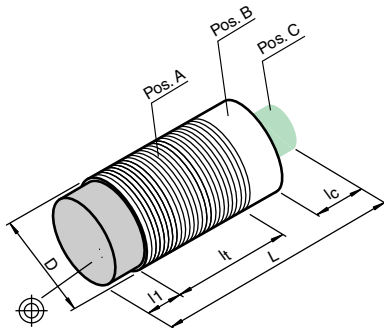
Length L [mm]	40	55
Diameter D [mm]	M30 x 1.5	
Thread length l _t [mm]	37	40
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	15
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

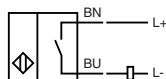
BF 30	Mounting bracket, 30 mm
EXG-30	Quick mounting bracket with stop
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



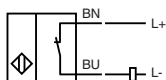
Electrical Connection



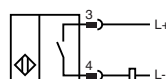
NCB10-30GM40-Z0
NBB10-30GM40-Z0



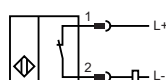
NCB10-30GM40-Z1



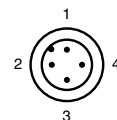
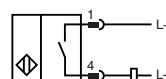
NCB10-30GM40-Z0-V1
NBB10-30GM40-Z0-V1



NCB10-30GM40-Z1-V1



NBB10-30GM40-Z3-V1
NCB10-30GM40-Z3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Ø30 mm housing
- 15 mm, non-flush mountable
- DC, 2-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	5 ... 60 V
Reverse polarity protection	✓, polarity independent
Load current	2 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Protection degree	IP67

Model Number

			NBN15-30GM40-Z0	NCN15-30GM40-Z0	NCN15-30GM40-Z1	NBN15-30GM40-Z0-V1	NCN15-30GM40-Z0-V1	NBN15-30GM40-Z3-V1	NCN15-30GM40-Z3-V1	NCN15-30GM40-Z1-V1
Output type	DC	NO	●	●	●	●	●	●	●	●
	DC	NC			●					●
Switching frequency	0 ... 100 Hz		●	●	●	●	●	●	●	●
	0 ... 150 Hz		●	●	●	●	●	●	●	●
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		●	●	●	●	●	●	●	●
	-40 ... 70 °C (-40 ... 158 °F)		●	●	●	●	●	●	●	●
Housing material	Stainless steel 1.4305 / AISI 303		●	●	●	●	●	●	●	●
	brass, nickel-plated		●	●	●	●	●	●	●	●
Connection type	Connector M12 x 1, 4-pin		●	●	●	●	●	●	●	●
	cable PUR, 2 m		●	●	●	●	●	●	●	●
	cable PVC, 2 m		●	●	●	●	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●	●	●	●	●	●

Dimensions

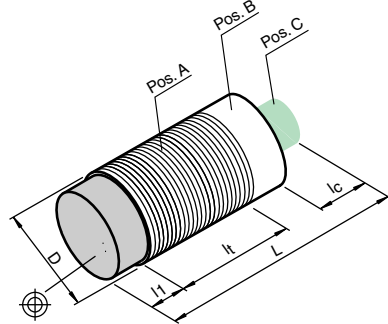
Length L [mm]	40	55
Diameter D [mm]		M30 x 1.5
Thread length l _t [mm]	19	22
Cap length l ₁ [mm]		18
Connector length l _c [mm]	0	15
LED position		Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

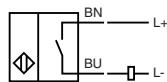
BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



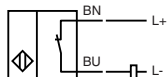
Electrical Connection



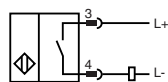
NBN15-30GM40-Z0
NCN15-30GM40-Z0



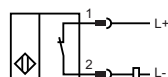
NCN15-30GM40-Z1



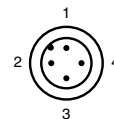
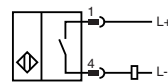
NBN15-30GM40-Z0-V1
NCN15-30GM40-Z0-V1



NCN15-30GM40-Z1-V1



NBN15-30GM40-Z3-V1
NCN15-30GM40-Z3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø30 mm housing
- 15 mm, flush mountable
- DC, 2-wire switching output
- Cable and connector versions

Benefits

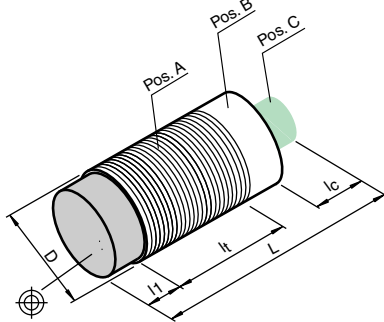
- Extended sensing range means fewer sensor/target impacts

Additional Products

In this series, we offer the following additional products:

NCB15-30GM50-Z5-V1

Technical data like NCB15-30GM50-Z5-V1 but: different wiring diagram, see Electrical Connection



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	flush
Type of voltage	DC
Operating voltage	3.5 ... 30 V
Switching frequency	500 Hz
Load current	2 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NCB15-30GM50-Z4	NCB15-30GM50-Z5	NCB15-30GM50-Z4-V1	NCB15-30GM50-Z5-V1
Output type	DC NO	●	●	●	●
	DC NC				
Reverse polarity protection	✓	●	●	●	●
	reverse polarity-conductive		●		●
Connection type	Connector M12 x 1, 4-pin			●	●
	cable PVC, 2 m	●	●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	50	65
Diameter D [mm]	M30 x 1.5	
Thread length l _t [mm]	47	50
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	15
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

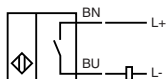
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30	Mounting bracket, 30 mm
EXG-30	Quick mounting bracket with stop
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

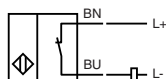
Electrical Connection



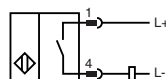
NCB15-30GM50-Z4



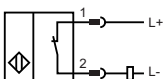
NCB15-30GM50-Z5



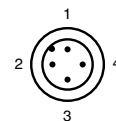
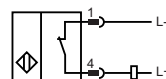
NCB15-30GM50-Z4-V1



NCB15-30GM50-Z5-V1



NCB15-30GM50-Z7-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Ø30 mm housing
- 25 mm, non-flush mountable
- DC, 2-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	25 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	3.5 ... 30 V
Switching frequency	500 Hz
Load current	2 ... 100 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NCN25-30GM50-Z4	NCN25-30GM50-Z5	NCN25-30GM50-Z4-V1	NCN25-30GM50-Z5-V1	NCN25-30GM50-Z7-V1
Output type	DC NO		●		●		
	DC NC			●		●	●
Reverse polarity protection	✓, reverse polarity conductive		●	●	●	●	
	✓, polarity independent						●
Connection type	Connector M12 x 1, 4-pin				●	●	●
	cable PVC, 2 m		●	●			

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V						

Dimensions

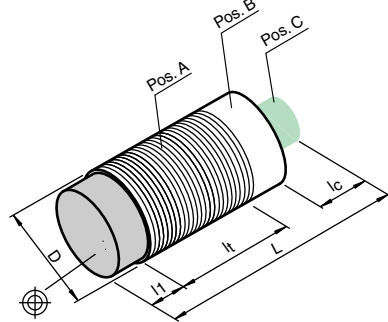
Length L [mm]	50	65
Diameter D [mm]	M30 x 1.5	
Thread length l _t [mm]	32	
Cap length l ₁ [mm]	18	
Connector length l _c [mm]	0	15
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

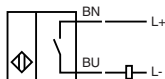
BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight



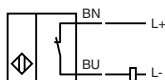
Electrical Connection



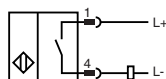
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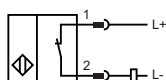
NCN25-30GM50-Z5



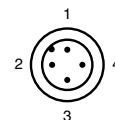
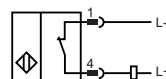
NCN25-30GM50-Z4-V1



NCN25-30GM50-Z5-V1



NCN25-30GM50-Z7-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø30 mm housing
- 10 mm, flush mountable
- DC, 4-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	10 mm
Installation	flush
Type of voltage	DC
Reverse polarity protection	✓
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Protection degree	IP67

Model Number

		NJ10-30GM50-A2	NBB10-30GM60-A0	NBB10-30GM60-A2	
Output type	NPN	•	•	•	NO/NC
	PNP	•	•	•	NO/NC
Operating voltage	10 ... 30 V	•	•	•	
	10 ... 60 V	•	•	•	
No-load supply current	≤ 15 mA	•	•	•	
	≤ 20 mA	•	•	•	
Switching frequency	0 ... 200 Hz	•	•	•	
	0 ... 300 Hz	•	•	•	
Load current	0 ... 200 mA	•	•	•	
	0 ... 400 mA	•	•	•	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	•	•	•	
	-40 ... 70 °C (-40 ... 158 °F)	•	•	•	
Housing material	Stainless steel 1.4305 / AISI 303	•	•	•	
	brass, nickel-plated	•	•	•	
Connection type	Connector M12 x 1, 4-pin	•	•	•	
	cabl PVC, 2 m	•	•	•	



Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	•	•	•	•	•

Dimensions

Length L [mm]	50	60	65	70
Diameter D [mm]	M30 x 1.5			
Thread length l _t [mm]	47	60	50	60
Cap length l ₁ [mm]		0		10
Connector length l _c [mm]		0	15	10
LED position	Pos.	B	C	A

Accessories

These and more accessories can be found in chapter 10

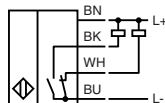
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30	Mounting bracket, 30 mm
EXG-30	Quick mounting bracket with stop
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

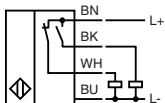
Electrical Connection



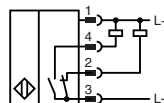
NBB10-30GM60-A0



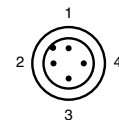
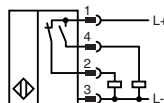
NJ10-30GM50-A2
NBB10-30GM60-A2



NBB10-30GM60-A0-V1



NJ10-30GM50-A2-V1
NBB10-30GM60-A2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

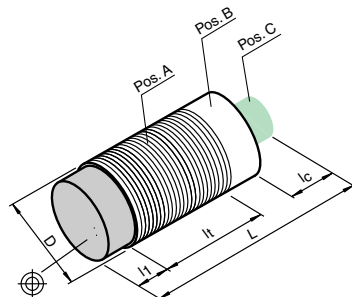
- Ø30 mm housing
- 10 mm, flush mountable
- DC, 3-wire switching output
- Cable version

Additional Products

In this series, we offer the following additional products:

NJ10-30GK50-A2

Technical data like NBB10-30GK50-E2 but:
Output type: PNP, NO/NC
Operating voltage: 10 ... 60 V
No-load supply current: ≤ 9 mA
Switching frequency: 0 ... 500 Hz
Load current: 0 ... 400 mA



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	10 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Housing material	PBT

Model Number

			NJ10-30GK-E-T	NJ10-30GK-E2-T	NBB10-30GK50-E0	NBB10-30GK50-E2
Output type	NPN	NO	●		●	
	PNP	NO		●		●
Switching frequency	0 ... 200 Hz		●	●	●	●
	0 ... 300 Hz					
Switching state indication	LED, yellow				●	●
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)		●	●		
	-25 ... 70 °C (-13 ... 158 °F)				●	●
Protection degree	IP68		●	●		
	IP68 / IP69K				●	●
Connection type	cable PUR, 2 m		●	●		
	cable PVC, 2 m				●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	80	52
Diameter D [mm]	M30 x 1.5	
Thread length lt [mm]	60	48
Cap length l1 [mm]	1	
Connector length lc [mm]	0	
LED position	-	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30

AB-30

MH01-M30

Mounting bracket, 30 mm

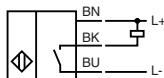
Right angled mounting bracket

Mounting bracket M30 - 1/2" rod type

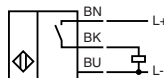
Electrical Connection



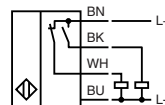
NJ10-30GK-E-T
NBB10-30GK50-E0



NJ10-30GK-E2-T
NBB10-30GK50-E2



NJ10-30GK50-A2





Properties

- Ø30 mm housing
- 10 mm, flush mountable
- DC, 4-wire switching output
- Terminal compartment

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	10 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 300 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection type	terminal compartment



Model Number

Output type	NPN	NO/NC
	PNP	NO/NC

NJ10-30GKK-A

NJ10-30GKK-A2

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

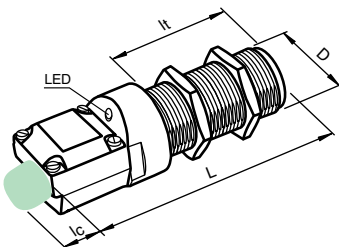
Length L [mm]	115
Diameter D [mm]	M30 x 1.5 (max. housing diameter: 40 mm)
Thread length l _t [mm]	58
Cap length l ₁ [mm]	2
Connector length l _c [mm]	0

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

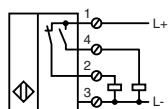
BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type



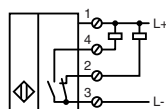
Electrical Connection



NJ10-30GKK-A2



NJ10-30GKK-A





Properties

- Ø30 mm housing
- 15 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 200 Hz
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NBB15-30GM30-E2	NBB15-30GM30-E3	NBB15-30GM50-E0	NBB15-30GM50-E2	NBB15-30GM30-E2-V1	NBB15-30GM30-E3-V1	NBB15-30GM50-E0-V1	NBB15-30GM50-E2-V1
Output type	NPN	NO	•	•	•	•	•	•	•
	PNP	NO	•	•	•	•	•	•	•
	PNP	NC	•	•	•	•	•	•	•
Load current	0 ... 100 mA	•	•	•	•	•	•	•	•
	0 ... 200 mA	•	•	•	•	•	•	•	•
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	•	•	•	•	•	•	•	•
	-40 ... 70 °C (-40 ... 158 °F)	•	•	•	•	•	•	•	•
Connection type	Connector M12 x 1, 4-pin	•	•	•	•	•	•	•	•
	cable PVC, 2 m	•	•	•	•	•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	•	•	•	•	•	•	•	•

Dimensions

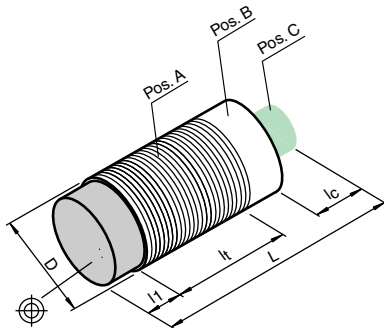
Length L [mm]	30	50	45	65
Diameter D [mm]	M30 x 1.5			
Thread length l _t [mm]	27	47	30	50
Cap length l ₁ [mm]	0			
Connector length l _c [mm]	0	15		
LED position	Pos. C			

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

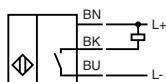
BF 30	Mounting bracket, 30 mm
BF 30-F	Mounting bracket with stop, 30 mm
EXG-30	Quick mounting bracket with stop
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



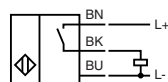
Electrical Connection



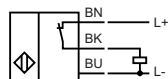
NBB15-30GM50-E0



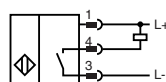
NBB15-30GM30-E2
NBB15-30GM50-E2



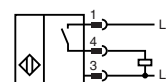
NBB15-30GM30-E3



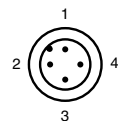
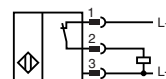
NBB15-30GM50-E0-V1



NBB15-30GM30-E2-V1
NBB15-30GM50-E2-V1



NBB15-30GM30-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Ø30 mm housing
- 15 mm, flush mountable
- DC, 4-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 25 mA
Reverse polarity protection	✓
Switching frequency	0 ... 200 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NBB15-30GM60-A0	NBB15-30GM60-A2	NBB15-30GM60-A0-V1	NBB15-30GM60-A2-V1
Output type	NPN NO/NC	●	●	●	●
	PNP NO/NC				
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	●	●	●	●
	-40 ... 70 °C (-40 ... 158 °F)				
Connection type	Connector M12 x 1, 4-pin cable PVC, 2 m	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

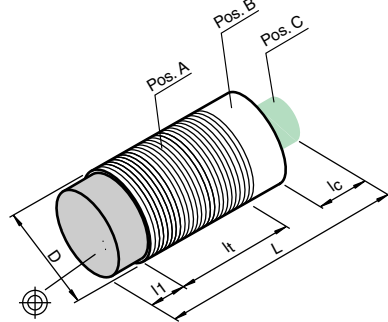
Length L [mm]	60	70
Diameter D [mm]	M30 x 1.5	
Thread length l _t [mm]	57	60
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	10
LED position	Pos. C	Pos. A

Accessories

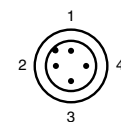
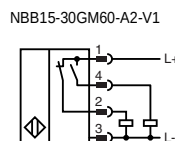
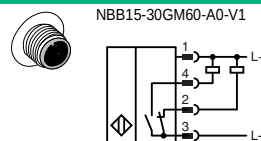
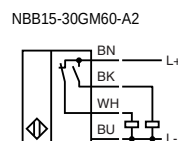
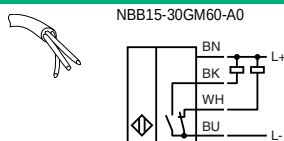
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30	Mounting bracket, 30 mm
EXG-30	Quick mounting bracket with stop
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø30 mm housing
- 15 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Switching frequency	0 ... 200 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NBN15-30GM50-E0	NBN15-30GM50-E2	NBN15-30GM50-E0-V1	NBN15-30GM50-E2-V1
Output type	NPN NO PNP NO	●	●	●	●
No-load supply current	≤ 15 mA ≤ 20 mA	●	●	●	●
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F) -40 ... 70 °C (-40 ... 158 °F)	●	●	●	●
Connection type	Connector M12 x 1, 4-pin cable PVC, 2 m	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

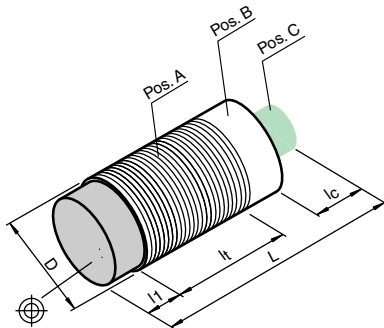
Length L [mm]	50	65
Diameter D [mm]	M30 x 1.5	
Thread length l _t [mm]	32	
Cap length l ₁ [mm]	18	
Connector length l _c [mm]	0	15
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

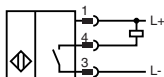
BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



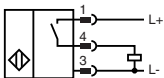
Electrical Connection



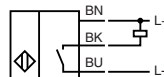
NBN15-30GM50-E0-V1



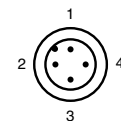
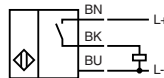
NBN15-30GM50-E2-V1



NBN15-30GM50-E0



NBN15-30GM50-E2



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Ø30 mm housing
- 15 mm, non-flush mountable
- DC, 4-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	non-flush
Type of voltage	DC
Reverse polarity protection	✓
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67

Model Number

		NJ15-30GM50-A2	NBN15-30GM60-A0	NBN15-30GM60-A2	
Output type	NPN	•	•	•	
	PNP	•	•	•	
Operating voltage	10 ... 30 V	•	•	•	
	10 ... 60 V	•	•	•	
No-load supply current	≤ 15 mA	•	•	•	
	≤ 20 mA	•	•	•	
Switching frequency	0 ... 200 Hz	•	•	•	
	0 ... 300 Hz	•	•	•	
Load current	0 ... 200 mA	•	•	•	
	0 ... 400 mA	•	•	•	
Housing material	Stainless steel 1.4305 / AISI 303	•	•	•	
	brass, nickel-plated	•	•	•	
Connection type	Connector M12 x 1, 4-pin	•	•	•	
	cable PVC, 2 m	•	•	•	

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	•	•	•	•	•	•

Dimensions

Length L [mm]	50	60	65	70
Diameter D [mm]	M30 x 1.5			
Thread length l _t [mm]	32	42	32	42
Cap length l ₁ [mm]	18			
Connector length l _c [mm]	0	15	10	
LED position	Pos.	B	C	A

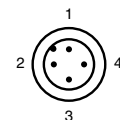
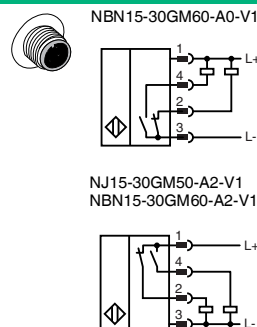
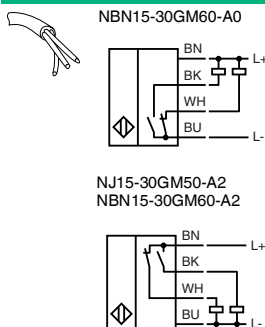
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

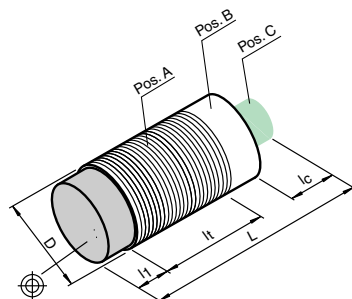
- Ø30 mm housing
- 15 mm, non-flush mountable
- DC, 3-wire switching output
- Cable version

Additional Products

In this series, we offer the following additional products:

NJ15-30GK50-A2

Technical data like NBN15-30GK50-E2 but:
Output type: PNP, NO/NC
Operating voltage: 10 ... 60 V
No-load supply current: ≤ 9 mA
Switching frequency: 0 ... 500 Hz
Load current: 0 ... 400 mA



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Housing material	PBT

Model Number

		NJ15-30GK-E-T	NJ15-30GK-E2-T	NBN15-30GK50-E0	NBN15-30GK50-E2
Output type	NPN	•		•	
	NO				
	PNP		•		•
	NO				
No-load supply current	≤ 15 mA			•	•
	≤ 20 mA	•	•		
Switching frequency	0 ... 200 Hz			•	•
	0 ... 300 Hz	•	•		
Switching state indication	LED, yellow			•	•
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)	•	•		
	-25 ... 70 °C (-13 ... 158 °F)			•	•
Protection degree	IP68	•	•		
	IP68 / IP69K			•	•
Connection type	cable PUR, 2 m	•	•		
	cable PVC, 2 m			•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	80	52
Diameter D [mm]	M30 x 1.5	
Thread length l _t [mm]	59	48
Cap length l ₁ [mm]	1	
Connector length l _c [mm]	0	
LED position	-	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30

AB-30

MH01-M30

Mounting bracket, 30 mm

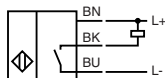
Right angled mounting bracket

Mounting bracket M30 - 1/2" rod type

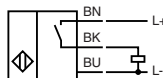
Electrical Connection



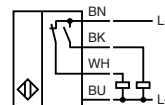
NJ15-30GK-E-T
NBN15-30GK50-E0



NBN15-30GK50-E2
NJ15-30GK-E2-T



NJ15-30GK50-A2





Properties

- Ø30 mm housing
- 15 mm, non-flush mountable
- DC, 4-wire switching output
- Terminal compartment

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 300 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection type	terminal compartment



Model Number

Output type	NPN	NO/NC
	PNP	NO/NC

NJ15-30GKK-A

NJ15-30GKK-A2

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

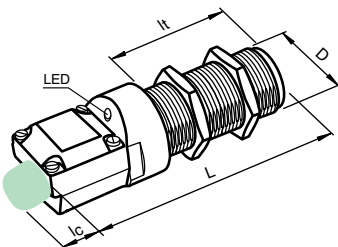
Length L [mm]	115
Diameter D [mm]	M30 x 1.5 (max. housing diameter: 40 mm)
Thread length l _t [mm]	58
Cap length l ₁ [mm]	2
Connector length l _c [mm]	0

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type

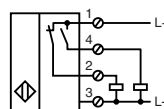
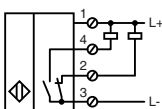


Electrical Connection



NJ15-30GKK-A

NJ15-30GKK-A2





Properties

- Ø30 mm housing
- 22 mm, quasi-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	22 mm
Installation	quasi-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 150 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	chromium plated brass
Protection degree	IP67

Model Number

			NEB22-30GM60-E0	NEB22-30GM60-E2	NEB22-30GM60-E0-V1	NEB22-30GM60-E2-V1	NEB22-30GM60-E3-V1
Output type	NPN	NO	●		●		
	PNP	NO		●		●	
	PNP	NC					●
Connection type	Connector M12 x 1, 4-pin				●	●	●
	cable PVC, 2 m		●	●			

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●
CSA approval	cCSAus Listed, General Purpose	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	

Dimensions

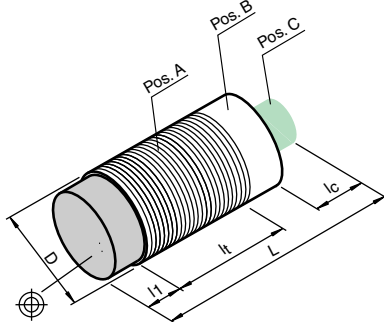
Length L [mm]	60		73.5		
Diameter D [mm]	M30 x 1.5				
Thread length l _t [mm]	60	60	52	61.5	52
Cap length l ₁ [mm]	0				
Connector length l _c [mm]	0		13.5	12.5	
LED position	C	C	C	A	C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

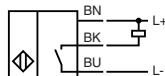
BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



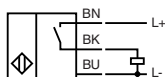
Electrical Connection



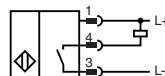
NEB22-30GM60-E0



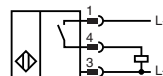
NEB22-30GM60-E2



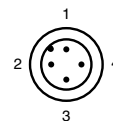
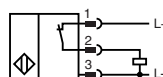
NEB22-30GM60-E0-V1



NEB22-30GM60-E2-V1



NEB22-30GM60-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø30 mm housing
- 22 mm and 25 mm sensing ranges
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

		NBN22-30GM35-E2	NBN25-30GM50-E0	NBN25-30GM50-E2	NBN22-30GM35-E2-V1	NBN25-30GM50-E0-V1	NBN25-30GM50-E2-V1
Rated operating distance	22 mm	●			●		
	25 mm		●	●		●	●
Output type	NPN NO		●			●	
	PNP NO	●		●	●		●
No-load supply current	≤ 10 mA	●	●	●	●	●	●
	≤ 12 mA	●					
Switching frequency	0 ... 200 Hz	●	●	●	●	●	●
	0 ... 80 Hz	●					
Load current	0 ... 100 mA	●			●		
	0 ... 200 mA		●	●		●	●
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	●	●	●	●	●	●
	-40 ... 70 °C (-40 ... 158 °F)						●
Connection type	Connector M12 x 1, 4-pin				●	●	●
	cable PVC, 2 m	●	●	●			



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V						

Dimensions

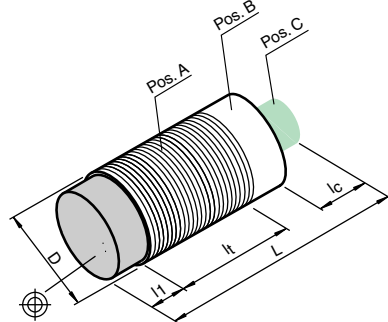
Length L [mm]	35	50	50	50	65	65
Diameter D [mm]				M30 x 1.5		
Thread length l _t [mm]	15	32	32	17	32	32
Cap length l ₁ [mm]				18		
Connector length l _c [mm]		0			15	
LED position				Pos. C		

Accessories

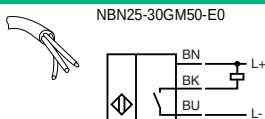
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

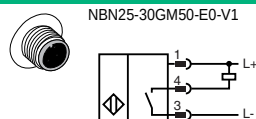
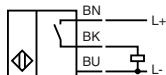
BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



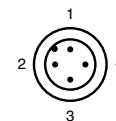
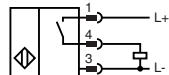
Electrical Connection



NBN22-30GM35-E2
NBN25-30GM50-E2



NBN22-30GM35-E2-V1
NBN25-30GM50-E2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø30 mm housing
- 40 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	40 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 100 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self-checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	chromium plated brass
Protection degree	IP67

Model Number

			NEN40-30GM60-E0	NEN40-30GM60-E2	NEN40-30GM60-E0-V1	NEN40-30GM60-E2-V1	NEN40-30GM60-E3-V1
Output type	NPN	NO	●		●		
	PNP, NO			●			
	PNP	NO				●	
	PNP	NC					●
Connection type	Connector M12 x 1, 4-pin		●	●	●	●	●
	cable PVC, 2 m						

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●
CSA approval	cCSAus Listed, General Purpose	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	

Dimensions

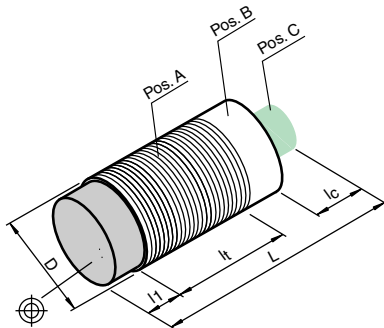
Length L [mm]	60	73.5
Diameter D [mm]	M30 x 1.5	
Thread length l _t [mm]	50	42
Cap length l ₁ [mm]	10	
Connector length l _c [mm]	0	12.5
LED position	C	C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

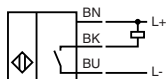
BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



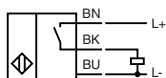
Electrical Connection



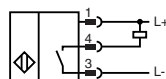
NEN40-30GM60-E0



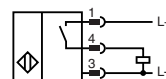
NEN40-30GM60-E2



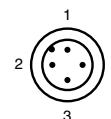
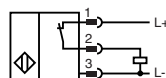
NEN40-30GM60-E0-V1



NEN40-30GM60-E2-V1



NEN40-30GM60-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø30 mm housing
- 10 mm, flush mountable
- AC, 2-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	10 mm
Installation	flush
Type of voltage	AC
Operating voltage	20 ... 250 V
Switching frequency	0 ... 25 Hz
Load current	5 ... 200 mA
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP68
Connection type	cable PVC , 2 m



Model Number

Output type	AC	NO	NBB10-30GK-WS	NBB10-30GK-WO
	AC	NC	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●

Dimensions

Length L [mm]	80
Diameter D [mm]	M30 x 1.5
Thread length l _t [mm]	60
Cap length l ₁ [mm]	0
Connector length l _c [mm]	0
LED position	-

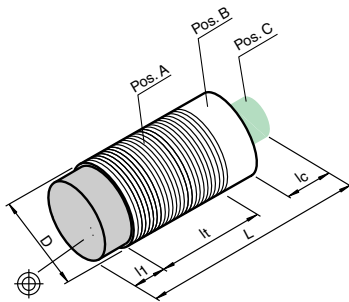
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30
AB-30

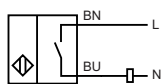
Mounting bracket, 30 mm
Right angled mounting bracket



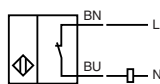
Electrical Connection



NBB10-30GK-WS



NBB10-30GK-WO





Properties

- Ø30 mm housing
- 10 mm and 15 mm sensing ranges
- AC, 2-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	AC
Operating voltage	20 ... 253 V
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 20 Hz
Load current	5 ... 200 mA
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

Rated operating distance	10 mm	NBB10-30GM50-WS	NBB10-30GM50-WO	NBB15-30GM50-WS	NBB15-30GM50-WO	NBB10-30GM50-WS-V12	NBB10-30GM50-WO-V12	NBB10-30GM50-WS-V93	NBB10-30GM50-WO-V93	NBB15-30GM50-WS-V12	NBB15-30GM50-WO-V12	NBB15-30GM50-WS-V93	NBB15-30GM50-WO-V93
Installation	flush	•	•	•	•	•	•	•	•	•	•	•	•
	quasi-flush	•	•	•	•	•	•	•	•	•	•	•	•
Output type	AC NO	•	•	•	•	•	•	•	•	•	•	•	•
	AC NC	•	•	•	•	•	•	•	•	•	•	•	•
Connection type	Connector 1/2"-20 UN, 3-pin	•	•	•	•	•	•	•	•	•	•	•	•
	Connector 7/8"-16 UN, 3-pin	•	•	•	•	•	•	•	•	•	•	•	•
	cable PVC, 2 m	•	•	•	•	•	•	•	•	•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•	•	•
CCC approval	Certified by China Compulsory Certification (CCC)	•	•	•	•	•	•	•	•	•	•	•	•

Dimensions

Length L [mm]	50	60	65
Diameter D [mm]	M30 x 1.5		
Thread length l _t [mm]	47	50	
Cap length l ₁ [mm]	0		
Connector length l _c [mm]	0	10	15
LED position	Pos. C	Pos. B	

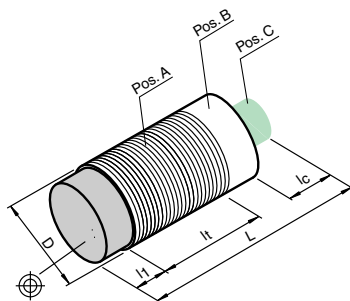
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30
EXG-30
AB-30
MH01-M30

Mounting bracket, 30 mm
Quick mounting bracket with stop
Right angled mounting bracket
Mounting bracket M30 - 1/2" rod type

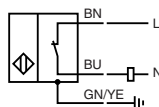
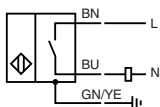


Electrical Connection

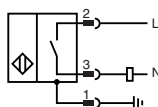


NBB10-30GM50-WS
NBB15-30GM50-WS

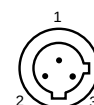
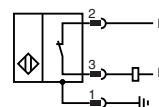
NBB10-30GM50-WO
NBB15-30GM50-WO



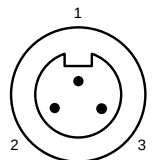
NBB10-30GM50-WS-V12
NBB10-30GM50-WS-V93
NBB15-30GM50-WS-V12
NBB15-30GM50-WS-V93



NBB10-30GM50-WO-V12
NBB10-30GM50-WO-V93
NBB15-30GM50-WO-V12



V12



V93





Properties

- Ø30 mm housing
- 10 mm and 15 mm sensing ranges
- AC, 2-wire switching output
- Terminal compartment

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Type of voltage	AC
Operating voltage	20 ... 250 V
No-load supply current	≤ 1.7 mA
Switching frequency	0 ... 20 Hz
Load current	1.5 ... 200 mA
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection type	terminal compartment



Model Number

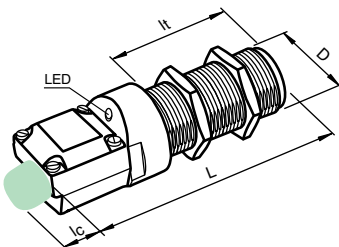
		NBB10-30GKK-WO	NBB10-30GKK-WS	NBB15-30GKK-WO	NBB15-30GKK-WS
Rated operating distance	10 mm	●	●		
	15 mm			●	●
Output type	AC NO		●		●
	AC NC	●		●	

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●

Dimensions

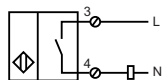
Length L [mm]	115
Diameter D [mm]	M30 x 1.5 (max. housing diameter: 40 mm)
Thread length l_t [mm]	58
Cap length l_1 [mm]	2
Connector length l_c [mm]	0



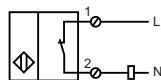
Electrical Connection



NBB15-30GKK-WS
NBB10-30GKK-WS



NBB15-30GKK-WO
NBB10-30GKK-WO





Properties

- Ø30 mm housing
- 15 mm, flush mountable
- AC/DC, 2-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	flush
Output type	AC/DC NO
Type of voltage	UC
Operating voltage	20 ... 250 V AC/20 ... 300 V DC
Reverse polarity protection	✓, polarity independent
Switching frequency	30 Hz
Load current	4 ... 500 mA AC/DC
Short-circuit protection	✓
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

	NBB15-30GM50-US	NBB15-30GM50-US-V12	NBB15-30GM50-US-V93
Connection type	Connector 1/2"-20 UN, 3-pin Connector 7/8"-16 UN, 3-pin cable PUR, 2 m		

Approvals and Certificates

UL approval	cULus Listed, General Purpose			
CSA approval	cCSAus Listed, General Purpose			
CCC approval	Certified by China Compulsory Certification (CCC)			

Dimensions

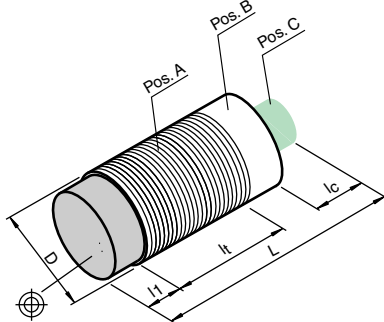
Length L [mm]	51	60	65
Diameter D [mm]		M30 x 1.5	
Thread length l _t [mm]		50	
Cap length l ₁ [mm]		0	
Connector length l _c [mm]		10	15
LED position		Pos. B	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

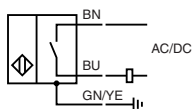
BF 30	Mounting bracket, 30 mm
EXG-30	Quick mounting bracket with stop
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type



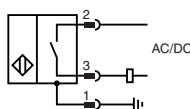
Electrical Connection



NBB15-30GM50-US



NBB15-30GM50-US-V93
NBB15-30GM50-US-V12



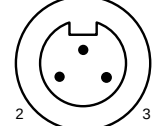
V12



Wire colors

1	GN (green)
2	RD/BK (red/black)
3	RD/WH (red/white)

V93



Wire colors

1	GN (green)
2	BK (black)
3	WH (white)



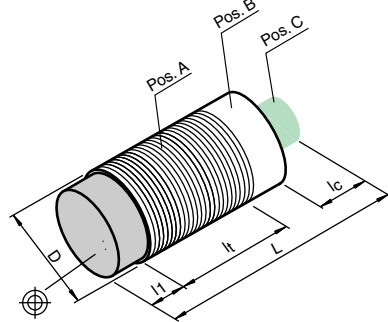


Properties

- Ø30 mm housing
- 25 mm, non-flush mountable
- AC/DC, 2-wire switching output
- Cable and connector versions

Benefits

- Extended sensing range means fewer sensor/target impacts



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	25 mm
Installation	non-flush
Output type	AC/DC NO
Type of voltage	UC
Operating voltage	20 ... 250 V AC/20 ... 300 V DC
Reverse polarity protection	✓, polarity independent
Switching frequency	30 Hz
Load current	4 ... 500 mA AC/DC
Short-circuit protection	✓
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

Connection type	Connector 1/2"-20 UN , 3-pin Connector 7/8"-16 UN , 3-pin cable PUR , 2 m
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NBN25-30GM50-US

NBN25-30GM50-US-V12

NBN25-30GM50-US-V93



Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Certified by China Compulsory Certification (CCC)

Dimensions

Length L [mm]	51	60	65
Diameter D [mm]	M30 x 1.5		
Thread length l _t [mm]	32		
Cap length l ₁ [mm]	18		
Connector length l _c [mm]	0	10	15
LED position	Pos. B		

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30

AB-30

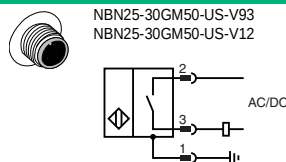
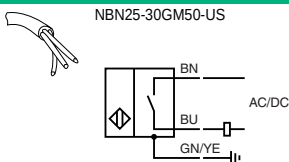
MH01-M30

Mounting bracket, 30 mm

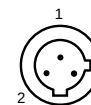
Right angled mounting bracket

Mounting bracket M30 - 1/2" rod type

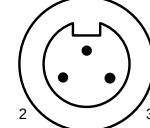
Electrical Connection



V12



V93



Wire colors

1	GN (green)
2	RD/BK (red/black)
3	RD/WH (red/white)

Wire colors

1	GN (green)
2	BK (black)
3	WH (white)



Properties

- Ø30 mm housing
- 10 mm and 15 mm sensing ranges
- DC and AC/DC, relay output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	SPDT Relay
No-load supply current	≤50 mA
Reverse polarity protection	✓
Switching frequency	5 Hz
Load current	6 A max.
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F)
Housing material	PBT
Protection degree	IP68

Model Number

		NBB10-30GK60-AR-1M	NBB10-30GK60-AR-3M	NBN15-30GK60-AR-1M	NBN15-30GK60-AR-3M	NBN15-30GK60-UR-1M	NBN15-30GK60-UR-3M	NBN15-30GK60-UR-5M
Rated operating distance	10 mm	•	•					
	15 mm			•	•	•	•	•
Installation	flush	•	•					
	non-flush			•	•	•	•	•
Type of voltage	DC	•	•	•	•			
Operating voltage	10 ... 30 V DC	•	•	•	•			
	20 ... 132 V AC/DC					•	•	•
Switching state indication	LED, yellow	•	•	•	•			
	LED, red 360°					•	•	•
Connection type	1-meter cable, PVC heavy jacket, 5-conductor, #18 AWG	•		•		•		
	3-meter cable, PVC heavy jacket, 5-conductor, #18 AWG		•		•		•	
	5-meter cable, PVC heavy jacket, 5-conductor, #18 AWG							•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	•	•	•	•			

Dimensions

Length L [mm]	60
Diameter D [mm]	M30 x 1.5
Thread length l _t [mm]	60
Cap length l ₁ [mm]	0
Connector length l _c [mm]	0
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30-F

Mounting bracket with stop, 30 mm

BF 30

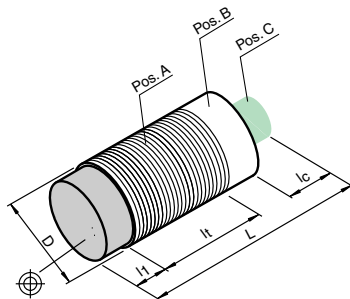
Mounting bracket, 30 mm

BF 5-30

Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm

AB-30

Right angled mounting bracket

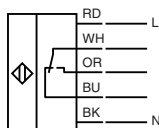
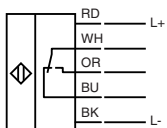


Electrical Connection



NBB10-30GK60-AR-1M
NBB10-30GK60-AR-3M
NBN15-30GK60-AR-1M
NBN15-30GK60-AR-3M

NBN15-30GK60-UR-1M
NBN15-30GK60-UR-3M
NBN15-30GK60-UR-5M





Properties

- Ø30 mm housing
- Up to 15 mm sensing ranges
- DC, 3-wire analog output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	Analog current output
Type of voltage	DC
Operating voltage	15 ... 30 V
No-load supply current	≤ 10 mA
Output type	0 ... 20 mA
Linearity error	≤ ± 10 % of full-scale value
Load resistor	≤ 500 Ω
Adjustment tolerance zero point	≤ ± 10 % of full-scale value
Ambient temperature	-10 ... 70 °C (14 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67
Connection type	cable PVC, 2 m



Model Number

		IA8-30GM-I3	IA15-30GM-I3
Measurement range	3 ... 8 mm	●	
	5 ... 15 mm		●
Installation	flush	●	
	non-flush		●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

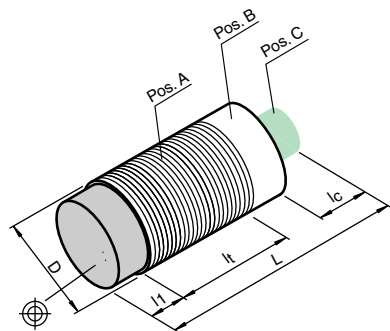
Dimensions

Length L [mm]	60
Diameter D [mm]	M30 x 1.5
Thread length l _t [mm]	60
Cap length l ₁ [mm]	0
Connector length l _c [mm]	0
LED position	-

Accessories

These and more accessories can be found in chapter 10

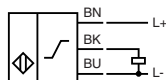
BF 30	See pages from 970 ... for cordsets	See pages 1066 ... for mounting accessories
AB-30	Mounting bracket, 30 mm	
DA5-IU-C	Right angled mounting bracket	
	Digital display unit	



Electrical Connection



IA15-30GM-I3
IA8-30GM-I3





Properties

- Ø6.5 mm smooth barrel
- 2 mm and 6 mm sensing ranges
- DC, 3-wire switching output
- Connector version

Benefits

- Same sensing range for all metals

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	PNP	NO
Type of voltage	DC	
Operating voltage	10 ... 30 V	
No-load supply current	≤ 15 mA	
Reverse polarity protection	✓	
Load current	0 ... 100 mA	
Short-circuit protection	✓, self checking	
Switching state indication	Multihole-LED, yellow	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	
Housing material	Stainless steel 1.4305 / AISI 303	
Protection degree	IP67	
Connection type	Connector M8 x 1, 3-pin	



Model Number

Rated operating distance	2 mm 6 mm
Installation	flush non-flush
Switching frequency	0 ... 1000 Hz 0 ... 400 Hz

NRB2-6,5S50-E2-V3

NRN6-6,5S50-E2-V3

Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Length L [mm]	59
Diameter D [mm]	6.5 / 8
Cap length l ₁ [mm]	0
Connector length l _c [mm]	6
LED position	Pos. C

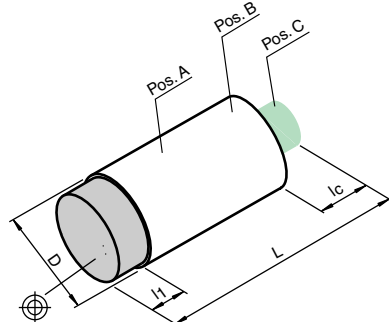
Note: 6.5 / 8 indicated: barrel diameter / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

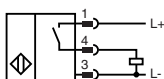
BF 6,5	Mounting bracket, 6.5 mm
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight



Electrical Connection



NRB2-6,5S50-E2-V3
NRN6-6,5S50-E2-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Properties

- Ø8 mm housing
- 2 mm and 6 mm sensing ranges
- DC, 3-wire switching output
- Connector versions

Benefits

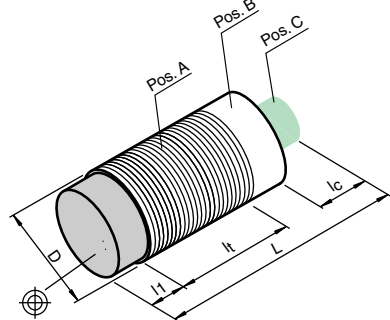
- Same sensing range for all metals

Additional Products

In this series, we offer the following additional products:

NRB1,5-8GM40-E2-V1

Technical data like NRB2-8GS40-E2-V1 but:
Rated operating distance: 1.5 mm
Switching frequency: 0 ... 800 Hz
Housing material: brass, nickel-plated



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	PNP	NO
Type of voltage	DC	
Operating voltage	10 ... 30 V	
No-load supply current	≤ 15 mA	
Reverse polarity protection	✓	
Load current	0 ... 100 mA	
Short-circuit protection	✓, self checking	
Switching state indication	Multihole-LED, yellow	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	
Housing material	Stainless steel 1.4305 / AISI 303	
Protection degree	IP67	

Model Number

		NRB2-8GS50-E2-V3	NRN6-8GS50-E2-V3	NRB2-8GS40-E2-V1	NRN6-8GS40-E2-V1
Rated operating distance	2 mm	●	●	●	●
	6 mm	●	●	●	●
Installation	flush	●	●	●	●
	non-flush	●	●	●	●
Switching frequency	0 ... 1000 Hz	●	●	●	●
	0 ... 400 Hz	●	●	●	●
Connection type	Connector M12 x 1, 4-pin	●	●	●	●
	Connector M8 x 1, 3-pin	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	●	●	●	●

Dimensions

Length L [mm]	59	65
Diameter D [mm]	M8 x 1	M8 x 1 / 12
Thread length l_t [mm]	50	45
Cap length l_1 [mm]	0	5
Connector length l_c [mm]	6	6
LED position	Pos. C	Pos. C

Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

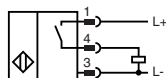
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 8	Mounting bracket, 8 mm
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight

Electrical Connection

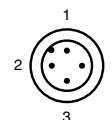


NRB2-8GS40-E2-V1
NRB2-8GS50-E2-V3
NRN6-8GS40-E2-V1
NRN6-8GS50-E2-V3
NRB1,5-8GM40-E2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	BU	(blue)
4	BK	(black)



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

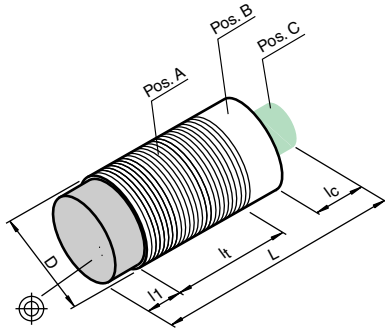


Properties

- Ø12 mm housing
- 4 mm and 10 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Connector version

Benefits

- Same sensing range for all metals



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	DC
Operating voltage	10 ... 30 V
Load current	0 ... 200 mA
Reverse polarity protection	✓
Short-circuit protection	✓, self checking
Switching state indication	Multihole-LED, yellow
Protection degree	IP67
Connection type	Connector M12 x 1, 4-pin



Model Number

		NRB4-12GM40-E2-V1	NRB4-12GS40-E2-V1	NRB4-12GS40-A2-V1	NRN10-12GM40-E2-V1	NRN10-12GS40-E2-V1	NRN10-12GS40-A2-V1
Rated operating distance	4 mm	•	•	•	•	•	•
	10 mm						
Installation	flush	•	•	•	•	•	•
	non-flush						
Output type	PNP NO/NC			•			
	PNP NO	•	•		•	•	•
No-load supply current	≤ 13 mA	•	•		•	•	•
	≤ 15 mA			•			•
Switching frequency	0 ... 1000 Hz	•	•	•	•	•	•
	0 ... 2000 Hz						
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	•	•	•			
	-25 ... 85 °C (-13 ... 185 °F)				•	•	•
Housing material	Stainless steel 1.4305 / AISI 303		•	•		•	•
	brass, nickel-plated	•			•		•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V						

Dimensions

Length L [mm]	55
Diameter D [mm]	M12 x 1
Thread length l _t [mm]	39
Cap length l ₁ [mm]	0
Connector length l _c [mm]	15
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

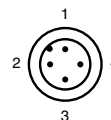
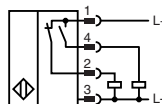
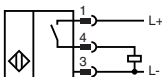
BF 12	Mounting bracket, 12 mm
AB-12	Right angled mounting bracket
MH01-M12	Mounting aid for M12 threaded sensors
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

Electrical Connection



NRB4-12GS40-E2-V1
NRB4-12GM40-E2-V1
NRN10-12GS40-E2-V1
NRN10-12GM40-E2-V1

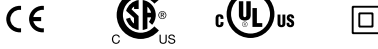
NRB4-12GS40-A2-V1
NRN10-12GS40-A2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Ø18 mm housing
- Up to 15 mm sensing ranges
- DC, 3-wire switching output
- Connector version

Benefits

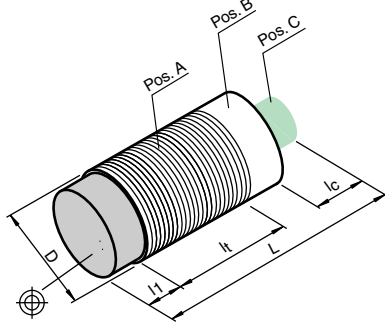
- Same sensing range for all metals

Additional Products

In this series, we offer the following additional products:

NRB8-18GM50-E2-V1

Technical data like NRB8-18GS50-E2-V1 but:
Housing material: brass, nickel-plated



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	DC
Operating voltage	10 ... 30 V
Reverse polarity protection	✓
Short-circuit protection	✓, self checking
Switching state indication	Multihole-LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67
Connection type	Connector M12 x 1, 4-pin



Model Number

		NRB8-18GS40-E2-V1	NRB8-18GS50-E2-V1	NRB12-18GS40-E2-V1	NRN15-18GS40-E2-V1	NRN15-18GS50-E2-V1	NRN15-18GS50-E3-V1
Rated operating distance	8 mm	●	●				
	12 mm			●			
	15 mm				●	●	●
Installation	flush	●	●				
	non-flush				●	●	●
	quasi-flush			●			
Output type	PNP NO	●	●	●	●	●	
	PNP NC						●
No-load supply current	≤ 15 mA	●	●		●	●	●
	≤ 28 mA			●			
Switching frequency	0 ... 500 Hz				●	●	●
	0 ... 600 Hz	●	●	●			
Load current	0 ... 100 mA				●		
	0 ... 200 mA	●	●	●		●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V						

Dimensions

Length L [mm]	55	65	55	55	65	65
Diameter D [mm]	M18 x 1					
Thread length l _t [mm]	40	50	40	30	40	40
Cap length l ₁ [mm]		0			10	
Connector length l _c [mm]	15					
LED position	Pos. C					

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

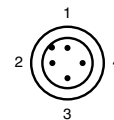
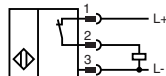
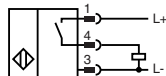
BF 18	Mounting bracket, 18 mm
AB-18	Right angled mounting bracket
MH01-M18	Mounting aid for M18 threaded sensors
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

Electrical Connection



NRB12-18GS40-E2-V1
NRB8-18GS40-E2-V1
NRN15-18GS40-E2-V1
NRN15-18GS50-E2-V1
NRB8-18GS50-E2-V1
NRB8-18GM50-E2-V1

NRN15-18GS50-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø30 mm housing
- 15 mm and 30 mm sensing ranges
- DC, 3-wire switching output
- Connector version

Benefits

- Same sensing range for all metals

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Type of voltage	DC
Operating voltage	10 ... 30 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Switching state indication	Multihole-LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Connection type	Connector M12 x 1, 4-pin



Model Number

		NRB15-30GM50-E2-V1	NRB15-30GS50-E2-V1	NRB15-30GS50-E3-V1	NRN30-30GM50-E2-V1	NRN30-30GS50-E2-V1	NRN30-30GS50-E3-V1
Rated operating distance	15 mm	●	●	●	●	●	●
	30 mm						
Installation	flush	●	●	●	●	●	●
	non-flush						
Output type	PNP NO	●	●	●	●	●	●
	PNP NC						
Switching frequency	0 ... 300 Hz						
	0 ... 750 Hz	●	●	●	●	●	●
Housing material	stainless steel 1.4301						
	Stainless steel 1.4305 / AISI 303		●	●			
	brass, nickel-plated	●			●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V						

Dimensions

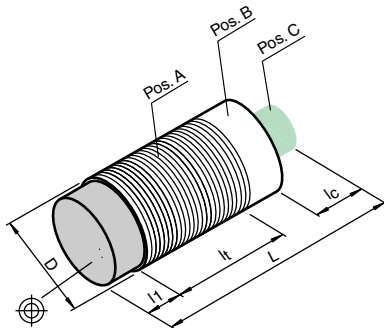
Length L [mm]		65
Diameter D [mm]		M30 x 1.5
Thread length l _t [mm]	50	32
Cap length l ₁ [mm]	0	18
Connector length l _c [mm]		15
LED position		Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket
MH01-M30	Mounting aid for M30 threaded sensors
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight

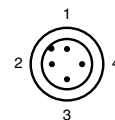
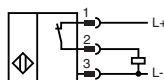
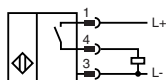


Electrical Connection



NRB15-30GS50-E2-V1
NRB15-30GM50-E2-V1
NRN30-30GS50-E2-V1
NRN30-30GM50-E2-V1

NRB15-30GS50-E3-V1
NRN30-30GS50-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



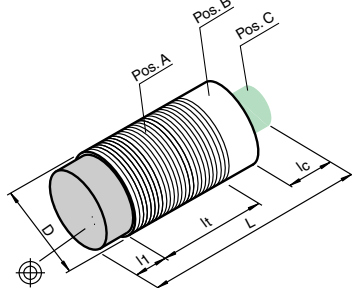


Properties

- Ø8 mm housing with stainless steel barrel and sensing face
- 1.5 mm sensing range
- DC, 3-wire switching output
- Cable and pigtailed connector versions

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Reduced maintenance and troubleshooting increases machine uptime
- 100% embeddable in steel



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Target	ferrous
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Switching state indication	LED, red
Switching frequency	80 Hz
Load current	≤ 100 mA
Short-circuit protection	✓
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

Output type	NPN	NO	PNP	NO
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	-25 ... 75 °C (-13 ... 167 °F)		
Connection type	cable PUR, 2 m	Cable connector M12 x 1, 3-pin with PUR cable 150 mm	Cable connector M8 x 1, 3-pin with PUR cable 150 mm	

Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V

Dimensions

Length L [mm]	35	52	35
Diameter D [mm]		M8 x 1	
Thread length l _t [mm]	25	40	25
l ₁ [mm]		0	
Connector length l _c [mm]	0	12	10
LED position	Pos. C	Pos. B	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G-BK2M-PUR-U

V3-GM-BK2M-PUR-U

V1-W-BK2M-PUR-U

V3-WM-BK2M-PUR-U

Female cordset, M12, 4-pin, PUR cable, straight

Female cordset, M8, 3-pin, PUR cable, straight

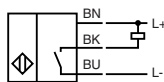
Female cordset, M12, 4-pin, PUR cable, angled

Female cordset, M8, 3-pin, PUR cable, angled

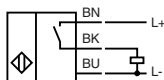
Electrical Connection



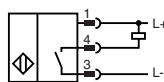
NMB1,5-8GM35-E0-FE
NMB1,5-8GM50-E0-FE



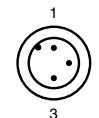
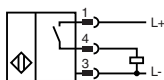
NMB1,5-8GM35-E2-FE
NMB1,5-8GM50-E2-FE



NMB1,5-8GM35-E0-FE-150MM-V1
NMB1,5-8GM35-E0-FE-150MM-V3



NMB1,5-8GM35-E2-FE-150MM-V1
NMB1,5-8GM35-E2-FE-150MM-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)

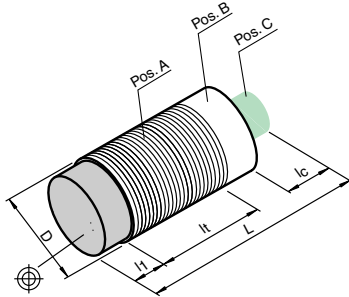


Properties

- Ø8 mm housing with stainless steel barrel and sensing face
- 1.5 mm sensing range
- DC, 3-wire switching output
- Connector version

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Reduced maintenance and troubleshooting increases machine uptime
- 100% embeddable in steel



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Target	ferrous
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Switching state indication	LED, red
Switching frequency	80 Hz
Load current	≤ 100 mA
Short-circuit protection	✓
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

Output type	NPN	NO
	PNP	NO
Connection type	Connector M12 x 1, 4-pin	
	Connector M8 x 1, 3-pin	

NMB1,5-8GM50-E0-FE-V3	NMB1,5-8GM50-E2-FE-V3	NMB1,5-8GM65-E0-FE-V3	NMB1,5-8GM65-E2-FE-V3	NMB1,5-8GM50-E0-FE-V1	NMB1,5-8GM50-E2-FE-V1	NMB1,5-8GM65-E0-FE-V1	NMB1,5-8GM65-E2-FE-V1
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•
•	•	•	•	•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	•	•	•	•	•	•	•	•

Dimensions

Length L [mm]	50	65	50	65
Diameter D [mm]	M8 x 1			
Thread length l _t [mm]	25	40	25	40
l ₁ [mm]	0			
Connector length l _c [mm]	25			
LED position	Pos. B			

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

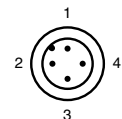
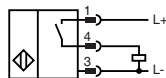
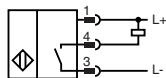
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled

Electrical Connection



NMB1,5-8GM50-E0-FE-V1
NMB1,5-8GM50-E0-FE-V3
NMB1,5-8GM65-E0-FE-V1
NMB1,5-8GM65-E0-FE-V3

NMB1,5-8GM50-E2-FE-V1
NMB1,5-8GM50-E2-FE-V3
NMB1,5-8GM65-E2-FE-V1
NMB1,5-8GM65-E2-FE-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

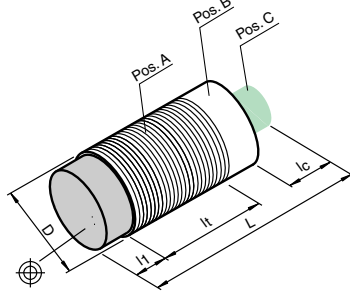


Properties

- Ø12 mm housing with stainless steel barrel and sensing face
- 2 mm and 5 mm extended sensing ranges
- DC, 2-wire switching output
- Connector version

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Extended sensing range means fewer sensor/target impacts
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	6 ... 30 V DC
Reverse polarity protection	✓
Switching state indication	LED, yellow
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard
Connection type	Connector M12 x 1, 4-pin



Model Number

		NMB2-12GM75-Z0-FE-V1	NMB2-12GM75-Z3-FE-V1	NMB5-12GM65-Z9-V1
Rated operating distance	2 mm	●	●	●
	5 mm	●	●	●
Installation	flush	●	●	●
Target	ferrous	●	●	●
	ferrous and non-ferrous	●	●	●
Output type	DC NO	●	●	●
	PNP NO	●	●	●
Switching frequency	250 Hz	●	●	●
	50 Hz	●	●	●
Load current	2 ... 100 mA	●	●	●
	2 ... 200 mA	●	●	●
Short-circuit protection	✓, self checking	●	●	●
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	●	●	●
	-40 ... 70 °C (-40 ... 158 °F)	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	●	●	●

Dimensions

Length L [mm]	75	65
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	52	42
l ₁ [mm]	2	
Connector length l _c [mm]	21	15
LED position	Pos. B	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-12

Right angled mounting bracket

V1-G-BK2M-PUR-U

Female cordset, M12, 4-pin, PUR cable, straight

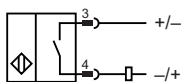
V1-W-BK2M-PUR-U

Female cordset, M12, 4-pin, PUR cable, angled

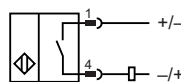
Electrical Connection



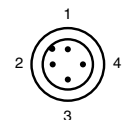
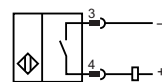
NMB2-12GM75-Z0-FE-V1



NMB2-12GM75-Z3-FE-V1



NMB5-12GM65-Z9-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



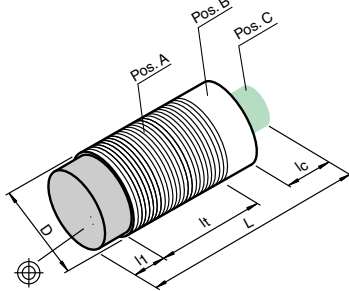


Properties

- Ø12 mm housing with stainless steel barrel and sensing face
- 5 mm extended sensing range
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Extended sensing range means fewer sensor/target impacts
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	5 mm
Installation	flush
Target	ferrous and non-ferrous
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 360 Hz
Load current	≤ 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303

Model Number

			NMB5-12GM55-E0	NMB5-12GM55-E2	NMB5-12GM65-E0-V1	NMB5-12GM65-E2-V1	NMB5-12GM65-E3-V1
Output type	NPN	NO	•		•		
	PNP	NO		•		•	
	PNP	NC					•
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard				•	•	•
	IP69K		•	•			
Connection type	Connector M12 x 1, 4-pin				•	•	•
	cable PUR, 2 m		•	•			

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V					

Dimensions

Length L [mm]	55	65
Diameter D [mm]		M12 x 1
Thread length l _t [mm]	45	42
l ₁ [mm]		2
Connector length l _c [mm]	0	15
LED position		Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-12

V1-G-BK2M-PUR-U

V1-W-BK2M-PUR-U

Right angled mounting bracket

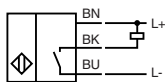
Female cordset, M12, 4-pin, PUR cable, straight

Female cordset, M12, 4-pin, PUR cable, angled

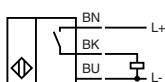
Electrical Connection



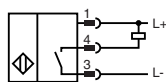
NMB5-12GM55-E0



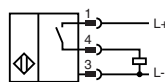
NMB5-12GM55-E2



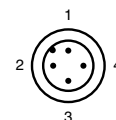
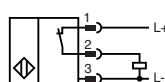
NMB5-12GM65-E0-V1



NMB5-12GM65-E2-V1



NMB5-12GM65-E3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

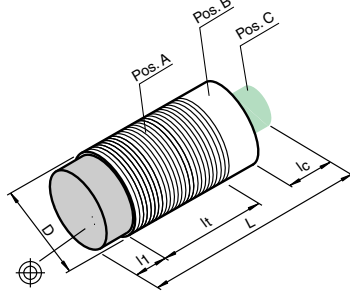


Properties

- Ø12 mm housing
- 2 mm sensing range
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Reduced maintenance and troubleshooting increases machine uptime
- NFE series for full-range detection of non-ferrous metals



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Load current	≤ 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303

Model Number

		NMB2-12GM55-E0-FE	NMB2-12GM55-E2-FE	NMB2-12GM65-E0-FE-V1	NMB2-12GM65-E2-FE-V1	NMB2-12GM65-E3-FE-V1	NMB2-12GM65-E0-NFE-V1	NMB2-12GM65-E2-NFE-V1
Target	ferrous	●	●	●	●	●	●	●
	non-ferrous							
Output type	NPN NO	●		●			●	
	PNP NC					●		
	PNP NO		●		●			●
Switching frequency	0 ... 100 Hz	●	●	●	●	●		
	0 ... 15 Hz						●	●
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard			●	●	●	●	●
	IP69K	●	●					
Connection type	2 m PUR cable	●	●					
	Connector M12 x 1, 4-pin			●	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V							

Dimensions

Length L [mm]	55	65
Diameter D [mm]		M12 x 1
Thread length l ₁ [mm]	45	44
l ₁ [mm]	2	0
Connector length l _c [mm]	8	21
LED position	Pos. B	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-12

V1-G-BK2M-PUR-U

V1-W-BK2M-PUR-U

Right angled mounting bracket

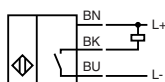
Female cordset, M12, 4-pin, PUR cable, straight

Female cordset, M12, 4-pin, PUR cable, angled

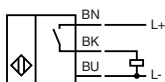
Electrical Connection



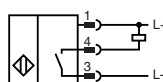
NMB2-12GM55-E0-FE



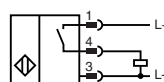
NMB2-12GM55-E2-FE



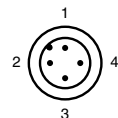
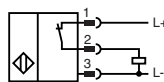
NMB2-12GM65-E0-FE-V1
NMB2-12GM65-E0-NFE-V1



NMB2-12GM65-E2-FE-V1
NMB2-12GM65-E2-NFE-V1



NMB2-12GM65-E3-FE-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
SENSING YOUR NEEDS

1
1.1

Proximity Sensors, Inductive Sensors, cylindrical

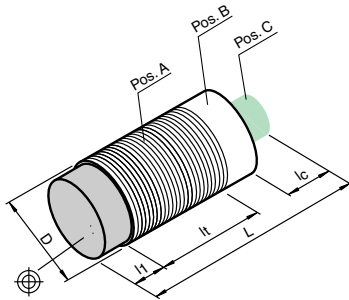


Properties

- Ø12 mm housing with stainless steel barrel and sensing face
- 2 mm sensing range
- AC/DC, 2-wire switching output
- Cable and connector versions

Benefits

- Compatible with 120 and 220 VAC supplies
- Wear-proof housing outlasts plastic-face sensors by 20X
- *Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush
Target	ferrous
Operating voltage	20 ... 300 V DC 20 ... 250 V AC
Output type	AC/DC NO
Reverse polarity protection	✓
Switching frequency	30 Hz
Load current	8 ... 200 mA
Short-circuit protection	✓
Power indication	LED, green
Switching state indication	LED, yellow
short circuit / overload indication	LED green / yellow alternating
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

Connection type	Connector 1/2"-20 UN , 3-pin Cable PUR , 2 m
-----------------	---

NMB2-12GM80-US-FE

NMB2-12GM85-US-FE-V12



Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Certified by China Compulsory Certification (CCC)

Dimensions

Length L [mm]	80	85
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	70	67
l ₁ [mm]	2	
Connector length l _c [mm]	8	16
LED position	Pos. A	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-12

V12-G-YE2M-PVC

V12-W-YE5M-PVC

Right angled mounting bracket

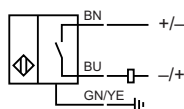
Female cordset, 1/2" - 20 UNF, 3-pin, PVC cable, straight

Female cordset, 1/2" - 20 UNF, 3-pin, PVC cable, angled

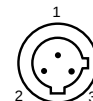
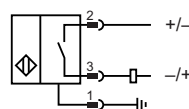
Electrical Connection



NMB2-12GM80-US-FE



NMB2-12GM85-US-FE-V12



Wire colors

1	GN (green)
2	RD/BK (red/black)
3	RD/WH (red/white)

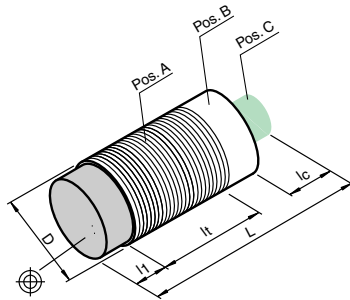


Properties

- Ø18 mm housing with stainless steel barrel and sensing face
- 5 mm sensing range
- DC, 2-wire switching output
- Connector version

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Reduced maintenance and troubleshooting increases machine uptime
- NFE series for full-range detection of non-ferrous metals



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	5 mm
Installation	flush
Output type	DC NO
Operating voltage	6 ... 30 V DC
Reverse polarity protection	✓
Load current	2 ... 100 mA
Switching state indication	LED, yellow
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard
Connection type	Connector M12 x 1, 4-pin



Model Number

		NMB5-18GM65-Z0-NFE-V1	NMB5-18GM65-Z0-FE-V1	NMB5-18GM65-Z3-FE-V1
Target	ferrous		●	●
	non-ferrous	●		
Switching frequency	15 Hz		●	●
	30 Hz	●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]	65
Diameter D [mm]	M18 x 1
Thread length l _t [mm]	40
l ₁ [mm]	2.5
Connector length l _c [mm]	15
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-18
V1-W-BK2M-PUR-U
V1-G-BK2M-PUR-U

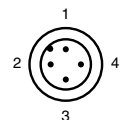
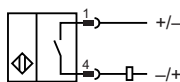
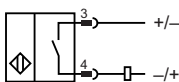
Right angled mounting bracket
 Female cordset, M12, 4-pin, PUR cable, angled
 Female cordset, M12, 4-pin, PUR cable, straight

Electrical Connection



NMB5-18GM65-Z0-FE-V1
 NMB5-18GM65-Z0-NFE-V1

NMB5-18GM65-Z3-FE-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NMB10-18GM65-Z4-V1 NMB10-18GM65-Z9-V1
Rated operating distance	10 mm
Installation	flush
Target	ferrous and non-ferrous
Output type	DC NO
Operating voltage	6 ... 30 V DC
Reverse polarity protection	✓
Switching frequency	200 Hz
Load current	2 ... 200 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard
Connection type	Connector M12 x 1, 4-pin



Properties

- Ø18 mm housing with stainless steel barrel and sensing face
- 10 mm extended sensing range
- DC, 2-wire switching output
- Connector version

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Extended sensing range means fewer sensor/target impacts
- Reduced maintenance and troubleshooting increases machine uptime

Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Length L [mm]	65
Diameter D [mm]	M18 x 1
Thread length l _t [mm]	40
l ₁ [mm]	2.5
Connector length l _c [mm]	15
LED position	Pos. C

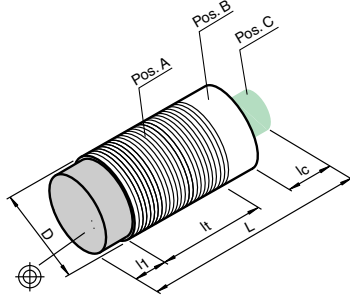
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-18
V1-G-BK2M-PUR-U
V1-W-BK2M-PUR-U

Right angled mounting bracket
Female cordset, M12, 4-pin, PUR cable, straight
Female cordset, M12, 4-pin, PUR cable, angled

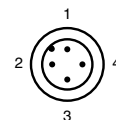
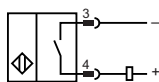
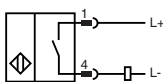


Electrical Connection



NMB10-18GM65-Z4-V1

NMB10-18GM65-Z9-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

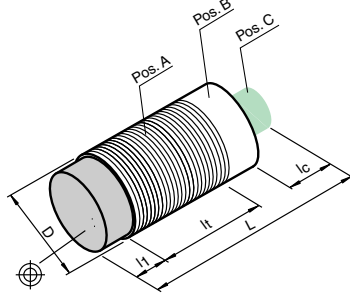


Properties

- Ø18 mm housing with stainless steel barrel and sensing face
- 10 mm extended sensing range
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Extended sensing range means fewer sensor/target impacts
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	10 mm
Installation	flush
Target	ferrous and non-ferrous
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 240 Hz
Load current	≤ 200 mA
Short-circuit protection	✓, self checking
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303

Model Number

			NMB10-18GM55-E0	NMB10-18GM55-E2	NMB10-18GM65-E0-V1	NMB10-18GM65-E2-V1	NMB10-18GM65-E3-V1	NMB10-18GM70-E2-V94
Output type	NPN	NO	•		•			
	PNP	NO		•		•		•
	PNP	NC					•	
Operating voltage display	LED, green		•	•	•	•	•	•
Switching state indication	LED, yellow		•	•	•	•	•	•
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard				•	•	•	•
	IP69K		•	•				
Connection type	Connector 7/8"-16 UN, 4-pin				•	•	•	•
	Connector M12 x 1, 4-pin							
	Cable PUR, 2 m		•	•				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V							

Dimensions

Length L [mm]		55	65	70
Diameter D [mm]			M18 x 1	
Thread length lt [mm]		44	40	38.5
l1 [mm]			2.5	
Connector length lc [mm]		0	15	21
LED position	Pos.:		C	A

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-18

Right angled mounting bracket

V1-G-BK2M-PUR-U

Female cordset, M12, 4-pin, PUR cable, straight

V1-W-BK2M-PUR-U

Female cordset, M12, 4-pin, PUR cable, angled

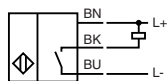
V94-W-YE2M-STOOW

Female cordset, 7/8" - 16 UNF, 4-pin, PVC cable, angled

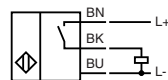
Electrical Connection



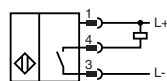
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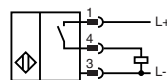
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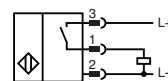
NMB10-18GM65-E0-V1



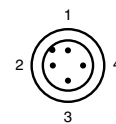
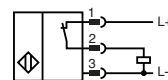
NMB10-18GM65-E2-V1



NMB10-18GM70-E2-V94



NMB10-18GM65-E3-V1



V1

Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



V94

Wire colors

1	BK	(black)
2	WH	(white)
3	RD	(red)
4	GN	(green)

Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
SENSING YOUR NEEDS

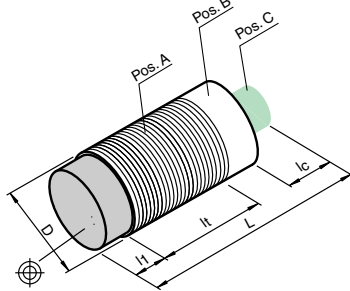


Properties

- Ø18 mm housing with stainless steel barrel and sensing face
- 5 mm sensing range
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Reduced maintenance and troubleshooting increases machine uptime
- NFE series for full-range detection of non-ferrous metals



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	5 mm
Installation	flush
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Short-circuit protection	✓
Power indication	LED, green
Switching state indication	LED, yellow
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303

Model Number

		NMB5-18GM55-E0-FE	NMB5-18GM55-E2-FE	NMB5-18GM65-E0-FE-V1	NMB5-18GM65-E2-FE-V1	NMB5-18GM65-E3-FE-V1	NMB5-18GM65-E2-NFE-V1	NMB5-18GM70-E2-FE-V94
Target	ferrous	●	●	●	●	●	●	●
	non-ferrous							
Output type	NPN NO	●		●				
	PNP NO		●		●		●	●
	PNP NC					●		
Switching frequency	0 ... 15 Hz	●	●	●	●	●	●	●
	0 ... 30 Hz						●	
Load current	≤ 100 mA		●					
	≤ 200 mA	●		●	●	●	●	●
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard			●	●	●	●	●
	IP69K	●	●					
Connection type	2 m PUR cable	●	●					
	7/8"-16 UN , 4-pin							●
	Connector M12 x 1 , 4-pin							

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V							

Dimensions

Length L [mm]		55	65	70
Diameter D [mm]			M18 x 1	
Thread length l _t [mm]		44	40	38.5
l ₁ [mm]			2.5	
Connector length l _c [mm]		8	15	21
LED position	Pos.:		C	A

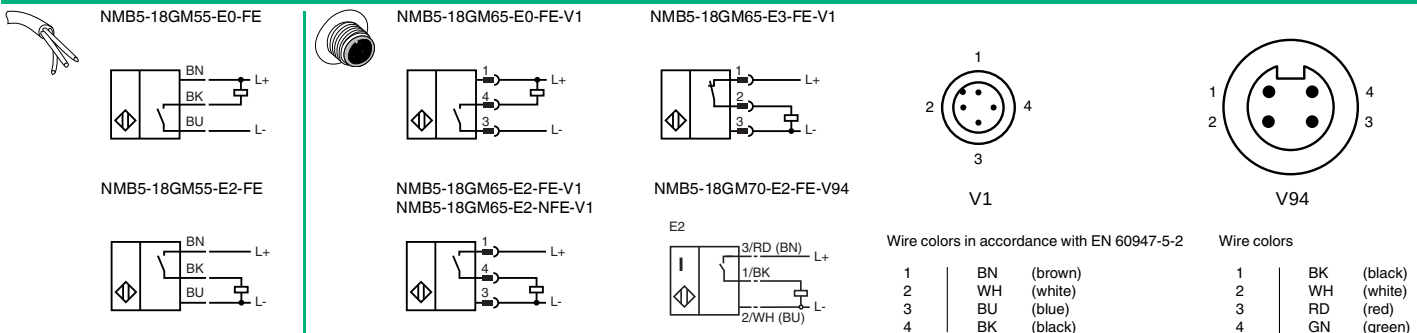
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-18	Right angled mounting bracket
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V94-G-YE2M-STOOW	Female cordset, 7/8" - 16 UNF, 4-pin, PVC cable, straight
V94-W-YE2M-STOOW	Female cordset, 7/8" - 16 UNF, 4-pin, PVC cable, angled

Electrical Connection





Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

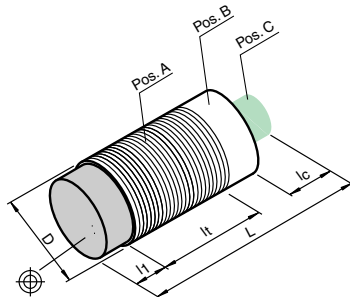
Rated operating distance	5 mm
Installation	flush
Target	ferrous
Operating voltage	20 ... 300 V DC 20 ... 250 V AC
Output type	AC/DC NO
Reverse polarity protection	✓
Switching frequency	15 Hz
Load current	8 ... 200 mA
Short-circuit protection	✓
Power indication	LED, green
Switching state indication	LED, yellow
short circuit / overload indication	LED green / yellow alternating
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Properties

- Ø18 mm housing with stainless steel barrel and sensing face
- 5 mm sensing range
- AC/DC, 2-wire switching output
- Cable and connector versions

Benefits

- Compatible with 120 and 220 VAC supplies
- Wear-proof housing outlasts plastic-face sensors by 20X
- Reduced maintenance and troubleshooting increases machine uptime



Model Number

	NMB5-18GM80-US-FE	NMB5-18GM85-US-FE-V12	NMB5-18GM85-US-FE-V93
Connection type	Connector 1/2"-20 UN, 3-pin Connector 7/8"-16 UN, 3-pin cable PUR, 2 m		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•
CCC approval	Certified by China Compulsory Certification (CCC)	•	•	•

Dimensions

Length L [mm]	80	90
Diameter D [mm]	M18 x 1	
Thread length l _t [mm]	72.5	77.5
l ₁ [mm]	2.5	
Connector length l _c [mm]	5	20
LED position	Pos. C	Pos. A

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-18

V12-G-YE2M-PUR-H/S

V93-G-YE2M-STOOW

Right angled mounting bracket

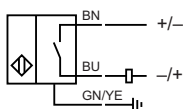
Female cordset, 1/2" - 20 UNF, 3-pin, irradiated PUR cable, straight

Female cordset, 7/8" - 16 UNF, 3-pin, PUR cable, straight

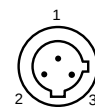
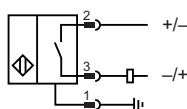
Electrical Connection



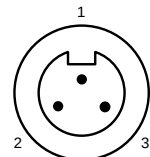
NMB5-18GM80-US-FE



NMB5-18GM85-US-FE-V12
NMB5-18GM85-US-FE-V93



V12



V93

Wire colors

1	GN (green)
2	RD/BK (red/black)
3	RD/WH (red/white)

Wire colors

1	GN (green)
2	BK (black)
3	WH (white)

Refer to General Notes Relating to Product Information

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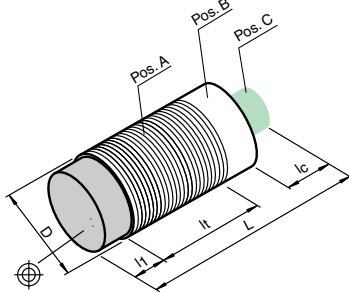


Properties

- Ø30 mm housing with stainless steel barrel and sensing face
- 8 mm and 15 mm extended sensing ranges
- DC, 2-wire switching output
- Connector version

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Extended sensing range means fewer sensor/target impacts
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Output type	DC NO
Operating voltage	6 ... 30 V DC
Reverse polarity protection	✓
Load current	2 ... 100 mA
Switching state indication	LED, yellow
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard
Connection type	Connector M12 x 1, 4-pin



Model Number

		NMB8-30GM65-Z0-FE-V1	NMB15-30GM65-Z4-V1	NMB15-30GM65-Z9-V1
Target	ferrous	•		
	ferrous and non-ferrous		•	•
Rated operating distance	15 mm		•	•
	8 mm	•		
Switching frequency	0 ... 10 Hz	•		
	0 ... 150 Hz		•	•
Short-circuit protection	✓		•	•
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F)	•		
	0 ... 70 °C (32 ... 158 °F)		•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]	65
Diameter D [mm]	M30 x 1.5
Thread length l _t [mm]	37
l ₁ [mm]	2.5
Connector length l _c [mm]	15
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-30

AB-30-L3M-C

Right angled mounting bracket

V1-W-BK2M-PUR-U

Right angle mounting bracket for "Cube" (L2M) housing retrofits

V1-G-BK2M-PUR-U

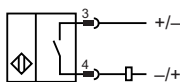
Female cordset, M12, 4-pin, PUR cable, angled

Female cordset, M12, 4-pin, PUR cable, straight

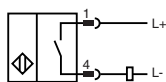
Electrical Connection



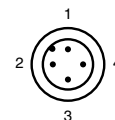
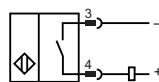
NMB8-30GM65-Z0-FE-V1



NMB15-30GM65-Z4-V1



NMB15-30GM65-Z9-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

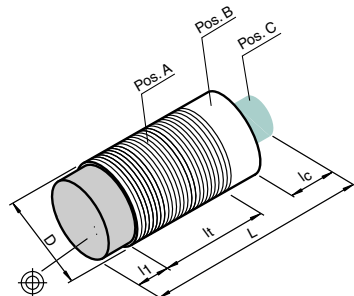


Properties

- Ø30 mm housing with stainless steel barrel and sensing face
- 15 mm extended sensing range
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Extended sensing range means fewer sensor/target impacts
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	flush
Target	ferrous and non-ferrous
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 150 Hz
Load current	≤ 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303

Model Number

			NMB15-30GM55-E0	NMB15-30GM55-E2	NMB15-30GM65-E0-V1	NMB15-30GM65-E2-V1
Output type	NPN	NO	●		●	
	PNP	NO		●		●
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard				●	●
	IP69K		●	●		
Connection type	Connector M12 x 1, 4-pin cable PUR, 2 m		●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	55	65
Diameter D [mm]	M30 x 1.5	
Thread length l _t [mm]	42	37
l ₁ [mm]	2.5	
Connector length l _c [mm]	0	15
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-30

AB-30-L3M-C

V1-G-BK2M-PUR-U

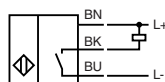
V1-W-BK2M-PUR-U

- Right angled mounting bracket
- Right angle mounting bracket for "Cube" (L2M) housing retrofits
- Female cordset, M12, 4-pin, PUR cable, straight
- Female cordset, M12, 4-pin, PUR cable, angled

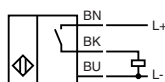
Electrical Connection



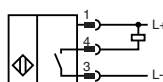
NMB15-30GM55-E0



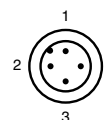
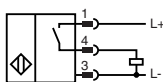
NMB15-30GM55-E2



NMB15-30GM65-E0-V1



NMB15-30GM65-E2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



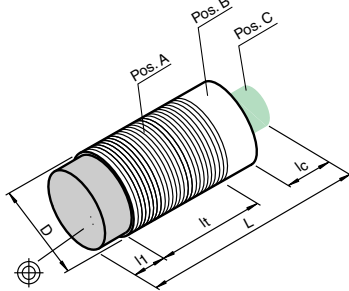


Properties

- Ø30 mm housing with stainless steel barrel and sensing face
- 8 mm sensing range
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Reduced maintenance and troubleshooting increases machine uptime
- NFE series for full-range detection of non-ferrous metals



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	8 mm
Installation	flush
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 10 Hz
Load current	≤ 200 mA
Short-circuit protection	✓
Power indication	LED green
Switching state indication	LED yellow
Ambient temperature	-40 ... 70 °C (-40 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303

Model Number

		NMB8-30GM55-E0-FE	NMB8-30GM55-E2-FE	NMB8-30GM65-E0-FE-V1	NMB8-30GM65-E2-FE-V1	NMB8-30GM65-E2-NFE-V1
Target	ferrous	●	●	●	●	●
	non-ferrous					●
Output type	NPN	●		●		
	PNP		●		●	●
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard			●	●	●
Connection type	Connector M12 x 1, 4-pin	●	●	●	●	●
	cable PUR, 2 m	●	●			



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V					

Dimensions

Length L [mm]	55	65
Diameter D [mm]	M30 x 1.5	
Thread length l _t [mm]	42	37
l ₁ [mm]	2.5	
Connector length l _c [mm]	0	15
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

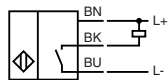
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-30	Right angled mounting bracket
AB-30-L3M-C	Right angle mounting bracket for "Cube" (L2M) housing retrofits
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight

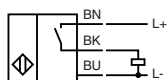
Electrical Connection



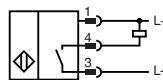
NMB8-30GM55-E0-FE



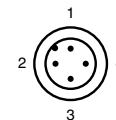
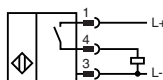
NMB8-30GM55-E2-FE



NMB8-30GM65-E0-FE-V1



NMB8-30GM65-E2-FE-V1
NMB8-30GM65-E2-NFE-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

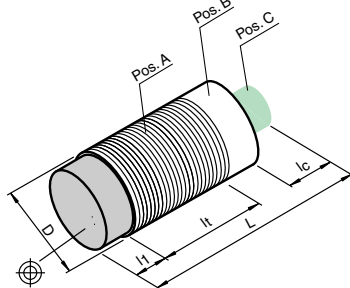


Properties

- Ø30 mm housing with stainless steel barrel and sensing face
- 8 mm sensing range
- AC/DC, 2-wire switching output
- Cable and connector versions

Benefits

- Compatible with 120 and 220 VAC supplies
- Wear-proof housing outlasts plastic-face sensors by 20X
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	8 mm
Installation	flush
Target	ferrous
Operating voltage	20 ... 300 V DC 20 ... 250 V AC
Output type	AC/DC NO
Reverse polarity protection	✓, polarity independent
Switching frequency	10 Hz
Load current	8 ... 200 mA
Short-circuit protection	✓
Power indication	LED, green
Switching state indication	LED, yellow
short circuit / overload indication	LED green / yellow alternating
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

Connection type	Connector 1/2"-20 UN , 3-pin Connector 7/8"-16 UN , 3-pin cable PVC , 2 m	NMB8-30GM80-US-FE	NMB8-30GM85-US-FE-V12	NMB8-30GM85-US-FE-V93
		●	●	●



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●

Dimensions

Length L [mm]	80	90
Diameter D [mm]	M30 x 1.5	
Thread length l _t [mm]	67.5	63.5
l ₁ [mm]	2.5	
Connector length l _c [mm]	10	20
LED position	Pos. C	9 Pos. A

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-30

AB-30-L3M-C

V12-W-YE2M-PVC

V93-G-YE2M-STOOW

Right angled mounting bracket

Right angle mounting bracket for "Cube" (L2M) housing retrofits

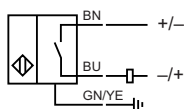
Female cordset, 1/2" - 20 UNF, 3-pin, PVC cable, angled

Female cordset, 7/8" - 16 UNF, 3-pin, PUR cable, straight

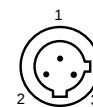
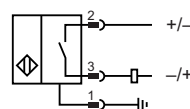
Electrical Connection



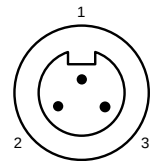
NMB8-30GM80-US-FE



NMB8-30GM85-US-FE-V12
NMB8-30GM85-US-FE-V93



V12



V93

Wire colors

1	GN (green)
2	RD/BK (red/black)
3	RD/WH (red/white)

Wire colors

1	GN (green)
2	BK (black)
3	WH (white)

Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
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Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NMB1,5-8GM23-Z0-C-FE-850MM-V1 NMB1,5-8GM23-Z3-C-FE-850MM-V1
metal face	✓
Rated operating distance	1.5 mm
Installation	flush
Switching element function	DC NO
Operating voltage	6 ... 30 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 5 Hz
Load current	2 ... 100 mA
Short-circuit protection	✓, self checking
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	250 mT
Indication of the switching state	LED, red
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PTFE coated - Stainless steel 1.4305 / AISI 303
Protection degree	IP67
Connection type	Cable connector M12 x 1, 4-pin with TPE Cable, 850 mm



Properties

- Miniature Ø8 mm x 23 mm head
- 1.5 mm sensing range
- DC, 2-wire switching output
- Stainless steel barrel and sensing face with spatter immune coating
- Pigtailed connector version

Benefits

- Miniature design excellent for small parts welding
- Wear-proof housing outlasts plastic-face sensors by 20X
- Immune to electromagnetic weld fields
- Reduced maintenance and troubleshooting increases machine uptime

Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Amplifier length L [mm]	40
Amplifier diameter D [mm]	12
Amplifier thread length l _t [mm]	28
Head length L ₁ [mm]	23
Head diameter D ₁ [mm]	M8 x 1
Head thread length [mm]	15
Connector area l _c [mm]	0
LED position	Pos. C

Accessories

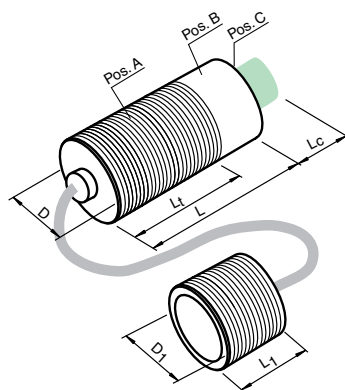
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G-OR2M-POC

Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

Note: Devices with an ...-FE in the model number are suitable only in combination with ferrous targets.

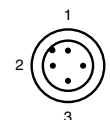
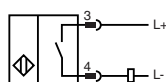
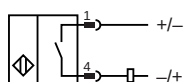


Electrical Connection



NMB1,5-8GM23-Z3-C-FE-850MM-V1

NMB1,5-8GM23-Z0-C-FE-850MM-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

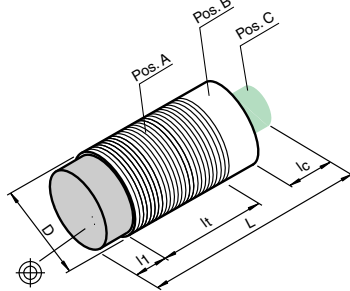


Properties

- Ø8 mm housing
- 1.5 mm sensing range
- DC, 3-wire switching output
- Stainless steel barrel and sensing face with spatter immune coating
- Connector and pigtailed connector versions

Benefits

- Miniature design excellent for small parts welding
- Wear-proof housing outlasts plastic-face sensors by 20X
- Immune to electromagnetic weld fields
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

metal face	✓
Rated operating distance	1.5 mm
Installation	flush
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Load current	≤ 100 mA
Switching frequency	0 ... 5 Hz
Short-circuit protection	✓, self checking
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	250 mT
Switching state indication	LED, red
Ambient temperature	-25 ... 75 °C (-13 ... 167 °F)
Housing material	stainless steel 1.4305 / AISI 303, black PTFE coated
Protection degree	IP67

Model Number

		NMB1,5-8GM35-E2-C-FE-150MM-V3		NMB1,5-8GM35-E2-C-FE-150MM-V1		NMB1,5-8GM50-E0-C-FE-V1		NMB1,5-8GM50-E2-C-FE-V1	
Output type	NPN	NO	•	•	•	•	•	•	•
	PNP	NO							
Connection type	Connector M12 x 1, 4-pin								
	Cable connector M12 x 1, 3-pin with PVC Cable, 150 mm			•					
	Cable connector M8 x 1, 3-pin with PVC Cable, 150 mm		•						

Note: Devices with an ...FE in the model number are suitable only in combination with ferrous targets.

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	35	50
Diameter D [mm]	M8 x 1	M8 x 1 / 12
Thread length l _t [mm]	25	
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	6
LED position	Pos. C	Pos. B

Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V3-GM-OR5M-POC

Female cordset, M8, 3-pin, TPE cable, welding-bead resistant, straight

V1-G-OR2M-POC

Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

V3-WM-OR5M-POC

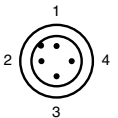
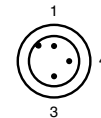
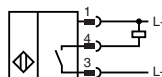
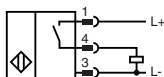
Female cordset, M8, 3-pin, TPE cable, welding-bead resistant, angled

Electrical Connection



NMB1,5-8GM35-E2-C-FE-150MM-V1
NMB1,5-8GM35-E2-C-FE-150MM-V3
NMB1,5-8GM50-E2-C-FE-V1

NMB1,5-8GM50-E0-C-FE-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



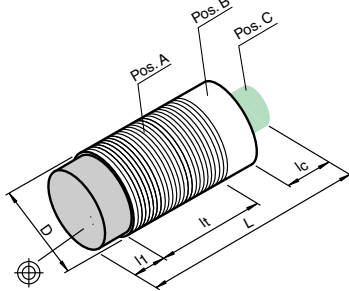


Properties

- Ø8 mm housing
- 3 mm extended sensing range
- DC, 3-wire switching output
- Stainless steel barrel and sensing face with spatter immune coating
- Connector and pigtailed connector versions

Benefits

- Miniature design excellent for small parts welding
- Wear-proof housing outlasts plastic-face sensors by 20X
- Immune to electromagnetic weld fields
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

metal face	✓
Rated operating distance	3 mm
Installation	flush
Output type	PNP NO contact
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 5 Hz
Load current	0 ... 100 mA
Short-circuit protection	✓, self checking
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	250 mT
Switching state indication	LED, red
Ambient temperature	-25 ... 75 °C (-13 ... 167 °F)
Housing material	PTFE coated - Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

Connection type	Connector M12 x 1, 4-pin	Connector M12 x 1, 4-pin	Connector M12 x 1, 4-pin
Cable connector M12 x 1, PVC cable jacket: 150 mm	•	•	•
Cable connector M8 x 1, PVC cable jacket: 150 mm	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	•	•	•

Dimensions

Length L [mm]	35	50
Diameter D [mm]	M8 x 1	M8 x 1 / 12
Thread length l _t [mm]	25	
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	6
LED position	Pos. C	Pos. B

Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

V3-GM-OR5M-POC

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

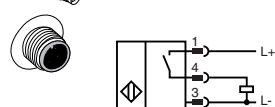
V1-G-OR2M-POC

Female cordset, M8, 3-pin, TPE cable, welding-bead resistant, straight

Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

Electrical Connection

NMB3-8GM35-E2-C-150MM-V1
NMB3-8GM35-E2-C-150MM-V3
NMB3-8GM50-E2-C-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø8 mm housing
- Up to 6 mm sensing ranges
- DC, 3-wire switching output
- Connector version

Benefits

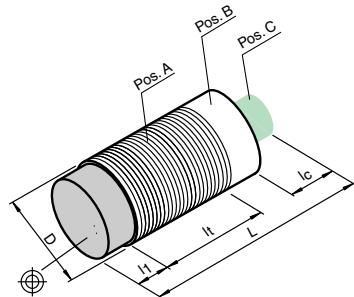
- Specially optimized for welding applications
- Weld slag resistance coated housing
- Reduction factor 1 (NRB/NRN type), all metal sensing at same distance

Additional Products

In this series, we offer the following additional products:

NBB1,5-8GM40-E2-C-V3

Technical data like NRB1,5-8GM40-E2-C-V1 but:
Connection type: Connector M8 x 1, 3-pin



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	PNP	NO
Type of voltage	DC	
Operating voltage	10 ... 30 V DC	
Reverse polarity protection	✓	
Load current	0 ... 100 mA	
Short-circuit protection	✓, self checking	
Switching state indication	LED, yellow	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	
Housing material	Brass, PTFE coated	
Protection degree	IP67	
Connection type	Connector M12 x 1, 4-pin	



Model Number

Reduction factor 1

Rated operating distance

1.5 mm

2 mm

3 mm

6 mm

Installation

flush

non-flush

Switching frequency

0 ... 50 Hz

0 ... 400 Hz

0 ... 800 Hz

0 ... 1000 Hz

0 ... 1800 Hz

Mag. Field strength, AC fields

100 mT

200 mT

Mag. Field strength, DC fields

200 mT

	NBB1,5-8GM30-E2-C-V1	NRB1,5-8GM40-E2-C-V1	NRB2-8GM40-E2-C-V1	NBN3-8GM30-E2-C-V1	NRN6-8GM40-E2-C-V1
Reduction factor 1	•	•	•	•	•
Rated operating distance	•	•	•	•	•
Installation	•	•	•	•	•
Switching frequency	•	•	•	•	•
Mag. Field strength, AC fields	•	•	•	•	•
Mag. Field strength, DC fields	•	•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	•	•	•	•	•
Dimensions						
Length L [mm]	60	65	65	60	65	
Diameter D [mm]						M8 x 1 / 12
Thread length l _t [mm]	30	40	40	31	35	
Cap length l ₁ [mm]	0	0	0	4	5	
Connector length l _c [mm]						6
LED position						Pos. B

Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 8

EXG-08

V1-G-OR2M-POC

V1-W-OR2M-POC

Mounting bracket, 8 mm

Quick mounting bracket with stop

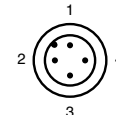
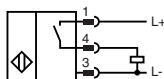
Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, angled

Electrical Connection



NBB1,5-8GM40-E2-C-V1
NBB1,5-8GM30-E2-C-V1
NBB1,5-8GM40-E2-C-V3
NBN3-8GM30-E2-C-V1
NRB2-8GM40-E2-C-V1
NRN6-8GM40-E2-C-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



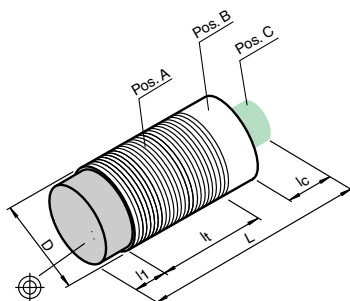


Properties

- Ø12 mm housing
- 2 mm sensing range
- Ferrous targets
- DC, 2-wire switching output
- Stainless steel barrel and sensing face w/spatter immune coating
- Connector and pigtailed connector versions

Benefits

- Short barrel design excellent for compact welding areas
- Wear-proof housing outlasts plastic-face sensors by 20X
- Immune to electromagnetic weld fields
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

metal face	✓
Rated operating distance	2 mm
Installation	flush
Output type	DC NO
Operating voltage	6 ... 30 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 5 Hz
Load current	2 ... 100 mA
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	250 mT
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PTFE coated - Stainless steel 1.4305 / AISI 303
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard

Model Number

		NMB2-12GM40-Z0-C-FE-300MM-V1	NMB2-12GM40-Z3-C-FE-300MM-V1	NMB2-12GM75-Z0-C-FE-V1
Switching state indication	LED, red Multihole-LED, yellow	●	●	●
Connection type	300 mm POC cable with 3-pin, M12 x 1 connector Connector M12 x 1, 4-pin	●	●	●

Note: Devices with an ...FE in the model number are suitable only in combination with ferrous targets.

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]	40	75
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	28	52
Cap length l ₁ [mm]	0	2
Connector length l _c [mm]	0	15
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

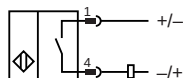
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V1-G-OR2M-POC	Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

Electrical Connection

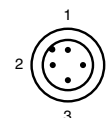
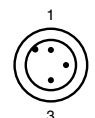
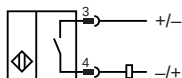


NMB2-12GM40-Z3-C-FE-300MM-V1



NMB2-12GM40-Z0-C-FE-300MM-V1

NMB2-12GM75-Z0-C-FE-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

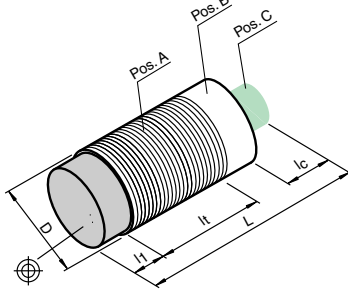


Properties

- Ø12 mm housing
- 2 mm and 5 mm sensing ranges
- DC, 3-wire switching output
- Stainless steel barrel and sensing face w/spatter immune coating
- Connector versions

Benefits

- Extended sensing range means fewer sensor-target impacts
- Wear-proof housing outlasts plastic-face sensors by 20X
- Immune to electromagnetic weld fields
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

metal face	✓
Installation	flush
Output type	PNP NO
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 5 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	250 mT
Operating voltage display	LED, green
Switching state indication	Multihole-LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PTFE coated - Stainless steel 1.4305 / AISI 303
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard
Connection type	Connector M12 x 1, 4-pin



Model Number

		NMB2-12GM65-E2-C-FE-V1	NMB5-12GM65-E2-C-V1
Rated operating distance	2 mm	●	●
	5 mm		

Note: Devices with an ...FE in the model number are suitable only in combination with ferrous targets.

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

Length L [mm]	65
Diameter D [mm]	M12 x 1
Thread length l _t [mm]	42
Cap length l ₁ [mm]	2
Connector length l _c [mm]	15 19
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-12

MH01-M12

V1-G-OR2M-POC

Right angled mounting bracket

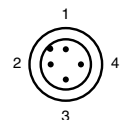
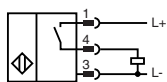
Mounting bracket M12 - 1/2" rod type

Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

Electrical Connection



NMB2-12GM65-E2-C-FE-V1
NMB5-12GM65-E2-C-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



1
1.1

Properties

- Ø12 mm housing
- Up to 10 mm sensing ranges
- DC, 3-wire switching output
- Connector version

Benefits

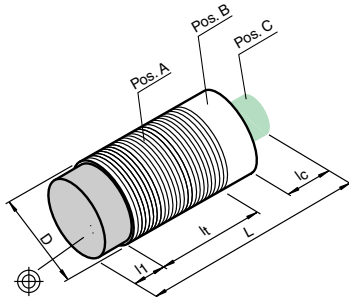
- Specially optimized for welding applications
- Weld slag resistance coated housing
- Reduction factor 1 (NRB/NRN type), all metal sensing at same distance

Additional Products

In this series, we offer the following additional products:

NBB2-12GM50-E0-C-V1

Technical data like NBB2-12GM50-E2-C-V1 but:
Output type: NPN, NO



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	PNP	NO
Type of voltage	DC	
Operating voltage	10 ... 30 V DC	
Reverse polarity protection	✓	
Load current	0 ... 200 mA	
Short-circuit protection	✓, self checking	
Mag. Field strength, AC fields	200 mT	
Mag. Field strength, DC fields	200 mT	
Switching state indication	LED, yellow	
Housing material	Brass, PTFE coated	
Protection degree	IP67	
Connection type	Connector M12 x 1, 4-pin	



Model Number

Reduction factor 1

Rated operating distance	10 mm
	2 mm
	3 mm
	4 mm

Installation	flush
	non-flush

Switching frequency	0 ... 200 Hz
	0 ... 1000 Hz
	0 ... 1200 Hz
	0 ... 1500 Hz
	0 ... 2000 Hz

Operating voltage display	LED, green
---------------------------	------------

Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
	-25 ... 85 °C (-13 ... 185 °F)

Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Length L [mm]	60	65	65	65	55	65	55
Diameter D [mm]	M12 x 1						
Thread length l _t [mm]	45	49	49	52	39	41	31
Cap length l ₁ [mm]	0						
Connector length l _c [mm]	15						
LED position	Pos. C						

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12

EXG-12

AB-12

MH01-M12

V1-G-OR2M-POC

V1-W-OR2M-POC

Mounting bracket, 12 mm

Quick mounting bracket with stop

Right angled mounting bracket

Mounting bracket M12 - 1/2" rod type

Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

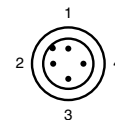
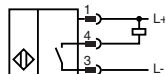
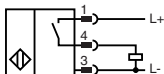
Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, angled

Electrical Connection



NBN4-12GM50-E2-C-V1
NRB2-12GM45-E2-C-V1
NRB3-12GM50-E2-C-V1
NBB2-12GM50-E2-C-V1
NRB4-12GM40-E2-C-V1
NRN10-12GM40-E2-C-V1
NBB2-12GM50-E2-C3-V1

NBB2-12GM50-E0-C-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø12 mm housing
- 2 mm sensing range
- Ferrous targets
- AC/DC, 2-wire switching output
- Stainless steel barrel and sensing face w/spatter immune coating
- Connector version

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Immune to electromagnetic weld fields
- Reduced maintenance and troubleshooting increases machine uptime

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NMB2-12GM85-US-C-FE-V12
metal face	✓
Rated operating distance	2 mm
Installation	flush
Operating voltage	20 ... 300 V DC 20 ... 250 V AC
Output type	AC/DC NO
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 30 Hz
Load current	8 ... 200 mA
Short-circuit protection	✓, self checking
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	250 mT
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PTFE coated - Stainless steel 1.4305 / AISI 303
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard
Connection type	Connector 1/2"-20 UN , 3-pin



Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Certified by China Compulsory Certification (CCC)

Dimensions

Length L [mm]	85
Diameter D [mm]	M12 x 1
Thread length l _t [mm]	67
Cap length l ₁ [mm]	2
Connector length l _c [mm]	16
LED position	Pos. A

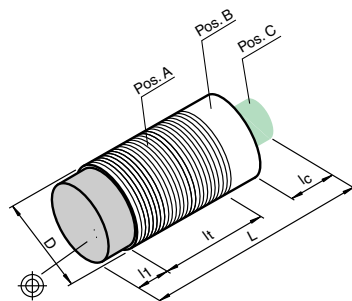
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

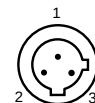
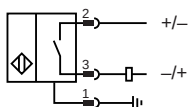
AB-12	Right angled mounting bracket
MH01-M12	Mounting bracket M12 - 1/2" rod type
V12-G-YE2M-PVC	Female cordset, 1/2" - 20 UNF, 3-pin, PVC cable, straight
V12-W-YE5M-PVC	Female cordset, 1/2" - 20 UNF, 3-pin, PVC cable, angled

Note: Devices with an ...-FE in the model number are suitable only in combination with ferrous targets.



Electrical Connection

NMB2-12GM85-US-C-FE-V12



Wire colors

1	GN (green)
2	RD/BK (red/black)
3	RD/WH (red/white)



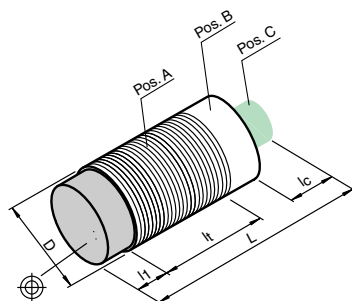


Properties

- Ø18 mm housing
- 5 mm sensing range
- Ferrous targets
- DC, 2-wire switching output
- Stainless steel barrel and sensing face w/spatter immune coating
- Pigtailed connector version with burn-proof POC cable jacket

Benefits

- Pigtail design excellent for compact welding areas
- Wear-proof housing outlasts plastic-face sensors by 20X
- Immune to electromagnetic weld fields
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NMB5-18GM55-Z0-C-FE-300MM-V1 NMB5-18GM55-Z3-C-FE-300MM-V1
metal face	✓
Rated operating distance	5 mm
Installation	flush
Output type	DC NO
Operating voltage	6 ... 30 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 5 Hz
Load current	2 ... 100 mA
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	250 mT
Switching state indication	LED, red
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PTFE coated - Stainless steel 1.4305 / AISI 303
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard
Connection type	300 mm POC cable with 3-pin, M12 x 1 connector



Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Length L [mm]	55
Diameter D [mm]	M18 x 1
Thread length l _t [mm]	44.5
Cap length l _c [mm]	2.5
Connector length l _c [mm]	0
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-18	Right angled mounting bracket
MH01-M18	Mounting bracket M18 - 1/2" rod type
V1-G-OR2M-POC	Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

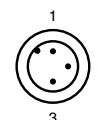
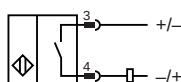
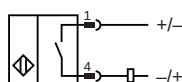
Note: Devices with an ...-FE in the model number are suitable only in combination with ferrous targets.

Electrical Connection



NMB5-18GM55-Z3-C-FE-300MM-V1

NMB5-18GM55-Z0-C-FE-300MM-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

metal face	✓
Installation	flush
Output type	PNP NO
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 5 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	250 mT
Operating voltage display	LED, green
Switching state indication	Multihole-LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PTFE coated - Stainless steel 1.4305 / AISI 303
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard
Connection type	Connector M12 x 1, 4-pin

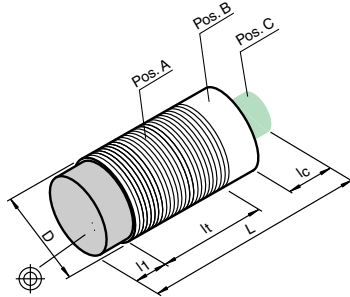


Properties

- Ø18 mm housing
- 5 mm and 10 mm sensing ranges
- DC, 3-wire switching output
- Stainless steel barrel and sensing face w/spatter immune coating
- Connector version

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Immune to electromagnetic weld fields
- Reduced maintenance and troubleshooting increases machine uptime



Model Number

		NMB5-18GM65-E2-C-FE-V1	NMB10-18GM65-E2-C-V1
Rated operating distance	10 mm	●	●
	5 mm	●	●

Note: Devices with an ...FE in the model number are suitable only in combination with ferrous targets.

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

Length L [mm]	65
Diameter D [mm]	M18 x 1
Thread length l _t [mm]	39.5
Cap length l ₁ [mm]	2.5
Connector length l _c [mm]	15
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-18

MH01-M18

V1-G-OR2M-POC

Right angled mounting bracket

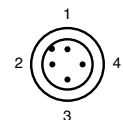
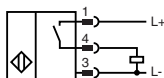
Mounting bracket M18 - 1/2" rod type

Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

Electrical Connection



NMB5-18GM65-E2-C-FE-V1
NMB10-18GM65-E2-C-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

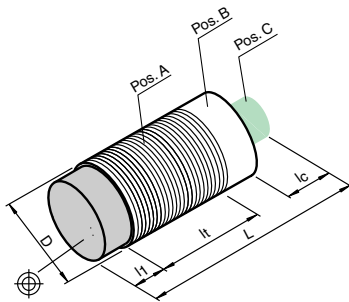


Properties

- Ø18 mm housing
- 5 mm and 8 mm sensing ranges
- DC, 3-wire switching output
- Connector version

Benefits

- Specially optimized for welding applications
- Weld slag resistance coated housing



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	PNP	NO
Type of voltage	DC	
Operating voltage	10 ... 30 V DC	
Reverse polarity protection	✓	
Load current	0 ... 200 mA	
Short-circuit protection	✓, self checking	
Mag. Field strength, AC fields	150 mT	
Mag. Field strength, DC fields	150 mT	
Switching state indication	Multihole-LED, yellow	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	
Housing material	Brass, PTFE coated	
Protection degree	IP67	
Connection type	Connector M12 x 1, 4-pin	



Model Number

		NBB5-18GM50-E2-C-V1	NBB5-18GM50-E2-C3-V1	NBN8-18GM50-E2-C-V1
Rated operating distance	5 mm	●	●	
	8 mm			●
Installation	flush	●	●	
	non-flush			●
Switching frequency	0 ... 500 Hz	●	●	●
	0 ... 800 Hz			●
Operating voltage display	LED, green		●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]	65	
Diameter D [mm]	M18 x 1	
Thread length l _t [mm]	50	40
Cap length l ₁ [mm]	0	10
Connector length l _c [mm]	15	
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

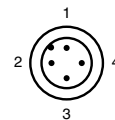
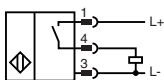
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18	Mounting bracket, 18 mm
EXG-18	Quick mounting bracket with stop
AB-18	Right angled mounting bracket
MH01-M18	Mounting bracket M18 - 1/2" rod type
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-OR2M-POC	Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight
V1-W-OR2M-POC	Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, angled

Electrical Connection



NBN8-18GM50-E2-C-V1
NBB5-18GM50-E2-C-V1
NBB5-18GM50-E2-C3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Reduction factor 1	✓
Output type	PNP NO
Type of voltage	DC
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 600 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Mag. Field strength, AC fields	200 mT
Mag. Field strength, DC fields	200 mT
Switching state indication	Multihole-LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Brass, PTFE coated
Protection degree	IP67
Connection type	Connector M12 x 1, 4-pin



Properties

- Ø18 mm housing
- Up to 12 mm sensing ranges
- DC, 3-wire switching output
- Connector version

Benefits

- Specially optimized for welding applications
- Same sensing range for all metals
- Weld slag resistance coated housing

Additional Products

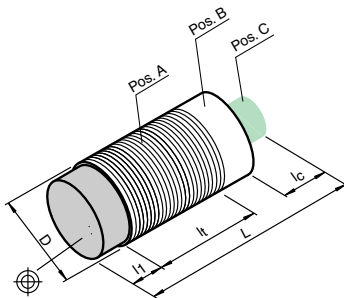
In this series, we offer the following additional products with increased sensing range:

NRB12-18GM40-E2-C-V1

Technical data like NRB8-18GM50-E2-C-V1 but:
Rated operating distance: 12 mm, quasi-flush

NRN15-18GM50-E2-C-V1

Technical data like NRN12-18GM50-E2-C-V1 but:
Rated operating distance: 15 mm



Model Number

	NRB5-18GM40-E2-C-V1	NRB5-18GM50-E2-C-V1	NRB8-18GM40-E2-C-V1	NRB8-18GM50-E2-C-V1	NRN8-18GM50-E2-C-V1	NRN12-18GM50-E2-C-V1
Rated operating distance	12 mm	5 mm	8 mm	8 mm	8 mm	8 mm
Installation	flush	flush	flush	flush	flush	flush
	non-flush	non-flush	non-flush	non-flush	non-flush	non-flush

Approvals and Certificates

UL approval	cULus Listed, General Purpose	✓	✓	✓	✓	✓
CSA approval	cCSAus Listed, General Purpose	✓	✓	✓	✓	✓
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	✓	✓	✓	✓	✓

Dimensions

Length L [mm]	55	65	55	65	65	65
Diameter D [mm]	M18 x 1					
Thread length l _t [mm]	40	50	40	50	40	40
Cap length l ₁ [mm]	0					
Connector length l _c [mm]	15					
LED position	Pos. C					

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18

AB-18

MH01-M18

V1-G

V1-W

V1-G-OR2M-POC

V1-W-OR2M-POC

Mounting bracket, 18 mm

Right angled mounting bracket

Mounting bracket M18 - 1/2" rod type

4-pin, M12 female field-attachable connector, straight

4-pin, M12 female field-attachable connector, angled

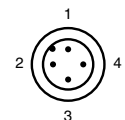
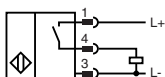
Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, angled

Electrical Connection



NRB5-18GM40-E2-C-V1
NRB5-18GM50-E2-C-V1
NRN12-18GM50-E2-C-V1
NRN8-18GM50-E2-C-V1
NRB12-18GM40-E2-C-V1
NRB8-18GM40-E2-C-V1
NRB8-18GM50-E2-C-V1
NRN15-18GM50-E2-C-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

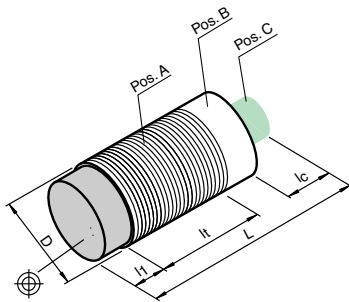


Properties

- Ø18 mm housing
- 5 mm sensing range
- Ferrous targets
- AC/DC, 2-wire switching output
- Stainless steel barrel and sensing face w/spatter immune coating
- Connector version

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Immune to electromagnetic weld fields
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

metal face	✓
Rated operating distance	5 mm
Installation	flush
Operation voltage	20 ... 300 V DC 20 ... 250 V AC
Output type	AC/DC NO
Reverse polarity protection	✓
Switching frequency	0 ... 5 Hz
Load current	8 ... 200 mA
Short-circuit protection	✓, self checking
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	250 mT
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PTFE coated - Stainless steel 1.4305 / AISI 303
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard

Model Number

Connection type	Connector 1/2"-20 UN , 3-pin Connector 7/8"-16 UN , 3-pin
-----------------	--

Note: Devices with an ...-FE in the model number are suitable only in combination with ferrous targets.

NMB5-18GM85-US-C-FE-V12

NMB5-18GM85-US-C-FE-V93



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●

Dimensions

Length L [mm]	90
Diameter D [mm]	M18 x 1
Thread length l _t [mm]	67.5
Cap length l ₁ [mm]	2.5
Connector length l _c [mm]	13 15
LED position	Pos. A

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-18

MH01-M18

V93-G-YE2M-STOOW

V12-G-YE2M-PUR-H/S

Right angled mounting bracket

Mounting bracket M18 - 1/2" rod type

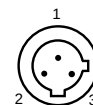
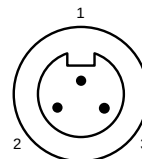
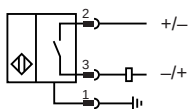
Female cordset, 7/8" - 16 UNF, 3-pin, PUR cable, straight

Female cordset, 1/2" - 20 UNF, 3-pin, irradiated PUR cable, straight

Electrical Connection



NMB5-18GM85-US-C-FE-V12
NMB5-18GM85-US-C-FE-V93



Wire colors

1	GN	(green)
2	BK	(black)
3	WH	(white)

Wire colors

1	GN	(green)
2	RD/BK	(red/black)
3	RD/WH	(red/white)

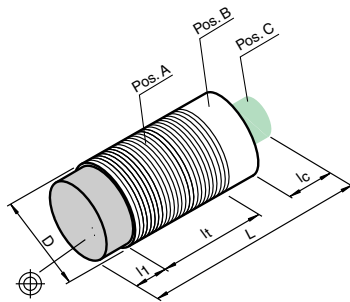


Properties

- Ø30 mm housing
- 8 mm sensing range
- Ferrous targets
- DC, 2-wire switching output
- Stainless steel barrel and sensing face w/spatter immune coating
- Pigtailed connector version with burn-proof POC cable jacket

Benefits

- Pigtail design excellent for compact welding areas
- Wear-proof housing outlasts plastic-face sensors by 20X
- Immune to electromagnetic weld fields
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NMB8-30GM55-Z0-C-FE-300MM-V1 NMB8-30GM55-Z3-C-FE-300MM-V1
metal face	✓
Rated operating distance	8 mm
Installation	flush
Output type	DC NO
Operating voltage	6 ... 30 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 5 Hz
Load current	≤ 200 mA
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	250 mT
Switching state indication	LED, red
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PTFE coated - Stainless steel 1.4305 / AISI 303
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard
Connection type	300 mm POC cable with 3-pin , M12 x 1 connector



Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Length L [mm]	55
Diameter D [mm]	M30 x 1.5
Thread length l_t [mm]	42.5
Cap length l_1 [mm]	2.5
Connector length l_c [mm]	0
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-30-L3M-C	Right angle mounting bracket for "Cube" (L2M) housing retrofits
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V1-G-OR2M-POC	Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

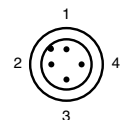
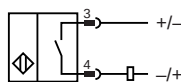
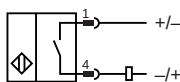
Note: Devices with an ...-FE in the model number are suitable only in combination with ferrous targets.

Electrical Connection



NMB8-30GM55-Z3-C-FE-300MM-V1

NMB8-30GM55-Z0-C-FE-300MM-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



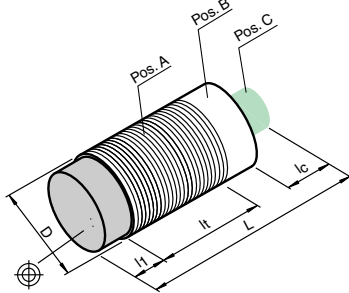


Properties

- Ø30 mm housing
- Up to 30 mm sensing ranges
- DC, 3-wire switching output
- Connector version

Benefits

- Specially optimized for welding applications
- Weld slag resistance coated housing
- Reduction factor 1 (NRB/NRN type), all metal sensing at same distance



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	PNP	NO
Type of voltage	DC	
Operating voltage	10 ... 30 V DC	
Reverse polarity protection	✓	
Load current	0 ... 200 mA	
Short-circuit protection	✓, self checking	
Switching state indication	Multihole-LED, yellow	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	
Housing material	Brass, PTFE coated	
Protection degree	IP67	
Connection type	Connector M12 x 1, 4-pin	



Model Number

		NBB10-30GM50-E2-C3-V1	NRB10-30GM50-E2-C-V1	NRB15-30GM50-E2-C-V1	NBN15-30GM50-E2-C-V1	NRN20-30GM50-E2-C-V1	NRN30-30GM50-E2-C-V1
Reduction factor 1			•	•		•	•
Rated operating distance	10 mm	•	•				
	15 mm			•	•		
	20 mm					•	
	30 mm						•
Installation	flush	•	•	•			
	non-flush				•	•	•
Switching frequency	0 ... 10 Hz	•			•		
	0 ... 300 Hz					•	•
	0 ... 750 Hz		•	•			
Mag. Field strength, AC fields	100 mT				•		
	150 mT	•					
	200 mT		•	•		•	•
Mag. Field strength, DC fields	100 mT				•		
	150 mT	•					
	200 mT		•	•		•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V						

Dimensions

Length L [mm]	65
Diameter D [mm]	M30 x 1.5
Thread length l _t [mm]	50 32
Cap length l ₁ [mm]	0 18
Connector length l _c [mm]	15
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

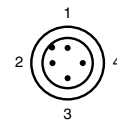
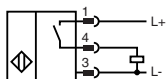
AB-30
MH01-M30
V1-G-OR2M-POC
V1-W-OR2M-POC

Right angled mounting bracket
Mounting bracket M30 - 1/2" rod type
Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight
Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, angled

Electrical Connection



NRB15-30GM50-E2-C-V1
NRN30-30GM50-E2-C-V1
NBB10-30GM50-E2-C3-V1
NBN15-30GM50-E2-C-V1
NRB10-30GM50-E2-C-V1
NRN20-30GM50-E2-C-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

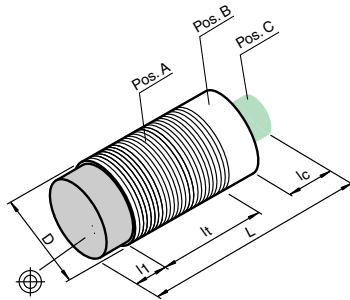


Properties

- Ø30 mm housing
- 8 mm and 15 mm sensing ranges
- DC, 3-wire switching output
- Stainless steel barrel and sensing face w/spatter immune coating
- Connector version

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Immune to electromagnetic weld fields
- Reduced maintenance and troubleshooting increases machine uptime



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

metal face	✓
Installation	flush
Output type	PNP NO
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Load current	≤ 200 mA
Short-circuit protection	✓, self checking
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	250 mT
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PTFE coated - Stainless steel 1.4305 / AISI 303
Protection degree	IP67 / IP68 / IP69K - cordset dependent according to cable Standard
Connection type	Connector M12 x 1, 4-pin



Model Number

Rated operating distance	15 mm		
	8 mm		
Switching frequency	0 ... 2 Hz		
	0 ... 5 Hz		

Note: Devices with an ...-FE in the model number are suitable only in combination with ferrous targets.

Approvals and Certificates

UL approval	cULus Listed, General Purpose		
CSA approval	cCSAus Listed, General Purpose		
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

Length L [mm]	65
Diameter D [mm]	M30 x 1.5
Thread length l_t [mm]	37.5
Cap length l_1 [mm]	2.5
Connector length l_c [mm]	15
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-30-L3M-C

AB-30

MH01-M30

V1-G-OR2M-POC

Right angle mounting bracket for "Cube" (L2M) housing retrofits

Right angled mounting bracket

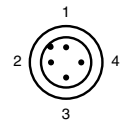
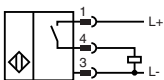
Mounting bracket M30 - 1/2" rod type

Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

Electrical Connection



NMB15-30GM65-E2-C-V1
NMB8-30GM65-E2-C-FE-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Ø30 mm housing
- 8 mm sensing range
- Ferrous targets
- AC/DC, 2-wire switching output
- Stainless steel barrel and sensing face w/spatter immune coating
- Connector version

Benefits

- Wear-proof housing outlasts plastic-face sensors by 20X
- Immune to electromagnetic weld fields
- Reduced maintenance and troubleshooting increases machine uptime

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NMB8-30GM85-US-C-FE-V93
metal face	✓
Rated operating distance	8 mm
Installation	flush
Operating voltage	20 ... 300 V DC 20 ... 250 V AC
Output type	AC/DC NO
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 10 Hz
Load current	8 ... 200 mA
Short-circuit protection	✓, self checking
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	250 mT
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PTFE coated - Stainless steel 1.4305 / AISI 303
Protection degree	IP67
Connection type	Connector 7/8"-16 UN , 3-pin



Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Certified by China Compulsory Certification (CCC)

Dimensions

Length L [mm]	90
Diameter D [mm]	M30 x 1.5
Thread length l _t [mm]	68.5
Cap length l ₁ [mm]	2.5
Connector length l _c [mm]	19
LED position	Pos. A

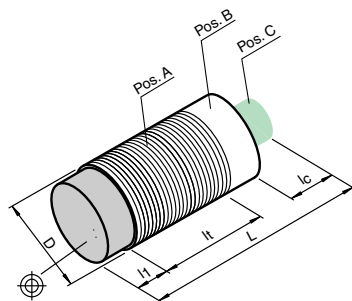
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-30-L3M-C	Right angle mounting bracket for "Cube" (L2M) housing retrofits
AB-30	Right angled mounting bracket
MH01-M30	Mounting bracket M30 - 1/2" rod type
V93-G-YE2M-STOOW	Female cordset, 7/8" - 16 UNF, 3-pin, PUR cable, straight

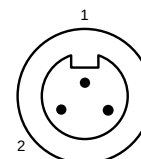
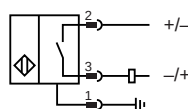
Note: Devices with an ...FE in the model number are suitable only in combination with ferrous targets.



Electrical Connection



NMB8-30GM85-US-C-FE-V93



Wire colors

1	GN	(green)
2	BK	(black)
3	WH	(white)

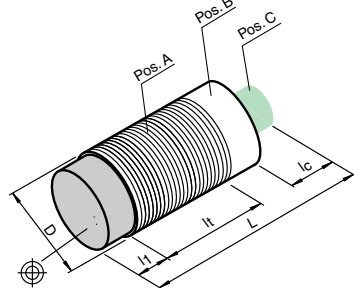


Properties

- Ø12 mm housing
- 4 mm sensing range
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- 100 V/m RF immunity
- Operational to -40 °C
- Heavy duty 18 AWG cable
- IP 69K / 1200 psi washdown rating



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	4 mm
Installation	flush
Type of voltage	DC
Operating voltage	10 ... 60 V
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Switching frequency	0 ... 800 Hz
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-40 ... 85 °C (-40 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP68 / IP69K

Model Number

Output type	NPN	NO	•	•	•	•	•	•
	NPN	NC	•	•	•	•	•	•
	PNP	NO	•	•	•	•	•	•
	PNP	NC	•	•	•	•	•	•
Connection type	Connector M12 x 1, 4-pin		•	•	•	•	•	•
	cable PUR, 2 m		•	•	•	•	•	•
	Cable connector Deutsch DT04, 3-pin with PUR cable 150 mm		•	•	•	•	•	•
			•	•	•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•
e1 Type approval	2006/28/EG	•	•	•	•	•	•	•

Dimensions

Length L [mm]	60	76
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	44	45
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	16	5
LED position	Pos. B	

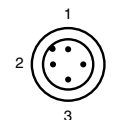
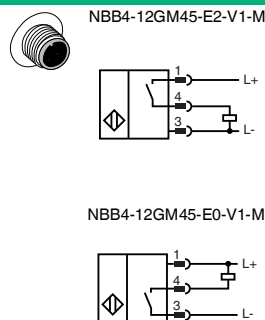
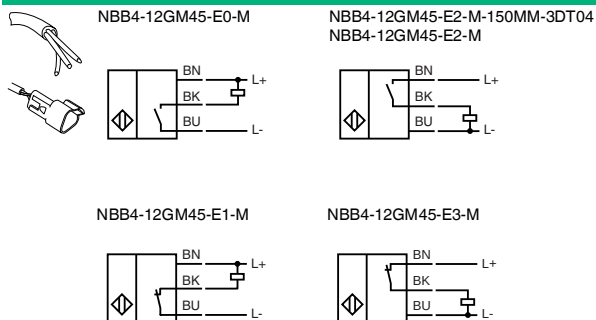
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

- V1-G** 4-pin, M12 female field-attachable connector, straight
- V1-W** 4-pin, M12 female field-attachable connector, angled
- V1-G-BK2M-PUR-U** Female cordset, M12, 4-pin, 2 m PUR cable, straight
- V1-W-BK2M-PUR-U** Female cordset, M12, 4-pin, 2 m PUR cable, angled

Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
SENSING YOUR NEEDS

1
.1.1

Proximity Sensors, Inductive Sensors, cylindrical



Properties

- Ø18 mm housing
- 8 mm sensing range
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- 100 V/m RF immunity
- Operational to -40 °C
- Heavy duty 18 AWG cable
- IP 69K / 1200 psi washdown rating

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	8 mm
Installation	flush
Type of voltage	DC
Operating voltage	5 ... 60 V
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 400 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-40 ... 85 °C (-40 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP68 / IP69K

Model Number

Output type	NPN	NO	•	•	•	•	•	•	•
	NPN	NC	•	•	•	•	•	•	•
Connection type	PNP	NO	•	•	•	•	•	•	•
	PNP	NC	•	•	•	•	•	•	•
Connection type	Connector M12 x 1, 4-pin		•	•	•	•	•	•	•
	cable POC, 2 m		•	•	•	•	•	•	•
Connection type	Cable connector Deutsch DT04, 3-pin with PUR cable 150 mm		•	•	•	•	•	•	•
			•	•	•	•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•
e1 Type approval	2006/28/EG	•	•	•	•	•	•	•	•

Dimensions

Length L [mm]	50	65	50
Diameter D [mm]		M18 x 1	
Thread length l _t [mm]	47	50	45
Cap length l ₁ [mm]		0	
Connector length l _c [mm]	0	15	0
LED position		Pos. C	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-W

V1-G

V1-G-BK2M-PUR-U

V1-W-BK2M-PUR-U

4-pin, M12 female field-attachable connector, angled

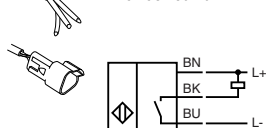
4-pin, M12 female field-attachable connector, straight

Female cordset, M12, 4-pin, 2 m PUR cable, straight

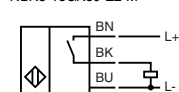
Female cordset, M12, 4-pin, 2 m PUR cable, angled

Electrical Connection

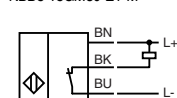
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NBB8-18GM50-E0-M



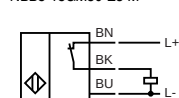
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NBB8-18GM50-E2-M
NBB8-18GM50-E2-M
NBB8-18GM50-E2-M



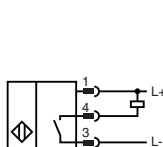
NBB8-18GM50-E1-M



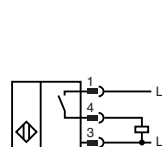
NBB8-18GM50-E3-M



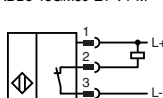
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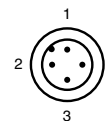
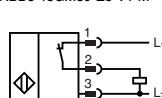
NBB8-18GM50-E2-V1-M



NBB8-18GM50-E1-V1-M



NBB8-18GM50-E3-V1-M



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



CE

e1

Properties

- Ø18 mm housing
- 12 mm sensing range
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- 100 V/m RF immunity
- Operational to -40 °C
- Heavy duty 18 AWG cable
- IP 69K / 1200 psi washdown rating

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	12 mm
Installation	non-flush
Type of voltage	DC
Operating voltage	5 ... 60 V
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 200 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Ambient temperature	-40 ... 85 °C (-40 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP68 / IP69K

Model Number

			NBN12-18GM50-E0-M	NBN12-18GM50-E2-M	NBN12-18GM50-E0-V1-M	NBN12-18GM50-E2-V1-M
Output type	NPN	NO	•		•	
	PNP	NO		•		•
Switching state indication	LED, yellow		•	•		
	Multihole-LED, yellow				•	•
Connection type	Connector M12 x 1, 4-pin				•	•
	cable PUR		•	•		

Approvals and Certificates

e1 Type approval	2004/104/EC					
	2006/28/EG		•	•	•	•

Dimensions

Length L [mm]	50	65
Diameter D [mm]	M18 x 1	
Thread length l _t [mm]	37	40
Cap length l ₁ [mm]	10	
Connector length l _c [mm]	0	15
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

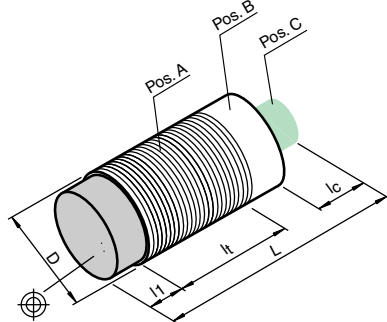
V1-W

V1-G

V1-G-BK2M-PUR-U

V1-W-BK2M-PUR-U

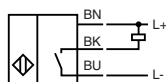
- 4-pin, M12 female field-attachable connector, angled
- 4-pin, M12 female field-attachable connector, straight
- Female cordset, M12, 4-pin, 2 m PUR cable, straight
- Female cordset, M12, 4-pin, 2 m PUR cable, angled



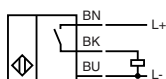
Electrical Connection



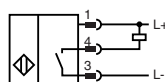
NBN12-18GM50-E0-M



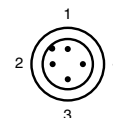
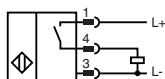
NBN12-18GM50-E2-M



NBN12-18GM50-E0-V1-M



NBN12-18GM50-E2-V1-M



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Ø30 mm housing
- 15 mm sensing range
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- 100 V/m RF immunity
- Operational to -40 °C
- Heavy duty 18 AWG cable
- IP 69K / 1200 psi washdown rating

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	flush
Type of voltage	DC
Operating voltage	5 ... 60 V
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 200 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-40 ... 85 °C (-40 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP68 / IP69K

Model Number

Output type	NPN	NO
	NPN	NC
	PNP	NO
	PNP	NC
Connection type	Connector M12 x 1, 4-pin	
	cable POC, 2 m	

NBB15-30GM50-E0-M
NBB15-30GM50-E1-M
NBB15-30GM50-E2-M
NBB15-30GM50-E3-M
NBB15-30GM50-E0-V1-M
NBB15-30GM50-E1-V1-M
NBB15-30GM50-E2-V1-M
NBB15-30GM50-E3-V1-M
NBB15-30GM50-E2-M-150MM-3DT04

Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
e1 Type approval	2006/28/EG

Dimensions

Length L [mm]	50	65	50
Diameter D [mm]	M30 x 1.5		
Thread length l _t [mm]	47	50	47
Cap length l ₁ [mm]	0		
Connector length l _c [mm]	0	15	0
LED position	Pos. C		

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-W

4-pin, M12 female field-attachable connector, angled

V1-G

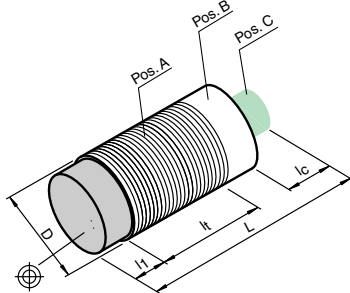
4-pin, M12 female field-attachable connector, straight

V1-G-BK2M-PUR-U

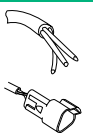
Female cordset, M12, 4-pin, 2 m PUR cable, straight

V1-W-BK2M-PUR-U

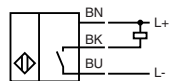
Female cordset, M12, 4-pin, 2 m PUR cable, angled



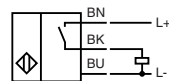
Electrical Connection



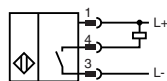
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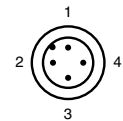
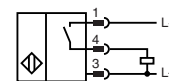
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NBB15-30GM50-E2-M-150MM-3DT04



NBB15-30GM50-E0-V1-M



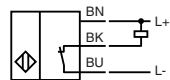
NBB15-30GM50-E2-V1-M



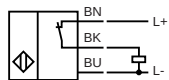
Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

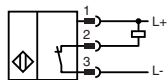
NBB15-30GM50-E1-M



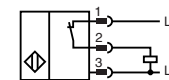
NBB15-30GM50-E3-M



NBB15-30GM50-E1-V1-M



NBB15-30GM50-E3-V1-M





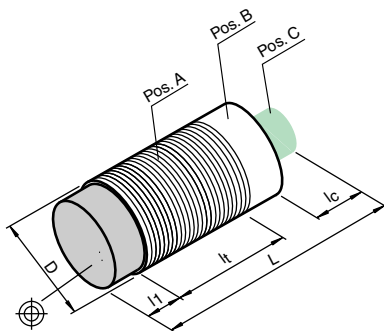
Properties

- Ø18 mm housing
- 5 mm and 8 mm sensing ranges
- NAMUR output
- Cable version

Benefits

- For use in high temperature applications
- Ex approval for use in hazardous area zone 0 and 1
- Intrinsically safe when connected to approved device

Application Note:
Reference appendix, data sheet, operating instructions, and appropriate standards.
To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Type of voltage	DC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Ambient temperature	-40 ... 150 °C (-40 ... 302 °F)
Housing material	PPS
Protection degree	IP65
Connection type	cable SIHF, 2 m



Model Number

		NJ5-18GK-N-150	NJ8-18GK-N-150
Rated operating distance	5 mm	●	
	8 mm		●
Installation	flush	●	
	non-flush		●
Switching frequency	0 ... 200 Hz		●
	0 ... 500 Hz	●	

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●
Category	1G; 2G	●	●

Approvals and Certificates

FM Control drawing	116-0165F	●	●
UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V		

Dimensions

Length L [mm]	47
Diameter D [mm]	M18 x 1
Thread length l_t [mm]	34.5
Cap length l_1 [mm]	1
Connector length l_c [mm]	7
LED position	-

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KCD2-SR-Ex2

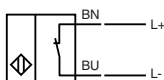
2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



NJ5-18GK-N-150
NJ8-18GK-N-150





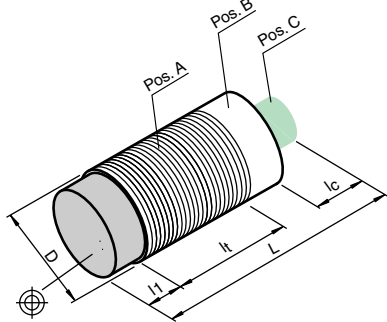
Properties

- Ø30 mm housing
- 4 mm and 15 mm sensing ranges
- NAMUR output
- Cable version

Benefits

- For use in high temperature applications
- Ex approval for use in hazardous area zone 0 and 1
- Intrinsically safe when connected to approved device
- FM Class and Division approvals

Application Note:
Reference appendix, data sheet, operating instructions, and appropriate standards.
To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Type of voltage	DC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Protection degree	IP65

Model Number

		NJ4-30GM-N-200	NJ15-30GK-N-150
Rated operating distance	15 mm		
	4 mm		
Installation	flush		
	non-flush		
Switching frequency	0 ... 100 Hz		
	0 ... 1000 Hz		
Suitable for 2:1 technology	✓		
Ambient temperature	-25 ... 150 °C (-13 ... 302 °F)		
	0 ... 200 °C (32 ... 392 °F)		
Housing material	Stainless steel 1.4305 / AISI 303		
	PPS		
Connection type	cable SIHF , 2 m		
	cable SIHF , 5 m		



Use in the Hazardous Area

Use in the hazardous area	see instruction manuals		
Category	1G; 2G		

Approvals and Certificates

FM Control drawing	116-0165F		
UL approval	cULus Listed, General Purpose		
CSA approval	cCSAus Listed, General Purpose		
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

Length L [mm]	75	47
Diameter D [mm]	M30 x 1.5	
Thread length l _t [mm]	50	40
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	15	7
LED position	-	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KCD2-SR-Ex2

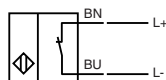
2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



NJ15-30GK-N-150
NJ4-30GM-N-200





Properties

- Ø12 mm housing
- 1.5 mm, flush mountable
- DC, 3-wire switching output
- Connector version

Benefits

- For high pressure applications

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Output type	PNP NO
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating pressure	500 bar (725 psi)
Peak pressure	800 bar (1160 psi)
Ambient temperature	-25 ... 80 °C (-13 ... 176 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Ceramic
Protection degree	IP68
Connection type	Connector M12 x 1, 4-pin



Model Number

	NCB1,5-12GM40-E2-D-V1	NCB1,5-12GM45-E2-D-V1	NCB1,5-12GM60-E2-D-V1	NCB1,5-12GM70-E2-D-V1	NCB1,5-12GM85-E2-D-V1
Switching frequency	0 ... 2000 Hz	0 ... 2000 Hz	0 ... 2000 Hz	0 ... 2000 Hz	0 ... 2000 Hz
	0 ... 600 Hz	0 ... 600 Hz	0 ... 600 Hz	0 ... 600 Hz	0 ... 600 Hz

Approvals and Certificates

UL approval	cULus Listed, General Purpose	✓	✓	✓	✓
CSA approval	cCSAus Listed, General Purpose	✓	✓	✓	✓
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	✓	✓	✓	✓

Dimensions

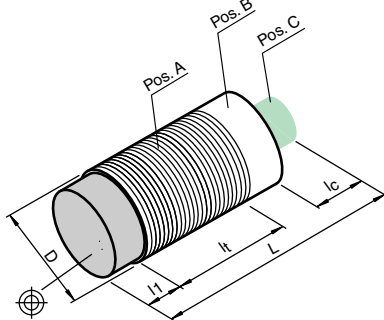
Length L [mm]	56		69	93	
Diameter D [mm]	M12 x 1				
Thread length l _t [mm]	30	33	38	57	62
Cap length l ₁ [mm]	18	15	13	18	13
Connector length l _c [mm]	8				
LED position	-				

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

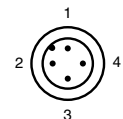
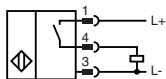
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



Electrical Connection

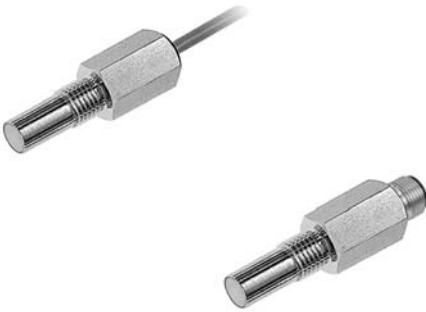


NCB1,5-12GM40-E2-D-V1
NCB1,5-12GM45-E2-D-V1
NCB1,5-12GM60-E2-D-V1
NCB1,5-12GM70-E2-D-V1
NCB1,5-12GM85-E2-D-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø14 mm housing
- 3 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- For high pressure applications

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Installation	flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 500 Hz
Load current	≤ 200 mA
Short-circuit protection	✓, self checking
Operating pressure	500 bar (725 psi)
Peak pressure	800 bar (1160 psi)
Ambient temperature	-25 ... 80 °C (-13 ... 176 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Ceramic
Protection degree	IP68

Model Number

	NCB3-14GM65-E0-D	NCB3-14GM65-E1-D	NCB3-14GM65-E2-D	NCB3-14GM65-E3-D	NCB3-14GM65-E0-D-V1	NCB3-14GM65-E1-D-V1	NCB3-14GM65-E2-D-V1	NCB3-14GM65-E3-D-V1
Output type	NPN NO	NPN NC	PNP NO	PNP NC				
Connection type	Connector M12 x 1, 4-pin cable PUR, 2 m							

Approvals and Certificates

UL approval	cULus Listed, General Purpose	✓	✓	✓	✓	✓	✓	✓
CSA approval	cCSAus Listed, General Purpose	✓	✓	✓	✓	✓	✓	✓
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	✓	✓	✓	✓	✓	✓	✓

Dimensions

Length L [mm]	56.5	65
Diameter D [mm]	M 14 x 1.5 thread / 19 mm wrench width	
Thread length l _t [mm]	9.1	
Cap length l ₁ [mm]	18.6	
Connector length l _c [mm]	0	8.5
LED position	-	

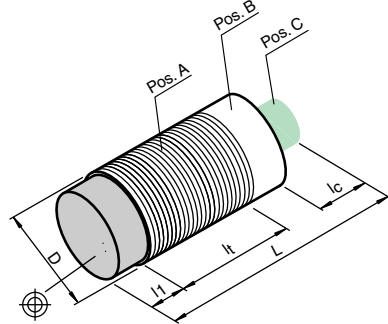
Note: 14 / 19 indicated: barrel diameter / wrench width (mm)

Accessories

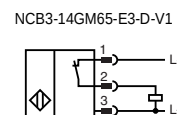
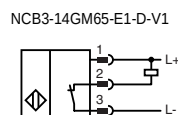
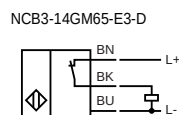
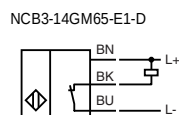
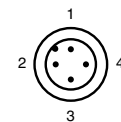
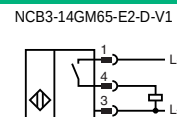
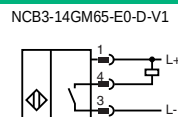
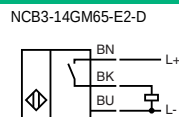
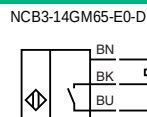
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø18 mm housing
- 1.5 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- For high pressure applications

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Operating voltage	10 ... 60 V DC
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1500 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating pressure	350 bar (507 psi)
Ambient temperature	-35 ... 80 °C (-31 ... 176 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	Epoxy (black)
Protection degree	IP67

Model Number

		NCB1,5-18GM60-E2-D	NCB1,5-18GM60-E3-D	NCB1,5-18GM60-E2-D-V1
Output type	PNP NO	●	●	●
	PNP NC			
Connection type	Connector M12 x 1, 4-pin cable PVC, 2 m	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●

Dimensions

Length L [mm]	57	57	69
Diameter D [mm]		M18 x 1	
Thread length l _t [mm]	41	41	44
Cap length l ₁ [mm]		15	
Connector length l _c [mm]	0	0	10
LED position		-	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G

4-pin, M12 female field-attachable connector, straight

V1-W

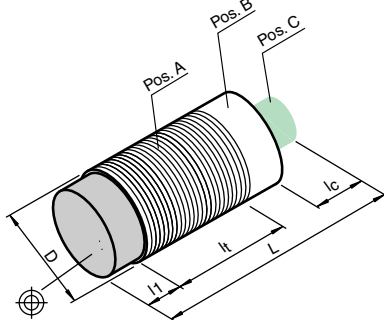
4-pin, M12 female field-attachable connector, angled

V1-G-BK2M-PUR-U

Female cordset, M12, 4-pin, PUR cable, straight

V1-W-BK2M-PUR-U

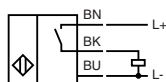
Female cordset, M12, 4-pin, PUR cable, angled



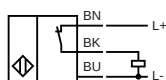
Electrical Connection



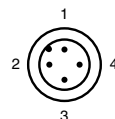
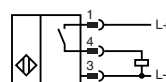
NCB1,5-18GM60-E2-D



NCB1,5-18GM60-E3-D



NCB1,5-18GM60-E2-D-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



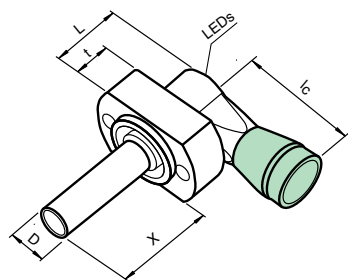


Properties

- Ø1/2" probe diameter
- 1.5 mm and 2 mm sensing ranges
- DC, 4-wire switching outputs
- Connector version

Benefits

- Optimized for applications close to strong magnetic fields
- 3000 psi rating for high pressure applications
- Through port mounting probe



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Output type	NPN & PNP, NO
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 35 mA
Off-state current	≤ 100 µA
Reverse polarity protection	✓
Switching frequency	30 Hz
Load current	≤ 200 mA
Short-circuit protection	✓
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	100 mT
Operating pressure dynamically	3000 psi
LED green	Power on
LED yellow	Output status
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Material	Housing: zinc Probe: aluminum
Connection type	Connector 7/8"-16 UN, 5-pin



Model Number

Rated operating distance	1.5 mm
	2 mm

NJ1.5-PD-E02-1.250-V95

NJ2-PD-E02-2.062-V95

NJ2-PD-E02-2.875-V95

NJ2-PD-E02-4.562-V95

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Probe length X	1.250 in (31.8 mm)	•			
	2.062 in (52.4 mm)		•		
	2.875 in (73 mm)			•	
	4.562 in (115.9 mm)				•
Length L [mm]				34.5	
Diameter D [mm]				12.5	
Connector length L _c [mm]	(from sensor's center line)			52.5	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

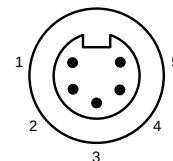
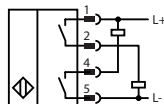
V95-G-YE2M-STOOW

Female connector, 7/8" - 16 UNF, 5-pin, PUR cable, straight

Electrical Connection



NJ1.5-PD-E02-1.250-V95
NJ2-PD-E02-2.062-V95
NJ2-PD-E02-2.875-V95
NJ2-PD-E02-4.562-V95



Wire colors

1	WH
2	RD
4	OR
5	BK

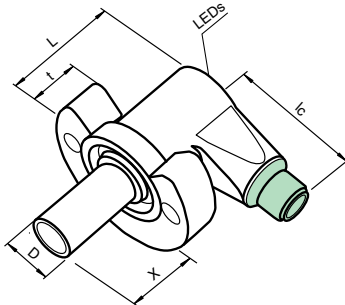


Properties

- Ø1/2" probe diameter
- 2 mm, flush mountable
- DC, 4-wire switching outputs
- Connector version

Benefits

- Optimized for applications close to strong magnetic fields
- 3000 psi rating for high pressure applications
- Through port mounting probe



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush
Output type	NPN & PNP, NO
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 35 mA
Off-state current	≤ 100 µA
Reverse polarity protection	✓
Switching frequency	30 Hz
Load current	≤ 200 mA
Short-circuit protection	✓
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	100 mT
Operating pressure dynamically	3000 psi
LED green	Power on
LED yellow	Output status
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Material	Housing: zinc Probe: aluminum Steel flange
Connection type	Connector M12 x 1, 4-pin



Model Number

NJ2-D-E02-1.025-V1	NJ2-D-E02-1.250-V1	NJ2-D-E02-1.875-V1	NJ2-D-E02-2.062-V1	NJ2-D-E02-2.875-V1	NJ2-D-E02-4.562-V1
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Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V					

Dimensions

Probe length X	1.025 in (26 mm)	•				
	1.250 in (31.8 mm)		•			
	1.875 in (47.6 mm)			•		
	2.062 in (52.4 mm)				•	
	2.875 in (73 mm)					•
	4.562 in (115.9 mm)					•
Length L [mm]				34.5		
Diameter D [mm]				12.5		
Connector length L _c [mm]	(from sensor's center line)			39		

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

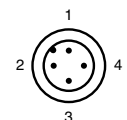
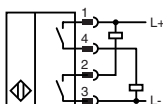
V1-G-2M-PVC
V1-W-2M-PVC

Female cordset, M12, 4-pin, PVC cable, straight
Female cordset, M12, 4-pin, PVC cable, angled

Electrical Connection



NJ2-D-E02-1.025-V1
NJ2-D-E02-1.250-V1
NJ2-D-E02-1.875-V1
NJ2-D-E02-2.062-V1
NJ2-D-E02-2.875-V1
NJ2-D-E02-4.562-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



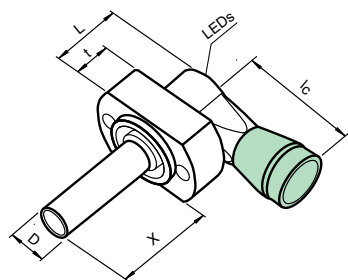


Properties

- Ø1/2" probe diameter
- 1.5 mm and 2 mm sensing ranges
- AC/DC, 2-wire switching output
- Connector version

Benefits

- Optimized for applications close to strong magnetic fields
- 3000 psi rating for high pressure applications
- Through port mounting probe



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Output type	NO contact
Operating voltage	20 ... 250 V AC/DC
Off-state current	< 1.7 mA
Reverse polarity protection	✓
Switching frequency	0 ... 20 Hz
Load current	8 ... 300 mA
Momentary current (20 ms, 0.1 Hz)	≤ 3 A
Short-circuit protection	✓
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	100 mT
Operating pressure dynamically	3000 psi
LED green	Power on
LED red	Output status
LED red/green	Short circuit/overload indication
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Material	Housing: zinc Probe: aluminum
Connection type	Connector 7/8"-16 UN , 3-pin



Model Number

Rated operating distance	1.5 mm
	2 mm

NJ1.5-PD-US-1.250-V93

NJ2-PD-US-2.062-V93

NJ2-PD-US-2.875-V93

NJ2-PD-US-4.562-V93

Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose

Dimensions

Probe length X	1.250 in (31.8 mm)
	2.062 in (52.4 mm)
	2.875 in (73 mm)
	4.562 in (115.9 mm)

Length L [mm]	34.5
Diameter D [mm]	12.5
Connector length lc [mm]	52.5

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

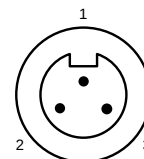
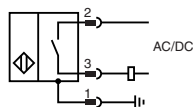
V93-G-YE2M-STOOW

Female connector, 7/8" - 16 UNF, 3-pin, PUR cable, straight

Electrical Connection



NJ1.5-PD-US-1.250-V93
NJ2-PD-US-2.062-V93
NJ2-PD-US-2.875-V93
NJ2-PD-US-4.562-V93



Wire colors

1	GN	(green)
2	BK	(black)
3	WH	(white)

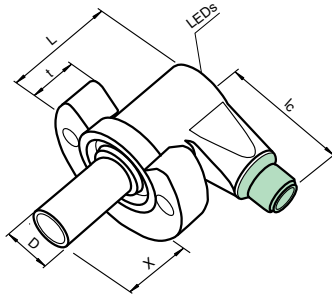


Properties

- Ø1/2" probe diameter
- 2 mm, flush mountable
- AC/DC, 2-wire switching output
- Connector version

Benefits

- Optimized for applications close to strong magnetic fields
- 3000 psi rating for high pressure applications
- Through port mounting probe



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush
Output type	NO contact
Operating voltage	20 ... 250 V AC/DC
Off-state current	< 1.7 mA
Reverse polarity protection	✓
Switching frequency	0 ... 20 Hz
Load current	8 ... 300 mA
Momentary current (20 ms, 0.1 Hz)	≤ 3 A
Short-circuit protection	✓
Mag. Field strength, AC fields	250 mT
Mag. Field strength, DC fields	100 mT
Operating pressure dynamically	3000 psi
LED green	Power on
LED red	Output status
LED red/green	Short circuit/overload indication
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Material	Housing: zinc Probe: aluminum

Model Number

Connection type	Connector 1/2"-20 UN , 3-pin Connector 7/8"-16 UN , 3-pin
-----------------	--

NJ2-D-US-1.025-V12	•
NJ2-D-US-1.025-V93	•
NJ2-D-US-1.250-V12	•
NJ2-D-US-1.250-V93	•
NJ2-D-US-1.500-V12	•
NJ2-D-US-1.500-V93	•
NJ2-D-US-2.062-V12	•
NJ2-D-US-2.062-V93	•
NJ2-D-US-2.875-V93	•
NJ2-D-US-4.562-V93	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•
CSA approval	cCSAus Listed, General Purpose	•

Dimensions

Probe length X	1.025 in (26 mm) 1.250 in (31.8 mm) 1.50 in (38.1 mm) 2.062 in (52.4 mm) 2.875 in (73 mm) 4.562 in (115.9 mm)	•	•	•	•	•	•	•	•
Length L [mm]									34.5
Diameter D [mm]									12.5
Connector length l _c [mm]	(from sensor's center line)	39	53	39	53	39	53	39	53

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V12-G-YE2M-PVC

Female connector, 1/2" - 20 UNF, 3-pin, PVC cable, straight

V93-G-YE2M-STOOW

Female connector, 7/8" - 16 UNF, 3-pin, PUR cable, straight

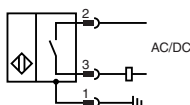
V12-W-YE2M-PVC

Connecting cable, 1/2" - 20 UNF, 3-pin, PVC cable, angled

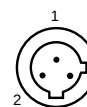
Electrical Connection



NJ2-D-US-1.025-V12
NJ2-D-US-1.025-V93
NJ2-D-US-1.250-V12
NJ2-D-US-1.250-V93
NJ2-D-US-1.500-V93
NJ2-D-US-2.062-V12
NJ2-D-US-2.062-V93
NJ2-D-US-2.875-V93
NJ2-D-US-4.562-V93
NJ2-D-US-1.500-V12



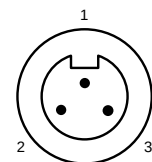
Connector 1/2"-20 UN , 3-pin



Wire colors

1	GN (green)
2	RD/BK (red/black)
3	RD/WH (red/white)

Connector 7/8"-16 UN , 3-pin



Wire colors

1	GN (green)
2	BK (black)
3	WH (white)





Properties

- Ø8 mm housing
- 2 mm, flush mountable
- DC, 3-wire switching output
- Connector version

Benefits

- ATEX-approval for zone 2 and zone 22

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

NBB2-8GM40-E2-V1-3G-3D

Rated operating distance	2 mm
Installation	flush
Output type	PNP NO
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1500 Hz
Load current	0 ... 100 mA
Short-circuit protection	✓, self checking
Switching state indication	Multihole-LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67
Connection type	Connector M12 x 1, 4-pin



Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	3G; 3D

Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Length L [mm]	65
Diameter D [mm]	M8 x 1 / 12
Thread length l _t [mm]	40
Cap length l ₁ [mm]	0
Connector length l _c [mm]	6
LED position	Pos. B

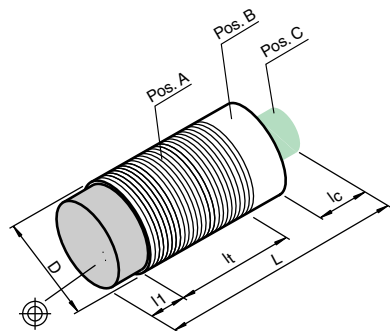
Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

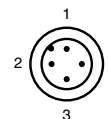
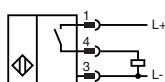
BF 8	Mounting bracket, 8 mm
-------------	------------------------



Electrical Connection



NBB2-8GM40-E2-V1-3G-3D



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø12 mm housing
- 2 mm and 4 mm sensing ranges
- DC, 2-wire switching output
- Cable and connector versions

Benefits

- ATEX-approval for zone 2 and zone 22

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	DC	NO
Operating voltage	5 ... 60 V DC	
Reverse polarity protection	✓, polarity independent	
Load current	2 ... 100 mA	
Short-circuit protection	✓, self checking	
Switching state indication	LED, yellow	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	
Protection degree	IP67	

Model Number

		NBB2-12GM40-Z0-3G-3D	NCN4-12GM40-Z0-3G-3D	NCB2-12GM40-Z0-V1-3G-3D
Rated operating distance	2 mm 4 mm	●	●	●
Installation	flush non-flush	●	●	●
Switching frequency	0 ... 1000 Hz 0 ... 800 Hz	●	●	●
Housing material	Stainless steel 1.4305 / AISI 303 brass, nickel-plated	●	●	●
Connection type	Connector M12 x 1, 4-pin cable PVC, 2 m	●	●	●

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●
Category	3G; 3D	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●

Dimensions

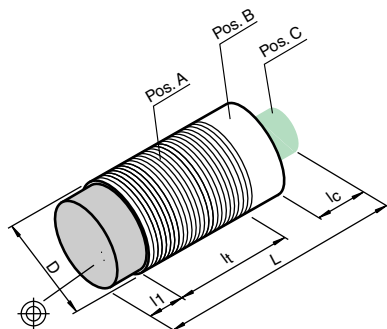
Length L [mm]		40	55
Diameter D [mm]		M12 x 1	
Thread length l _t [mm]		37	32
Cap length l ₁ [mm]		0	5
Connector length l _c [mm]		0	6
LED position	Pos.:	C	B

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

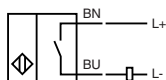
BF 12	Mounting bracket, 12 mm
AB-12	Right angled mounting bracket
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



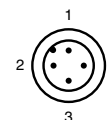
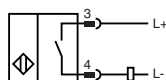
Electrical Connection



NBB2-12GM40-Z0-3G-3D
NCN4-12GM40-Z0-3G-3D



NCB2-12GM40-Z0-V1-3G-3D



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø12 mm housing
- 2 mm and 4 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Cable and connector versions

Benefits

- ATEX-approval for zone 2 and zone 22

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67

Model Number

		NCB2-12GM40-E2-3G-3D	NBB2-12GM60-A2-3G-3D	NBB4-12GM50-E2-3G-3D	NCN4-12GM40-E2-V1-3G-3D
Rated operating distance	2 mm	●	●		●
	4 mm			●	
Installation	flush	●	●	●	
	non-flush				●
Output type	PNP NO/NC		●		
	PNP NO	●		●	●
No-load supply current	≤ 15 mA	●		●	●
	≤ 20 mA		●		
Switching frequency	0 ... 1000 Hz	●	●	●	
	0 ... 1200 Hz				●
Load current	0 ... 150 mA			●	
	0 ... 200 mA	●	●		●
Housing material	Stainless steel 1.4305 / AISI 303	●			●
	brass, nickel-plated		●	●	
Connection type	Connector M12 x 1, 4-pin				●
	cable PVC, 2 m	●	●	●	

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●
Category	3G; 3D	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	40	60	50	50
Diameter D [mm]		M12 x 1		
Thread length l _t [mm]	37	60	47	45
Cap length l ₁ [mm]		0		5
Connector length l _c [mm]		0		6
LED position	Pos.:	C		B

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12

AB-12

V1-G-BK2M-PUR-U

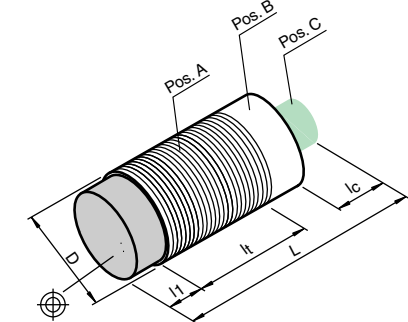
V1-W-BK2M-PUR-U

Mounting bracket, 12 mm

Right angled mounting bracket

Female cordset, M12, 4-pin, PUR cable, straight

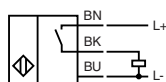
Female cordset, M12, 4-pin, PUR cable, angled



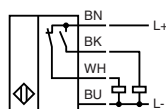
Electrical Connection



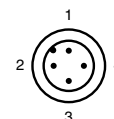
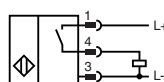
NBB4-12GM50-E2-3G-3D
NCB2-12GM40-E2-3G-3D



NBB2-12GM60-A2-3G-3D



NCN4-12GM40-E2-V1-3G-3D



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø18 mm housing
- 5 mm, flush mountable
- DC, 2-wire switching output
- Connector version

Benefits

- ATEX-approval for zone 2 and zone 22

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NBB5-18GM40-Z0-3G-3D
Rated operating distance	5 mm
Installation	flush
Output type	DC NO
Operating voltage	5 ... 60 V DC
Reverse polarity protection	✓, polarity independent
Load current	2 ... 100 mA
Short-circuit protection	✓, self checking
Switching frequency	0 ... 500 Hz
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67
Connection type	cabl PVC , 2 m



Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	3G; 3D

Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Certified by China Compulsory Certification (CCC)

Dimensions

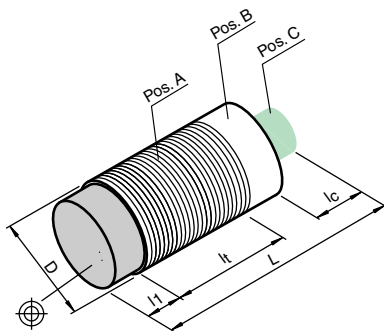
Length L [mm]	40
Diameter D [mm]	M18 x 1
Thread length l _t [mm]	37
Cap length l ₁ [mm]	0
Connector length l _c [mm]	0
LED position	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

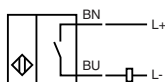
BF 18	Mounting bracket, 18 mm
AB-18	Right angled mounting bracket



Electrical Connection



NBB5-18GM40-Z0-3G-3D



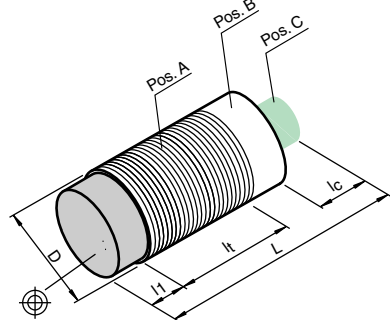


Properties

- Ø18 mm housing
- 5 mm and 8 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Cable and connector versions

Benefits

- ATEX-approval for zone 2 and zone 22



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67

Model Number

		NJ5-18GM50-E2-3G-3D	NJ5-18GM50-E2-V1-3G-3D	NBB5-18GM60-A2-V1-3G-3D	NBB8-18GM50-E2-V1-3G-3D	NBB8-18GM60-A2-V1-3G-3D
Rated operating distance	5 mm	●	●	●	●	●
	8 mm				●	●
Output type	PNP NO/NC			●		●
	PNP NO	●	●		●	●
Operating voltage	10 ... 30 V DC	●	●	●	●	●
	10 ... 60 V DC			●	●	●
No-load supply current	[mA] ≤	9	9	20	15	25
Switching frequency	0 ... 1500 Hz	●	●			
	0 ... 500 Hz			●	●	●
	0 ... 800 Hz				●	●
Housing material	Stainless steel 1.4305 / AISI 303	●	●	●	●	●
	brass, nickel-plated			●	●	●
Connection type	Connector M12 x 1, 4-pin		●	●	●	●
	cable PVC, 2 m	●				



Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●	●
Category	3G; 3D	●	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●			
	CCC approval / marking not required for sensors rated ≤36 V			●	●	●

Dimensions

Length L [mm]	50	65	70	65	70
Diameter D [mm]	M18 x 1				
Thread length l _t [mm]	50	50	60	50	60
Cap length l ₁ [mm]	0				
Connector length l _c [mm]	0	15	10	15	10
LED position	Pos.:	A	C	A	C

Accessories

These and more accessories can be found in chapter 10

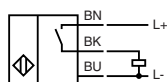
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18	Mounting bracket, 18 mm
AB-18	Right angled mounting bracket

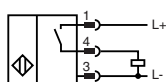
Electrical Connection



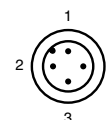
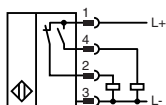
NJ5-18GM50-E2-3G-3D



NBB8-18GM50-E2-V1-3G-3D
NJ5-18GM50-E2-V1-3G-3D



NBB5-18GM60-A2-V1-3G-3D
NBB8-18GM60-A2-V1-3G-3D



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø30 mm housing
- 10 mm and 15 mm sensing ranges
- DC, 2-wire switching output
- Cable version

Benefits

- ATEX-approval for zone 2 and zone 22

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	5 ... 60 V DC
Reverse polarity protection	✓, polarity independent
Load current	2 ... 100 mA
Short-circuit protection	✓, self checking
Switching state indication	all direction LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67
Connection type	cabl PVC , 2 m

Model Number

		NCB10-30GM40-Z0-3G-3D	NCB10-30GM40-Z1-3G-3D	NCN15-30GM40-Z0-3G-3D	NCB10-30GM40-Z0-V1-3G-3D
Rated operating distance	10 mm	●	●	●	●
	15 mm			●	
Installation	flush	●	●		●
	non-flush			●	
Output type	DC NO	●		●	●
	DC NC		●		
Switching frequency	0 ... 100 Hz			●	
	0 ... 150 Hz	●	●		●
Connection type	cabl PVC , 2 m	●	●	●	●
	Connector M12 x 1 , 4-pin				●

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●
Category	3G; 3D	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)			●	

Dimensions

Length L [mm]	40	55
Diameter D [mm]	M30 x 1.5	
Thread length l _t [mm]	37	22
Cap length l ₁ [mm]	0	18
Connector length l _c [mm]	0	15
LED position	Pos. C	

Accessories

These and more accessories can be found in chapter 10

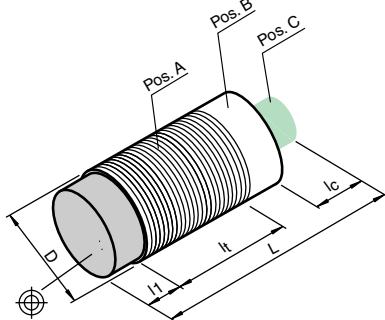
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30

Mounting bracket, 30 mm

AB-30

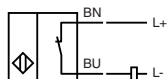
Right angled mounting bracket



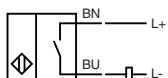
Electrical Connection



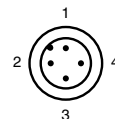
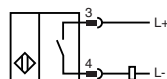
NCB10-30GM40-Z1-3G-3D



NCB10-30GM40-Z0-3G-3D
NCN15-30GM40-Z0-3G-3D



NCB10-30GM40-Z0-V1-3G-3D



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Ø30 mm housing
- 10 mm and 15 mm sensing ranges
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- ATEX-approval for zone 2 and zone 22

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Reverse polarity protection	✓
Load current	0 ... 200 mA
Switching state indication	LED, yellow
Short-circuit protection	✓, self checking
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67

Model Number

		NBB15-30GM50-E2-3G-3D	NJ10-30GM50-E2-3G-3D	NJ15-30GM50-E2-3G-3D	NBB15-30GM50-E2-V1-3G-3D	NBB15-30GM50-E3-V1-3G-3D	NJ10-30GM50-E2-V1-3G-3D	NJ15-30GM50-E2-V1-3G-3D
Rated operating distance	10 mm		●					
	15 mm	●		●	●	●	●	●
Installation	flush	●	●		●	●	●	●
	non-flush			●				●
Output type	PNP NO	●	●	●	●	●	●	●
	PNP NC							
Operating voltage	10 ... 30 V DC	●			●	●		
	10 ... 60 V DC		●	●			●	●
No-load supply current	≤ 15 mA	●			●	●		
	≤ 9 mA		●	●			●	●
Switching frequency	0 ... 200 Hz	●			●	●		
	0 ... 500 Hz			●				●
	0 ... 650 Hz		●	●			●	●
Housing material	Stainless steel 1.4305 / AISI 303		●	●			●	●
	brass, nickel-plated	●			●	●	●	●
Connection type	Connector M12 x 1, 4-pin				●	●	●	●
	cable PVC, 2 m	●	●	●				



Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●	●	●	●
Category	3G; 3D	●	●	●	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification		●	●				●
	CCC approval / marking not required for sensors rated ≤36 V							

Dimensions

Length L [mm]		50		65				
Diameter D [mm]				M30 x 1.5				
Thread length l _t [mm]		47	50	32	50	50	50	32
Cap length l ₁ [mm]		0	0	18	0	0	0	18
Connector length l _c [mm]			0			15		
LED position	Pos..	C	A	A	C	C	C	C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

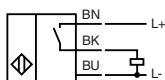
BF 30

Mounting bracket, 30 mm

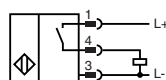
Electrical Connection



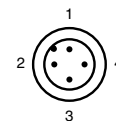
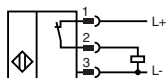
NBB15-30GM50-E2-3G-3D
NJ10-30GM50-E2-3G-3D
NJ15-30GM50-E2-3G-3D



NJ10-30GM50-E2-V1-3G-3D
NJ15-30GM50-E2-V1-3G-3D
NBB15-30GM50-E2-V1-3G-3D

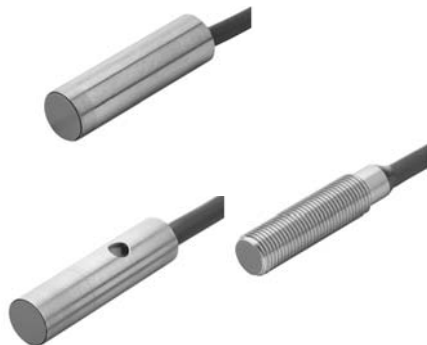


NBB15-30GM50-E3-V1-3G-3D



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



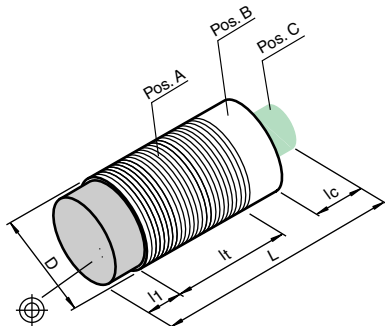
Properties

- Ø4.5 mm / Ø5 mm and Ø6.5 mm housing versions
- 0.8 mm and 1.5 mm sensing ranges
- NAMUR output
- Cable and connector versions

Benefits

- ATEX approved sensor applicable up to zone 0 and zone 20
- Intrinsically safe when connected to approved device
- FM Class and Division approvals
- 2:1 technology allows two sensor signals on one line

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Output type	NAMUR, NC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Suitable for 2:1 technology	✓, Reverse polarity protection diode not required
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	Stainless steel 1.4305 / AISI 303
Protection degree	IP67

Model Number

		NJ08-4,5-N	NJ08-5GM-N	NJ11,5-6,5-N	NCB1,5-6,5M25-N0	NCB1,5-6,5M25-N0-V1
Rated operating distance	0.8 mm	●	●			
	1.5 mm			●	●	●
Switching frequency	0 ... 2000 Hz				●	●
	0 ... 5000 Hz	●	●	●		
Switching state indication	LED, yellow				●	
	Multihole-LED, yellow					●
Connection type	Connector M12 x 1, 4-pin					●
	cable PVC, 2 m	●	●	●	●	

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●	●
Category	1G; 2G; 1D		●	●		
	2G	●			●	●

Approvals and Certificates

FM control drawing	116-0165F	●	●			
UL approval	cULus Listed, General Purpose	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V					

Dimensions

Length L [mm]		20	22	25	47
Diameter D [mm]		4.5	M5 x 0.5	6.5	6.5/12
Thread length l _t [mm]		0	17	0	
Cap length l ₁ [mm]			0		
Connector length l _c [mm]			0		6
LED position	Pos.		-	A	B

Note: 6.5 / 12 indicated: barrel diameter / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

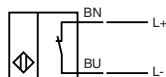
BF 4,5	Mounting bracket, 4.5 mm
BF 5	Mounting bracket, 5 mm
BF 6,5	Mounting bracket, 6.5 mm
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W-N-2M-PUR	Female cordset, M12, 2-pin, NAMUR, PUR cable, angled
V1-G-N-2M-PUR	Female cordset, M12, 2-pin, NAMUR, PUR cable, straight
KFD2-SRA-Ex4	4-channel isolated amplifier for 2:1 technology

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

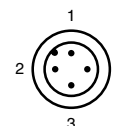
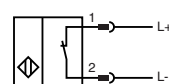
Electrical Connection



NJ0,8-4,5-N
NJ0,8-5GM-N
NCB1,5-6,5M25-N0
NJ11,5-6,5-N



NCB1,5-6,5M25-N0-V1



Wire colors in accordance with EN 60947-5-6

1	BN	(brown)
2	BU	(blue)

1
1.1

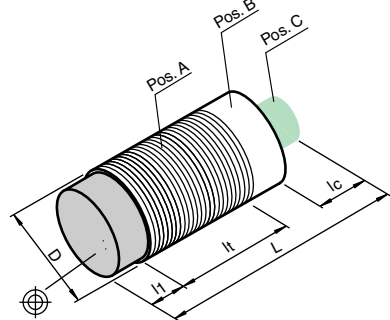
Properties

- Ø8 mm housing
- 1.5 mm flush mountable
- NAMUR output
- Cable and connector versions

Benefits

- ATEX approved sensor applicable up to zone 0 and zone 20
- Intrinsically safe when connected to approved device
- FM Class and Division approvals
- 2:1 technology allows two sensor signals on one line

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Output type	NAMUR, NC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)

Current consumption

Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 2000 Hz
Switching state indication	LED, yellow
Suitable for 2:1 technology	✓, Reverse polarity protection diode not required
Protection degree	IP67
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	Stainless steel 1.4305 / AISI 303

Model Number

Connection type	Connector M12 x 1, 4-pin cable PVC, 2 m
-----------------	--

NCB1,5-8GM25-N0

NCB1,5-8GM25-N0-V1



Use in the hazardous area

Use in the hazardous area	see instruction manuals
Category	1G; 2G; 1D
	1G; 2G; 3G; 1D

Approvals and Certificates

FM control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Length L [mm]	25	45
Diameter D [mm]	M8 x 1	M8 x 1 / 12
Thread length l _t [mm]	25	
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	6
LED position	Pos. C	B

Note: M8 x 1 / 12 indicated: barrel thread / connector end diameter (mm)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

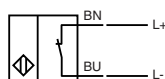
BF 5-30	Universal mounting bracket, 5 ... 30 mm
BF 8	Mounting bracket, 8 mm
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-N-2M-PUR	Female cordset, M12, 2-pin, NAMUR, PUR cable, straight
V1-W-N-2M-PUR	Female cordset, M12, 2-pin, NAMUR, PUR cable, angled
KFD2-SRA-Ex4	4-channel isolated amplifier for 2:1 technology

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

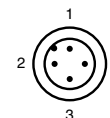
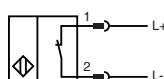
Electrical Connection



NCB1,5-8GM25-N0



NCB1,5-8GM25-N0-V1



Wire colors in accordance with EN 60947-5-6

1	BN	(brown)
2	BU	(blue)



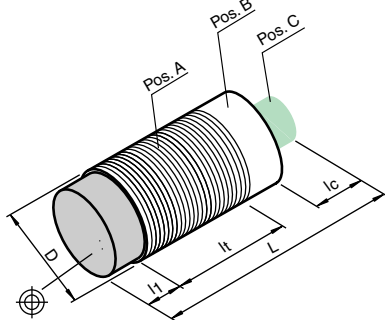
Properties

- Ø11 mm smooth and threaded housing versions
- 2 mm and 5 mm sensing ranges
- NAMUR output
- Cable version

Benefits

- ATEX approved sensor applicable up to zone 0 and zone 20
- Intrinsically safe when connected to approved device
- FM Class and Division approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 3000 Hz
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Protection degree	IP68
Connection type	cable PVC, 2 m



Model Number

		NJ2-11-N	NJ2-11-N-G	NJ5-11-N	NJ5-11-N-G
Rated operating distance	2 mm	●	●	●	●
	5 mm	●	●	●	●
Installation	flush	●	●	●	●
	non-flush			●	●
Suitable for 2:1 technology	✓, Reverse polarity protection diode not required			●	●
Housing material	Stainless steel 1.4305 / AISI 303		●		●
	PVDF	●		●	

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●
Category	1G; 2G; 3G; 1D; 3D	●	●		
	2G			●	
	2G; 3G; 1D; 3D				●

Approvals and Certificates

FM control drawing	116-0165F	●	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V				

Dimensions

Length L [mm]		30		30		31
Diameter D [mm]		11	M14 x 1		11	M14 x 1
Thread length l_t [mm]		0	30		0	17
Cap length l_1 [mm]			0			14
Connector length l_c [mm]				0		
LED position				-		

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

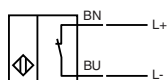
BF 5-30	Universal mounting bracket, 5 ... 30 mm
BF 11	Mounting bracket, 11 mm
KCD2-SR-Ex2	2-channel isolated amplifier
KFD2-SRA-Ex4	4-channel isolated amplifier for 2:1 technology

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



NJ2-11-N
NJ2-11-N-G
NJ5-11-N
NJ5-11-N-G





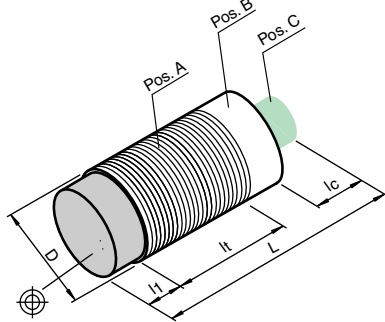
Properties

- Ø12 mm housing
- 2 mm and 4 mm sensing ranges
- NAMUR output
- Cable version

Benefits

- ATEX approved sensor applicable up to zone 0 and zone 20
- Intrinsically safe when connected to approved device
- FM Class and Division approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Connection type	cable PVC, 2 m



Model Number

		NJ2-12GK-N	NJ4-12GK-N	NCB2-12GK35-N0	NCN4-12GK35-N0
Rated operating distance	2 mm	●		●	
	4 mm		●		●
Installation	flush	●		●	
	non-flush		●		●
Switching frequency	0 ... 1000 Hz			●	
	0 ... 1500 Hz		●		
	0 ... 2000 Hz	●			
	0 ... 800 Hz				●
Suitable for 2:1 technology	✓, Reverse polarity protection diode not required	●		●	
Switching state indication	all direction LED, yellow			●	●
Protection degree	IP66 / IP68	●	●		
	IP67			●	●

Use in the hazardous area

Use in the hazardous area	see instruction manuals	●	●	●	●
Category	2G; 1D	●	●	●	●

Approvals and Certificates

FM control drawing	116-0165F	●	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	34	35
Diameter D [mm]	M12 x 1	
Thread length l _t [mm]	30.5	32
Cap length l ₁ [mm]	0	
Connector length l _c [mm]	0	
LED position	-	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

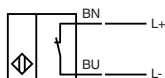
BF 12	Mounting bracket, 12 mm
AB-12	Right angled mounting bracket
KCD2-SR-Ex2	2-channel isolated amplifier
KFD2-SRA-Ex4	4-channel isolated amplifier for 2:1 technology

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



NCB2-12GK35-N0
NJ2-12GK-N
NCN4-12GK35-N0
NJ4-12GK-N





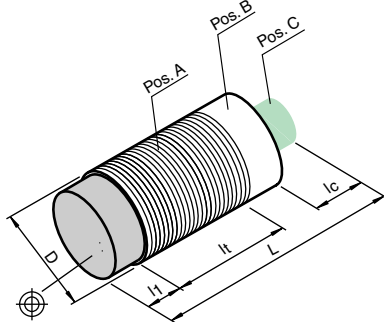
Properties

- Ø12 mm housing
- 2 mm and 4 mm sensing ranges
- NAMUR output
- Cable and connector versions

Benefits

- ATEX approved sensor applicable up to zone 0 and zone 20
- Intrinsically safe when connected to approved device
- FM Class and Division approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	Stainless steel 1.4305 / AISI 303

Model Number

		NJ2-12GM-N	NJ4-12GM-N	NCB2-12GM35-N0	NCB4-12GM40-N0	NCN4-12GM35-N0	NJ2-12GM-N-V1	NJ4-12GM-N-V1	NCB2-12GM35-N0-V1	NCB4-12GM40-N0-V1	NCN4-12GM35-N0-V1
Rated operating distance	2 mm	•	•	•	•	•	•	•	•	•	•
	4 mm	•	•	•	•	•	•	•	•	•	•
Installation	flush	•	•	•	•	•	•	•	•	•	•
	non-flush	•	•	•	•	•	•	•	•	•	•
Current consumption											
Measuring plate not detected	≥ 2.2 mA	•	•	•	•	•	•	•	•	•	•
	≥ 3 mA	•	•	•	•	•	•	•	•	•	•
Measuring plate detected	≤ 1 mA	•	•	•	•	•	•	•	•	•	•
Switching frequency	0 ... 1000 Hz	•	•	•	•	•	•	•	•	•	•
	0 ... 1500 Hz	•	•	•	•	•	•	•	•	•	•
	0 ... 2000 Hz	•	•	•	•	•	•	•	•	•	•
	0 ... 800 Hz	•	•	•	•	•	•	•	•	•	•
Suitable for 2:1 technology	✓, Reverse polarity protection diode not required	•	•	•	•	•	•	•	•	•	•
Switching state indication	LED, yellow	•	•	•	•	•	•	•	•	•	•
Protection degree	IP66 / IP67	•	•	•	•	•	•	•	•	•	•
	IP67	•	•	•	•	•	•	•	•	•	•
Connection type	Connector M12 x 1, 4-pin	•	•	•	•	•	•	•	•	•	•
	cable PVC, 2 m	•	•	•	•	•	•	•	•	•	•

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	•	•	•	•	•	•	•	•	•	•
Category	1G; 2G	•	•	•	•	•	•	•	•	•	•
	1G; 2G; 1D	•	•	•	•	•	•	•	•	•	•
	1G; 2G; 3G	•	•	•	•	•	•	•	•	•	•
	1G; 2G; 3G; 1D; 3D	•	•	•	•	•	•	•	•	•	•
	1G; 2G; 3G; 3D	•	•	•	•	•	•	•	•	•	•

Approvals and Certificates

FM control drawing	116-0165F	•	•	•	•	•	•	•	•	•	•
UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	•	•	•	•	•	•	•	•	•	•

Dimensions

Length L [mm]	35	33	35	40	35	50	50	50	55	50
Diameter D [mm]	M12 x 1									
Thread length l _t [mm]	35	28	32	37	27	50	45	34	40	29
Cap length l ₁ [mm]	0	5	0	0	5	0	5	0	0	5
Connector length l _c [mm]	0					6				
LED position	- Pos. C					- Pos. B				

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

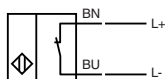
AB-12	Right angled mounting bracket
V1-G-N-2M-PUR	Female cordset, M12, 2-pin, NAMUR, PUR cable, straight
V1-W-N-2M-PUR	Female cordset, M12, 2-pin, NAMUR, PUR cable, angled
KCD2-SR-Ex2	2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

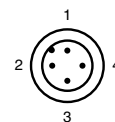
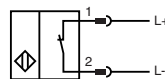
Electrical Connection



NCB2-12GM35-N0
NJ2-12GM-N
NCB4-12GM40-N0
NCN4-12GM35-N0
NJ4-12GM-N



NCB2-12GM35-N0-V1
NJ2-12GM-N-V1
NCB4-12GM40-N0-V1
NCN4-12GM35-N0-V1
NJ4-12GM-N-V1



Wire colors in accordance with EN 60947-5-6

1	BN	(brown)
2	BU	(blue)



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Connection type	cabl PVC , 2 m



Model Number

		NJ5-18GK-N	NJ8-18GK-N	NCB5-18GK40-N0	NCN8-18GK40-N0
Rated operating distance	5 mm	●		●	
	8 mm		●		●
Installation	flush	●		●	
	non-flush		●		●
Switching frequency	0 ... 200 Hz		●		
	0 ... 300 Hz				●
	0 ... 400 Hz			●	
	0 ... 500 Hz	●			
Switching state indication	all direction LED, yellow			●	●
Housing material	PBT			●	●
	PBT/PPS	●	●		
Protection degree	IP66 / IP68	●			
	IP67			●	●
	IP68		●		

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●
Category	2G; 1D	●	●	●	●

Approvals and Certificates

FM control drawing	116-0165F	●	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	39	40
Diameter D [mm]	M18 x 1	
Thread length l _t [mm]	34.5	37
Cap length l ₁ [mm]	1	0
Connector length l _c [mm]	0	
LED position	-	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

AB-12	Right angled mounting bracket
BF 18	Mounting bracket, 18 mm
KCD2-SR-Ex2	2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us



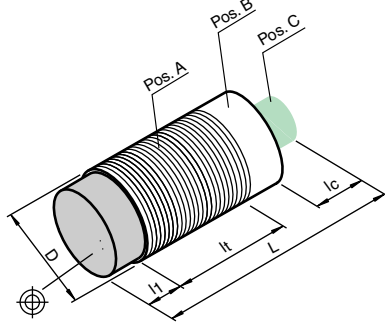
Properties

- Ø18 mm housing
- 5 mm and 8 mm sensing ranges
- NAMUR output
- Cable version

Benefits

- ATEX approved sensor applicable up to zone 0 and zone 20
- Intrinsically safe when connected to approved device
- FM Class and Division approvals

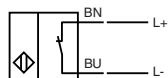
Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Electrical Connection



NCB5-18GK40-N0
NJ5-18GK-N
NCN8-18GK40-N0
NJ8-18GK-N





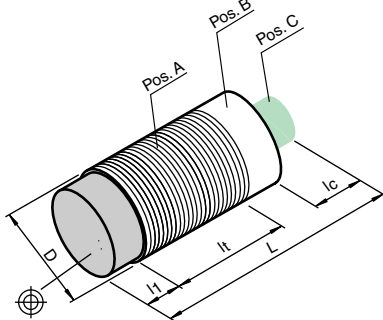
Properties

- Ø18 mm housing
- 5 mm and 8 mm sensing ranges
- NAMUR output
- Cable and connector versions

Benefits

- ATEX approved sensor applicable up to zone 0 and zone 20
- Intrinsically safe when connected to approved device
- FM Class and Division approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	Stainless steel 1.4305 / AISI 303

Model Number

		NJ5-18GM-N	NJ8-18GM-N	NCB5-18GM40-N0	NCB8-18GM40-N0	NCN8-18GM40-N0	NJ5-18GM-N-V1	NJ8-18GM-N-V1	NCB5-18GM40-N0-V1	NCB8-18GM40-N0-V1	NCN8-18GM40-N0-V1
Rated operating distance	5 mm	●	●	●	●	●	●	●	●	●	●
	8 mm	●	●	●	●	●	●	●	●	●	●
Installation	flush	●	●	●	●	●	●	●	●	●	●
	non-flush	●	●	●	●	●	●	●	●	●	●
Current consumption	Measuring plate detected	≤ 1 mA	●	●	●	●	●	●	●	●	●
	Measuring plate not detected	≥ 2.2 mA	●	●	●	●	●	●	●	●	●
	≥ 3 mA	●	●	●	●	●	●	●	●	●	●
Switching frequency	0 ... 200 Hz	●	●	●	●	●	●	●	●	●	●
	0 ... 300 Hz	●	●	●	●	●	●	●	●	●	●
	0 ... 400 Hz	●	●	●	●	●	●	●	●	●	●
	0 ... 500 Hz	●	●	●	●	●	●	●	●	●	●
	0 ... 1500 Hz	●	●	●	●	●	●	●	●	●	●
Suitable for 2:1 technology	✓, Reverse polarity protection diode not required	●	●	●	●	●	●	●	●	●	●
Switching state indication	LED, yellow	●	●	●	●	●	●	●	●	●	●
Protection degree	IP66 / IP67	●	●	●	●	●	●	●	●	●	●
	IP67	●	●	●	●	●	●	●	●	●	●
Connection type	Connector M12 x 1, 4-pin	●	●	●	●	●	●	●	●	●	●
	cable PVC, 2 m	●	●	●	●	●	●	●	●	●	●

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●	●	●	●	●	●	●
Category	1G; 2G	●	●	●	●	●	●	●	●	●	●
	1G; 2G; 1D	●	●	●	●	●	●	●	●	●	●
	1G; 2G; 3G	●	●	●	●	●	●	●	●	●	●
	1G; 2G; 3G; 1D; 3D	●	●	●	●	●	●	●	●	●	●
	1G; 2G; 3G; 3D	●	●	●	●	●	●	●	●	●	●

Approvals and Certificates

FM control drawing	116-0165F	●	●	●	●	●	●	●	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	●	●	●	●	●	●	●	●	●	●

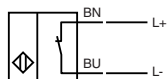
Dimensions

Length L [mm]	40	40	50	55
Diameter D [mm]	M18 x 1			
Thread length l _t [mm]	40	24	37	37
Cap length l ₁ [mm]	0	16	0	10
Connector length l _c [mm]	0			
LED position	Pos.	-	C	-

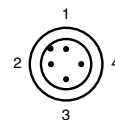
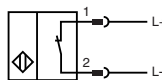
Electrical Connection



NCB5-18GM40-N0
NJ5-18GM-N
NCB8-18GM40-N0
NCN8-18GM40-N0
NJ8-18GM-N



NCB5-18GM40-N0-V1
NJ5-18GM-N-V1
NCB8-18GM40-N0-V1
NCN8-18GM40-N0-V1
NJ8-18GM-N-V1



Wire colors in accordance with EN 60947-5-6

1 | BN (brown)
2 | BU (blue)



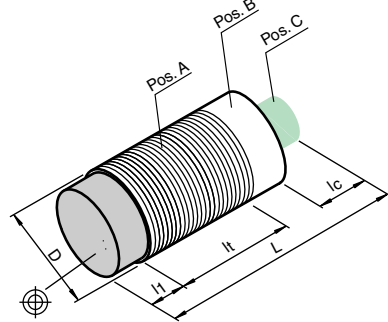
Properties

- Ø18 mm housing
- 1.5 mm flush mountable
- NAMUR output
- Cable and connector versions

Benefits

- ATEX approved sensor applicable up to zone 0 and zone 20
- Intrinsically safe when connected to approved device
- FM Class and Division approvals
- Compression proof up to 350 bar, dynamically on active surface

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Output type	NAMUR, NC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 400 Hz
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	Stainless steel 1.4305 / AISI 303

Model Number

Protection degree	IP66 / IP68		
	IP67		
Connection type	Connector M12 x 1, 4-pin cable PVC, 2 m		

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals		
Category	2G; 1D		

Approvals and Certificates

UL approval	cULus Listed, General Purpose		
CSA approval	cCSAus Listed, General Purpose		
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

Length L [mm]	50	45
Diameter D [mm]	M18 x 1	
Thread length l _t [mm]	20	
Cap length l ₁ [mm]	15	
Connector length l _c [mm]	0	10
LED position	-	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

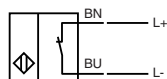
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-W-N-2M-PUR	Female cordset, M12, 2-pin, NAMUR, PUR cable, angled
V1-G-N-2M-PUR	Female cordset, M12, 2-pin, NAMUR, PUR cable, straight
KCD2-SR-Ex2	2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

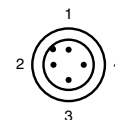
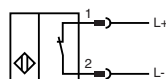
Electrical Connection



NJ1,5-18GM-N-D



NJ1,5-18GM-N-D-V1



Wire colors in accordance with EN 60947-5-6

1	BN	(brown)
2	BU	(blue)



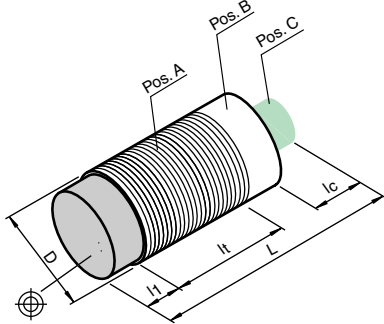
Properties

- Ø22 mm smooth and threaded housing versions
- 6 mm and 8 mm sensing ranges
- NAMUR output
- Cable version

Benefits

- ATEX approved sensors applicable up to zone 1 and zone 20
- Intrinsically safe when connected to approved device
- FM Class and Division approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 2000 Hz
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Protection degree	IP68
Connection type	cable PVC, 2 m



Model Number

		NJ6-22-N	NJ6-22-N-G	NJ10-22-N	NJ10-22-N-G
Rated operating distance	10 mm				
	6 mm				
Installation	flush				
	non-flush				
Housing material	Stainless steel 1.4305 / AISI 303				
	PBT				

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals				
Category	2G				
	2G; 1D				
	2G; 3G				
	2G; 3G; 3D				

Approvals and Certificates

FM control drawing	116-0165F				
UL approval	cULus Listed, General Purpose				
CSA approval	cCSAus Listed, General Purpose				
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V				

Dimensions

Length L [mm]			35		
Diameter D [mm]	22	PG21	22	PG21	
Thread length l_t [mm]	0	35	0	15	
Cap length l_1 [mm]		0		20	
Connector length l_c [mm]			0		
LED position			-		

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KCD2-SR-Ex2

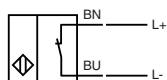
2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



NJ10-22-N
NJ10-22-N-G
NJ6-22-N
NJ6-22-N-G





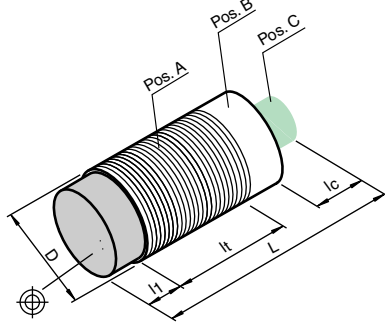
Properties

- Ø30 mm housing
- 10 mm and 15 mm sensing ranges
- NAMUR output
- Cable version

Benefits

- ATEX approved sensors applicable up to zone 1 and zone 20
- Intrinsically safe when connected to approved device
- FM Class and Division approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Connection type	cable PVC, 2 m



Model Number

		NJ10-30GK-N	NJ15-30GK-N	NCB10-30GK40-N0	NCN15-30GK40-N0
Rated operating distance	10 mm	●		●	
	15 mm		●		●
Installation	flush	●		●	
	non-flush		●		●
Current consumption					
Measuring plate detected	≤ 1 mA	●	●	●	●
Measuring plate not detected	≥ 2.2 mA	●	●	●	●
	≥ 3 mA				
Switching frequency	0 ... 100 Hz		●		
	0 ... 150 Hz				●
	0 ... 200 Hz			●	
	0 ... 300 Hz	●			
Switching state indication	all direction LED, yellow			●	●
Protection degree	IP66 / IP68	●		●	●
	IP67			●	●
	IP68		●		

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●
Category	2G; 1D	●	●		
	2G; 3G; 1D; 3D			●	●

Approvals and Certificates

FM control drawing	116-0165F	●	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]			40	
Diameter D [mm]			M30 x 1.5	
Thread length l ₁ [mm]	34.5		37	22
Cap length l ₁ [mm]	1		0	18
Connector length l _c [mm]			0	
LED position	-		Pos. C	-

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

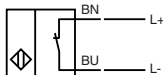
BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket
KCD2-SR-Ex2	2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



NCB10-30GK40-N0
NJ10-30GK-N
NCN15-30GK40-N0
NJ15-30GK-N





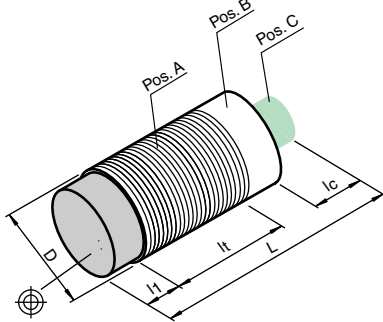
Properties

- Ø30 mm housing
- 10 mm and 15 mm sensing ranges
- NAMUR output
- Cable and connector versions

Benefits

- ATEX approved sensor applicable up to zone 0 and zone 20
- Intrinsically safe when connected to approved device
- FM Class and Division approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	Stainless steel 1.4305 / AISI 303

Model Number

		NJ10-30GM-N	NJ15-30GM-N	NCB10-30GM40-N0	NCB15-30GM40-N0	NCN15-30GM40-N0	NJ10-30GM-N-V1	NCB10-30GM40-N0-V1	NCB15-30GM40-N0-V1	NCN15-30GM40-N0-V1
Rated operating distance	10 mm	●								
	15 mm		●							
Installation	flush	●		●	●	●	●	●	●	●
	non-flush		●							
	quasi-flush				●				●	
Current consumption										
Measuring plate not detected	≥ 2.2 mA			●	●	●		●	●	●
	≥ 3 mA	●	●				●			
Measuring plate detected	≤ 1 mA	●	●	●	●	●	●	●	●	●
Switching frequency	0 ... 100 Hz		●							
	0 ... 150 Hz									
	0 ... 200 Hz			●				●		
	0 ... 300 Hz	●					●			
	0 ... 450 Hz				●				●	
Switching state indication	LED, yellow			●	●	●		●	●	●
Protection degree	IP65						●			
	IP67	●	●	●	●	●	●	●	●	●
Connection type	Connector M12 x 1, 4-pin						●	●	●	●
	cable PVC, 2 m	●	●	●	●	●				

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●	●	●	●	●	●
Category	1G; 2G									
	1G; 2G; 1D	●	●							
	1G; 2G; 3G; 1D; 3D			●		●		●		●
	1G; 2G; 3G; 3D				●				●	

Approvals and Certificates

FM control drawing	116-0165F	●	●	●	●	●	●	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	●	●	●	●	●	●	●	●	●

Dimensions

Length L [mm]		40	50	55
Diameter D [mm]		M30 x 1.5		
Thread length l_t [mm]	40	37	22	40
Cap length l_1 [mm]	0	18	0	0
Connector length l_c [mm]		0	10	15
LED position	-	Pos. C	-	Pos. C

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G-N-2M-PUR

Female cordset, M12, 2-pin, NAMUR, PUR cable, straight

V1-W-N-2M-PUR

Female cordset, M12, 2-pin, NAMUR, PUR cable, angled

KCD2-SR-Ex2

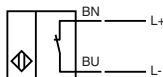
2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

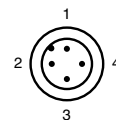
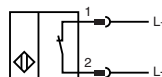
Electrical Connection



NCB10-30GM40-N0
NCB15-30GM40-N0
NCN15-30GM40-N0
NJ15-30GM-N
NJ10-30GM-N



NCB10-30GM40-N0-V1
NJ10-30GM-N-V1
NCB15-30GM40-N0-V1
NCN15-30GM40-N0-V1



Wire colors in accordance with EN 60947-5-6

1	BN	(brown)
2	BU	(blue)





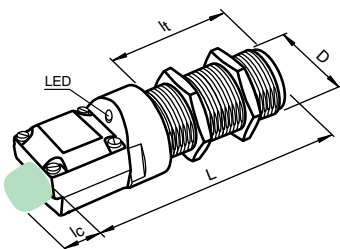
Properties

- Ø30 mm and Ø40 mm housing versions
- Up to 20 mm sensing ranges
- NAMUR output
- Terminal compartment

Benefits

- ATEX approved sensor applicable up to zone 1
- Intrinsically safe when connected to approved device
- FM Class and Division approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Protection degree	IP67
Connection type	terminal compartment



Model Number

		NJ10-30GKK-N	NJ15-30GKK-N	NJ20-40-N
Rated operating distance	10 mm	●		
	15 mm		●	
	20 mm			●
Installation	flush	●		
	non-flush		●	●
Switching frequency	0 ... 100 Hz		●	●
	0 ... 300 Hz	●		●

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●
Category	2G	●	●	●

Approvals and Certificates

FM control drawing	116-0165F			●
UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]	115	95
Diameter D [mm]	M30 x 1.5 (max. housing diameter: 40 mm)	40
Thread length l _t [mm]	58	0 (barrel 50)
Cap length l ₁ [mm]	2	0
Connector length l _c [mm]		0
LED position		-

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket
BF 40	Mounting bracket, 40 mm
KCD2-SR-Ex2	2-channel isolated amplifier

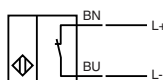
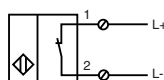
For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



NJ10-30GKK-N
NJ15-30GKK-N

NJ20-40-N





Properties

- Ø50 mm housing
- 25 mm non-flush mountable
- NAMUR output
- Cable version

Benefits

- ATEX approved sensor applicable up to zone 1
- Intrinsically safe when connected to approved device
- FM Class and Division approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NJ25-50-N
Rated operating distance	25 mm
Installation	non-flush
Output type	NAMUR, NC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 250 Hz
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Protection degree	IP67
Connection type	cable PVC, 2 m



Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	2G

Approvals and Certificates

FM control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V

Dimensions

Height H [mm]	40
Diameter D [mm]	50
Thread length l_t [mm]	0
Connector length l_c [mm]	0

Accessories

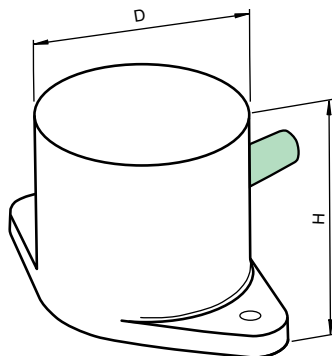
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KCD2-SR-Ex2

2-channel isolated amplifier

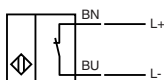
For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

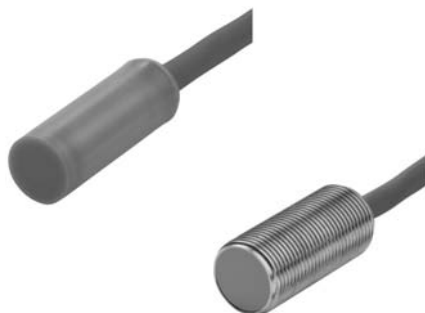


Electrical Connection



NJ25-50-N





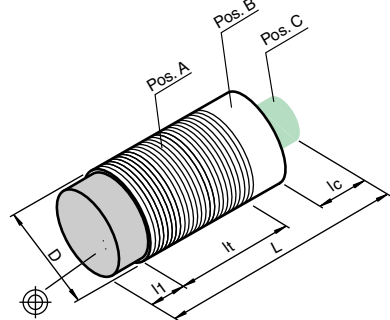
Properties

- Ø11/14 mm housing
- 2 mm, flush mountable
- NAMUR output
- Cable version

Benefits

- Usable up to SIL 3 acc. to IEC 61508
- Usable in hazardous area
- FM Class and Division approvals
- High protection degree (IP68)

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush
Output type	NAMUR, NC
Nominal voltage	8 V DC
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 3000 Hz
Suitable for 2:1 technology	✓, with reverse polarity protection diode
Ambient temperature	-40 ... 100 °C (-40 ... 212 °F)
Protection degree	IP68
Connection type	cable silicon, 2 m



Model Number

Housing material	Stainless steel 1.4305 / AISI 303
	PVDF

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	1G; 2G; 1D

Approvals and Certificates

FM control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Length L [mm]	31	30
Diameter D [mm]	11	M14 x 1
Thread length l _t [mm]	0	30
Cap length l ₁ [mm]		0
Connector length l _c [mm]		0
LED position		-

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 11

Mounting bracket, 11 mm



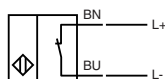
Danger!

In safety-related applications the sensor must be operated with a qualified fail safe interface from Pepperl+Fuchs, such as KFD2-SH-EX1. Consider the "exida Functional Safety Assessment" document which is available on www.pepperl-fuchs.com as an integral part of this product's documentation.

Electrical Connection



NJ2-11-SN
NJ2-11-SN-G





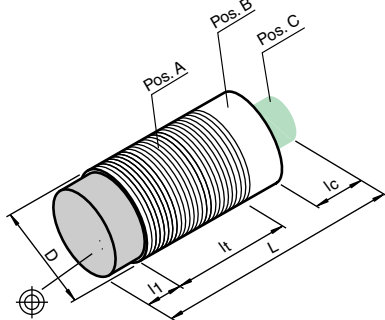
Properties

- Ø12 mm housing
- 2 mm and 4 mm sensing ranges
- NAMUR output
- Cable version

Benefits

- Usable up to SIL 3 acc. to IEC 61508
- Usable in hazardous area
- FM Class and Division approvals
- High protection degree (IP68)

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Nominal voltage	8 V DC
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Housing material	PP
Protection degree	IP68
Connection type	cable silicon, 2 m



Model Number	NJ2-12GK-SN	NJ4-12GK-SN
Rated operating distance	2 mm	
	4 mm	
Installation	flush	
	non-flush	
Switching frequency	0 ... 1500 Hz	
	0 ... 2000 Hz	
Suitable for 2:1 technology	✓, with reverse polarity protection diode	
Ambient temperature	-40 ... 100 °C (-40 ... 212 °F)	
	-50 ... 100 °C (-58 ... 212 °F)	

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals		
Category	1G; 2G; 1D		
	1G; 2G; 3G; 1D; 3D		

Approvals and Certificates

FM control drawing	116-0165F		
UL approval	cULus Listed, General Purpose		
CSA approval	cCSAus Listed, General Purpose		
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

Length L [mm]	34
Diameter D [mm]	M12 x 1
Thread length l _t [mm]	30
Cap length l ₁ [mm]	0
Connector length l _c [mm]	0
LED position	-

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12	Mounting bracket, 12 mm
AB-12	Right angled mounting bracket



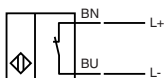
Danger!

In safety-related applications the sensor must be operated with a qualified fail safe interface from Pepperl+Fuchs, such as KFD2-SH-EX1. Consider the "exida Functional Safety Assessment" document which is available on www.pepperl-fuchs.com as an integral part of this product's documentation.

Electrical Connection



NJ4-12GK-SN
NJ2-12GK-SN





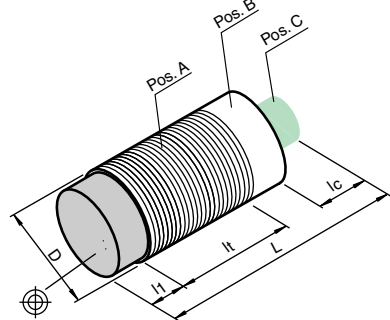
Properties

- Ø18 mm housing
- Up to 8 mm sensing ranges
- NAMUR output
- Cable version

Benefits

- Usable up to SIL 3 acc. to IEC 61508
- Usable in hazardous area
- FM Class and Division approvals
- High protection degree (IP68)

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Nominal voltage	8 V DC
Protection degree	IP68
Connection type	cable silicon, 2 m



Model Number

		NJ3-18GK-S1N	NJ5-18GK-SN	NJ8-18GK-SN
Rated operating distance	3 mm	●		
	5 mm		●	
	8 mm			●
Installation	flush	●	●	
	non-flush			●
Output type	NAMUR, NO	●		
	NAMUR, NC		●	●
Current consumption				
Measuring plate not detected	≥ 3 mA		●	●
	≤ 1 mA	●		
Measuring plate detected	≥ 3 mA	●		
	≤ 1 mA		●	●
Switching frequency	0 ... 200 Hz	●		●
	0 ... 500 Hz		●	
Suitable for 2:1 technology	✓, Reverse polarity protection diode not required	●		
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)	●		
	-40 ... 100 °C (-40 ... 212 °F)		●	●
Housing material	Hostalen PPN, black	●		●
	PP		●	

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●
Category	1G; 2G; 3G; 1D	●	●	
	1G; 2G; 3G; 1D; 3D			●

Approvals and Certificates

FM control drawing	116-0165F	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]	40.5	39
Diameter D [mm]		M18 x 1
Thread length l _t [mm]		34.5
Cap length l ₁ [mm]		1
Connector length l _c [mm]		0
LED position		-

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 18	Mounting bracket, 18 mm
AB-18	Right angled mounting bracket



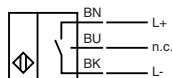
Danger!

In safety-related applications the sensor must be operated with a qualified fail safe interface from Pepperl+Fuchs, such as KFD2-SH-EX1. Consider the "exida Functional Safety Assessment" document which is available on www.pepperl-fuchs.com as an integral part of this product's documentation.

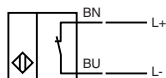
Electrical Connection



NJ3-18GK-S1N



NJ5-18GK-SN
NJ8-18GK-SN





Properties

- Ø22 mm / PG21 housing
- 6 mm, flush mountable
- NAMUR output
- Cable version

Benefits

- Usable up to SIL 3 acc. to IEC 61508
- Usable in hazardous area
- FM Class and Division approvals
- High protection degree (IP68)

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	6 mm
Installation	flush
Output type	NAMUR, NC
Nominal voltage	8 V DC
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 2000 Hz
Suitable for 2:1 technology	✓, with reverse polarity protection diode
Ambient temperature	-40 ... 100 °C (-40 ... 212 °F)
Protection degree	IP68
Connection type	cable silicon, 2 m



Model Number

Housing material	Stainless steel 1.4305 / AISI 303
	PBT

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	1G; 2G; 1D

Approvals and Certificates

FM control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

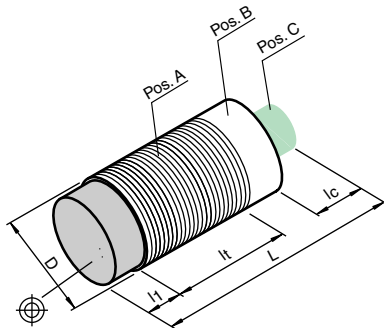
Dimensions

Length L [mm]	35
Diameter D [mm]	22
Thread length l _t [mm]	0
Cap length l ₁ [mm]	0
Connector length l _c [mm]	0
LED position	-



Danger!

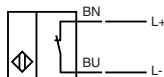
In safety-related applications the sensor must be operated with a qualified fail safe interface from Pepperl+Fuchs, such as KFD2-SH-EX1. Consider the "exida Functional Safety Assessment" document which is available on www.pepperl-fuchs.com as an integral part of this product's documentation.



Electrical Connection



NJ6-22-SN
NJ6-22-SN-G





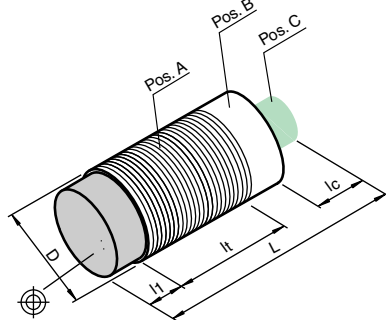
Properties

- Ø30 mm housing
- Up to 15 mm sensing ranges
- DC, NAMUR safety interface
- Cable version

Benefits

- Usable up to SIL 3 acc. to IEC 61508
- Usable in hazardous area
- FM Class and Division approvals
- High protection degree (IP68)
- Models available with low temperature operation down to -50 °C (-58 °F)

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Nominal voltage	8 V DC
Housing material	PP
Protection degree	IP68
Connection type	cable silicon , 2 m



Model Number

		NJ5-30GK-S1N	NJ10-30GK-SN	NJ15-30GK-SN
Rated operating distance	5 mm	●		
	10 mm		●	
	15 mm			●
Installation	flush	●	●	
	non-flush			●
Output type	NAMUR, NO	●		
	NAMUR, NC		●	●
Current consumption				
Measuring plate not detected	≥ 3 mA		●	●
	≤ 1 mA	●		
Measuring plate detected	≥ 3 mA	●		
	≤ 1 mA		●	●
Switching frequency	0 ... 100 Hz			●
	0 ... 150 Hz	●		
	0 ... 300 Hz		●	
Suitable for 2:1 technology	✓, with reverse polarity protection diode	●		
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)	●		
	-40 ... 100 °C (-40 ... 212 °F)			●
	-50 ... 100 °C (-58 ... 212 °F)		●	

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●
Category	1G; 2G; 1D	●	●	
	1G; 2G; 3G; 1D; 3D			●

Approvals and Certificates

FM control drawing	116-0165F	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]	40
Diameter D [mm]	M30 x 1.5
Thread length l _t [mm]	34.5
Cap length l ₁ [mm]	1
Connector length l _c [mm]	0
LED position	-

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 30	Mounting bracket, 30 mm
AB-30	Right angled mounting bracket



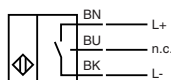
Danger!

In safety-related applications the sensor must be operated with a qualified fail safe interface from Pepperl+Fuchs, such as KFD2-SH-EX1. Consider the "exida Functional Safety Assessment" document which is available on www.pepperl-fuchs.com as an integral part of this product's documentation.

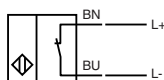
Electrical Connection



NJ5-30GK-S1N



NJ10-30GK-SN
NJ15-30GK-SN





Properties

- Ø12 mm, Ø18 mm and Ø30 mm housing versions
- Up to 15 mm sensing ranges
- AS interface
- Connector version

Additional Products

In this series, we offer the following additional products:

NCN4-12GM60-B3B-C2-V1

Technical data like NCB4-12GM60-B3B-V1 but:

Installation: non-flush

Cap length: 5 mm

Special property: magnetic field resistant

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Output type	AS-Interface, NO/NC programmable
Slave type	A/B slave
AS-Interface specification	V3.0
Operating voltage	26.5 ... 31.9 V via AS-i bus system
No-load supply current	≤ 25 mA
Reverse polarity protection	✓
Switching state indication	dual-LED, yellow
Fault indication	dual-LED, red
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Connection type	Connector M12 x 1, 4-pin



Model Number

		NCB4-12GM60-B3B-V1	NCB5-18GM60-B3B-V1	NBB8-18GM60-B3B-V1	NBB15-30GM60-B3B-V1
Rated operating distance	4 mm	●			
	5 mm		●		
	8 mm			●	
	15 mm				●
Switching frequency	0 ... 100 Hz		●		
	0 ... 200 Hz			●	
	0 ... 500 Hz	●			●
Housing material	Stainless steel 1.4305 / AISI 303	●	●		
	brass, nickel-plated			●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V				

Dimensions

Length L [mm]	75	70	75
Diameter D [mm]	M12 x 1	M18 x 1	M30 x 1.5
Thread length l _t [mm]	60	44	60
Cap length l ₁ [mm]		0	
Connector length l _c [mm]	15	10	15
LED position	Pos. B		Pos. C

Accessories

These and more accessories can be found in chapter 10

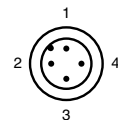
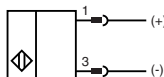
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BF 12	Mounting bracket, 12 mm
BF 18	Mounting bracket, 18 mm
BF 30	Mounting bracket, 30 mm
EXG-12	Quick mounting bracket with stop, 12 mm
EXG-18	Quick mounting bracket with stop, 18 mm
EXG-30	Quick mounting bracket with stop, 30 mm
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector
V1-G-BK0,3M-PUR-U-V1-G	Connection cable, M12 to M12, 0.3 m PUR cable, 4-pin, straight
V1-G-BK1M-PUR-U-V1-G	Connection cable, M12 to M12, 1 m PUR cable, 4-pin, straight

Electrical Connection



NCB4-12GM60-B3B-V1
NCB5-18GM60-B3B-V1
NBB8-18GM60-B3B-V1
NBB15-30GM60-B3B-V1
NCN4-12GM60-B3B-C2-V1





Properties

- Miniature F76 housing
- 2 mm, flush mountable
- DC, 3-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1500 Hz
Load current	0 ... 100 mA
Short-circuit protection	✓, self checking
Switching state indication	LED yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PC
Protection degree	IP67
Connection type	cable PVC, 0.5 m



Model Number

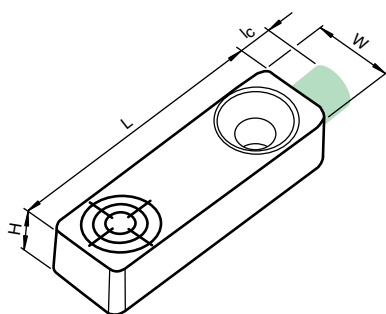
			NBB2-F76-E0-0,5M	NBB2-F76-E1-0,5M	NBB2-F76-E2-0,5M	NBB2-F76-E3-0,5M
Output type	NPN	NC				
	NPN	NO	●	●		
	PNP	NC				●
	PNP	NO			●	

Approvals and Certificates

CCC approval	CCC approval / marking not required for sensors rated ≤36 V
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Dimensions

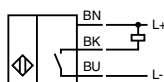
Length L [mm]	25
Width W [mm]	8
Height H [mm]	5.5
Connector length l _c [mm]	3



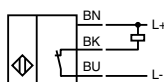
Electrical Connection



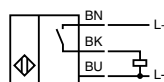
NBB2-F76-E0-0,5M



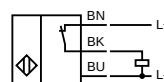
NBB2-F76-E1-0,5M



NBB2-F76-E2-0,5M



NBB2-F76-E3-0,5M





Properties

- Miniature F29 housing
- 2 mm and 4 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Cable version

Benefits

- Anti-slide tab (models available without tab)

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Reverse polarity protection	✓
Switching frequency	0 ... 1000 Hz
Load current	0 ... 100 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Connection type	cable PVC, 2 m



Model Number

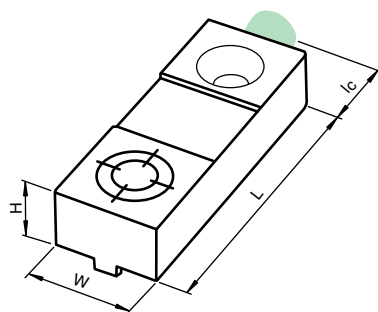
		NBB2-F29-A0	NBB2-F29-A2	NBN4-F29-E0	NBN4-F29-E2	NBN4-F29-A0	NBN4-F29-A2
Rated operating distance	2 mm	●	●				
	4 mm						
Installation	flush	●	●				
	non-flush			●	●	●	●
Output type	NPN NO/NC	●					
	NPN NO			●			
	PNP NO/NC						●
	PNP NO				●		
Operating voltage	10 ... 30 V DC			●	●		
	4.75 ... 30 V DC	●	●			●	●
No-load supply current	≤ 10 mA			●	●		
	≤ 15 mA	●	●			●	●
Housing material	PPS			●	●	●	●
	Ryton R4	●	●				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V						

Dimensions

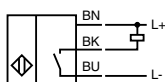
Length L [mm]	27
Width W [mm]	10
Height H [mm]	6
Connector length l _c [mm]	4



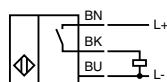
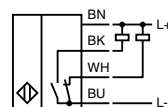
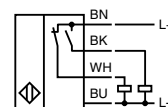
Electrical Connection



NBN4-F29-E0



NBN4-F29-E2

NBB2-F29-A0
NBN4-F29-A0NBB2-F29-A2
NBN4-F29-A2



Properties

- Miniature F79 housing
- 1.5 mm, flush mountable
- DC, 3-wire switching output
- Cable and pigtailed connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Operating voltage	5 ... 30 V DC
No-load supply current	≤ 15 mA
Switching frequency	0 ... 1200 Hz
Load current	0 ... 100 mA
Short-circuit protection	✓, self checking
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PA
Protection degree	IP67

Model Number

			NBB1,5-F79-E0-0,5M	NBB1,5-F79-E1-0,5M	NBB1,5-F79-E2-0,5M	NBB1,5-F79-E3-0,5M	NBB1,5-F79-E0-0,1M-V3	NBB1,5-F79-E1-0,1M-V3	NBB1,5-F79-E2-0,1M-V3	NBB1,5-F79-E3-0,1M-V3
Output type	NPN	NO	●				●			
	NPN	NC		●				●		
	PNP	NO			●				●	
	PNP	NC				●				●
Connection type	cable PVC, 500 mm		●	●	●	●				
	Cable connector M8 x 1, 3-pin with PVC cable 100 mm						●	●	●	●

Approvals and Certificates

CCC approval	CCC approval / marking not required for sensors rated ≤36 V
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Dimensions

Length L [mm]	16
Width W [mm]	8
Height H [mm]	4
Cap length l ₁ [mm]	0.7
Connector length l _c [mm]	1.5

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V3-WM

Female connector, M8, 3-pin, field attachable, angled

V3-GM

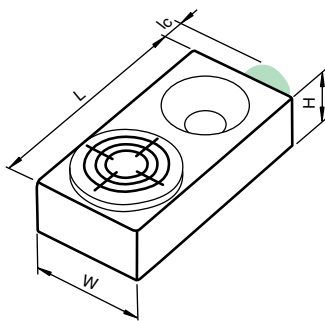
Female connector, M8, 3-pin, field attachable, straight

V3-WM-BK2M-PUR-U

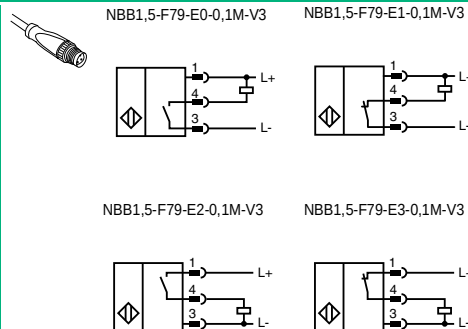
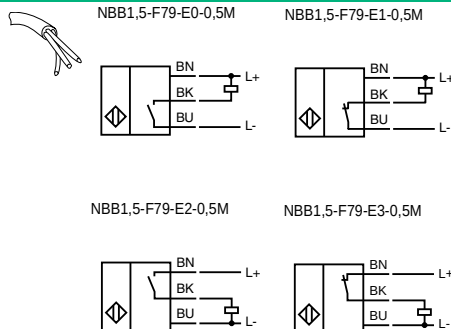
Female cordset, M8, 3-pin, PUR cable, angled

V3-GM-BK2M-PUR-U

Female cordset, M8, 3-pin, PUR cable, straight



Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Properties

- Miniature V3 housing
- 3 mm, flush mountable
- DC, 2-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Installation	flush
Operating voltage	5 ... 60 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 2000 Hz
Load current	4 ... 100 mA
Lowest Load current	4 mA
Switching state indication	LED, yellow
Housing material	PBT
Protection degree	IP67

Model Number

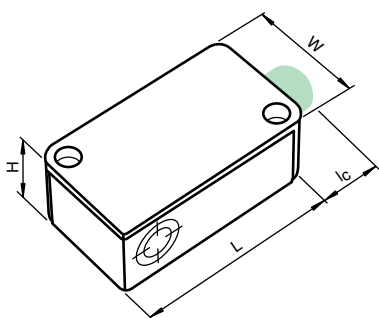
		NBB3-V3-Z4	NBB3-V3-Z5	NBB3-V3-Z4-V5	NBB3-V3-Z5-V5
Output type	DC NO	●		●	
	DC NC		●		●
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	●	●	●	●
	-25 ... 85 °C (-13 ... 185 °F)	●			
Connection type	4.8 mm Faston	●	●	●	●
	cable PVC, 130 mm				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●

Dimensions

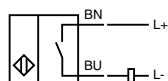
Length L [mm]	27.8	
Width W [mm]	16	
Height H [mm]	10	
Connector length l _c [mm]	0	9.7



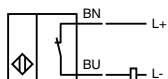
Electrical Connection



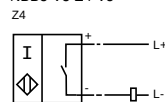
NBB3-V3-Z4



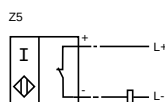
NBB3-V3-Z5



NBB3-V3-Z4-V5



NBB3-V3-Z5-V5





Properties

- Miniature V3 housing
- 2 mm and 4 mm sensing ranges
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	PNP	NO
Operating voltage	10 ... 30 V DC	
No-load supply current	≤ 15 mA	
Reverse polarity protection	✓	
Load current	0 ... 100 mA	
Short-circuit protection	✓, self checking	
Switching state indication	LED, yellow	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	
Housing material	PBT	
Protection degree	IP67	

Model Number

		NBB2-V3-E2	NBN4-V3-E2	NBB2-V3-E2-V3
Rated operating distance	2 mm	●		●
	4 mm		●	
Installation	flush	●		●
	non-flush		●	
Switching frequency	0 ... 1000 Hz	●		●
	0 ... 500 Hz		●	
Connection type	Connector M8 x 1, 3-pin			●
	cable PVC, 130 mm	●	●	

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]		27.8		
Width W [mm]		16		
Height H [mm]		10		
Connector length l _c [mm]	0	0		9.2

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V3-WM

Female connector, M8, 3-pin, field attachable, angled

V3-GM

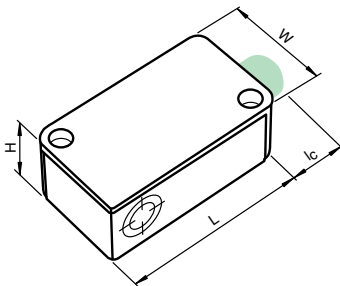
Female connector, M8, 3-pin, field attachable, straight

V3-WM-BK2M-PUR-U

Female cordset, M8, 3-pin, PUR cable, angled

V3-GM-BK2M-PUR-U

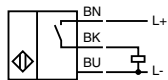
Female cordset, M8, 3-pin, PUR cable, straight



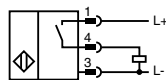
Electrical Connection



NBB2-V3-E2
NBN4-V3-E2



NBB2-V3-E2-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Properties

- Miniature V3 housing
- 2 mm, flush mountable
- AC/DC, 2-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NBB2-V3-US
Rated operating distance	2 mm
Installation	flush mountable
Output type	AC/DC NO
Operating voltage DC	10 ... 140 V
Operating voltage AC	20 ... 140 V
Switching frequency	25 Hz
Load current	5 ... 200 mA max
Switching state indication	LED, red
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection type	cable PUR

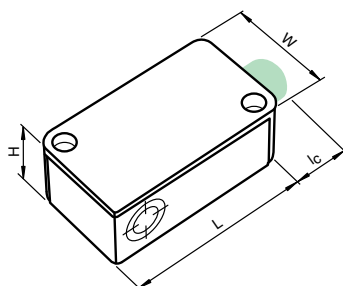


Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose

Dimensions

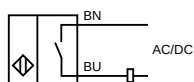
Length L [mm]	27.8
Width W [mm]	16
Height H [mm]	10
Connector length l _c [mm]	9.2



Electrical Connection



NBB2-V3-US





Properties

- Miniature F141 housing
- 0.8 mm, flush mountable
- DC, 3-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	0.8 mm
Installation	flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 5 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP67
Connection type	cable PUR , 2 m



Model Number

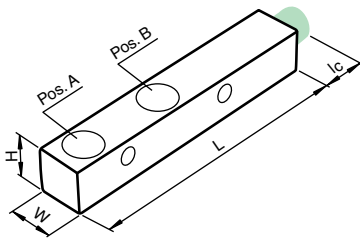
		NBB0,8-F141-E0	NBB0,8-F141-E1	NBB0,8-F141-E2	NBB0,8-F141-E3
Output type	NPN normally closed		●		
	NPN NO	●			
	PNP NO			●	
Switching frequency	PNP NC				●
	0 ... 10000 Hz	●		●	
	0 ... 2500 Hz		●		●

Approvals and Certificates

CCC approval	CCC approval / marking not required for sensors rated ≤36 V
--------------	---

Dimensions

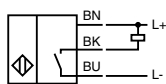
Length L [mm]	25
Width W [mm]	5
Height H [mm]	5
Connector length l _c [mm]	0
Active area position	Pos. A



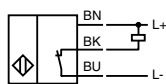
Electrical Connection



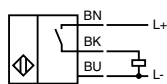
NBB0,8-F141-E0



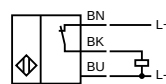
NBB0,8-F141-E1



NBB0,8-F141-E2



NBB0,8-F141-E3





Properties

- Miniature F41 housing
- 1.5 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Additional Products

In this series, we offer the following additional products:

NBB2-F41-E2-V3

Technical data like NBB1,5-F41-E2-V3 but:
Rated operating distance: 2 mm

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	1.5 mm
Installation	flush
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

			NBB1,5-F41-E0	NBB1,5-F41-E2	NBB1,5-F41-E3	NBB1,5-F41A-E2	NBB1,5-F41A-E3	NBB1,5-F41-E0-V3	NBB1,5-F41-E2-V3	NBB1,5-F41-E3-V3	NBB1,5-F41A-E2-V3
Output type	NPN	NO	•					•			
	PNP	NO		•					•		
	PNP	NC			•		•			•	
No-load supply current	≤ 10 mA		•					•			
	≤ 15 mA			•	•	•	•		•	•	•
Switching frequency	0 ... 1500 Hz			•	•	•	•		•	•	•
	0 ... 5000 Hz		•					•			
Load current	0 ... 100 mA			•	•	•	•		•	•	•
	0 ... 200 mA		•					•			
Connection type	Connector M8 x 1, 3-pin							•	•	•	•
	cable PVC, 2 m		•	•	•	•	•				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V										

Dimensions

Length L [mm]		40	50	46	
Width W [mm]			8		
Height H [mm]			8		
Connector length l _c [mm]		0		9	
Active area position	Pos.:	A	B	A	B

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V3-GM

V3-WM

V3-GM-BK2M-PUR-U

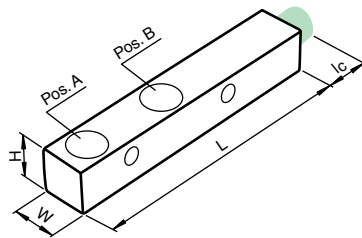
V3-WM-BK2M-PUR-U

Female connector, M8, 3-pin, field attachable, straight

Female connector, M8, 3-pin, field attachable, angled

Female cordset, M8, 3-pin, PUR cable, straight

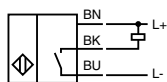
Female cordset, M8, 3-pin, PUR cable, angled



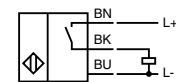
Electrical Connection



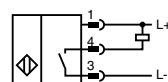
NBB1,5-F41-E0



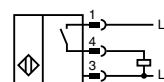
NBB1,5-F41-E2
NBB1,5-F41A-E2



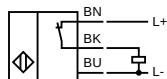
NBB1,5-F41-E0-V3



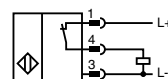
NBB1,5-F41-E2-V3
NBB1,5-F41A-E2-V3
NBB2-F41-E2-V3



NBB1,5-F41-E3
NBB1,5-F41A-E3



NBB1,5-F41-E3-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)

Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
SENSING YOUR NEEDS



Properties

- Miniature F41 housing
- 3 mm, quasi-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Installation	quasi-flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1000 Hz
Load current	0 ... 200 mA , above 50°C ≤ 150 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	brass, nickel-plated
Protection degree	IP67

Model Number

	NEB3-F41-E0	NEB3-F41-E1	NEB3-F41-E2	NEB3-F41-E3	NEB3-F41-E0-V3	NEB3-F41-E1-V3	NEB3-F41-E2-V3	NEB3-F41-E3-V3
Output type	NPN NO	NPN NC	PNP NO	PNP NC				
Connection type	Connector M8 x 1 , 3-pin cable PVC , 2 m							

Approvals and Certificates

UL approval	cULus Listed, General Purpose							
CSA approval	cCSAus Listed, General Purpose							
CCC approval	CCC approval / marking not required for sensors rated ≤36 V							

Dimensions

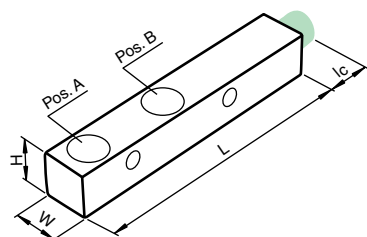
Length L [mm]	40	50
Width W [mm]	8	
Height H [mm]	8	
Connector length l _c [mm]	0	6
Active area position	Pos. A	

Accessories

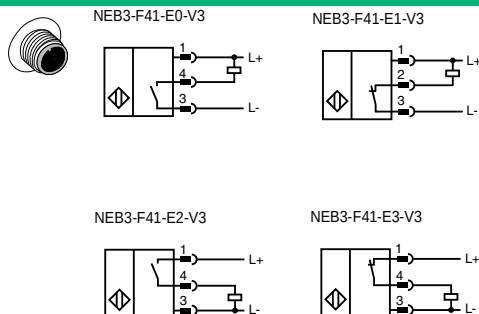
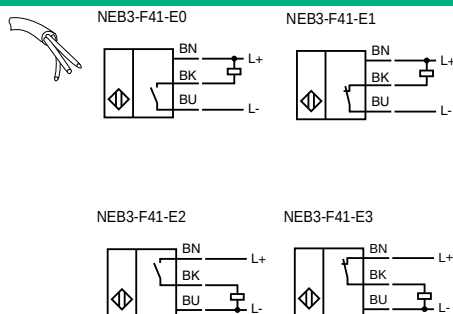
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled



Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)



Properties

- Compact F1 housing
- 4 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- High visibility LED

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	4 mm
Installation	flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1400 Hz
Load current	0 ... 250 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PA
Protection degree	IP67

Model Number

	NBB4-F1-E0	NBB4-F1-E2	NBB4-F1-E3	NBB4-F1-E0-V3	NBB4-F1-E2-V3	NBB4-F1-E3-V3
Output type	NPN NO	PNP NO	PNP NC			
Connection type	Connector M8 x 1, 3-pin cable PVC, 2 m					

Approvals and Certificates

UL approval	cULus Listed, General Purpose					
CSA approval	cCSAus Listed, General Purpose					
CCC approval	CCC approval / marking not required for sensors rated ≤36 V					

Dimensions

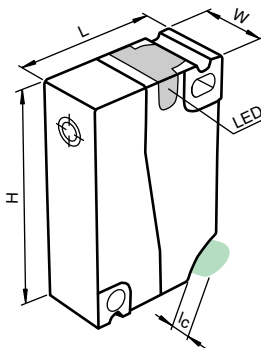
Length L [mm]	26
Width W [mm]	12
Height H [mm]	40
Connector length l _c [mm]	0 9

Accessories

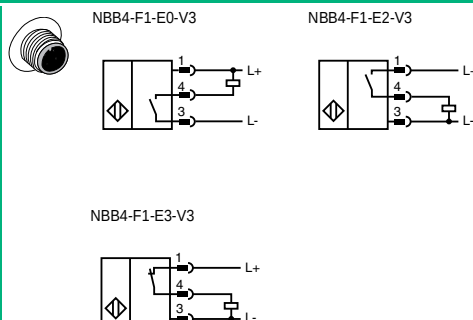
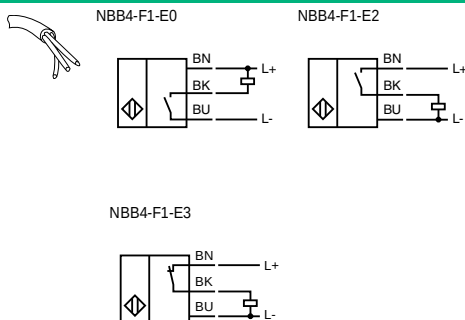
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM	Female connector, M8, 3-pin, field attachable, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled



Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)

Refer to General Notes Relating to Product Information

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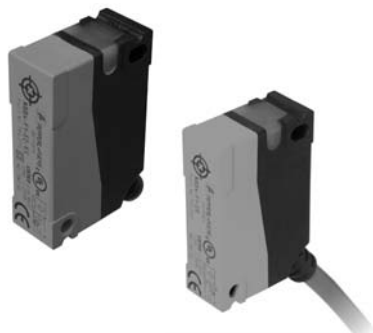
Copyright Pepperl+Fuchs

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PEPPERL+FUCHS
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Properties

- Compact F1 housing
- 4 mm, flush mountable
- DC, 4-wire switching output
- Cable and connector versions

Benefits

- High visibility LED

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	4 mm
Installation	flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1400 Hz
Load current	0 ... 250 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PA
Protection degree	IP67

Model Number

		NBB4-F1-A0	NBB4-F1-A2	NBB4-F1-A0-V31	NBB4-F1-A2-V31
Output type	NPN	•		•	
	PNP		•		•
Connection type	Connector M8 x 1, 4-pin	•	•	•	•
	cable PVC, 2 m				



Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	26
Width W [mm]	12
Height H [mm]	40
Connector length l _c [mm]	0
	9

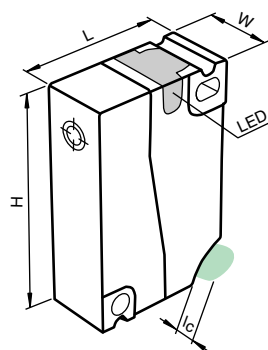
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V31-GM-BK2M-PUR-U
V31-WM-BK2M-PUR-U

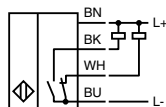
Female cordset, M8 x 1, 4-pin, PUR cable, straight
Female cordset, M8 x 1, 4-pin, PUR cable, angled



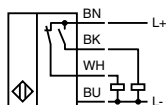
Electrical Connection



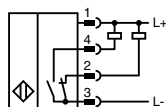
NBB4-F1-A0



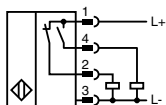
NBB4-F1-A2



NBB4-F1-A0-V31



NBB4-F1-A2-V31



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Compact F1 housing
- 8 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Benefits

- High visibility LED

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	8 mm
Installation	non-flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1400 Hz
Load current	0 ... 250 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PA
Protection degree	IP67

Model Number

	NBN8-F1-E0	NBN8-F1-E2	NBN8-F1-E3	NBN8-F1-E0-V3	NBN8-F1-E2-V3	NBN8-F1-E3-V3
Output type	NPN NO	PNP NO	PNP NC			
Connection type	Connector M8 x 1, 3-pin cable PVC, 2 m					

Approvals and Certificates

UL approval	cULus Listed, General Purpose					
CSA approval	cCSAus Listed, General Purpose					
CCC approval	CCC approval / marking not required for sensors rated ≤36 V					

Dimensions

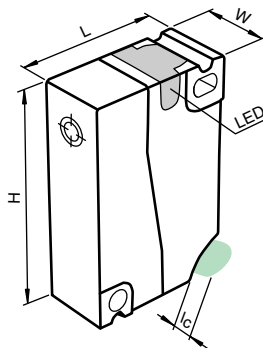
Length L [mm]	26
Width W [mm]	12
Height H [mm]	40
Connector length l _c [mm]	0

Accessories

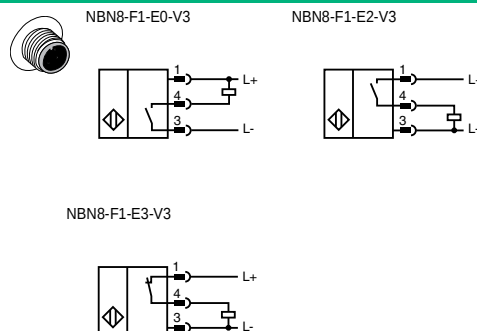
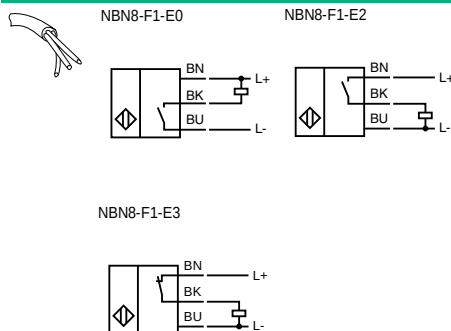
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V3-WM	Female connector, M8, 3-pin, field attachable, angled
V3-GM	Female connector, M8, 3-pin, field attachable, straight
V3-WM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, angled
V3-GM-BK2M-PUR-U	Female cordset, M8, 3-pin, PUR cable, straight



Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)

Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
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Properties

- Compact F1 housing
- 8 mm, non-flush mountable
- DC, 4-wire switching output
- Cable and connector versions

Benefits

- High visibility LED

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	8 mm
Installation	non-flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1400 Hz
Load current	0 ... 250 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PA
Protection degree	IP67

Model Number

		NBN8-F1-A0	NBN8-F1-A2	NBN8-F1-A0-V31	NBN8-F1-A2-V31
Output type	NPN	•		•	
	PNP		•		•
Connection type	Connector M8 x 1, 4-pin	•	•	•	•
	cable PVC, 2 m				



Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	26
Width W [mm]	12
Height H [mm]	40
Connector length l _c [mm]	0
	9

Accessories

These and more accessories can be found in chapter 10

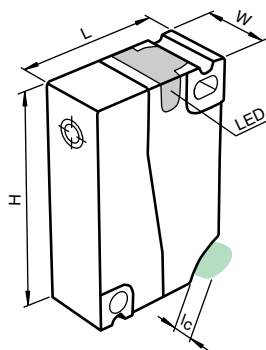
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V31-WM-BK2M-PUR-U

Female cordset, M8 x 1, 4-pin, PUR cable, angled

V31-GM-BK2M-PUR-U

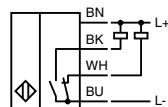
Female cordset, M8 x 1, 4-pin, PUR cable, straight



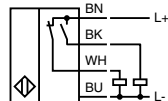
Electrical Connection



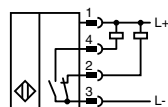
NBN8-F1-A0



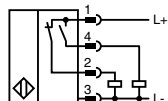
NBN8-F1-A2



NBN8-F1-A0-V31



NBN8-F1-A2-V31



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	4 mm
Installation	flush
Operating voltage	20 ... 253 V AC/DC
No-load supply current	≤ 4 mA
Reverse polarity protection	✓
Switching frequency	0 ... 25 Hz
Load current	4 ... 250 mA AC 4 ... 100 mA DC
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PA
Protection degree	IP67
Connection type	cable PVC, 2 m

Properties

- Compact F1 housing
- 4 mm, flush mountable
- AC/DC, 2-wire switching output
- Cable version

Benefits

- High visibility LED

Model Number

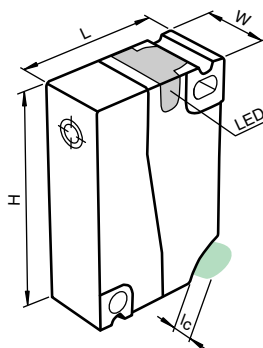
Output type	AC/DC	NO	NC	NBB4-F1-US	NBB4-F1-UO

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●

Dimensions

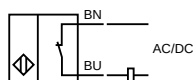
Length L [mm]	26
Width W [mm]	12
Height H [mm]	40
Connector length l _c [mm]	0



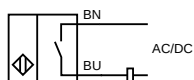
Electrical Connection



NBB4-F1-UO



NBB4-F1-US





Properties

- Compact F7 housing
- 5 mm, non-flush mountable
- DC, 3-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	5 mm
Installation	non-flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 500 Hz
Load current	0 ... 100 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection type	cable PVC, 2 m



Model Number

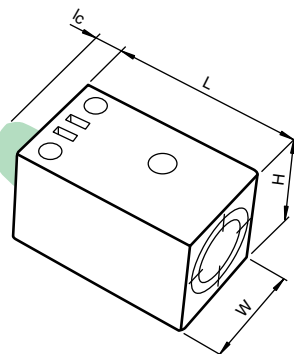
Output type	NPN	NO	NBN5-F7-E0	NBN5-F7-E2
	PNP	NO	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

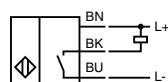
Length L [mm]	28
Width W [mm]	17
Height H [mm]	17
Connector length l _c [mm]	0



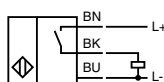
Electrical Connection



NBN5-F7-E0



NBN5-F7-E2





Properties

- Compact F9 housing
- 5 mm, flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	5 mm
Installation	flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 500 Hz
Load current	0 ... 150 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number

		NBB5-F9-E0	NBB5-F9-E2	NBB5-F9-E0-V3	NBB5-F9-E2-V3
Output type	NPN NO	●	●	●	●
	PNP NO				
Connection type	Connector M8 push on, 3-pin	●	●	●	●
	cable PVC, 2 m				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	38.5
Width W [mm]	16
Height H [mm]	16.5
Connector length l _c [mm]	0 6

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V3-GM

V3-WM

V3-WR-5M-PUR

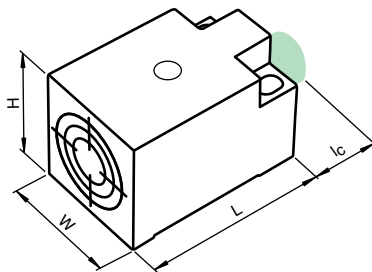
V3-WR-E2-5M-PUR

Female connector, M8, 3-pin, field attachable, straight

Female connector, M8, 3-pin, field attachable, angled

Female cordset, M8 x 1, 3-pin, 5 m PUR cable, angled

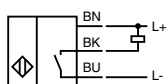
Female cordset with LED indicator, M8 x 1, 3-pin, 5 m PUR cable, angled



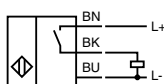
Electrical Connection



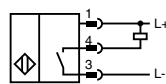
NBB5-F9-E0



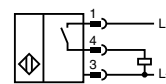
NBB5-F9-E2



NBB5-F9-E0-V3



NBB5-F9-E2-V3



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)





Properties

- Compact F10 housing
- 10 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	10 mm
Installation	non-flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 500 Hz
Load current	0 ... 150 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number

	NBN10-F10-E0	NBN10-F10-E2	NBN10-F10-E0-V1	NBN10-F10-E2-V1
Output type	NPN NO	PNP NO		
Connection type	Connector M12 x 1, 4-pin cable PVC, 2 m			

Approvals and Certificates

UL approval	cULus Listed, General Purpose			
CSA approval	cCSAus Listed, General Purpose			
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

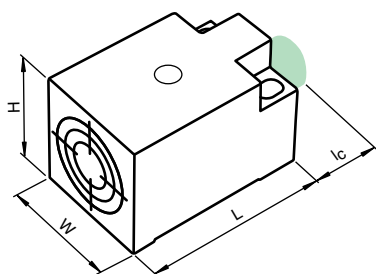
Length L [mm]	38.5
Width W [mm]	25
Height H [mm]	25.5
Connector length l _c [mm]	0 10

Accessories

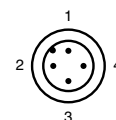
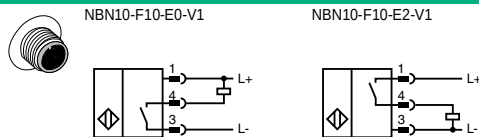
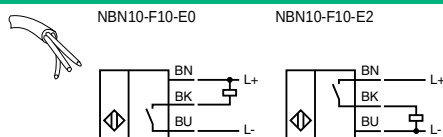
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Compact F11 housing
- 15 mm, non-flush mountable
- DC, 3-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	non-flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 150 Hz
Load current	0 ... 150 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number

		NBN15-F11-E0	NBN15-F11-E2	NBN15-F11-E0-V1	NBN15-F11-E2-V1
Output type	NPN NO	●		●	
	PNP NO		●		●
Connection type	Connector M12 x 1, 4-pin cable PVC, 2 m	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

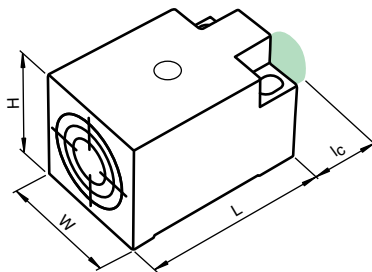
Length L [mm]	52.5
Width W [mm]	30
Height H [mm]	30.5
Connector length l _c [mm]	0 10

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

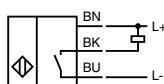
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



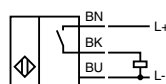
Electrical Connection



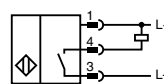
NBN15-F11-E0



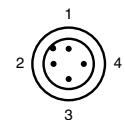
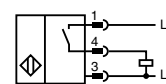
NBN15-F11-E2



NBN15-F11-E0-V1



NBN15-F11-E2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Compact F104 housing
- 7 mm, flush mountable
- DC, 4-wire switching output
- Cable and pigtailed connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	7 mm
Installation	flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	150 Hz
Load current	200 mA
Short-circuit protection	✓, self checking
Switching state indication	LED
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	GD-Zn
Protection degree	IP67

Model Number

		NBB7-F104M-A0	NBB7-F104M-A2	NBB7-F104M-A0-200MM-V1	NBB7-F104M-A2-200MM-V1
Output type	NPN	•		•	
	NO/NC				
	PNP		•		•
	NO/NC				
Connection type	cable PUR, 2 m	•	•		
	Cable connector M12 x 1, 4-pin with PUR cable 200 mm			•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	32
Width W [mm]	20
Height H [mm]	8
Connector length l _c [mm]	4

Accessories

These and more accessories can be found in chapter 10

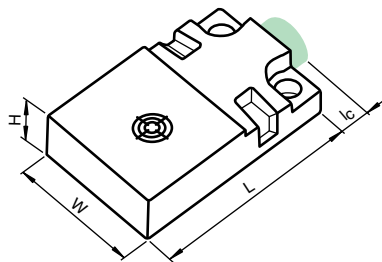
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G-BK2M-PUR-U

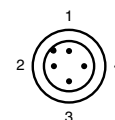
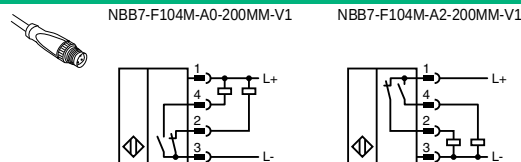
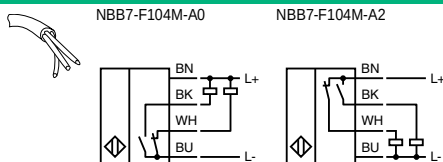
Female cordset, M12, 4-pin, PUR cable, straight

V1-W-BK2M-PUR-U

Female cordset, M12, 4-pin, PUR cable, angled



Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Compact F33 metal housing
- 5 mm, flush mountable
- DC, 3-wire and 4-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	5 mm
Installation	flush
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 500 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Switching state indication	LED
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	metal
Protection degree	IP67
Connection type	cable PVC, 2 m



Model Number

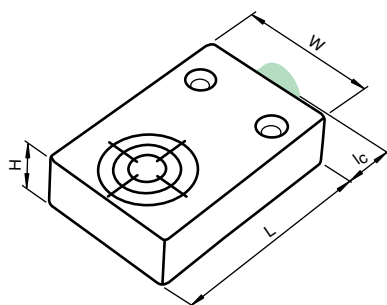
		NBB5-F33M-E0	NBB5-F33M-E2	NBB5-F33M-A0	NBB5-F33M-A2
Output type	NPN				
	NO/NC				
	NPN	•			
	NO				
	PNP				
	NO/NC				
	PNP		•		•
	NO				
No-load supply current	≤ 15 mA	•	•		
	≤ 20 mA			•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V				

Dimensions

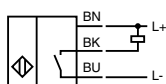
Length L [mm]	50
Width W [mm]	25
Height H [mm]	10
Connector length l _c [mm]	0



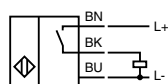
Electrical Connection



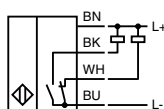
NBB5-F33M-E0



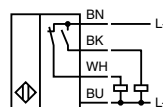
NBB5-F33M-E2



NBB5-F33M-A0



NBB5-F33M-A2





Properties

- Compact F33 plastic housing
- 5 mm and 8 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Housing material	PBT
Protection degree	IP67
Connection type	cable PVC, 2 m



Model Number

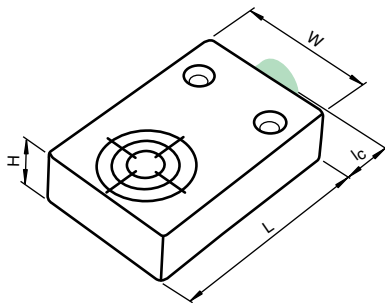
			NBB5-F33-E0	NBB5-F33-E2	NBB5-F33-A0	NBB5-F33-A2	NBB8-F33-E0	NBB8-F33-E1	NBB8-F33-E2	NBB8-F33-E3
Rated operating distance	5 mm		●	●	●	●				
	8 mm						●	●	●	●
Output type	NO/NC				●					
	NPN NO		●				●			
	NPN NC							●		
	PNP NO/NC				●					
	PNP NO			●					●	
	PNP NC									●
Operating voltage	10 ... 30 V DC		●	●	●	●				
	10 ... 60 V DC						●	●	●	●
No-load supply current	≤ 10 mA									
	≤ 15 mA		●	●						
	≤ 20 mA				●	●				
Switching frequency	0 ... 350 Hz						●	●	●	●
	0 ... 500 Hz		●	●	●	●				
Switching state indication	LED yellow						●	●	●	●
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)		●	●	●	●				
	-35 ... 70 °C (-31 ... 158 °F)						●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)						●	●	●	●
	CCC approval / marking not required for sensors rated ≤36 V	●	●	●	●					

Dimensions

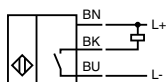
Length L [mm]	50
Width W [mm]	25
Height H [mm]	10
Connector length l _c [mm]	0



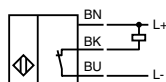
Electrical Connection



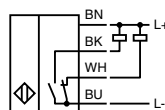
NBB5-F33-E0
NBB8-F33-E0



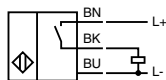
NBB8-F33-E1



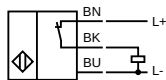
NBB5-F33-A0



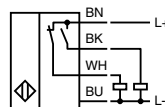
NBB5-F33-E2
NBB8-F33-E2



NBB8-F33-E3



NBB5-F33-A2





Properties

- Flexible Mini-Cube housing
- 15 mm, non-flush mountable
- DC, 2-wire switching output
- Terminal compartment

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NCN15-M1K-Z2
Rated operating distance	15 mm
Installation	non-flush
Output type	DC NO/NC
Operating voltage	5 ... 60 V DC
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 150 Hz
Load current	2 ... 200 mA
Lowest Load current	2 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Pre-fault indication	LED, red
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection type	screw terminals



Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Certified by China Compulsory Certification (CCC)

Dimensions

Length L [mm]	91
Width W [mm]	30
Height H [mm]	30
Connector length l _c [mm]	0
Connector thread	M16 X 1.5

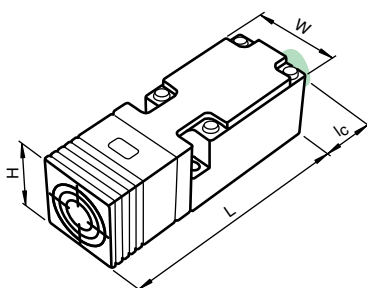
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

MH 04-3742A

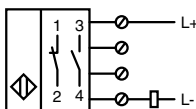
Mounting bracket for Limit Switch style and -M1K-



Electrical Connection



NCN15-M1K-Z2



Note: Only connect as Normally open or Normally closed - cannot be used simultaneously





Properties

- Flexible Mini-Cube housing
- 15 mm, non-flush mountable
- AC, 2-wire switching output
- Terminal compartment

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NBN15-M1K-WS
Rated operating distance	15 mm
Installation	non-flush
Output type	AC NO
Operating voltage	20 ... 253 V AC
Switching frequency	0 ... 20 Hz
Load current	5 ... 400 mA
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection type	screw terminals



Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose

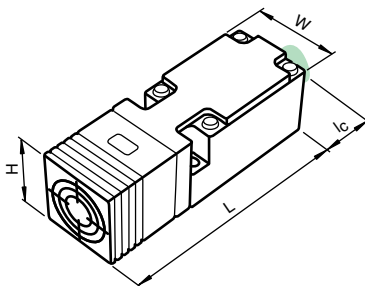
Dimensions

Length L [mm]	91
Width W [mm]	30
Height H [mm]	30
Connector length l _c [mm]	0
Connector thread	M16 X 1.5

Accessories

These and more accessories can be found in chapter 10

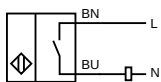
MH 04-3742A	See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories
	Mounting bracket for Limit Switch style and -M1K-



Electrical Connection



NBN15-M1K-WS



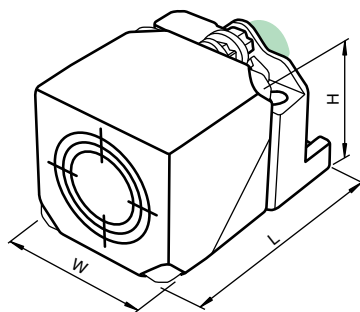


Properties

- Compact cube style, L2 housing
- 20 mm and 40 mm sensing ranges
- DC, 2-wire switching output
- Connector version

Benefits

- High visibility LED indication
- Sensor head can be positioned 5-ways
- Mounting base with quick release bracket
- Adjustable connector allows flexible wiring



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Switching frequency	0 ... 30 Hz
Load current	2 ... 100 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PA
Protection degree	IP69K
Connection type	Connector M12 x 1, 4-pin



Model Number

	NBB20-L2-Z0-V1	NBB20-L2-Z4-V1	NBB20-L2-Z5-V1	NBN40-L2-Z0-V1	NBN40-L2-Z4-V1	NBN40-L2-Z5-V1
Rated operating distance	20 mm	40 mm				
Installation	flush	non-flush				
Output type	NO	NC				
Operating voltage	3.8 ... 30 V DC	5 ... 30 V DC				
Reverse polarity protection	✓	✓, polarity independent				

Approvals and Certificates

UL approval	cULus Listed, General Purpose					
CSA approval	cCSAus Listed, General Purpose					
CCC approval	CCC approval / marking not required for sensors rated ≤36 V					

Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

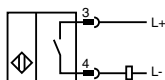
V1-G
V1-W
V1-G-BK2M-PUR-U
V1-W-BK2M-PUR-U
MHW 01
MH 02-L
MH 01-L2-W

4-pin, M12 female field-attachable connector, straight
4-pin, M12 female field-attachable connector, angled
Female cordset, M12, 4-pin, PUR cable, straight
Female cordset, M12, 4-pin, PUR cable, angled
Modular mounting bracket
Mounting bracket
Mounting bracket - 1/2" rod type, angled

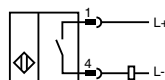
Electrical Connection



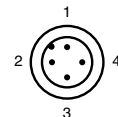
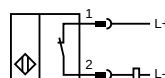
NBB20-L2-Z0-V1
NBN40-L2-Z0-V1



NBB20-L2-Z4-V1
NBN40-L2-Z4-V1



NBB20-L2-Z5-V1
NBN40-L2-Z5-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



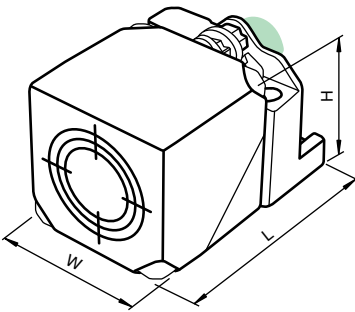


Properties

- Compact cube style, L2 housing
- 20 mm and 40 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Connector version

Benefits

- High visibility LED indication
- Sensor head can be positioned 5-ways
- Mounting base with quick release bracket
- Adjustable connector allows flexible wiring



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Housing material	PA
Protection degree	IP69K
Connection type	Connector M12 x 1, 4-pin



Model Number

		NBB20-L2-E0-V1	NBB20-L2-E2-V1	NBB20-L2-A0-V1	NBB20-L2-A2-V1	NBB20-L2-A2-T-V1	NBN40-L2-E0-V1	NBN40-L2-E2-V1	NBN40-L2-E34-V1	NBN40-L2-A0-V1	NBN40-L2-A2-V1
Rated operating distance	20 mm	●	●	●	●	●					
	40 mm						●	●	●	●	●
Installation	flush	●	●	●	●	●					
	non-flush						●	●	●	●	●
Output type	NPN NO/NC			●							
	NPN NO	●					●				
	PNP NO/NC				●	●					●
	PNP NO		●					●			
	PNP NC								●		
Switching frequency	0 ... 100 Hz						●	●	●	●	●
	0 ... 150 Hz	●	●	●	●	●					
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)	●	●	●	●	●	●	●	●	●	●
	-25 ... 100 °C (-13 ... 212 °F)					●					

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V										

Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40

Accessories

These and more accessories can be found in chapter 10

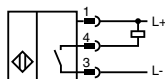
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
MHW 01	Modular mounting bracket
MH 02-L	Mounting bracket
MH 01-L2-W	Mounting bracket - 1/2" rod type, angled

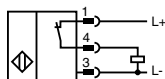
Electrical Connection



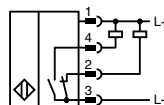
NBB20-L2-E0-V1
NBN40-L2-E0-V1



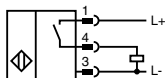
NBN40-L2-E34-V1



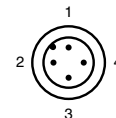
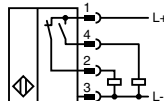
NBB20-L2-A0-V1
NBN40-L2-A0-V1



NBB20-L2-E2-V1
NBN40-L2-E2-V1
NBB20-L2-A2-T-V1



NBB20-L2-A2-T-V1
NBB20-L2-A2-V1
NBN40-L2-A2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

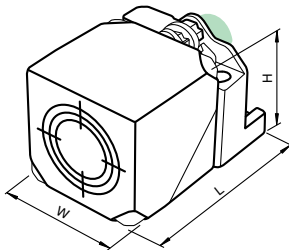


Properties

- Compact cube style, L2M housing
- 20 mm and 40 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Connector version

Benefits

- High visibility LED indication
- Sensor head can be positioned 5-ways
- Mounting base with quick release bracket
- Adjustable connector allows flexible wiring



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Housing material	PA-GF35 metal base Xylan coated metal mounting flange Xylan coated.
Protection degree	IP69K
Connection type	Connector M12 x 1, 4-pin



Model Number

		NBB20-L2M-E0-V1	NBB20-L2M-E2-V1	NBB20-L2M-E34-V1	NBB20-L2M-A0-V1	NBB20-L2M-A2-V1	NBB20-L2M-A2-T-V1	NBN40-L2M-E0-V1	NBN40-L2M-E2-V1	NBN40-L2M-A0-V1	NBN40-L2M-A2-V1
Rated operating distance	20 mm	●	●	●	●	●	●	●	●	●	●
	40 mm										
Installation	flush	●	●	●	●	●	●	●	●	●	●
	non-flush							●	●	●	●
Output type	NPN NO/NC				●						
	NPN NO	●						●			
	PNP NO/NC					●	●				●
	PNP NO		●						●		
	PNP NC			●							
Switching frequency	0 ... 100 Hz	●	●	●	●	●	●	●	●	●	●
	0 ... 150 Hz	●	●	●	●	●	●	●	●	●	●
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)	●	●	●	●	●	●	●	●	●	●
	-25 ... 100 °C (-13 ... 212 °F)					●					

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V										

Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40

Accessories

These and more accessories can be found in chapter 10

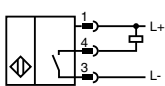
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
MHW 01	Modular mounting bracket
MH 02-L	Mounting bracket
MH 01-L2-W	Mounting bracket - 1/2" rod type, angled

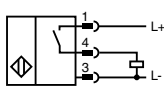
Electrical Connection



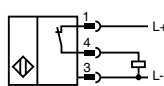
NBB20-L2M-E0-V1
NBN40-L2M-E0-V1



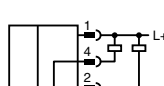
NBB20-L2M-E2-V1
NBN40-L2M-E2-V1



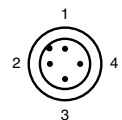
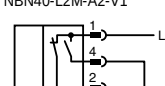
NBB20-L2M-E34-V1



NBB20-L2M-A0-V1
NBN40-L2M-A0-V1



NBB20-L2M-A2-V1
NBN40-L2M-A2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Compact cube style, L3M housing
- 20 mm and 40 mm sensing ranges
- AC/DC, 2-wire switching output
- Connector version

Benefits

- High visibility LED indication
- Sensor head can be positioned 5-ways
- Mounting base with quick release bracket

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	20 ... 250 V AC/DC
No-load supply current	≤ 0.6 mA
Reverse polarity protection	✓
Switching frequency	0 ... 30 Hz
Load current	3 ... 300 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, red
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	metal - Zinc housing
Housing base	Metal Bracket
Protection degree	IP67

Model Number

		NBB20-L3M-US-V12	NBB20-L3M-VO-V12	NBB20-L3M-US-V93	NBB20-L3M-VO-V93	NBN40-L3M-US-V12	NBN40-L3M-US-V93
Rated operating distance	20 mm	●	●	●	●	●	●
	40 mm						
Installation	flush	●	●	●	●	●	●
	non-flush						
Output type	AC/DC NC		●		●		
	AC/DC NO	●		●		●	●
Connection type	Connector 1/2"-20 UN, 3-pin	●	●			●	●
	Connector 7/8"-16 UN, 3-pin			●	●		●



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●	●	●	●

Dimensions

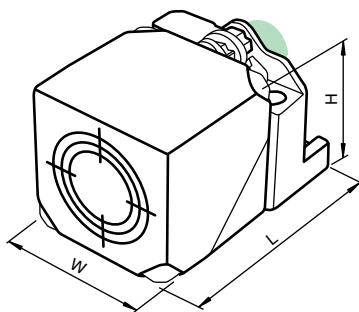
Length L [mm]	67	76	67	76
Width W [mm]		40		
Height H [mm]		40		

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

MHW 01	Modular mounting bracket
MH 01-L2-W	Mounting bracket - 1/2" rod type, angled
V93-G-YE2M-STOOW	Female cordset, 7/8" - 16 UNF, 3-pin, PUR cable, straight
V12-W-YE2M-PUR-H/S	Female cordset, 1/2" - 20 UNF, 3-pin, irradiated PUR cable, angled
V12-G-YE2M-PVC	Female cordset, 1/2" - 20 UNF, 3-pin, PVC cable, straight
V12-W-YE2M-PVC	Female cordset, 1/2" - 20 UNF, 3-pin, PVC cable, angled

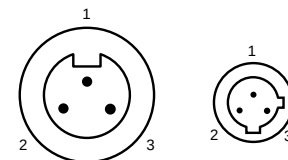
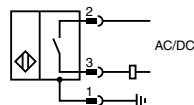
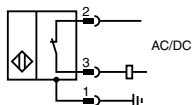


Electrical Connection



NBB20-L3M-VO-V12
NBB20-L3M-VO-V93

NBN40-L3M-US-V12
NBN40-L3M-US-V93
NBB20-L3M-US-V12
NBB20-L3M-US-V93



Wire colors

1	GN	(green)
2	BK	(black)
3	WH	(white)



Properties

- Flexible limit switch style housing
- 20 mm and 40 mm sensing ranges
- DC, 2-wire switching output
- Terminal compartment and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	DC	NO/NC
Operating voltage	5 ... 60 V DC	
Reverse polarity protection	✓, polarity independent	
Load current	2 ... 200 mA	
Short-circuit protection	✓, self checking	
Switching state indication	2 LED, yellow	
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)	
Material	PA housing/metal base	
Protection degree	IP68 / IP69K	

Model Number

		NBB20-U4-Z2	NBN40-U4-Z2	NBN40-U4-Z2-V1
Rated operating distance	20 mm 40 mm	●	●	●
Installation	flush non-flush	●	●	●
Switching frequency	0 ... 100 Hz 0 ... 250 Hz	●	●	●
Connection type	Connector M12 x 1, 4-pin screw terminals	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●

Dimensions

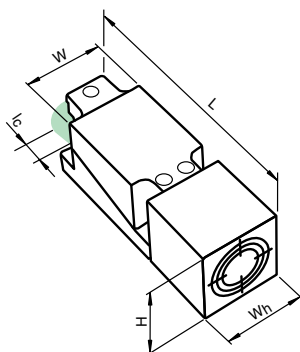
Length L [mm]				118
Width W [mm]				40
Head width W _h [mm]				40
Height H [mm]				40
Connector length l _c [mm]				0
Connector thread	conduit entrance with 1/2" NPT opening	●	●	25

Accessories

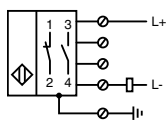
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

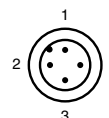
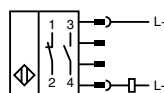
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
1/2"NPT-V1-G-S-.3M	Receptacle 1/2"NPT to M12 x 1, 4-pin
MHW 01	Modular mounting bracket
MH 04-2681F	Mounting bracket for Limit Switch style, +U1+ and +U9*



NBB20-U4-Z2
NBN40-U4-Z2



NBN40-U4-Z2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Note: Only connect as Normally open or Normally closed - cannot be used simultaneously



1
12

Properties

- Flexible limit switch style housing
- 20 mm, flush mountable
- DC, 3-wire switching output
- Terminal compartment and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	20 mm
Installation	flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 150 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Material	PA housing/metal base
Protection degree	IP68 / IP69K

Model Number

			NBB20-U2-E0	NBB20-U2-E2	NBB20-U4-E0	NBB20-U4-E2	NBB20-U2-E0-V1	NBB20-U2-E2-V1	NBB20-U4-E2-V1
Output type	NPN	NO	●	●	●	●	●	●	●
	PNP	NO		●		●		●	●
Housing base	plastic		●	●			●	●	
	metal				●	●			●
Connection type	Connector M12 x 1, 4-pin						●	●	●
	screw terminals		●	●	●	●			



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V								

Dimensions

Length L [mm]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

1/2"NPT-V1-G-S-.3M

V1-G

V1-W

V1-G-BK2M-PUR-U

V1-W-BK2M-PUR-U

MHW 01

MH 04-2681F

Receptacle 1/2"NPT to M12 x 1, 4-pin

4-pin, M12 female field-attachable connector, straight

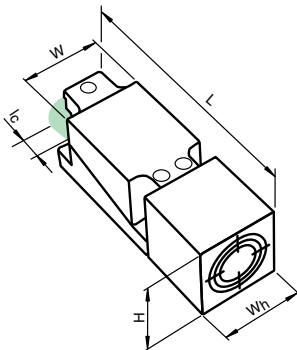
4-pin, M12 female field-attachable connector, angled

Female cordset, M12, 4-pin, PUR cable, straight

Female cordset, M12, 4-pin, PUR cable, angled

Modular mounting bracket

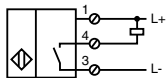
Mounting bracket for Limit Switch style, +U1+ and +U9*



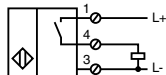
Electrical Connection



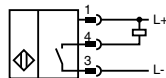
NBB20-U2-E0
NBB20-U4-E0



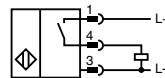
NBB20-U2-E2
NBB20-U4-E2



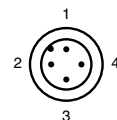
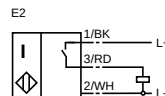
NBB20-U2-E0-V1



NBB20-U2-E2-V1



NBB20-U4-E2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

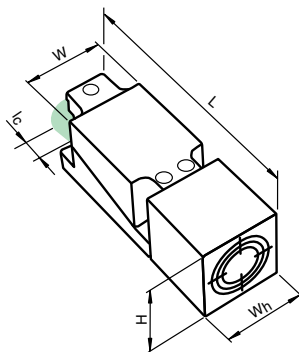
- Flexible limit switch style housing
- 20 mm, flush mountable
- DC, 4-wire switching output
- Terminals

Additional Products

In this series, we offer the following additional products:

NBB20-U4-A2-V1

Technical data like NBB20-U4-A2 but:
Connection type: Connector M12 x 1, 4-pin



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	20 mm
Installation	flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Protection degree	IP68 / IP69K
Connection type	screw terminals



Model Number

		NBB20-U2-A0	NBB20-U2-A2	NBB20-U2-A2-T	NBB20-U4-A0	NBB20-U4-A0-T	NBB20-U4-A2	NBB20-U4-A2-T
Output type	NPN	•	•	•	•	•	•	•
	NO/NC							
	PNP							
Switching frequency	0 ... 150 Hz	•	•	•	•	•	•	•
	0 ... 300 Hz							
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)			•		•		•
	-25 ... 85 °C (-13 ... 185 °F)							
Material	PA housing/plastic base	•	•	•	•	•	•	•
	PA housing/metal base							

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V							

Dimensions

Length L [mm]	118
Width W [mm]	40
Head width W _H [mm]	40
Height H [mm]	40
Connector length l _c [mm]	0
Connector thread	conduit entrance with 1/2" NPT opening

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

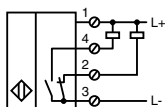
MHW 01
MH 04-2681F
1/2"NPT-V1-G-S-3M
V1-G
V1-W
V1-W-BK2M-PUR-U
V1-G-BK2M-PUR-U

Modular mounting bracket
Mounting bracket for Limit Switch style, +U1+ and +U9+
Receptacle 1/2"NPT to M12 x 1, 4-pin
4-pin, M12 female field-attachable connector, straight
4-pin, M12 female field-attachable connector, angled
Female cordset, M12, 4-pin, PUR cable, angled
Female cordset, M12, 4-pin, PUR cable, straight

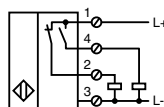
Electrical Connection



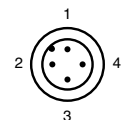
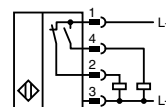
NBB20-U2-A0
NBB20-U4-A0
NBB20-U4-A0-T



NBB20-U2-A2
NBB20-U2-A2-T
NBB20-U4-A2
NBB20-U4-A2-T



NBB20-U4-A2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Flexible limit switch style housing
- 40 mm, non-flush mountable
- DC, 3-wire switching output
- Terminal compartment and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	40 mm
Installation	non-flush
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 150 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Protection degree	IP68 / IP69K

Model Number

		NBN40-U2-E0	NBN40-U2-E2	NBN40-U4-E0	NBN40-U4-E2	NBN40-U4-E0-V1	NBN40-U4-E2-V1
Output type	NPN NO	•	•	•	•	•	•
	PNP NO						
Material	PA housing/plastic base	•	•				
	PA housing/metal base			•	•	•	•
Connection type	Connector M12 x 1, 4-pin						
	screw terminals	•	•	•	•	•	•



Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V						

Dimensions

Length L [mm]	118
Width W [mm]	40
Head width W _h [mm]	40
Height H [mm]	40
Connector length l _c [mm]	0
Connector thread	conduit entrance with 1/2" NPT opening

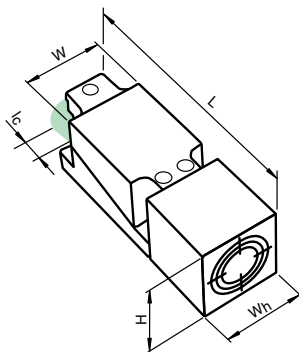
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

MHW 01
MH 04-2681F
1/2"NPT-V1-G-S-3M
V1-G
V1-W
V1-G-BK2M-PUR-U
V1-W-BK2M-PUR-U

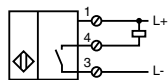
Modular mounting bracket
 Mounting bracket for Limit Switch style, +U1+ and +U9*
 Receptacle 1/2"NPT to M12 x 1, 4-pin
 4-pin, M12 female field-attachable connector, straight
 4-pin, M12 female field-attachable connector, angled
 Female cordset, M12, 4-pin, PUR cable, straight
 Female cordset, M12, 4-pin, PUR cable, angled



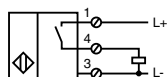
Electrical Connection



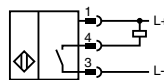
NBN40-U2-E0
 NBN40-U4-E0



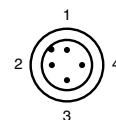
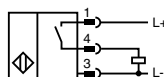
NBN40-U4-E2
 NBN40-U2-E2



NBN40-U4-E0-V1



NBN40-U4-E2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

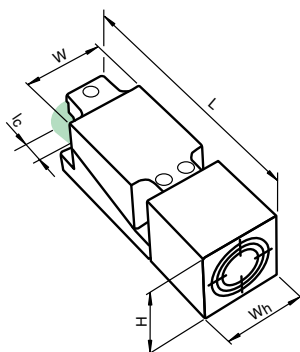
- Flexible limit switch style housing
- 40 mm, non-flush mountable
- DC, 4-wire switching output
- Terminals

Additional Products

In this series, we offer the following additional products:

NBN40-U4-A2-V1

Technical data like NBN40-U4-A2 but:
Connection type: Connector M12 x 1, 4-pin



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	40 mm
Installation	non-flush
Output type	PNP NO/NC
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Protection degree	IP68 / IP69K
Connection type	screw terminals



Model Number

		NBN40-U2-A2	NBN40-U2-A2-T	NBN40-U4-A2
Switching frequency	0 ... 150 Hz	●	●	●
	0 ... 250 Hz			
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)	●	●	●
	-25 ... 85 °C (-13 ... 185 °F)			
Material	PA housing/plastic base	●	●	●
	PA housing/metal base			●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V			

Dimensions

Length L [mm]	118
Width W [mm]	40
Head width W _h [mm]	40
Height H [mm]	40
Connector length l _c [mm]	0
Connector thread	conduit entrance with 1/2" NPT opening

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

MH 04-2681F

MHW 01

1/2"NPT-V1-G-S-.3M

V1-G-BK2M-PUR-U

V1-W-BK2M-PUR-U

V1-G

V1-W

Mounting bracket for Limit Switch style, +U1+ and +U9*

Modular mounting bracket

Receptacle 1/2"NPT to M12 x 1, 4-pin

Female cordset, M12, 4-pin, PUR cable, straight

Female cordset, M12, 4-pin, PUR cable, angled

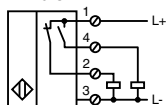
4-pin, M12 female field-attachable connector, straight

4-pin, M12 female field-attachable connector, angled

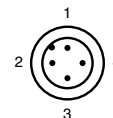
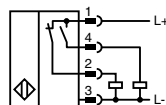
Electrical Connection



NBN40-U2-A2
NBN40-U2-A2-T
NBN40-U4-A2



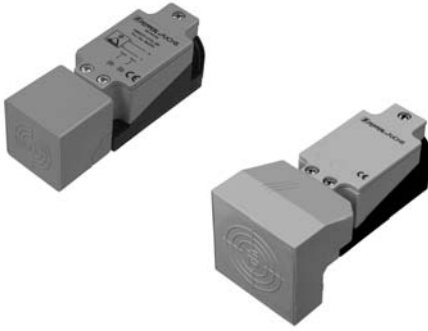
NBN40-U4-A2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Flexible limit switch style housing
- Up to 30 mm sensing ranges
- AC, 2-wire switching output
- Terminals

Benefits

- High Temperature models

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	AC	NO/NC
Operating voltage	20 ... 253 V AC	
Switching frequency	0 ... 20 Hz	
Load current	8 ... 500 mA	
Operating voltage display	LED, green	
Switching state indication	LED, yellow	
Protection degree	IP68	
Connection type	screw terminals	



Model Number

Rated operating distance	15 mm	NJ15+U2+W	NJ15+U4+W	NJ15+U4+W-T	NJ20+U2+W	NJ20+U4+W	NJ20+U4+W-T	NJ30+U2+W	NJ30+U4+W	NJ30+U4+W	NJ40+U2+W	NJ40+U4+W-T
	20 mm	●	●									
	30 mm				●	●						
	40 mm							●	●			
Installation	flush	●	●								●	●
	non-flush				●	●	●	●	●	●	●	●
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)				●							
	-25 ... 70 °C (-13 ... 158 °F)	●	●		●	●		●	●	●	●	
	0 ... 100 °C (32 ... 212 °F)											●
Material	PBT housing/plastic base	●			●			●			●	
	PBT housing/metal base		●	●		●	●		●	●		●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●		●	●	●		●	●	●	●

Dimensions

Length L [mm]	118	128
Width W [mm]	40	
Head width W _h [mm]	40	55
Height H [mm]	40	55
Connector length l _c [mm]	0	
Connector thread	conduit entrance with 1/2" NPT opening	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

MHW 01

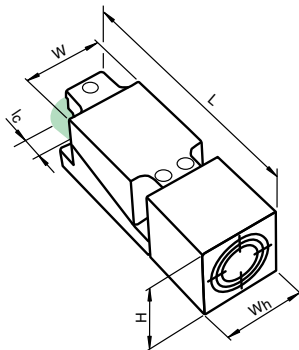
1/2"NPT-V12-G-S-3M

1/2"NPT-V93-G-S-3M

Modular mounting bracket

Receptacle 1/2"NPT to 1/2" - 20 UNF, 3-pin

Receptacle 1/2"NPT to 7/8" - 16 UN, 3-pin

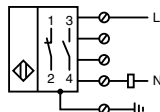
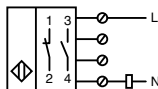


Electrical Connection



NJ40+U2+W
NJ30+U2+W
NJ15+U2+W
NJ20+U2+W

NJ20+U4+W
NJ40+U4+W
NJ40+U4+W-T
NJ20+U4+W-T
NJ30+U4+W
NJ15+U4+W
NJ15+U4+W-T



Note: Only connect as Normally open or Normally closed - cannot be used simultaneously



Properties

- Flexible limit switch style housing
- 20 mm, non-flush mountable
- AC, 4-wire switching output
- Terminal connections

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	20 mm
Installation	non-flush
Output type	AC NO/NC
Operating voltage	20 ... 253 V AC
Switching frequency	0 ... 20 Hz
Load current	10 ... 500 mA
Switching state indication	LED green: NC LED red: NO
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP68
Connection type	screw terminals



Model Number

Material	PBT housing/plastic base	NJ20+U2+W4	NJ20+U4+W4
	PBT housing/metal base	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●

Dimensions

Length L [mm]	118
Width W [mm]	40
Head width W _h [mm]	40
Height H [mm]	40
Connector length l _c [mm]	0
Connector thread	conduit entrance with 1/2" NPT opening

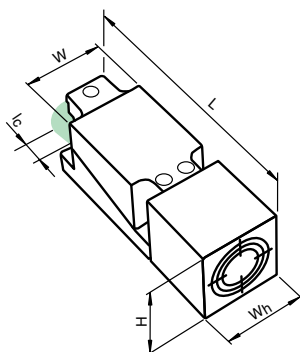
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

1/2"NPT-V95-G-S-3M
MHW 01

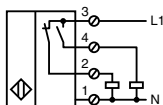
Receptacle 1/2"NPT to 7/8" - 16 UN, 5-pin
Modular mounting bracket

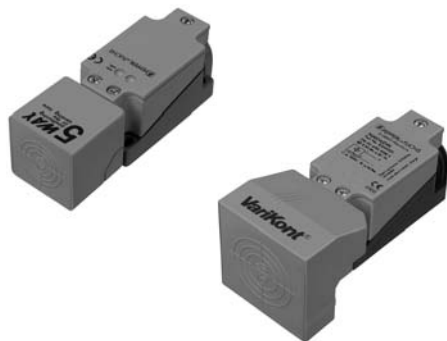


Electrical Connection



NJ20+U2+W4
NJ20+U4+W4





Properties

- Flexible limit switch style housing
- Up to 40 mm sensing ranges
- AC/DC, 2-wire switching output
- Terminal connections

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	AC/DC	NO/NC
Operating voltage AC	20 ... 253 V	
Operating voltage DC	20 ... 300 V	
Reverse polarity protection	✓	
Switching frequency	0 ... 25 Hz	
Short-circuit protection	✓, self checking	
Operating voltage display	LED, green	
Switching state indication	LED, yellow	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)	
Protection degree	IP68	
Connection type	screw terminals	



Model Number

		NCB15+U2+U	NCB15+U4+U	NCB20+U4+U	NCN20+U4+U	NCN30+U4+U	NEN40+U4+U	NCN40+U4+U
Rated operating distance	15 mm	•	•					
	20 mm			•	•			
	30 mm					•		
	40 mm						•	•
Installation	flush	•	•	•				
	non-flush				•	•	•	•
Load current	3 ... 400 mA			•			•	
	5 ... 500 mA	•	•		•	•		•
Housing material	PBT housing/plastic base	•						
	PBT housing/metal base		•	•	•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•
CCC approval	Certified by China Compulsory Certification (CCC)		•		•	•		•

Dimensions

Length L [mm]		118	128
Width W [mm]		40	
Head width W _h [mm]		40	55
Height H [mm]		40	55
Connector length l _c [mm]		0	
Connector thread		conduit entrance with 1/2" NPT opening	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

MHW 01

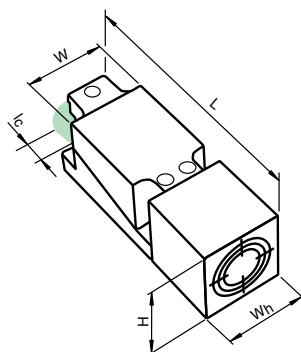
1/2"NPT-V12-G-S-.3M

1/2"NPT-V93-G-S-.3M

Modular mounting bracket

Receptacle 1/2"NPT to 1/2" - 20 UNF, 3-pin

Receptacle 1/2"NPT to 7/8" - 16 UN, 3-pin

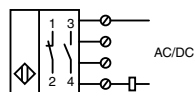
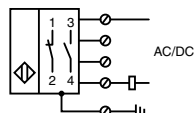


Electrical Connection



NCB20+U4+U
NEN40+U4+U
NCB15+U4+U
NCN40+U4+U
NCN20+U4+U
NCN30+U4+U

NCB15+U2+U

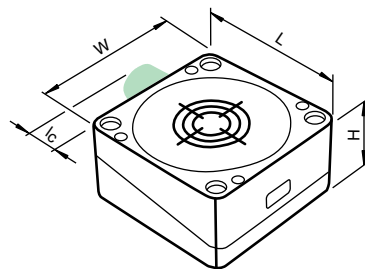


Note: Only connect as Normally open or Normally closed - cannot be used simultaneously



Properties

- Flat pack housing
- 50 mm, flush mountable
- DC, 2-wire switching output
- Terminal compartment and connector versions



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	50 mm
Installation	flush
Operating voltage	10 ... 60 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 80 Hz
Load current	2 ... 200 mA
Lowest Load current	2 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Protection degree	IP68
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)

Model Number

Output type	DC	NO/NC	NCB50-FP-Z2-P1	NCB50-FP-Z4-V1	NCB50-FP-Z5-V1
DC	NO		●	●	
DC	NC				●
Housing material	PBT housing / PBT base		●	●	●
Protection class	II		●	●	●
Connection type	Connector M12 x 1, 4-pin		●	●	●
	screw terminals		●	●	●



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●	●
CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	84	84
Width W [mm]	84	84
Height H [mm]		40
Cap length l ₁ [mm]		0
Connector length l _c [mm]	9	25
Connector thread	M20 x 1,5	

Accessories

These and more accessories can be found in chapter 10

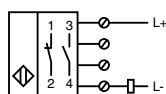
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

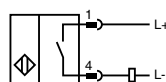
Electrical Connection



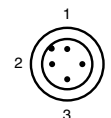
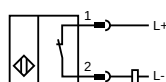
NCB50-FP-Z2-P1



NCB50-FP-Z4-V1



NCB50-FP-Z5-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Flat pack housing
- 50 mm, flush mountable
- DC, 3-wire and 4-wire switching output
- Terminal compartment and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	50 mm
Installation	flush
Operating voltage	10 ... 60 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 80 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP68

Model Number

		NCB50-FP-E2-P1	NCB50-FP-E2-P4	NCB50-FP-A2-P1	NCB50-FP-A2-P4	NCB50-FP-E2-P1-V1	NCB50-FP-E2-P4-V1	NCB50-FP-A2-P1-V1	NCB50-FP-A2-P4-V1
Output type	PNP NO	•	•	•	•	•	•	•	•
Housing material	PBT housing / PBT base	•	•	•	•	•	•	•	•
Connection type	Connector M12 x 1, 4-pin screw terminals	•	•	•	•	•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•	•	•
CCC approval	Certified by China Compulsory Certification (CCC)	•	•	•	•	•	•	•	•

Dimensions

Dimensions						
Length L [mm]						84
Width W [mm]						84
Height H [mm]						40
Cap length l ₁ [mm]						0
Connector length l _c [mm]		9	10	9	10	25
Connector thread	conduit entrance with 1/2" NPT opening		●		●	
	M20 x 1.5	●		●		

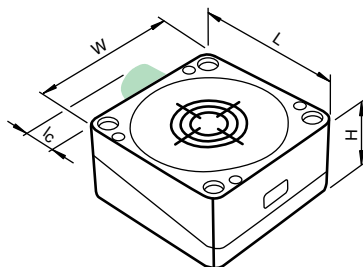
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

1/2"NPT-V1-G-S-3M
V1-G
V1-W
V1-W-BK2M-PUR-U
V1-G-BK2M-PUR-U

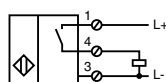
Receptacle 1/2"NPT to M12 x 1, 4-pin
4-pin, M12 female field-attachable connector, straight
4-pin, M12 female field-attachable connector, angled
Female cordset, M12, 4-pin, PUR cable, angled
Female cordset, M12, 4-pin, PUR cable, straight



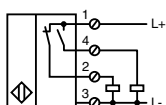
Electrical Connection



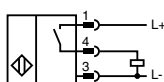
NCB50-FP-E2-P4
NCB50-FP-E2-P1



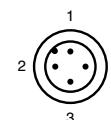
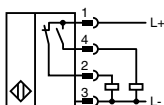
NCB50-FP-A2-P4
NCB50-FP-A2-P1



NCB50-FP-E2-P1-V1
NCB50-FP-E2-P4-V1



NCB50-FP-A2-P1-V1
NCB50-FP-A2-P4-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Flat pack housing
- Up to 50 mm sensing ranges
- AC, 2-wire switching output
- Terminal compartment and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	AC	NO/NC
Operating voltage	20 ... 253 V AC	
Switching frequency	0 ... 20 Hz	
Load current	5 ... 500 mA	
Operating voltage display	LED, green	
Switching state indication	LED, yellow	
Protection degree	IP68	
Connection type	screw terminals	



Model Number

		NCB40-FP-W-P2	NCB40-FP-W-P4	NCN40-FP-W-T-P4	NCN50-FP-W-P2	NCN50-FP-W-P4
Rated operating distance	40 mm	●	●	●		
	50 mm				●	●
Installation	flush	●	●			
	non-flush			●	●	●
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)			●		
	-25 ... 70 °C (-13 ... 158 °F)	●	●		●	●
Material	PBT housing/plastic base	●			●	
	PBT housing/metal base		●	●		●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)			●		

Dimensions

Length L [mm]	80
Width W [mm]	80
Height H [mm]	40
Cap length l ₁ [mm]	0
Connector length l _c [mm]	11
Connector thread	conduit entrance with 1/2" NPT opening

Accessories

These and more accessories can be found in chapter 10

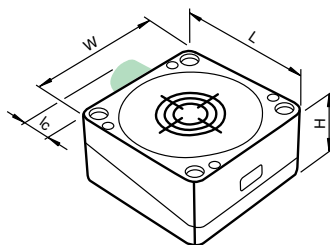
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

1/2"NPT-V12-G-S-.3M

Receptacle 1/2"NPT to 1/2" - 20 UNF, 3-pin

1/2"NPT-V93-G-S-.3M

Receptacle 1/2"NPT to 7/8" - 16 UN, 3-pin

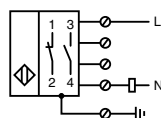
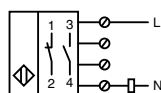


Electrical Connection



NCN50-FP-W-P2
NCB40-FP-W-P2

NCB40-FP-W-P4
NCN50-FP-W-P4
NCN40-FP-W-T-P4



Note: Only connect as Normally open or Normally closed - cannot be used simultaneously





Properties

- Flat pack housing
- 40 mm, non-flush mountable
- DC, 3-wire analog output
- Terminal compartment and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	non-flush
Measurement range	15 ... 40 mm
Output type	Analog current output 0 ... 20 mA
Operating voltage	15 ... 30 V DC
No-load supply current	≤ 8 mA
Repeat accuracy	0 ... 6 µm
Output type	0 ... 20 mA
Linearity error	≤ ± 10 % of full-scale value
Load resistor	≤ 500 Ω
Adjustment tolerance zero point	≤ ± 10 % of full-scale value
Ambient temperature	-10 ... 70 °C (14 ... 158 °F)
Housing material	PBT housing / PBT base
Protection degree	IP67

Model Number

Connection type	Connector M12 x 1, 4-pin screw terminals
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IA40-FP-I3-P1

IA40-FP-I3-P2

IA40-FP-I3-P2-V1



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]	80
Width W [mm]	80
Height H [mm]	40
Cap length l ₁ [mm]	0
Connector length l _c [mm]	11
Connector thread	M20 x 1,5

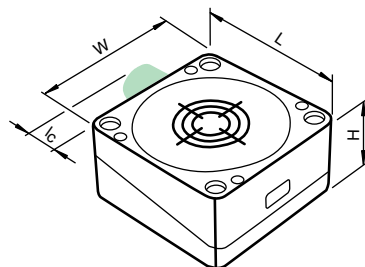
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G-BK2M-PUR-U
V1-W-BK2M-PUR-U
DA5-IU-C

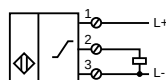
Female cordset, M12, 4-pin, PUR cable, straight
Female cordset, M12, 4-pin, PUR cable, angled
Digital display unit



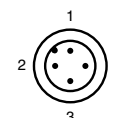
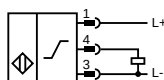
Electrical Connection



IA40-FP-I3-P2
IA40-FP-I3-P1



IA40-FP-I3-P2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



CE

Properties

- Compact flat pack housing
- 25 mm and 30 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Terminal compartment

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Short-circuit protection	✓
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	PBT
Housing base	PBT
Protection degree	IP65
Connection type	screw terminals



Model Number

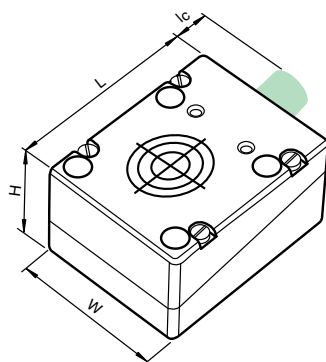
		NBN30-FPS-E5	NBB25-FPS-A2	NBN30-FPS-A2
Rated operating distance	25 mm		●	
	30 mm	●		●
Installation	flush		●	
	non-flush	●		●
Output type	PNP, NO/NC, programmable	●		
	PNP NO/NC		●	●
Operating voltage	10 ... 30 V DC		●	●
	10 ... 65 V DC	●		
Switching frequency	0 ... 50 Hz	●		●
	0 ... 70 Hz		●	
Load current	0 ... 200 mA		●	●
	0 ... 300 mA	●		

Approvals and Certificates

CCC approval	CCC approval / marking not required for sensors rated ≤36 V		●	●
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Dimensions

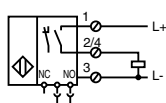
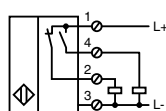
Length L [mm]		77
Width W [mm]		60
Height H [mm]		41
Connector length l _c [mm]		8
Connector thread		M20 x 1.5



Electrical Connection



NBN30-FPS-E5

NBB25-FPS-A2
NBN30-FPS-A2



Properties

- Compact flat pack housing
- 30 mm non-flush mountable
- AC/DC, 2-wire switching output
- Terminal compartment

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

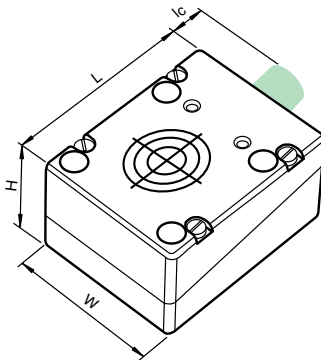
General Data

Rated operating distance	30 mm
Installation	non-flush
Output type	AC/DC NO/NC
Operating voltage	20 ... 265 V AC/DC
No-load supply current	≤ 2 mA
Reverse polarity protection	✓
Switching frequency	0 ... 25 Hz
Load current	0 ... 300 mA
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	PBT
Housing base	PBT
Protection degree	IP65
Connection type	screw terminals



Dimensions

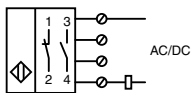
Length L [mm]	77
Width W [mm]	60
Height H [mm]	41
Connector length l _c [mm]	8
Connector thread	M20 x 1.5



Electrical Connection



NBN30-FPS-UU



Note: Only connect as Normally open or Normally closed - cannot be used simultaneously



Properties

- F23 surface mount housing
- 100 mm non-flush mountable
- DC, 3-wire switching output
- Connector version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data		NCN100-F23-E2-V1
Rated operating distance		100 mm
Installation		non-flush
Output type		PNP NO
Operating voltage		10 ... 30 V DC
No-load supply current		≤ 20 mA
Reverse polarity protection		✓
Switching frequency		0 ... 10 Hz
Load current		0 ... 200 mA
Short-circuit protection		✓, self checking
Operating voltage display		LED, green
Switching state indication		LED, yellow
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Housing material		ABS (TSG), bottom Al
Protection degree		IP67
Connection type		Connector M12 x 1 , 4-pin



Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose

Dimensions

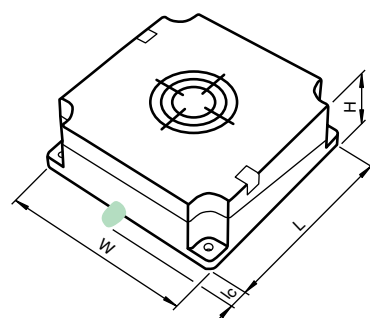
Length L [mm]	177
Width W [mm]	177
Height H [mm]	60.5
Connector length l _c [mm]	15

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

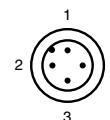
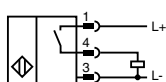
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight



Electrical Connection



NCN100-F23-E2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- F23 surface mount housing
- 100 mm non-flush mountable
- AC/DC, 2-wire switching output
- Connector version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data	
Rated operating distance	100 mm
Installation	non-flush
Output type	Normally open
Operating voltage	20 ... 300 V DC 20 ... 253 V AC
No-load supply current	≤ 1 mA
Switching frequency	0 ... 10 Hz
Load current	0 ... 300 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, red
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	ABS (TSG), bottom Al
Protection degree	IP67
Connection type	Connector 7/8"-16 UN , 3-pin



Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Certified by China Compulsory Certification (CCC)

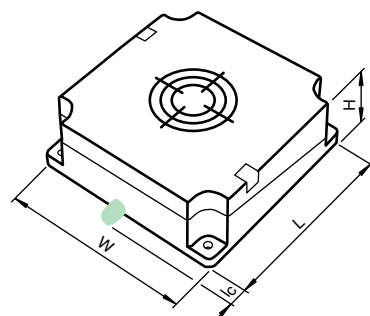
Dimensions

Length L [mm]	177
Width W [mm]	177
Height H [mm]	60.5
Connector length l _c [mm]	15

Accessories

These and more accessories can be found in chapter 10

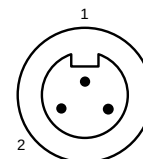
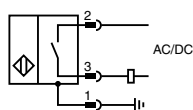
V93-G-YE2M-STOOW	See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories
	Female connector, 7/8" - 16 UNF, 3-pin, PUR cable, straight



Electrical Connection



NCN100-F23-US-V93



Wire colors

1	GN	(green)
2	BK	(black)
3	WH	(white)



Properties

- Miniature F29 housing
- 4 mm non-flush mountable
- DC, 3-wire switching output
- Cable version

Benefits

- Specially optimized for welding applications

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NBN4-F29-E2-C
Rated operating distance	4 mm
Installation	non-flush
Switching element function	PNP NO
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 10 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1000 Hz
Load current	0 ... 100 mA
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PPS
Protection degree	IP67
Connection type	cable PVC, 2 m

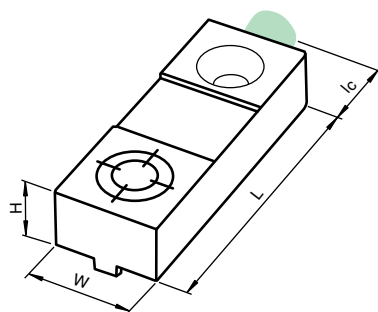


Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

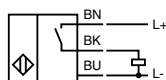
Length L [mm]	27
Width W [mm]	10
Height H [mm]	6
Connector area l _c [mm]	4



Electrical Connection



NBN4-F29-E2-C





Properties

- Miniature F104 metal housing
- 5 mm flush mountable
- DC, 3-wire switching output
- Pigtailed connector version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NBB5-F104M-E2-C-200MM-V1
Rated operating distance	5 mm
Installation	flush
Switching element function	PNP NO
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	100 Hz
Load current	200 mA
Short-circuit protection	pulsing
Indication of the switching state	LED
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	GD-Zn
Protection degree	IP67
Connection type	Cable connector M12 x 1, 4-pin with PUR Cable, 200 mm



Approvals and Certificates

UL approval	cULus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

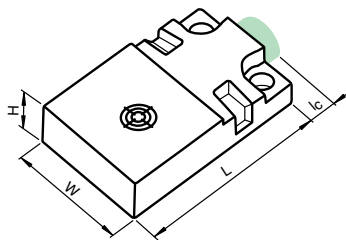
Length L [mm]	32
Width W [mm]	20
Height H [mm]	8
Connector area l _c [mm]	0

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

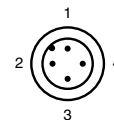
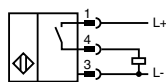
V1-G-OR2M-POC Female cordset, M12, 4-pin, TPE cable, welding-bead resistant



Electrical Connection



NBB5-F104M-E2-C-200MM-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



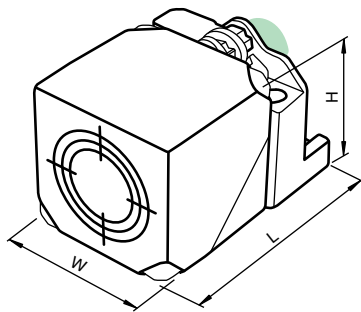


Properties

- Compact cube style, L2 housing
- 20 mm and 40 mm sensing ranges
- DC, 2-wire switching output
- Connector version

Benefits

- High visibility LED indication
- Sensor head can be positioned 5-ways
- Mounting base with quick clamping lever for swift mounting
- Adjustable connector allows flexible wiring
- Specially optimized for welding applications



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	3.8 ... 30 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 3 Hz
Load current	2 ... 100 mA
Short-circuit protection	pulsing
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PA
Protection degree	IP69K
Connection type	Device connector M12 x 1, 4-pin



Model Number

		NBB20-L2-Z4-C-V1	NBB20-L2-Z5-C-V1	NBN40-L2-Z4-C-V1	NBN40-L2-Z5-C-V1
Rated operating distance	20 mm	●	●		
	40 mm			●	●
Installation	flush	●	●		
	non-flush			●	●
Switching element function	NO	●		●	
	NC		●		●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40
Connector area l _c [mm]	0

Accessories

These and more accessories can be found in chapter 10

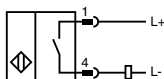
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector
V1-W	4-pin, M12 female field-attachable connector
V1-G-BK2M-PUR-U	Cable socket, M12, 4-pin, PUR cable
V1-W-BK2M-PUR-U	Cable socket, M12, 4-pin, PUR cable
MHW 01	Modular mounting bracket
MH 02-L	Mounting aid
MH 01-L2-W	Mounting bracket - 1/2" rod type, angled

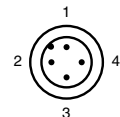
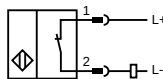
Electrical Connection



NBB20-L2-Z4-C-V1
NBN40-L2-Z4-C-V1



NBB20-L2-Z5-C-V1
NBN40-L2-Z5-C-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



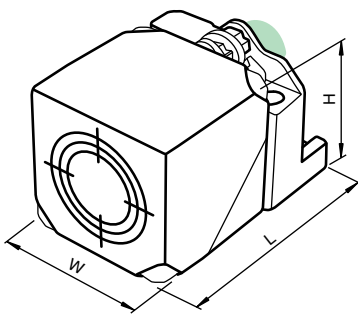


Properties

- Compact cube style, L2 housing
- 20 mm and 40 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Connector version

Benefits

- High visibility LED indication
- Sensor head can be positioned 5-ways
- Mounting base with quick clamping lever for swift mounting
- Adjustable connector allows flexible wiring
- Specially optimized for welding applications



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 10 Hz
Load current	0 ... 200 mA
Short-circuit protection	pulsing
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	PA
Protection degree	IP69K
Connection type	Device connector M12 x 1, 4-pin



Model Number

		NBB20-L2-E2-C-V1	NBB20-L2-A2-C-V1	NBN40-L2-E2-C-V1	NBN40-L2-A2-C-V1
Rated operating distance	20 mm	●	●		
	40 mm			●	●
Installation	flush	●	●		
	non-flush			●	●
Switching element function	PNP	●	●	●	●
	NO/NC				
	NO			●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40
Connector area l _c [mm]	0

Accessories

These and more accessories can be found in chapter 10

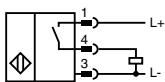
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector
V1-W	4-pin, M12 female field-attachable connector
V1-G-BK2M-PUR-U	Cable socket, M12, 4-pin, PUR cable
V1-W-BK2M-PUR-U	Cable socket, M12, 4-pin, PUR cable
MHW 01	Modular mounting bracket
MH 02-L	Mounting aid
MH 01-L2-W	Mounting bracket - 1/2" rod type, angled

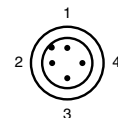
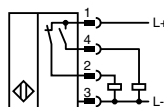
Electrical Connection



NBB20-L2-E2-C-V1
NBN40-L2-E2-C-V1



NBB20-L2-A2-C-V1
NBN40-L2-A2-C-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

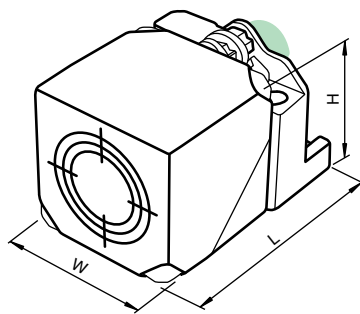


Properties

- Compact cube style, L2 housing
- 20 mm and 40 mm sensing ranges
- DC, 4-wire switching output
- Connector version

Benefits

- High visibility LED indication
- Sensor head can be positioned 5-ways
- Mounting base with quick clamping lever for swift mounting
- Adjustable connector allows flexible wiring
- Specially optimized for welding applications



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 5 Hz
Load current	0 ... 200 mA
Short-circuit protection	pulsing
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Connection type	Device connector M12 x 1, 4-pin



Model Number

		NBB20-L3-A2-C3-V1	NBB20-L3M-A0-C3-V1	NBB20-L3M-A2-C3-V1	NBN40-L3M-A0-C3-V1	NBN40-L3M-A2-C3-V1
Rated operating distance	20 mm	●	●	●		
	40 mm				●	●
Installation	flush	●	●	●		
	non-flush				●	●
Switching element function	NPN NO/NC		●		●	
	PNP NO/NC	●		●		●
Housing material	GD-ZnAl4Cu1, Coated metal fixing flange, coated.		●	●	●	●
	GD-ZnAl4Cu1, coated mounting flange PA6-GF35	●				
Housing base	PTFE coated zinc	●				

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V					

Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40

Accessories

These and more accessories can be found in chapter 10

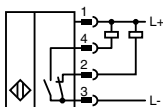
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector
V1-G-OR2M-POC	Female cordset, M12, 4-pin, TPE cable, welding-bead resistant
V1-W	4-pin, M12 female field-attachable connector
V1-W-BK2M-PUR-U	Cable socket, M12, 4-pin, PUR cable
V1-G-BK2M-PUR-U	Cable socket, M12, 4-pin, PUR cable
MHW 01	Modular mounting bracket
MH 02-L	Mounting aid
MH 01-L2-W	Mounting bracket - 1/2" rod type, angled

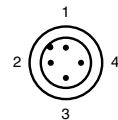
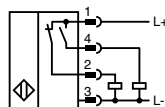
Electrical Connection



NBB20-L3M-A0-C3-V1
NBN40-L3M-A0-C3-V1



NBB20-L3-A2-C3-V1
NBB20-L3M-A2-C3-V1
NBN40-L3M-A2-C3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Compact cube style, L2 housing
- 20 mm and 40 mm sensing ranges
- AC/DC, 2-wire switching output
- Connector version

Benefits

- High visibility LED indication
- Sensor head can be positioned 5-ways
- Mounting base with quick clamping lever for swift mounting
- Adjustable connector allows flexible wiring
- Specially optimized for welding applications

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	20 ... 250 V AC/DC
No-load supply current	≤ 0.6 mA
Reverse polarity protection	✓
Switching frequency	2 Hz
Load current	3 ... 300 mA
Short-circuit protection	pulsing
Operating voltage display	LED, green
Indication of the switching state	LED, red
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PTFE coated zinc
Housing base	PTFE coated zinc
Protection degree	IP67

Model Number

Rated operating distance	20 mm 40 mm
Installation	flush non-flush
Switching element function	AC/DC normally open AC/DC normally closed
Connection type	Device connector 1/2"-20 UN , 3-pin Device connector 7/8"-16 UN , 3-pin

NBB20-L3M-US-C3-V12	NBB20-L3M-US-C3-V93	NBB20-L3M-UO-C3-V12	NBB20-L3M-UO-C3-V93	NBN40-L3M-US-C3-V12	NBN40-L3M-US-C3-V93	NBN40-L3M-UO-C3-V12	NBN40-L3M-UO-C3-V93
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Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Certified by China Compulsory Certification (CCC)

Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40

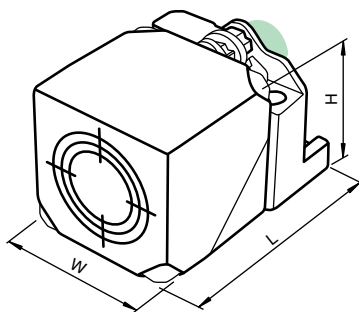
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V93-G-YE2M-STOOW
V12-W-YE2M-PUR-H/S
MHW 01
MH 02-L
MH 01-L2-W

Female connector, 7/8" - 16 UNF, 3-pin, PUR cable
Connecting cable, 1/2" - 20 UNF, 3-pin, irradiated PUR cable
Modular mounting bracket
Mounting aid
Mounting bracket - 1/2" rod type, angled

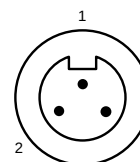
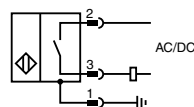
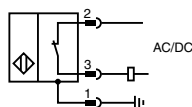


Electrical Connection



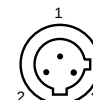
NBB20-L3M-UO-C3-V12
NBB20-L3M-UO-C3-V93
NBN40-L3M-UO-C3-V12
NBN40-L3M-UO-C3-V93

NBB20-L3M-US-C3-V12
NBB20-L3M-US-C3-V93
NBN40-L3M-US-C3-V12
NBN40-L3M-US-C3-V93



Wire colors

1	GN	(green)
2	BK	(black)
3	WH	(white)



Wire colors

1	GN	(green)
2	RD/BK	(red/black)
3	RD/WH	(red/white)

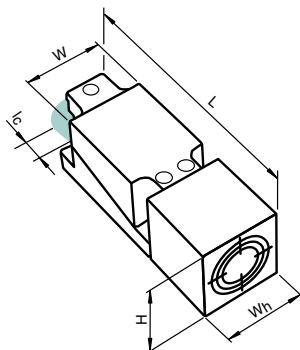


Properties

- Limit switch style housing
- 20 mm and 40 mm sensing ranges
- DC, 2-wire switching output
- Connector version

Benefits

- All-around visible status display
- Sensor head can be aligned in 5 different positions
- Specially optimized for welding applications



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	20 mm
Installation	flush
Switching element function	PNP NO
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 5 Hz
Load current	0 ... 200 mA
Short-circuit protection	pulsing
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	PA/metal with epoxy powder coating
Housing base	metal
Protection degree	IP68 / IP69K

Model Number

Connection type	Device connector M12 x 1, 4-pin screw terminals
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NBB20-U4-E2-C



NBB20-U4-E2-C-V1



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

Length L [mm]	118
Width W [mm]	40
Height H [mm]	40
Connector area l _c [mm]	0 (1/2" NPT) 25

Accessories

These and more accessories can be found in chapter 10

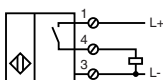
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector
V1-W	4-pin, M12 female field-attachable connector
V1-G-BK2M-PUR-U	Cable socket, M12, 4-pin, PUR cable
V1-W-BK2M-PUR-U	Cable socket, M12, 4-pin, PUR cable
MHW 01	Modular mounting bracket
MH 04-2681F	Mounting bracket for Limit Switch Style sensors, +U1+ and +U9

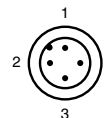
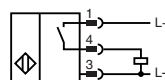
Electrical Connection



NBB20-U4-E2-C



NBB20-U4-E2-C-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- Flat pack housing
- 20 mm and 40 mm sensing ranges
- DC, 2-wire switching output
- Connector version

Benefits

- Specially optimized for welding applications

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	50 mm
Installation	flush
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1 Hz
Load current	0 ... 200 mA
Short-circuit protection	pulsing
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT/metal
Housing base	metal
Protection degree	IP68
Connection type	Device connector M12 x 1, 4-pin



Model Number

		NCB50-FP-E2-C-P3-V1	NCB50-FP-E34-C-P3-V1	NCB50-FP-A2-C-P3-V1
Switching element function	PNP NO contact	●		
	PNP NO/NC			●
	PNP NC		●	
Operating voltage	10 ... 30 V DC	●		
	10 ... 60 V DC		●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)			●

Dimensions

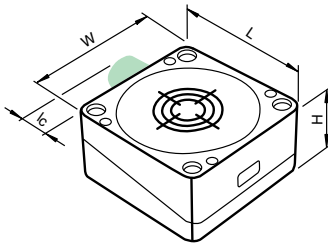
Length L [mm]	84
Width W [mm]	84
Height H [mm]	40
Connector area l _c [mm]	32

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

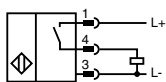
V1-G	4-pin, M12 female field-attachable connector
V1-W	4-pin, M12 female field-attachable connector
V1-G-BK2M-PUR-U	Cable socket, M12, 4-pin, PUR cable
V1-W-BK2M-PUR-U	Cable socket, M12, 4-pin, PUR cable



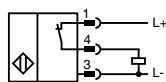
Electrical Connection



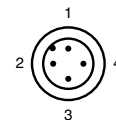
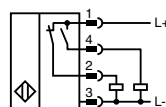
NCB50-FP-E2-C-P3-V1



NCB50-FP-E34-C-P3-V1



NCB50-FP-A2-C-P3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

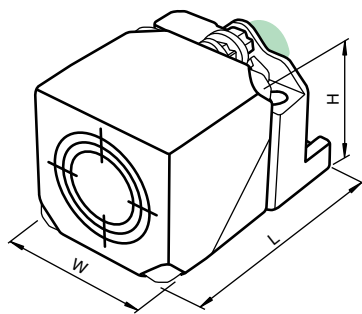


Properties

- Flexible Cube style housing
- Up to 40 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Connector version

Benefits

- Same sensing range for all metals
- High visibility LED indication
- Sensor head can be positioned 5-ways
- Adjustable connector allows flexible wiring
- Quick release mounting bracket



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	10 ... 30 V DC
No-load supply current	≤ 25 mA
Reverse polarity protection	✓
Switching frequency	0 ... 100 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	GD-ZnAl4Cu1, coated mounting flange PA6-GF35
Protection degree	IP67
Connection type	Connector M12 x 1, 4-pin



Model Number

		NRB20-L3-A2-V1	NRB20-L3-E2-V1	NRN35-L3-A2-V1	NRN40-L3K-A2-V1
Rated operating distance	20 mm	●	●	●	●
	35 mm				
	40 mm				●
Installation	flush	●	●		
	non-flush			●	●
Output type	PNP NO/NC	●		●	●
	PNP NO		●		

Approvals and Certificates

Protection class	II	●	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40
Connector length l _c [mm]	0

Accessories

These and more accessories can be found in chapter 10

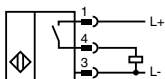
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

MHW 01	Modular mounting bracket
MH 02-L	Mounting bracket - 1/2" rod type, straight
MH 01-L2-W	Mounting bracket - 1/2" rod type, angled
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

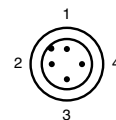
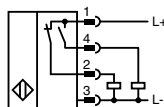
Electrical Connection



NRB20-L3-E2-V1



NRB20-L3-A2-V1
NRN35-L3-A2-V1
NRN40-L3K-A2-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Magnet field immunity	✓
Weld immune	✓
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 25 mA
Reverse polarity protection	✓
Switching frequency	0 ... 100 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	GD-ZnAl4Cu1, coated mounting flange PA6-GF35
Protection degree	IP67
Connection type	Connector M12 x 1, 4-pin



Properties

- Flexible Cube style housing
- Up to 40 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Connector version

Benefits

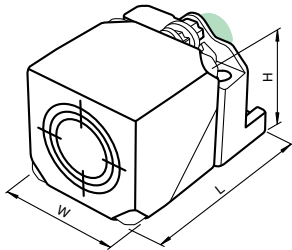
- Same sensing range for all metals
- Magnetic field and weld slag resistant
- Designed for tough automotive plant applications
- High visibility LED indication
- Sensor head can be positioned 5-ways

Additional Products

In this series, we offer the following additional products:

NRB20-L3M-A2-C3-V1

Technical data like NRB20-L3-A2-C-V1 but:
Housing material: GD-ZnAl4Cu1, coated
metal fixing flange, coated.



Model Number

		NRB20-L3-E2-C-V1	NRB20-L3-A2-C-V1	NRN35-L3-E2-C-V1	NRN35-L3-A2-C-V1	NRN40-L3K-E2-C-V1	NRN40-L3K-A2-C-V1
Rated operating distance	20 mm	●	●				
	35 mm			●	●		
	40 mm					●	●
Installation	flush	●	●				
	non-flush			●	●	●	●
Output type	PNP NO/NC		●		●		●
	PNP NO	●		●		●	

Approvals and Certificates

Protection class	II	●	●	●	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V						

Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40
Connector length l _c [mm]	0

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

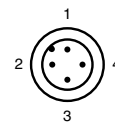
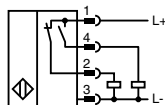
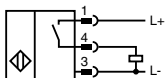
MHW 01	Modular mounting bracket
MH 02-L	Mounting bracket
MH 01-L2	Mounting bracket - 1/2" rod type, straight
MH 01-L2-W	Mounting bracket - 1/2" rod type, angled
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-OR2M-POC	Female cordset, M12, 4-pin, POC cable, straight
V1-W-OR2M-POC	Female cordset, M12, 4-pin, POC cable, angled

Electrical Connection



NRN35-L3-E2-C-V1
NRB20-L3-E2-C-V1
NRN40-L3K-E2-C-V1

NRB20-L3-A2-C-V1
NRB20-L3M-A2-C3-V1
NRN35-L3-A2-C-V1
NRN40-L3K-A2-C-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

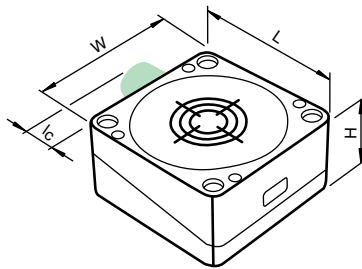


Properties

- Flat pack housing
- 50 mm and 75 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Connector version

Benefits

- Same sensing range for all metals
- Magnetic field and weld slag resistant
- Designed for tough automotive plant applications



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Magnetic field immunity	✓
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	0 ... 50 °C (32 ... 122 °F) (± 10 % changing operating distance) -25 ... 70 °C (-13 ... 158 °F) (± 20 % changing operating distance)
Housing material	PBT/metal
Housing base	metal
Protection degree	IP68
Connection type	Connector M12 x 1, 4-pin



Model Number

	NRB50-FP-A2-P3-V1	NRB50-FP-E2-P3-V1	NRN75-FP-A2-P3-V1	NRB50-FP-A2-C-P3-V1	NRB50-FP-E2-C-P3-V1	NRN75-FP-A2-C-P3-V1	NRN75-FP-E2-C-P3-V1
Weld immune	•	•	•	•	•	•	•
Rated operating distance	50 mm	50 mm	75 mm	50 mm	50 mm	75 mm	75 mm
Installation	flush	flush	non-flush	flush	flush	non-flush	non-flush
Output type	PNP	NO/NC	PNP	NO/NC	NO	PNP	NO/NC
Switching frequency	0 ... 1 Hz	0 ... 1 Hz	0 ... 1 Hz	0 ... 1 Hz	0 ... 1 Hz	0 ... 1 Hz	0 ... 1 Hz
	0 ... 50 Hz	0 ... 50 Hz	0 ... 50 Hz	0 ... 50 Hz	0 ... 50 Hz	0 ... 50 Hz	0 ... 50 Hz
	0 ... 80 Hz	0 ... 80 Hz	0 ... 80 Hz	0 ... 80 Hz	0 ... 80 Hz	0 ... 80 Hz	0 ... 80 Hz

Approvals and Certificates

Protection class	II	•	•	•	•	•	•
UL approval	cULus Listed, General Purpose	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	•	•	•	•	•	•

Dimensions

Length L [mm]	84	80	84	80
Width W [mm]	84	80	84	80
Height H [mm]			40	
Connector length lc [mm]	32	33	32	33

Accessories

These and more accessories can be found in chapter 10

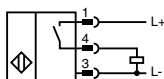
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V1-G-OR2M-POC	Female cordset, M12, 4-pin, POC cable, straight
V1-W-OR2M-POC	Female cordset, M12, 4-pin, POC cable, angled

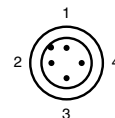
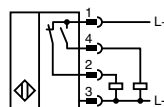
Electrical Connection



NRB50-FP-E2-P3-V1
NRB50-FP-E2-C-P3-V1
NRN75-FP-E2-C-P3-V1



NRB50-FP-A2-P3-V1
NRN75-FP-A2-P3-V1
NRB50-FP-A2-C-P3-V1
NRN75-FP-A2-C-P3-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

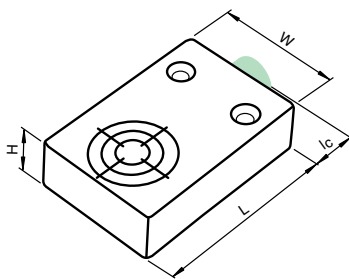


Properties

- Low mounting profile
- 8 mm and 10 mm sensing ranges
- DC, 3-wire switching output
- Cable and pigtailed connector versions

Benefits

- 100 V/m RF immunity
- Operational to -40 °C
- 20 AWG heavy duty cable
- IP 69K / 1200 psi washdown rating



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	5 ... 60 V DC
No-load supply current	≤ 10 mA
Reverse polarity protection	reverse polarity protected
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Switching state indication	LED yellow
Ambient temperature	-40 ... 85 °C (-40 ... 185 °F)
Housing material	PBT
Protection degree	IP67 / IP69K

Model Number

Rated operating distance	10 mm
	8 mm
Installation	flush
	non-flush
Output type	NPN NO
	NPN NC
	PNP NO
	PNP NC
Switching frequency	0 ... 200 Hz
	0 ... 350 Hz
Connection type	cable PUR , 2 m
	Cable connector Deutsch DT04,
	3-pin with PUR cable 150 mm

[illegible]

Approvals and Certificates

e1 Type approval	2006/28/EG
UL approval	cULus Listed, General Purpose

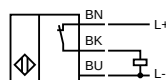
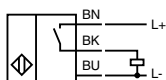
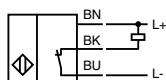
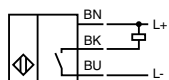
Dimensions

Length L [mm]	5
Width W [mm]	2
Height H [mm]	1
Connector length l_c [mm]	0

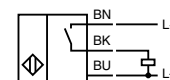
Electrical Connection



NBB8-F33-E0-M	NBB8-F33-E1-M	NBB8-F33-E2-M	NBB8-F33-E3-M
NBN10-F33-E0-M	NBN10-F33-E1-M	NBN10-F33-E2-M	NBN10-F33-E3-M



NBB8-F33-E2-M-150MM-3DT04





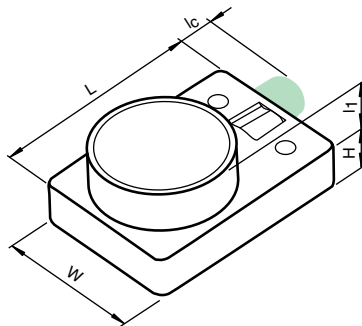
CE

Properties

- Durable metal housing
- 8 mm and 15 mm sensing ranges
- DC, 3-wire switching and 4-wire relay output
- Cable and pigtailed connector versions

Benefits

- Verifies outrigger extension
- Relay model features ultra low voltage drop
- Operational to -40 °C
- 20 AWG heavy duty cable
- IP 69K / 1200psi washdown rating



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Load current	≤ 200 mA
Switching state indication	LED, yellow
Ambient temperature	-40 ... 85 °C (-40 ... 185 °F)
Housing material	anodized aluminum
Protection degree	IP67 / IP69K

Model Number

		NBB8-F148P10-E0-M	NBB8-F148P10-E2-M	NBB15-F148P10-E0-M	NBB15-F148P10-E2-M	NBB15-F148P10-ARO-M	NBB8-F148P10-E0-M-150MM-3DT04	NBB8-F148P10-E2-M-150MM-3DT04
Rated operating distance	15 mm 8 mm	●	●	●	●	●	●	●
Output type	1 electronic relay, N.C. NPN NO PNP NO	●	●	●	●	●	●	●
Operating voltage	10 ... 30 V DC 10 ... 60 V DC	●	●	●	●	●	●	●
No-load supply current	≤ 10 mA ≤ 8 mA	●	●	●	●	●	●	●
Voltage drop	≤ 2.5 V ≤ 0.275 V	●	●	●	●	●	●	●
Reverse polarity protection	✓ ✓, polarity independent	●	●	●	●	●	●	●
Switching frequency	0 ... 120 Hz 0 ... 400 Hz 0 ... 40 Hz	●	●	●	●	●	●	●
Short-circuit protection	✓, self checking	●	●	●	●	●	●	●
Connection type	cable PUR, 2 m 150 mm cable with Deutsch connector	●	●	●	●	●	●	●

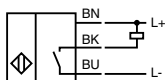
Dimensions

Length L [mm]	50
Width W [mm]	35
Height H [mm]	10
Cap length I ₁ [mm]	10
Connector length I _c [mm]	0

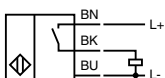
Electrical Connection



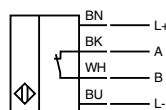
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NBB15-F148P10-E0-M



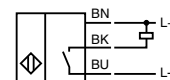
NBB8-F148P10-E2-M
NBB15-F148P10-E2-M



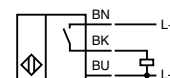
NBB15-F148P10-ARO-M



NBB8-F148P10-E0-M-150MM-3DT04



NBB8-F148P10-E2-M-150MM-3DT04



Refer to General Notes Relating to Product Information

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CE

e1

Properties

- Compact "cube" housing
- 20 mm and 40 mm sensing ranges
- DC, 4-wire switching output
- Connector version

Benefits

- High visibility LED indication
- Sensor head can be positioned 5-ways
- Maximum sensing range in a space-saving housing
- -40 °C operational temperature
- IP 69K / 1200 psi washdown rating

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	10 ... 60 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-40 ... 85 °C (-40 ... 185 °F)
Housing material	PA
Protection degree	IP69K
Connection type	Connector M12 x 1, 4-pin



Model Number

		NBB20-L2-A0-V1-M	NBB20-L2-A2-V1-M	NBN40-L2-A0-V1-M	NBN40-L2-A2-V1-M
Rated operating distance	20 mm	●	●		
	40 mm			●	●
Installation	flush	●	●		
	non-flush			●	●
Output type	NPN	●		●	
	NO/NC				
	PNP		●		●
	NO/NC				
Switching frequency	0 ... 100 Hz			●	●
	0 ... 200 Hz	●	●		

Approvals and Certificates

e1 Type approval	2006/28/EG	●	●	●	●
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Dimensions

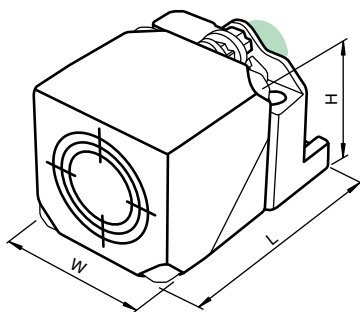
Length L [mm]	67
Width W [mm]	40
Height H [mm]	40
Connector length l _c [mm]	0

Accessories

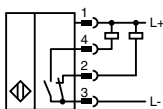
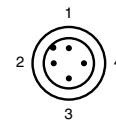
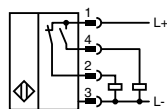
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



Electrical Connection

NBB20-L2-A0-V1-M
NBN40-L2-A0-V1-MNBB20-L2-A2-V1-M
NBN40-L2-A2-V1-M

Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



CE

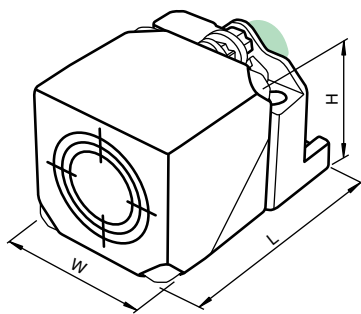
e1

Properties

- Compact "cube" housing
- 20 mm and 40 mm sensing ranges
- DC, 4-wire switching output
- Connector version

Benefits

- High visibility LED indication
- High torque metal mounting bracket
- Sensor head can be positioned 5-ways
- Maximum sensing range in a space-saving housing
- -40 °C operational temperature
- IP 69K / 1200 psi washdown rating



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	10 ... 60 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-40 ... 85 °C (-40 ... 185 °F)
Housing material	PA-GF35 metal base powder coated
Protection degree	IP69K
Connection type	Connector M12 x 1, 4-pin



Model Number

		NBB20-L2M-A0-V1-M	NBB20-L2M-A2-V1-M	NBN40-L2M-A0-V1-M	NBN40-L2M-A2-V1-M
Rated operating distance	20 mm	●	●		
	40 mm			●	●
Installation	flush	●	●		
	non-flush			●	●
Output type	NPN	●		●	
	NO/NC				
	PNP		●		●
	NO/NC				
Switching frequency	0 ... 100 Hz			●	●
	0 ... 200 Hz	●	●		

Approvals and Certificates

e1 Type approval	2006/28/EG	●	●	●	●
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Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40
Connector length l _c [mm]	0

Accessories

These and more accessories can be found in chapter 10

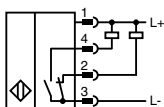
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

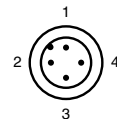
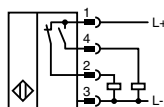
Electrical Connection



NBN40-L2M-A0-V1-M
NBB20-L2M-A0-V1-M



NBN40-L2M-A2-V1-M
NBB20-L2M-A2-V1-M



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





CE

e 1

Properties

- Limit switch style housing
- 20 mm and 40 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Cast metal terminal compartment

Benefits

- 360° power & output LED visibility
- Accepts a wide range of cable gauges
- 5-way rotatable head
- -40 C operational temperature
- IP 69K / 1200 psi washdown rating

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	10 ... 60 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-40 ... 85 °C (-40 ... 185 °F)
Housing material	PA/metal with epoxy powder coating
Housing base	metal
Protection degree	IP68 / IP69K
Connection type	screw terminals



Model Number

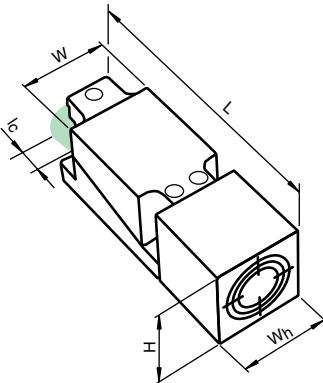
		NBB20-U4-A0-M	NBB20-U4-A2-M	NBB20-U4-E0-M	NBB20-U4-E2-M	NBN40-U4-A0-M	NBN40-U4-A2-M	NBN40-U4-E0-M	NBN40-U4-E2-M
Rated operating distance	20 mm	●	●	●	●				
	40 mm					●	●	●	●
Installation	flush	●	●	●	●				
	non-flush					●	●	●	●
Output type	NPN NO/NC	●				●			
	NPN NO			●				●	
	PNP NO/NC		●				●		
	PNP NO				●				●
Switching frequency	0 ... 150 Hz					●	●	●	●
	0 ... 200 Hz	●	●	●	●				

Approvals and Certificates

e1 Type approval	2006/28/EG	●	●	●	●	●	●	●	●
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Dimensions

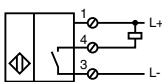
Length L [mm]	128
Width W [mm]	40
Width W _h [mm]	40
Height H [mm]	40
Connector length l _c [mm]	0 (1/2" NPT)



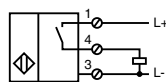
Electrical Connection



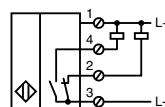
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NBN40-U4-E0-M



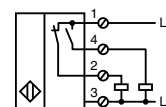
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NBN40-U4-E2-M



NBB20-U4-A0-M
NBN40-U4-A0-M



NBB20-U4-A2-M
NBN40-U4-A2-M



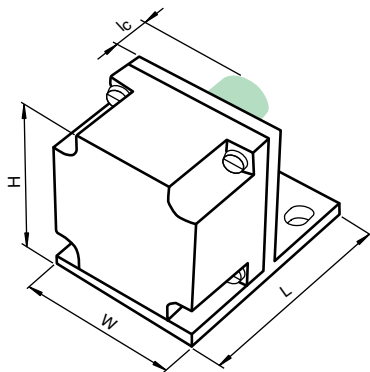


Properties

- Sturdy F35 housing
- 20 mm and 25 mm sensing ranges
- DC, 4-wire switching output
- Connector version

Benefits

- For use in high temperature applications



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Description	Sensor consists of a sensor head and a cylindrical amplifier
Installation	flush mountable
Output type	PNP NO/NC
Operating voltage	10 ... 30 V
No-load supply current	≤ 25 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Switching frequency	0 ... 20 Hz
Short-circuit protection	✓, self checking
Indication of the switching state	Multihole-LED, yellow
Ambient temperature	0 ... 250 °C (32 ... 482 °F)
Housing material	PTFE / AI / 1.4305 / AISI 303
Protection degree	amplifier IP67 sensor IP40
Connection type	Connector M12 x 1, 4-pin



Model Number

	NCN25-F35-A2-250-V1	NCN20-F35-A2-250-10M-V1	NCN25-F35-A2-250-15M-V1	NCN20-F35-A2-250-20M-V1
Rated operating distance		●		●
25 mm	●		●	
Cable length between sensor and amplifier	●	●	●	●
10 m				
15 m				
20 m				●

Approvals and Certificates

UL approval	cULus Listed, General Purpose, Class 2 Power Source	●	●	●	●
CSA approval	cCSAus Listed, General Purpose		●		●
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V				

Dimensions

Length L [mm]	56
Width W [mm]	40
Height H [mm]	40
Connector length L _c [mm]	12

Accessories

These and more accessories can be found in chapter 10

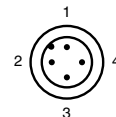
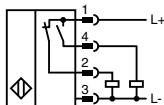
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

SH-F35	Protective cover
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

Electrical Connection



NCN20-F35-A2-250-10M-V1
NCN20-F35-A2-250-20M-V1
NCN25-F35-A2-250-15M-V1
NCN25-F35-A2-250-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



Properties

- Miniature V3 housing
- 3 mm, flush mountable
- DC, 2-wire switching output
- Cable version

Benefits

- ATEX approval for use in zone 2/zone 22

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NBB3-V3-Z4-3G-3D
Rated operating distance	3 mm
Installation	flush
Output type	DC NO
Operating voltage	5 ... 60 V DC
Reverse polarity protection	✓
Switching frequency	0 ... 2000 Hz
Load current	4 ... 100 mA
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	PBT
Protection degree	IP67
Connection type	cable PVC, 130 mm



Use in the Hazardous Area

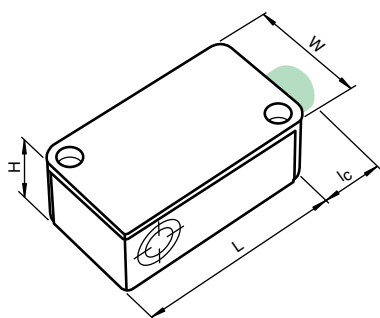
Use in the hazardous area	see instruction manuals
Category	3G; 3D

Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

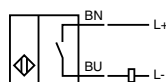
Length L [mm]	27.8
Width W [mm]	16
Height H [mm]	10
Connector length l _c [mm]	0



Electrical Connection



NBB3-V3-Z4-3G-3D





Properties

- Miniature V3 housing
- 2 mm and 4 mm sensing ranges
- DC, 3-wire switching output
- Cable version

Benefits

- ATEX approval for use in zone 2/zone 22

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Load current	0 ... 100 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection type	cable PVC, 130 mm



Model Number

		NBB2-V3-E2-3G-3D	NBB2-V3-E3-3G-3D	NBN4-V3-E2-3G-3D
Rated operating distance	2 mm 4 mm	●	●	●
Installation	flush non-flush	●	●	●
Output type	PNP NO PNP NC	●	●	●
Switching frequency	0 ... 1000 Hz 0 ... 500 Hz	●	●	●

Use in the Hazardous Area

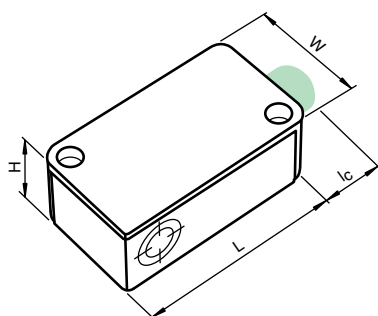
Use in the hazardous area	see instruction manuals	●	●	●
Category	3G; 3D	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	●	●	●

Dimensions

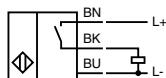
Length L [mm]	27.8
Width W [mm]	16
Height H [mm]	10
Connector length l _c [mm]	0



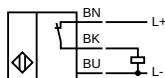
Electrical Connection



NBB2-V3-E2-3G-3D
NBN4-V3-E2-3G-3D



NBB2-V3-E3-3G-3D



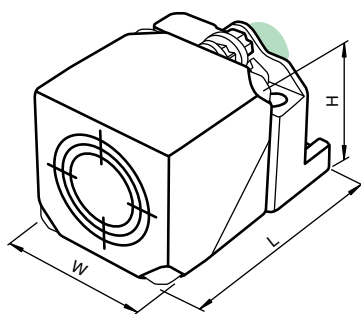


Properties

- Flexible Cube style housing
- 20 mm and 40 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Connector version

Benefits

- ATEX approval for use in zone 2/ zone 22
- High visibility LED indication
- Sensor head can be positioned 5-ways
- Adjustable connector allows flexible wiring
- Mounting base with quick release bracket



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Housing material	PA
Protection degree	IP69K
Connection type	Connector M12 x 1, 4-pin



Model Number

		NBB20-L2-E2-V1-3G-3D	NBB20-L2-A2-V1-3G-3D	NBN40-L2-E2-V1-3G-3D	NBN40-L2-A2-V1-3G-3D
Rated operating distance	20 mm	●	●		
	40 mm			●	●
Installation	flush	●	●		
	non-flush			●	●
Output type	PNP		●		●
	NO/NC				
	PNP	●		●	●
	NO				
Switching frequency	0 ... 100 Hz			●	●
	0 ... 150 Hz	●	●		

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●
Category	3G; 3D	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V				

Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40
Connector length l _c [mm]	0

Accessories

These and more accessories can be found in chapter 10

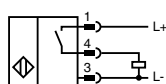
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

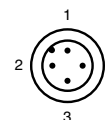
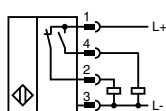
Electrical Connection



NBB20-L2-E2-V1-3G-3D
NBN40-L2-E2-V1-3G-3D



NBB20-L2-A2-V1-3G-3D
NBN40-L2-A2-V1-3G-3D



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

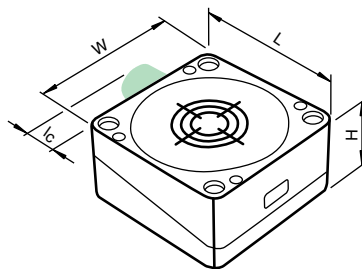


Properties

- Flat pack housing
- 40 mm and 50 mm sensing ranges
- DC, 3-wire and 4-wire switching output
- Terminal compartment and connector versions

Benefits

- ATEX approval for use in zone 2/ zone 22



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Installation	flush
Operating voltage	10 ... 60 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 80 Hz
Load current	0 ... 200 mA
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT housing / PBT base

Model Number

		NCB40-FP-A2-P1-3G-3D	NCB50-FP-E2-P1-V1-3G-3D
Rated operating distance	40 mm	●	
	50 mm		●
Output type	PNP NO		●
	PNP NO/NC	●	
Protection degree	IP67	●	●
	IP68	●	
Connection type	Connector M12 x 1, 4-pin screw terminals	●	●

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●
Category	3G; 3D	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●

Dimensions

Length L [mm]	80	84
Width W [mm]	80	84
Height H [mm]	40	
Connector length l_c [mm]	11	25
Connector thread	M20 x 1.5	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

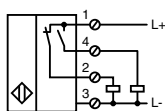
V1-G-BK2M-PUR-U
V1-W-BK2M-PUR-U

Female cordset, M12, 4-pin, PUR cable, straight
Female cordset, M12, 4-pin, PUR cable, angled

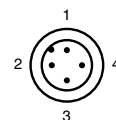
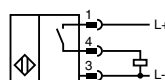
Electrical Connection



NCB40-FP-A2-P1-3G-3D



NCB50-FP-E2-P1-V1-3G-3D



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



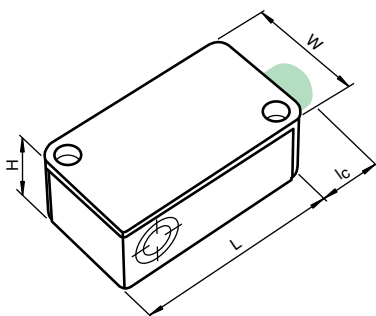
Properties

- Miniature V3 housing
- 2 mm and 4 mm sensing ranges
- NAMUR output
- Cable and connector versions

Benefits

- ATEX approval up to zone 0 / zone 20
- Intrinsically safe when connected to approved device
- FM Class/Div approvals
- 2:1 technology compatible

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Type of voltage	DC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Protection degree	IP67

Model Number

		NJ2-V3-N	NCB2-V3-N0	NCN4-V3-N0	NJ2-V3-N-V5	NCB2-V3-N0-V5	NCN4-V3-N0-V5
Rated operating distance	2 mm	●	●	●	●	●	●
	4 mm			●			●
Installation	flush	●	●		●	●	
	non-flush			●			●
Switching frequency	0 ... 1000 Hz	●		●	●		
	0 ... 2000 Hz		●	●		●	●
Suitable for 2:1 technology	✓	●			●		
Switching state indication	LED, yellow		●	●		●	●
Connection type	4.8 mm Faston				●	●	●
	cable PVC, 130 mm	●	●	●			

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●	●	●
Category	1G; 2G; 1D	●	●	●	●	●	●

Approvals and Certificates

FM Control drawing	116-0165F	●	●	●			
UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V						

Dimensions

Length L [mm]	27.8
Width W [mm]	16
Height H [mm]	10
Connector length l _c [mm]	0 9.2

Accessories

These and more accessories can be found in chapter 10

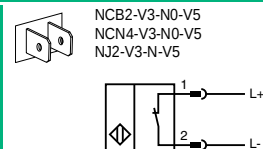
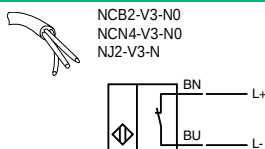
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KCD2-SR-Ex2

2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection





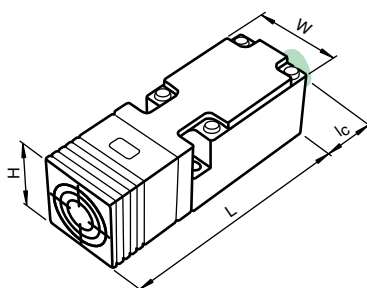
Properties

- Compact and flexible Mini-Cube housing
- 15 mm, non-flush mountable
- NAMUR output
- Terminal compartment

Benefits

- ATEX approval up to zone 0 / zone 20
- Intrinsically safe when connected to approved device
- FM Class/Div approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NCN15-M1K-N0
Rated operating distance	15 mm
Installation	non-flush
Output type	NAMUR, NC
Type of voltage	DC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 500 Hz
Switching state indication	LED, yellow
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Protection degree	IP67
Connection type	screw terminals



Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	1G; 2G; 1D

Approvals and Certificates

FM Control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V

Dimensions

Length L [mm]	91
Width W [mm]	30
Height H [mm]	30
Connector length l_c [mm]	0
Connector thread	M16 X 1.5

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KCD2-SR-Ex2

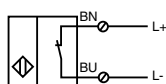
2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



NCN15-M1K-N0





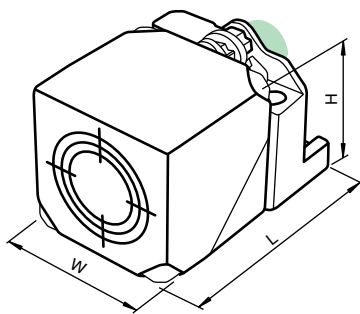
Properties

- Compact cube style housing
- 20 mm and 40 mm sensing ranges
- NAMUR output
- Connector version

Benefits

- ATEX approval up to zone 0 / zone 20
- Intrinsically safe when connected to approved device
- Adjustable connector allows flexible wiring
- Quick release mounting

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Type of voltage	DC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Current consumption	
Measuring plate not detected	≥ 2.2 mA
Measuring plate detected	≤ 1 mA
Switching state indication	LED, yellow
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PA
Protection degree	IP69K
Connection type	Connector M12 x 1, 4-pin



Model Number

		NCB20-L2-N0-V1	NCN40-L2-N0-V1
Rated operating distance	20 mm	●	
	40 mm		●
Installation	flush	●	
	non-flush		●
Switching frequency	0 ... 150 Hz		●
	0 ... 300 Hz	●	

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●
Category	1G; 2G; 3G; 3D	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40
Connector length l _c [mm]	0

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

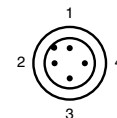
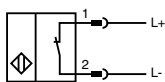
V1-G	4-pin, M12 female field-attachable connector
V1-W	4-pin, M12 female field-attachable connector
V1-G-N-2M-PUR	Female cordset, M12, 2-pin, NAMUR, PUR cable
V1-W-N-2M-PUR	Female cordset, M12, 2-pin, NAMUR, PUR cable
MHW 01	Modular mounting bracket
KCD2-SR-Ex2	2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



NCB20-L2-N0-V1
NCN40-L2-N0-V1



Wire colors in accordance with EN 60947-5-6

1	BN	(brown)
2	BU	(blue)



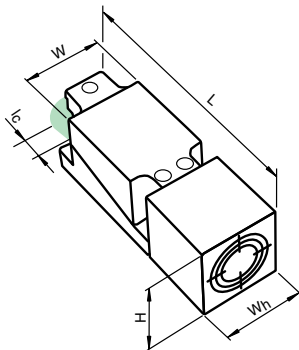
Properties

- Limit switch style housing
- 40 mm, non-flush mountable
- NAMUR output
- Terminal compartment

Benefits

- ATEX approval up to zone 1
- Intrinsically safe when connected to approved device
- FM Class/Div approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	40 mm
Installation	non-flush
Output type	NAMUR, NC
Type of voltage	DC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 100 Hz
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Protection degree	IP68
Connection type	screw terminals



Model Number

Material	PBT housing/plastic base
	PBT housing/metal base

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	2G

Approvals and Certificates

FM Control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V

Dimensions

Length L [mm]	118
Width W [mm]	40
Height H [mm]	40
Head width W_h [mm]	55
Head height H_h [mm]	55
Connector length l_c [mm]	0
Connector thread	conduit entrance with 1/2" NPT opening

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

MHW 01

Modular mounting bracket

KCD2-SR-Ex2

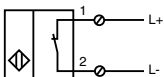
2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



NJ40+U4+N
NJ40+U2+N





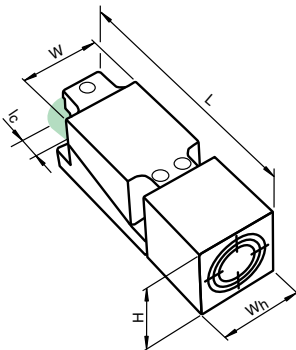
Properties

- Limit switch style housing
- Up to 40 mm sensing ranges
- NAMUR output
- Terminal compartment and connector versions

Benefits

- ATEX approval up to zone 0
- Intrinsically safe when connected to approved device

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Type of voltage	DC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Switching state indication	LED, yellow
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Protection degree	IP68 / IP69K

Model Number

		NBB15-U2K-N0	NBB15-U4K-N0	NBB20-U1K-N0	NBB20-U4K-N0	NBN40-U1K-N0	NBN40-U2K-N0	NBN40-U4K-N0	NBB15-U4K-N0-V1	NBN40-U1K-N0-V1	NBN40-U4K-N0-V1
Rated operating distance	15 mm	●	●								
	20 mm			●	●						
	40 mm					●	●	●		●	●
Installation	flush	●	●	●	●				●	●	●
	non-flush					●	●	●		●	●
Current consumption											
Measuring plate not detected	≥ 2.2 mA	●	●	●	●	●	●	●	●	●	●
	≥ 3 mA			●	●						
Measuring plate detected	≤ 1 mA	●	●	●	●	●	●	●	●	●	●
Switching frequency	0 ... 100 Hz					●					
	0 ... 150 Hz						●	●		●	●
	0 ... 250 Hz										
	0 ... 300 Hz	●	●	●	●				●		
Material	Housing PA/base PA	●	●	●	●	●	●	●	●	●	●
	Housing PA/base metal		●	●	●			●	●	●	●
Connection type	Connector M12 x 1, 4-pin	●	●	●	●	●	●	●	●	●	●
	screw terminals										



Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●	●	●	●	●	●	●
Category	1G; 2G; 3G	●	●	●	●	●	●	●	●	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V										

Dimensions

Length L [mm]		118									
Width W [mm]		40									
Height H [mm]		40									
Connector length l _c [mm]			0							30	
Connector thread	conduit entrance with 1/2" NPT opening	●	●	●	●	●	●	●			
Connector thread	M20 x 1.5			●		●					

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

MHW 01
1/2"NPT-V1-G-S-3M
V1-G
V1-W
V1-G-N-2M-PUR
V1-W-N-2M-PUR
KCD2-SR-Ex2

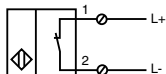
Modular mounting bracket
Receptacle 1/2"NPT to M12 x 1, 4-pin
4-pin, M12 female field-attachable connector
4-pin, M12 female field-attachable connector
Female cordset, M12, 2-pin, NAMUR, PUR cable
Female cordset, M12, 2-pin, NAMUR, PUR cable
2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

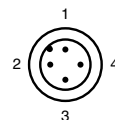
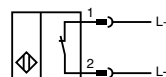
Electrical Connection



NBB15-U2K-N0
NBB15-U4K-N0
NBB20-U1K-N0
NBN40-U1K-N0
NBB20-U4K-N0
NBN40-U4K-N0
NBN40-U2K-N0



NBB15-U4K-N0-V1
NBN40-U4K-N0-V1
NBN40-U1K-N0-V1



Wire colors in accordance with EN 60947-5-6

1 BN (brown)
2 BU (blue)



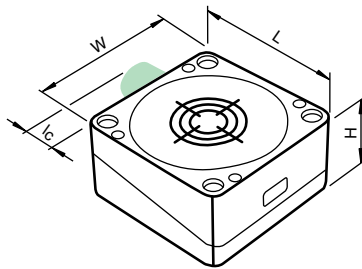
Properties

- Flat pack housing
- 40 mm and 50 mm sensing ranges
- NAMUR output
- Terminal compartment and connector versions

Benefits

- ATEX approval up to zone 0 / zone 20
- Intrinsically safe when connected to approved device
- FM Class/Div approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Type of voltage	DC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Housing material	PBT/metal
Protection degree	IP67

Model Number

	NJ50-FP-N-P4	NCB40-FP-N0-P4	NCN50-FP-N0-P4	NCN50-FP-N0-P4-V1
Rated operating distance	40 mm	50 mm		
Installation	flush	non-flush		
Switching frequency	0 ... 100 Hz	0 ... 80 Hz		
Switching state indication	LED, yellow			
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)	-25 ... 70 °C (-13 ... 158 °F)		
Connection type	Connector M12 x 1, 4-pin	screw terminals		

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals			
Category	1G; 2G; 1D			

Approvals and Certificates

FM Control drawing	116-0165F			
UL approval	cULus Listed, General Purpose			
CSA approval	cCSAus Listed, General Purpose			
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V			

Dimensions

Length L [mm]	80
Width W [mm]	80
Height H [mm]	40
Connector length l_c [mm]	11
Connector thread	conduit entrance with 1/2" NPT opening

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

1/2"NPT-V1-G-S-3M

V1-G

V1-W

V1-G-N-2M-PUR

V1-W-N-2M-PUR

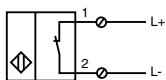
KCD2-SR-Ex2

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

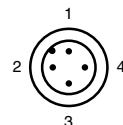
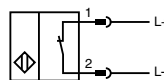
Electrical Connection



NCB40-FP-N0-P4
NCN50-FP-N0-P4
NJ50-FP-N-P4



NCN50-FP-N0-P4-V1



Wire colors in accordance with EN 60947-5-6

1	BN	(brown)
2	BU	(blue)



Properties

- Limit switch style housing
- 15 mm and 20 mm sensing ranges
- NAMUR output
- Terminal compartment

Benefits

- Usable up to SIL 3 acc. to IEC 61508
- ATEX approval up to zone 0 / zone 20
- FM Class and Division approvals

Additional Products

In this series, we offer the following additional products:

NJ6S1+U1+N1

for aluminum targets only.

Technical data:

Rated operating distance: 6 mm

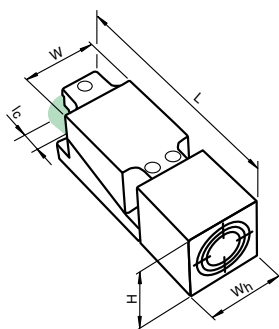
Installation: flush in mild steel

Output type: NAMUR, NO

Current consumption

Measuring plate not detected: ≤ 1 mA

Measuring plate detected: ≥ 3 mA



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Type of voltage	DC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 150 Hz
Ambient temperature	-40 ... 100 °C (-40 ... 212 °F)
Protection degree	IP68
Connection type	screw terminals



Model Number

		NJ15S+U1+N	NJ20S+U1+N	NJ15S+U4+N	NJ20S+U4+N
Rated operating distance	15 mm	●		●	
	20 mm		●		●
Installation	flush	●		●	
	non-flush		●		●
Housing material	PBT housing / PBT base	●	●		
	PBT housing / metal base			●	●

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●	●
Category	1G; 2G; 1D	●	●	●	●

Approvals and Certificates

FM Control drawing	116-0165F			●	●
UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V				

Dimensions

Length L [mm]	118
Width W [mm]	40
Height H [mm]	40
Connector length l_c [mm]	0
Connector thread	M20 x 1.5
	conduit entrance with 1/2" NPT opening

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

MHW 01

KFD2-SH-EX1

Modular mounting bracket

Isolated amplifier



Danger!

In safety-related applications the sensor must be operated with a qualified fail safe interface from Pepperl+Fuchs, such as KFD2-SH-EX1.

Consider the "exida Functional Safety Assessment" document which is available on www.pepperl-fuchs.com as an integral part of this product's documentation.

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.

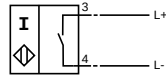
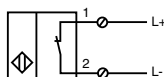
Electrical Connection



NJ15S+U1+N
NJ15S+U4+N
NJ20S+U1+N
NJ20S+U4+N

NJ6S1+U1+N1

S1N





Properties

- Flat pack housing
- 40 mm, non-flush mountable
- NAMUR output
- Terminal compartment

Benefits

- Usable up to SIL 3 acc. to IEC 61508
- ATEX approval up to zone 1 / zone 20
- FM Class and Division approvals

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NJ40-FP-SN-P4
Rated operating distance	40 mm
Installation	non-flush
Output type	NAMUR, NC
Type of voltage	DC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 100 Hz
Ambient temperature	-40 ... 100 °C (-40 ... 212 °F)
Housing material	PBT housing / metal base
Protection degree	IP68
Connection type	screw terminals



Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	2G; 1D

Approvals and Certificates

Control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V

Dimensions

Length L [mm]	80
Width W [mm]	80
Height H [mm]	40
Connector length l_c [mm]	11 (M20 x 1.5)

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KFD2-SH-EX1

Isolated amplifier

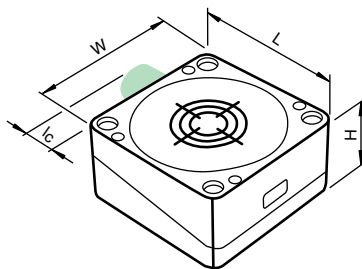


Danger!

In safety-related applications the sensor must be operated with a qualified fail safe interface from Pepperl+Fuchs, such as KFD2-SH-EX1.

Consider the "exida Functional Safety Assessment" document which is available on www.pepperl-fuchs.com as an integral part of this product's documentation.

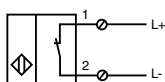
Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Electrical Connection



NJ40-FP-SN-P4



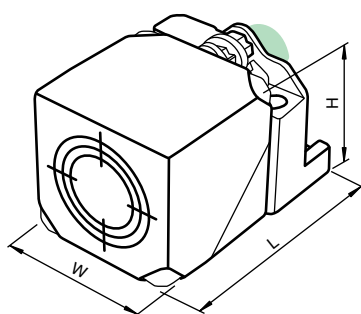


Properties

- Compact cube style, L2 housing
- 20 mm and 40 mm sensing ranges
- AS interface
- Connector version

Benefits

- High visibility LED indication
- Sensor head can be positioned 5-ways
- Mounting base with quick clamping lever for swift mounting
- Adjustable connector allows flexible wiring



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NO/NC programmable
Slave type	A/B slave
AS-Interface specification	V3.0
Required master specification	≥ V2.1
Operating voltage	26.5 ... 31.9 V via AS-i bus system
Reverse polarity protection	✓
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Fault indication	LED, red
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PA
Protection degree	IP69K
Connection type	Device connector M12 x 1, 4-pin



Model Number

Rated operating distance	20 mm 40 mm
Installation	flush non-flush
No-load supply current	≤ 25 mA ≤ 40 mA
Switching frequency	0 ... 150 Hz 0 ... 50 Hz

NBB20-L2-B3B-V1

NBN40-L2-B3B-V1

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

Length L [mm]	67
Width W [mm]	40
Height H [mm]	40
Connector area l _c [mm]	0

Accessories

These and more accessories can be found in chapter 10

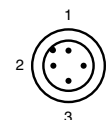
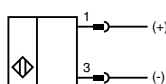
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector
V1-W	4-pin, M12 female field-attachable connector
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
MHW 01	Modular mounting bracket
MH 02-L	Mounting bracket
MH 01-L2-W	Mounting bracket - 1/2" rod type, angled

Electrical Connection



NBB20-L2-B3B-V1
NBN40-L2-B3B-V1





Properties

- 2 mm slot width
- Very fast response
- DC, 2-wire switching output
- Flexible leads version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	SB2-Z0-GN
Slot width	2 mm
Output type	DC NO
Lateral immersion switchpoint	5 ... 7 mm
Operating voltage	5 ... 30 V DC
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 2000 Hz
Load current	2 ... 50 mA
Short-circuit protection	✓, self checking
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection type	flexible leads LIFYW, 500 mm

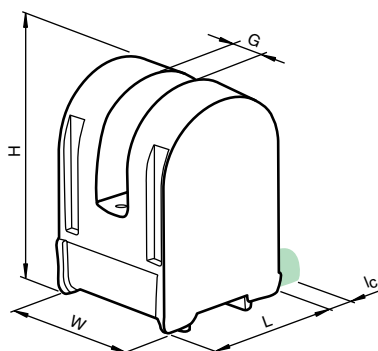


Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

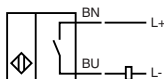
Length L [mm]	15
Width W [mm]	8
Height H [mm]	12
Slot width G [mm]	2 mm
Connector length l _c [mm]	0



Electrical Connection



SB2-Z0-GN





Properties

- 3.5 mm slot width
- Very fast response
- DC, 3-wire and 4-wire switching output
- Flexible leads and cable versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Slot width	3.5 mm
Lateral immersion switchpoint	5 ... 7 mm
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Load current	0 ... 100 mA
Short-circuit protection	✓, self checking
Housing material	PBT
Protection degree	IP67

Model Number

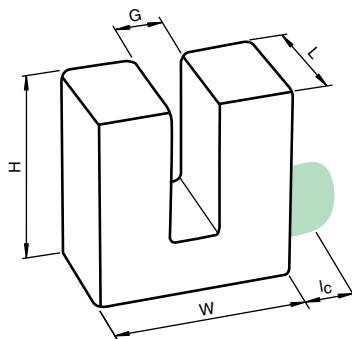
	SB3,5-E2	SB3,5-G-E2	SB3,5-A2
Output type	PNP NO/NC		
Switching frequency	0 ... 2000 Hz 0 ... 3000 Hz		
Switching state indication	LED, yellow		
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F) -25 ... 85 °C (-13 ... 185 °F)		
Connection type	cable PVC, 500 mm flexible leads LIY, 500 mm flexible leads PVC, 135 mm		

Approvals and Certificates

UL approval	cULus Listed, General Purpose			
CSA approval	cCSAus Listed, General Purpose			
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V			

Dimensions

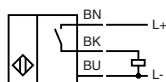
Length L [mm]	10
Width W [mm]	19
Height H [mm]	15
Slot width G [mm]	3.5
Connector length l _c [mm]	0



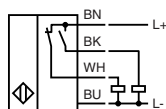
Electrical Connection



SB3,5-E2
SB3,5-G-E2



SB3,5-A2





Properties

- 10 mm slot width
- Very fast response
- DC, 3-wire switching output
- Cable version

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Slot width	10 mm
Lateral immersion switchpoint	13.5 ... 16.5 mm
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 15 mA
Reverse polarity protection	✓
Switching frequency	0 ... 1000 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection type	cable PVC, 2 m



Model Number

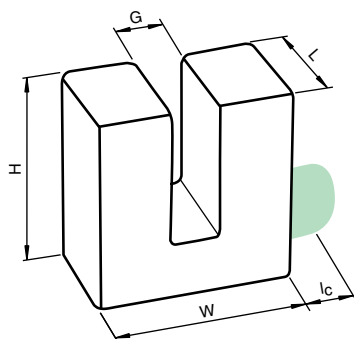
Output type	NPN	NO	SJ10-E	SJ10-E2
	PNP	NO	●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

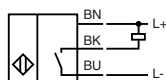
Length L [mm]	25
Width W [mm]	44
Height H [mm]	45
Slot width G [mm]	10
Connector length l _c [mm]	6



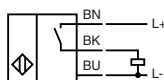
Electrical Connection



SJ10-E



SJ10-E2





Properties

- 15 mm slot width
- Fast response
- DC, 3-wire and 4-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Slot width	15 mm
Lateral immersion switchpoint	17 ... 20 mm
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 500 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number

			SJ15-E	SJ15-E2	SJ15-A	SJ15-A2	SJ15-A2-V1
Output type	NPN	NO/NC	•		•		
	NPN	NO	•				
	PNP	NO/NC				•	•
Connection type	PNP	NO		•			
	Connector M12 x 1, 4-pin						•
	cable PVC, 2 m		•	•	•	•	•

Approvals and Certificates

UL approval	cULus Listed, General Purpose	•	•	•	•	•	•
CSA approval	cCSAus Listed, General Purpose	•	•	•	•	•	•
CCC approval	CCC approval / marking not required for sensors rated ≤36 V						

Dimensions

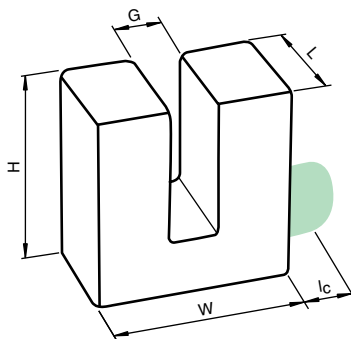
Length L [mm]	30	
Width W [mm]	48	
Height H [mm]	60	
Slot width G [mm]	15	
Connector length l _c [mm]	0	12

Accessories

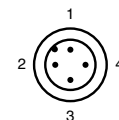
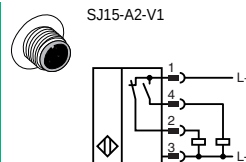
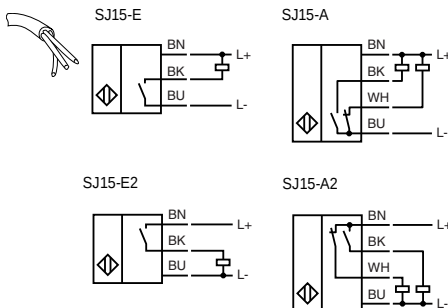
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



Electrical Connection



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- 30 mm slot width
- Fast response
- DC, 4-wire switching output
- Cable and connector versions

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Slot width	30 mm
Lateral immersion switchpoint	27 ... 31 mm
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Switching frequency	0 ... 150 Hz
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	ABS
Protection degree	IP67

Model Number

		SJ30-A	SJ30-A2	SJ30-A0-V1
Output type	NPN NO/NC PNP NO/NC	●	●	●
Operating voltage	10 ... 30 V DC 10 ... 65 V DC	●	●	●
Connection type	Connector M12 x 1, 4-pin cable PVC, 2 m	● 	● 	● 

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	●	●	●

Dimensions

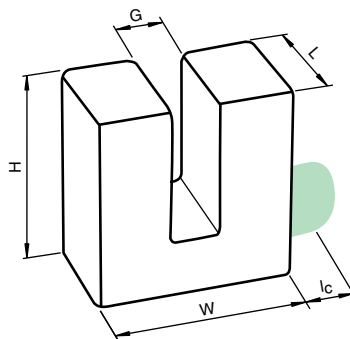
Length L [mm]	51	
Width W [mm]	84	
Height H [mm]	110	
Slot width G [mm]	30	
Connector length l _c [mm]	35	22

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

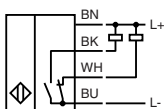
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled



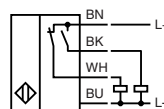
Electrical Connection



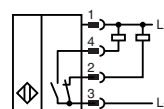
SJ30-A



SJ30-A2



SJ30-A0-V1





Properties

- 15 mm and 30 mm slot width
- Fast response
- AC, 2-wire switching output
- Cable version

Technical Data

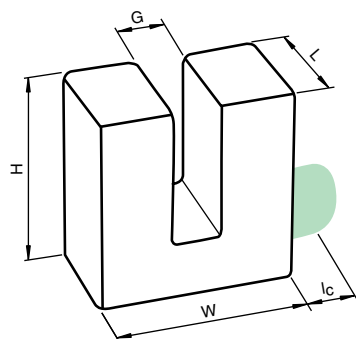
For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	20 ... 253 V AC
Switching frequency	0 ... 25 Hz
Load current	10 ... 500 mA
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Connection type	cable PVC, 2 m



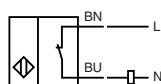
Model Number		SJ15-WO	SJ15-WS	SJ30-WO	SJ30-WS
Slot width	15 mm	●	●		
	30 mm			●	
Output type	AC NO		●		●
	AC NC	●		●	
Lateral immersion switchpoint	18.5 ... 20.5 mm	●	●		
	27 ... 31 mm			●	●
Housing material	ABS			●	●
	PBT	●	●		
Approvals and Certificates					
UL approval	cULus Listed, General Purpose	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)	●	●		
Dimensions					
Length L [mm]		30		51	
Width W [mm]		48		84	
Height H [mm]		60		110	
Slot width G [mm]		15		30	
Connector length l _c [mm]		0		35	



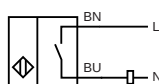
Electrical Connection



SJ15-WO
SJ30-WO



SJ15-WS
SJ30-WS





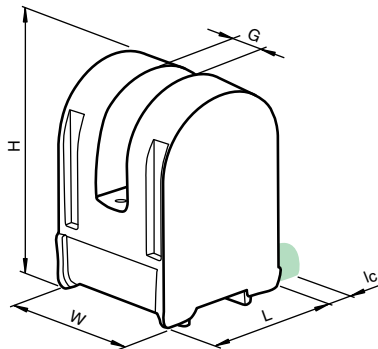
Properties

- 2 mm slot width
- Extraordinary fast response
- NAMUR output
- Flexible leads version

Benefits

- ATEX approval up to zone 0 / zone 20
- Intrinsically safe when connected to approved device
- FM Class/Div approvals
- 2:1 technology allows two sensor signals on one line

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	SJ2-N
Slot width	2 mm
Output type	NAMUR, NC
Lateral immersion switchpoint	5 ... 7 mm, typ. 6 mm
Suitable for 2:1 technology	✓, Reverse polarity protection diode not required
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Operating voltage	5 ... 25 V
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 5000 Hz
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Protection degree	IP67
Connection type	flexible leads LIFYW, 500 mm



Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	1G; 2G; 1D

Approvals and Certificates

FM control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V

Dimensions

Length L [mm]	8
Width W [mm]	8
Height H [mm]	12
Slot width G [mm]	2
Connector length l_c [mm]	0

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KFD2-SRA-Ex4

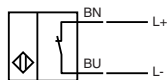
4-channel isolated amplifier for 2:1 technology

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



SJ2-N





Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Slot width	3.5 mm
Output type	NAMUR, NC
Lateral immersion switchpoint	5 ... 7 mm, typ. 6 mm
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Operating voltage	5 ... 25 V
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 3000 Hz
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Protection degree	IP67

Model Number

Suitable for 2:1 technology	✓, Reverse polarity protection diode not required ✓, with reverse polarity protection diode
Switching state indication	LED, yellow
Housing material	PBT
Connection type	flexible leads LIY, 500 mm flexible leads PVC, 135 mm flexible leads PVC, 500 mm

	SJ3,5-N	SJ3,5-G-N SJ3,5-N-GN	SJ3,5-N LED	SC3,5-G-N0	SC3,5-N0-GN
	●	●	●	●	●
			●	●	●
	●	●	●	●	●
	●	●	●	●	●
				●	●

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	1G; 2G; 1D 1G; 2G; 3G; 1D 2G

	●	●	●	●	●
	●	●		●	●
			●		

Approvals and Certificates

FM control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

	●				
	●	●	●	●	●
	●	●	●	●	●

Dimensions

Length L [mm]	10
Width W [mm]	19
Height H [mm]	15
Slot width G [mm]	3.5
Connector length l _c [mm]	0

Notes:

SJ3,5-G-N and SJ3,5-N-GN differ in switching hysteresis.
SC3,5-G-N0 and SC3,5-N0-GN differ in switching hysteresis.

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KFD2-SRA-Ex4

4-channel isolated amplifier for 2:1 technology

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

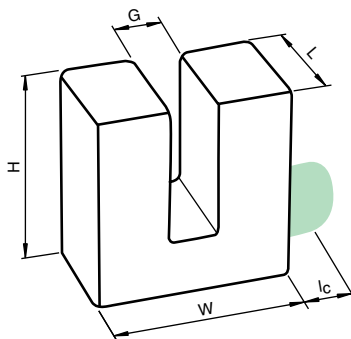
Properties

- 3.5 mm slot width
- Very fast response
- NAMUR output
- Flexible leads version

Benefits

- ATEX approval up to zone 0 / zone 20
- Intrinsically safe when connected to approved device
- FM Class/Div approvals
- 2:1 technology allows two sensor signals on one line

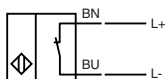
Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Electrical Connection



SC3,5-G-N0
SC3,5-N0-GN
SJ3,5-G-N
SJ3,5-N-GN
SJ3,5-N
SJ3,5-N LED





Properties

- 5 mm slot width
- Very fast response
- NAMUR output
- Flexible leads and cable versions

Benefits

- ATEX approval up to zone 0 / zone 20
- Intrinsically safe when connected to approved device
- FM Class/Div approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Slot width	5 mm
Output type	NAMUR, NC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Operating voltage	5 ... 25 V
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 2000 Hz
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Protection degree	IP67

Model Number

Lateral immersion switchpoint	5 ... 7 mm, typ. 6 mm 8 ... 10 mm, typ. 9 mm
Connection type	cable PVC, 2 m flexible leads LIY, 500 mm

SJ5-N

SJ5-G-N

SJ5-K-N

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	1G; 2G; 1D

Approvals and Certificates

FM control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Length L [mm]	10	15
Width W [mm]	15	29
Height H [mm]	15	31
Slot width G [mm]	5	
Connector length l_c [mm]	0	

Accessories

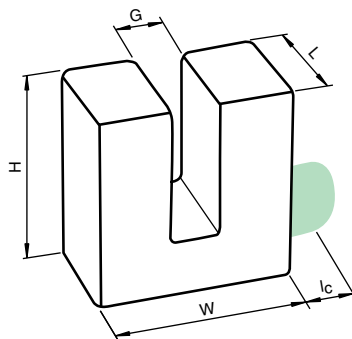
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KCD2-SR-Ex2

2-channel isolated amplifier

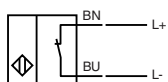
For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us



Electrical Connection



SJ5-G-N
SJ5-K-N
SJ5-N





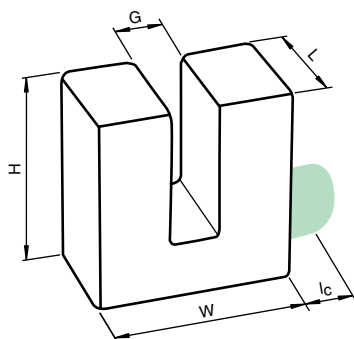
Properties

- Up to 30 mm slot width
- Fast response
- NAMUR output
- Cable version

Benefits

- ATEX approval up to zone 0 / zone 20
- Intrinsically safe when connected to approved device
- FM Class/Div approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Operating voltage	5 ... 25 V
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Protection degree	IP67
Connection type	cable PVC, 2 m



Model Number

		SJ10-N	SJ15-N	SJ30-N
Slot width	10 mm	●		
	15 mm		●	
	30 mm			●
Lateral immersion switchpoint	13.5 ... 16.5 mm, typ. 15 mm	●		
	16 ... 19 mm, typ. 17.5 mm		●	
	27 ... 30 mm			●
Switching frequency	0 ... 1000 Hz	●	●	
	0 ... 150 Hz			●
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)	●		
	-25 ... 70 °C (-13 ... 158 °F)		●	●
Housing material	ABS			●
	PBT	●	●	

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●
Category	1G; 2G; 1D	●	●	●

Approvals and Certificates

FM control drawing	116-0165F	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]	25	30	51
Width W [mm]	44	48	84
Height H [mm]	45	60	110
Slot width G [mm]	10	15	30
Connector length l _c [mm]	6	0	35

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KCD2-SR-Ex2

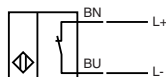
2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



SJ10-N
SJ15-N
SJ30-N





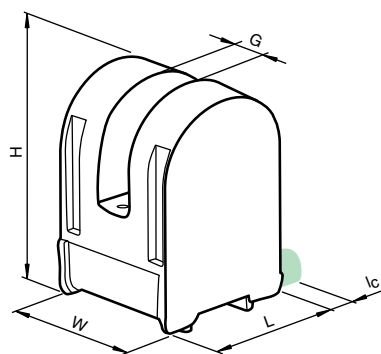
Properties

- 2 mm slot width
- Fast response time
- NAMUR output
- Flexible leads version

Benefits

- EX approval 1G/1D for use up to zone 0 / zone 20
- FM Class and Division approvals
- Applicable up to SIL3 acc. to IEC 61508

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Slot width	2 mm
Lateral immersion switchpoint	5 ... 7 typ. 6 mm
Type of voltage	DC
Nominal voltage	8 V
Switching frequency	0 ... 5000 Hz
Suitable for 2:1 technology	✓, with reverse polarity protection diode
Housing material	PBT
Protection degree	IP67
Connection type	flexible leads LIFYW, 500 mm



Model Number

		SJ2-SN	SJ2-S1N
Output type	NAMUR, NO		
	NAMUR, NC		
Current consumption			
Measuring plate not detected	≥ 3 mA		
	≤ 1 mA		
Measuring plate detected	≥ 3 mA		
	≤ 1 mA		
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)		
	-40 ... 100 °C (-40 ... 212 °F)		

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals		
Category	1G; 2G; 3G; 1D		

Approvals and Certificates

FM control drawing	116-0165F		
UL approval	cULus Listed, General Purpose		
CSA approval	cCSAus Listed, General Purpose		
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		

Dimensions

Length L [mm]	15
Width W [mm]	8
Height H [mm]	12
Slot width G [mm]	2
Connector length L _c [mm]	0



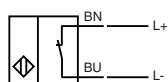
Danger!

In safety-related applications the sensor must be operated with a qualified fail safe interface from Pepperl+Fuchs, such as KFD2-SH-EX1. Consider the "exida Functional Safety Assessment" document which is available on www.pepperl-fuchs.com as an integral part of this product's documentation.

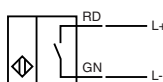
Electrical Connection



SJ2-SN



SJ2-S1N





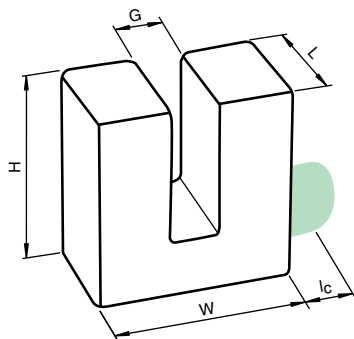
Properties

- 3.5 mm slot width
- Fast response time
- NAMUR output
- Flexible leads version

Benefits

- EX approval 1G/1D for use up to zone 0 / zone 20
- FM Class and Division approvals
- Applicable up to SIL3 acc. to IEC 61508

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Slot width	3.5 mm
Lateral immersion switchpoint	5 ... 7 typ. 6 mm
Type of voltage	DC
Nominal voltage	8 V
Suitable for 2:1 technology	✓, with reverse polarity protection diode
Housing material	PBT
Protection degree	IP67
Connection type	flexible leads LIY, 500 mm



Model Number		SJ3,5-SN	SJ3,5-S1N
Output type	NAMUR, NO NAMUR, NC	●	●
Current consumption			
Measuring plate not detected	≥ 3 mA ≤ 1 mA	●	●
Measuring plate detected	≥ 3 mA ≤ 1 mA	●	●
Switching frequency	0 ... 2500 Hz 0 ... 3000 Hz	●	●
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F) -50 ... 100 °C (-58 ... 212 °F)	●	●
Use in the Hazardous Area			
Use in the hazardous area	see instruction manuals	●	●
Category	1G; 2G; 3G; 1D	●	●
Approvals and Certificates			
FM control drawing	116-0165F	●	●
UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V		
Dimensions			
Length L [mm]		10	
Width W [mm]		19	
Height H [mm]		15	
Slot width G [mm]		3.5	
Connector length lc [mm]		0	



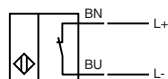
Danger!

In safety-related applications the sensor must be operated with a qualified fail safe interface from Pepperl+Fuchs, such as KFD2-SH-EX1. Consider the "exida Functional Safety Assessment" document which is available on www.pepperl-fuchs.com as an integral part of this product's documentation.

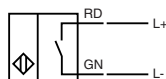
Electrical Connection



SJ3,5-SN



SJ3,5-S1N





Properties

- Ø21 mm and Ø43 mm inside diameters
- Mild steel targets
- Very fast response
- DC, 3-wire switching output

Technical Data

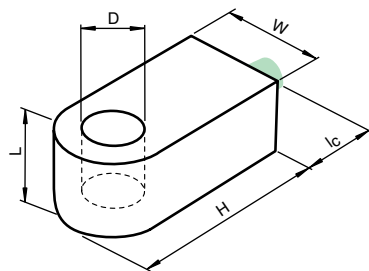
For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Operating voltage	10 ... 30 V DC
No-load supply current	≤ 20 mA
Reverse polarity protection	✓
Load current	0 ... 200 mA
Short-circuit protection	✓, self checking
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection type	cabl PVC , 2 m



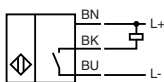
Model Number		RJ21-E	RJ43-E	RJ21-E2	RJ43-E2
Inside diameter	21 mm	●		●	
	43 mm		●		●
Output type	NPN NO	●	●		
	PNP NO			●	●
Measuring cylinder (target)					
min. diameter / min. length	6 mm / 12 mm	●		●	
	9 mm / 18 mm		●		●
Switching frequency	0 ... 1000 Hz	●		●	
	0 ... 500 Hz		●		●
Approvals and Certificates					
UL approval		●	●	●	●
CSA approval		●	●	●	●
Dimensions					
Length L [mm]		20			
Width W [mm]		45	70	45	70
Height H [mm]		80	100	80	100
Inside diameter D [mm]		21	43	21	43
Connector length l _c [mm]		0			



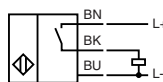
Electrical Connection



RJ21-E
RJ43-E



RJ21-E2
RJ43-E2





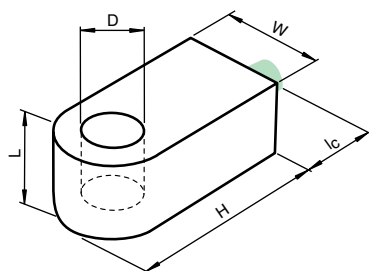
Properties

- Up to Ø43 mm inside diameters
- 9S20K targets
- Very fast response
- NAMUR output

Benefits

- EX approved sensor applicable up to zone 1
- Intrinsically safe when connected to approved device
- FM Class & Division approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Type of voltage	DC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Measuring cylinder (target)	9S20K
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection type	cabl PVC , 2 m



Model Number

		RJ15-N	RJ21-N	RJ43-N
Inside diameter	15 mm	●		
	21 mm		●	
	43 mm			●
Measuring cylinder (target)				
min. diameter / min. length	3 mm / 4 mm	●		
	6 mm / 12 mm		●	
	9 mm / 18 mm			●
Switching frequency	0 ... 500 Hz			●
	0 ... 1000 Hz		●	
	0 ... 1500 Hz	●		

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●	●
Category	2G	●	●	●

Approvals and Certificates

FM control drawing	116-0165F	●	●	●
UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●

Dimensions

Length L [mm]		20		
Width W [mm]	29	45		70
Height H [mm]	45	80		100
Inside diameter D [mm]	15	21		43
Connector length l _c [mm]		0		

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KCD2-SR-Ex2

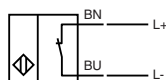
2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



RJ15-N
RJ21-N
RJ43-N





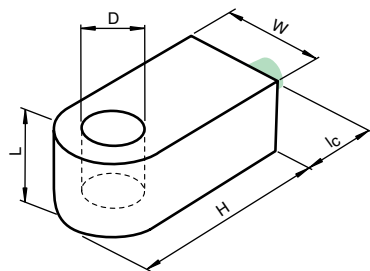
Properties

- Ø10 mm and Ø15 mm inside diameters
- 9S20K targets
- Very fast response
- NAMUR output

Benefits

- EX approved sensor applicable up to zone 1
- Intrinsically safe when connected to approved device
- FM Class & Division approvals

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, NC
Type of voltage	DC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Measuring cylinder (target)	9S20K
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Ambient temperature	-20 ... 65 °C (-4 ... 149 °F)
Housing material	PBT
Protection degree	IP67
Connection type	cabl PVC , 2 m



Model Number

		RC10-14-N0	RC15-14-N0
Inside diameter	10 mm 15 mm	●	●
Measuring cylinder (target)			
min. diameter / min. length	2.5 mm / 4 mm 3 mm / 4 mm	●	●
Switching frequency	0 ... 1500 Hz 0 ... 2000 Hz	●	●
Suitable for 2:1 technology	yes , Reverse polarity protection diode not required	●	

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●
Category	2G	●	●

Approvals and Certificates

FM control drawing	116-0165F	●	●
UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●

Dimensions

Length L [mm]		20	
Width W [mm]		25	
Height H [mm]		32.5	
Inside diameter D [mm]	10		15
Connector length l_c [mm]		0	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KCD2-SR-Ex2

2-channel isolated amplifier

KFD2-SRA-Ex4

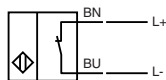
4-channel isolated amplifier for 2:1 technology

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



RC10-14-N0
RC15-14-N0





Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NAMUR, bistable
Type of voltage	DC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Measuring cylinder (target)	ferrous metal
Current consumption	see drawing, below
Traverse B	3 mA
Traverse A	1 mA
Passage speed	≤ 10 m/s
Housing material	PBT
Protection degree	IP67
Connection type	cabl PVC , 2 m



Model Number

		RC10-14-N3	RC15-14-N3
Inside diameter	10 mm 15 mm	●	●
Measuring cylinder (target)			
min. diameter / min. length	2.5 mm / 3 mm 3 mm / 4 mm	●	●
Ambient temperature	-20 ... 100 °C (-4 ... 212 °F) -20 ... 70 °C (-4 ... 158 °F)	●	●

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals	●	●
Category	2G	●	●

Approvals and Certificates

FM control drawing	116-0165F	●	●
UL approval	cULus Listed, General Purpose	●	●
CSA approval	cCSAus Listed, General Purpose	●	●

Dimensions

Length L [mm]	20		
Width W [mm]	25		
Height H [mm]	32.5		
Inside diameter D [mm]	10		15
Connector length l_c [mm]	0		

Accessories

These and more accessories can be found in chapter 10

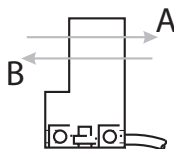
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

KCD2-SR-Ex2

2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Traverse A and B direction



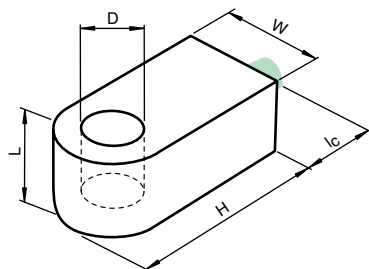
Properties

- Ø10 mm and Ø15 mm inside diameters
- Ferrous targets
- Very fast response
- Bistable NAMUR output

Benefits

- Direction detection possible
- EX approved sensor applicable up to zone 1
- Intrinsically safe when connected to approved device
- FM Class & Division approvals

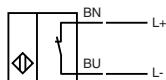
Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Electrical Connection



RC10-14-N3
RC15-14-N3



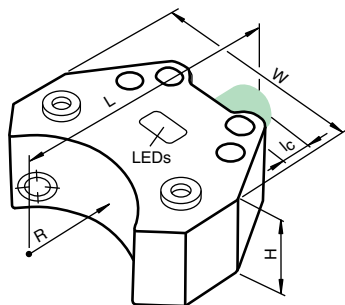


Properties

- F25 housing
- 3 mm, flush mountable
- DC, dual 2-wire switching output
- Cable and connector versions

Benefits

- NAMUR compliant mounting - hole spacing 30 x 80



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Output type	Dual (NO)
Installation	flush mountable
Operating voltage	6 ... 60 V DC
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 500 Hz
Load current	4 ... 100 mA
Off-state current	0 ... 1 mA, typically 0.7 mA
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number

		NBN3-F25-Z8-0,14	NBN3-F25-Z8-5M	NBN3-F25-Z8-V1
Connection type	Connector M12 x 1, 4-pin	●	●	●
	cable PVC, 180 mm	●	●	●
	cable PVC, 5 m		●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	Certified by China Compulsory Certification (CCC)			●

Dimensions

Length L [mm]	52	61
Width W [mm]	52	
Height H [mm]	20	
Radius R [mm]	20.8	
Connector length l _c [mm]	0	12

Accessories

These and more accessories can be found in chapter 10

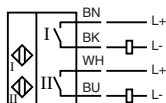
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BT32-F25-0	Activator for F25 series, 80x30 mount, <34mm shaft diam., 20mm actuator height
BT33-F25-0	Activator for F25 series, 80x30 mount, <34mm shaft diam., 30mm actuator height
BT34-F25-4	Activator for F25 series, 130x30 mount, >34mm shaft diam., 50mm actuator height
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled

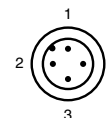
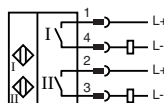
Electrical Connection



NBN3-F25-Z8-5M
NBN3-F25-Z8-0,14



NBN3-F25-Z8-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)





Properties

- F25 housing
- 3 mm, flush mountable
- DC, dual 3-wire switching output
- Cable and connector versions

Benefits

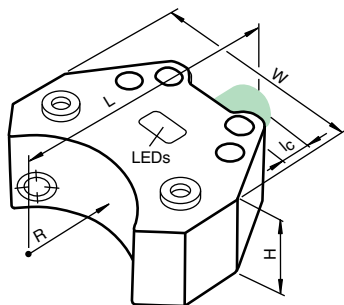
- NAMUR compliant mounting - hole spacing 30 x 80

Additional Products

In this series, we offer the following additional products:

NBN3-F25-E8-K

Technical data like NBN3-F25-E8-5M but:
Protection degree: IP20
Connection type: MINI-COMBICON



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Output type	PNP Dual NO
Installation	flush mountable
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 25 mA
Reverse polarity protection	all connections
Switching frequency	0 ... 500 Hz
Load current	0 ... 200 mA
Off-state current	0 ... 0.5 mA, typically 0.1 µA at 25 °C
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Protection degree	IP67
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT

Model Number

Connection type	Connector M12 x 1, 4-pin cable PVC, 180 mm cable PVC, 5 m
-----------------	---

NBN3-F25-E8-0,14

NBN3-F25-E8-5M

NBN3-F25-E8-V1



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]	52	61
Width W [mm]	52	
Height H [mm]	20	
Radius R [mm]	20.8	
Connector length l _c [mm]	0	12

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BT32-F25-0	Activator for F25 series, 80x30 mount, <34mm shaft diam., 20mm actuator height
BT33-F25-0	Activator for F25 series, 80x30 mount, <34mm shaft diam., 30mm actuator height
BT34-F25-4	Activator for F25 series, 130x30 mount, >34mm shaft diam., 50mm actuator height
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight

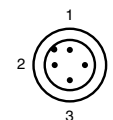
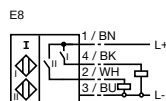
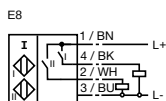
Electrical Connection



NBN3-F25-E8-K
NBN3-F25-E8-0,14
NBN3-F25-E8-5M



NBN3-F25-E8-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

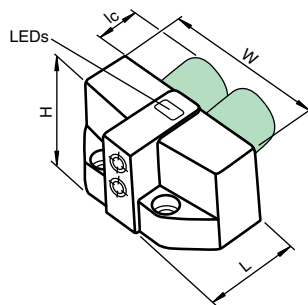


Properties

- F31 housing
- 3 mm, flush mountable
- DC, dual 2-wire switching output
- Cable and connector versions

Benefits

- LED indicators for switching state and valve output
- Direct mounting without additional mounting brackets on NAMUR bore holes 30 x 80 and 30 x 130



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Output type	Dual (NO)
Installation	flush mountable
Operating voltage	6 ... 60 V DC
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 500 Hz
Load current	4 ... 100 mA
Off-state current	0 ... 1 mA, typically 0.7 mA
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number

		NBN3-F31-Z8-K	NBN3-F31-Z8-K-K	NBN3-F31-Z8-V1	NBN3-F31-Z8-V18	NBN3-F31-Z8-V16-V15	NBN3-F31-Z8-V16-V16
Valve status indication	LED, yellow						
Connection type	Connector M18 x 1, 4-pin						
Connection (system side)	Connector M12 x 1, 4-pin						
	Connector Rd24 x 1/8, 4-pin						
	PVC cable 5 m						
Connection (valve side)	5-pin, M12 x 1 socket						
	PVC cable 0.5 m						
	Connector Rd24 x 1/8, 4-pin						

Approvals and Certificates

UL approval	cULus Listed, General Purpose						
CSA approval	cCSAus Listed, General Purpose						
CCC approval	Certified by China Compulsory Certification (CCC)						

Dimensions

Length L [mm]					36
Width W [mm]					65
Height H [mm]					33.5
Connector length l _c [mm]		28	10	18	28

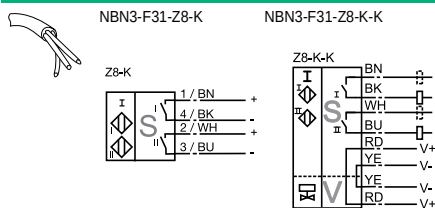
Accessories

These and more accessories can be found in chapter 10

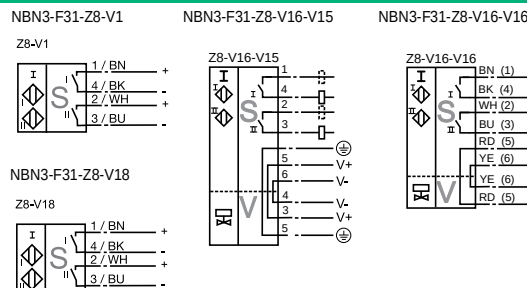
See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BT65A	Activator for F31 series, 80x30 mount, <58mm shaft diam., 20mm and 30mm actuator height
BT115A	Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <110mm ring diam.
BT65B	Activator for F31 series, 80x30 mount, <53mm shaft diam., 20mm actuator height
BT115B	Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <105mm ring diam.
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V15-G-PG9	5-pin, M12 female field-attachable connector, straight
V18-G	4-pin, M18 female field-attachable connector, straight
V18-W	4-pin, M18 female field-attachable connector, angled
V16-G	6-pin+PE, dia. 24 mm, female field-attachable connector, straight
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight

Electrical Connection



Note: S = system side, V = valve side



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Refer to General Notes Relating to Product Information

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PEPPERL+FUCHS
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Properties

- F31 housing
- 3 mm, flush mountable
- DC, dual 3-wire switching output
- Cable and connector versions

Benefits

- LED indicators for switching state and valve output
- NAMUR compliant mounting - hole spacing 30 x 80 and 30 x 130

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Output type	PNP Dual NO
Installation	flush mountable
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 25 mA
Reverse polarity protection	✓
Switching frequency	0 ... 500 Hz
Load current	0 ... 100 mA
Off-state current	0 ... 0.5 mA, typically 0.1 µA at 25 °C
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number

		NBN3-F31-E8-K	NBN3-F31-E8-K-K	NBN3-F31-E8-V1	NBN3-F31-E8-V16-V15	NBN3-F31-E8-V18
Valve status indication	LED, yellow		●			
Connection type	Connector M12 x 1, 4-pin			●		
	Connector M18 x 1, 4-pin					●
Connection (system side)	Connector Rd24 x 1/8, 4-pin			●	●	
	PVC cable 5 m	●	●			
Connection (valve side)	5-pin, M12 x 1 socket			●	●	
	PVC cable 0.5 m		●			

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V					

Dimensions

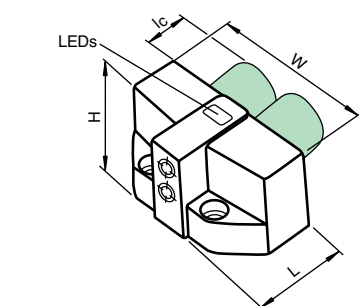
Length L [mm]				36
Width W [mm]				65
Height H [mm]				33.5
Connector length l _c [mm]	28	10	28	18

Accessories

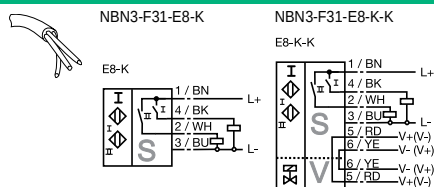
These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

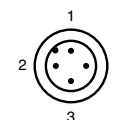
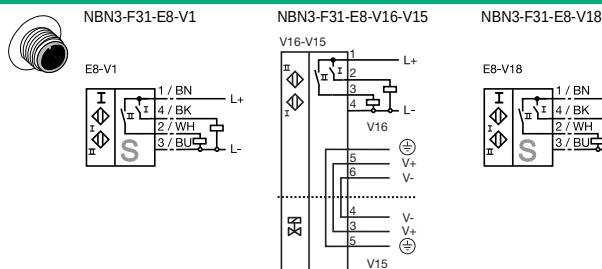
BT65A	Activator for F31 series, 80x30 mount, <58mm shaft diam., 20mm and 30mm actuator height
BT115A	Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <110mm ring diam.
BT65B	Activator for F31 series, 80x30 mount, <53mm shaft diam., 20mm actuator height
BT115B	Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <105mm ring diam.
V1-G	4-pin, M12 female field-attachable connector, straight
V1-W	4-pin, M12 female field-attachable connector, angled
V15-G-PG9	5-pin, M12 female field-attachable connector, straight
V18-G	4-pin, M18 female field-attachable connector, straight
V18-W	4-pin, M18 female field-attachable connector, angled
V16-G	6-pin+PE, dia. 24 mm, female field-attachable connector, straight
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight



Electrical Connection



Note: S = system side, V = valve side



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

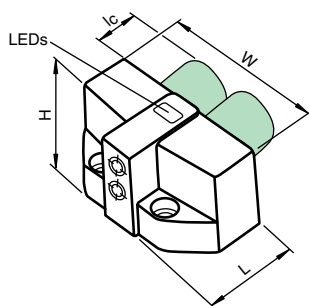


Properties

- F31 housing
- 3 mm, flush mountable
- AC/DC, dual 2-wire switching output
- Cable and connector versions

Benefits

- LED indicators for switching state and valve output
- NAMUR compliant mounting - hole spacing 30 x 80 and 30 x 130



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Output type	AC/DC binary NO
Installation	flush mountable
Operating voltage	20 ... 253 V AC/DC
Reverse polarity protection	✓
Switching frequency	25 Hz
Load current	4 ... 400 mA
Off-state current	≤ 1.7 mA
Short-circuit protection	✓
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number

		NBN3-F31-U8-K	NBN3-F31-U8-V125	NBN3-F31-U8-V18
Connection type	Connector 1/2"-20 UN		●	
	Connector M18 x 1, 4-pin			●
	Cable PVC, 5 m	●		

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●

Dimensions

Length L [mm]		36		
Width W [mm]		65		
Height H [mm]		33.5		
Connector length l _c [mm]	28	10		18

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BT65A

Activator for F31 series, 80x30 mount, <58mm shaft diam., 20mm and 30mm actuator height

BT115A

Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <110mm ring diam.

BT65B

Activator for F31 series, 80x30 mount, <53mm shaft diam., 20mm actuator height

BT115B

Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <105mm ring diam.

V18-G

4-pin, M18 female field-attachable connector, straight

V18-W

4-pin, M18 female field-attachable connector, angled

V125-G-YE2M-PVC

Female cordset, M12, 5-pin, PVC cable, straight

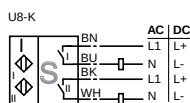
V125-W-YE2M-PVC

Female cordset, 1/2" - 20 UNF, 5-pin, PVC cable, angled

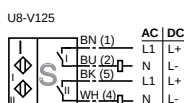
Electrical Connection



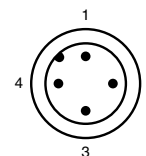
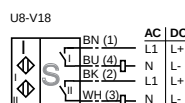
NBN3-F31-U8-K



NBN3-F31-U8-V125



NBN3-F31-U8-V18



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Note: S = system side



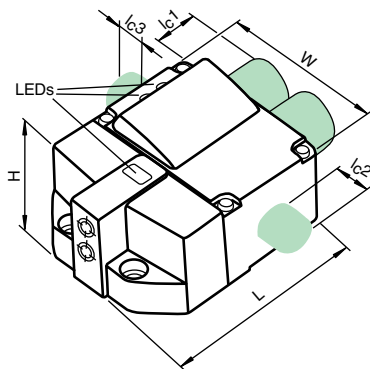


Properties

- F31K housing
- 3 mm, flush mountable
- DC, dual 2-wire switching output
- Terminal compartment
- Connector and cable gland versions

Benefits

- LED indicators for switching state and valve output
- NAMUR compliant mounting - hole spacing 30 x 80 and 30 x 130



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Output type	DC binary NO
Installation	flush mountable
Reverse polarity protection	✓, polarity independent
Switching frequency	0 ... 500 Hz
Load current	4 ... 100 mA
Off-state current	0 ... 1 mA, typically 0.7 mA
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number

	NBN3-F31K-Z8	NBN3-F31K-Z8-K	NBN3-F31K-Z8-V1-V1
Operating voltage	10 ... 30 V DC		
	6 ... 60 V DC		
No-load supply current	≤ 25 mA		
Short-circuit protection	✓, self checking		
Operating voltage display	LED, green		
Valve status indication	LED, yellow		
Connection (system side)	Cage tension spring terminals		
Connection (valve side)	4-pin, M12 x 1 socket		
	Cage tension spring terminals		

Approvals and Certificates

UL approval	cULUS Listed, General Purpose			
CSA approval	cCSAus Listed, General Purpose			
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]		77.5
Width W [mm]		65
Height H [mm]		35
Connector length l _{c1} [mm]		10
Connector length l _{c2} [mm]	-	10
Connector length l _{c3} [mm]		10

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BT65A

Activator for F31 series, 80x30 mount, <58mm shaft diam., 20mm and 30mm actuator height

BT115A

Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <110mm ring diam.

BT65B

Activator for F31 series, 80x30 mount, <53mm shaft diam., 20mm actuator height

BT115B

Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <105mm ring diam.

VMA-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, Form A on M12, 2+PE, LED, Z diode, PVC cable

VMB-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, Form B on M12, 2+PE, LED, Z diode, PUR cable

VMC-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, model C on M12, 2+PE, LED, zener diode, PVC cable

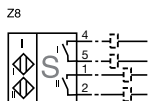
VMCI-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, model C (ind) on M12, 2+PE, LED, zener diode, PVC cable

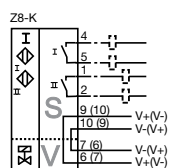
Electrical Connection



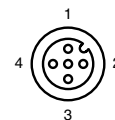
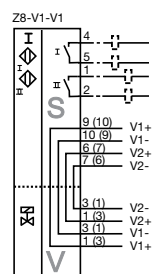
NBN3-F31K-Z8



NBN3-F31K-Z8-K



NBN3-F31K-Z8-V1-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

Note: S = system side, V = valve side

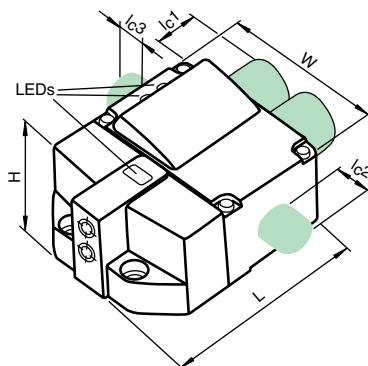


Properties

- F31K housing
- 3 mm, flush mountable
- DC, dual 3-wire switching output
- Terminal compartment
- Connector and cable gland versions

Benefits

- LED indicators for switching state and valve output
- NAMUR compliant mounting - hole spacing 30 x 80 and 30 x 130



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Output type	PNP Dual NO
Installation	flush mountable
Operating voltage	10 ... 30 V DC
No-load supply current	≤ 25 mA
Reverse polarity protection	✓
Switching frequency	0 ... 500 Hz
Load current	0 ... 100 mA
Off-state current	0 ... 0.5 mA, typically 0.1 µA
Short-circuit protection	✓, self checking
Operating voltage display	LED, green
Switching state indication	LED, yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67

Model Number

Valve status indication	LED, yellow
Connection (system side)	Cage tension spring terminals
Connection (valve side)	4-pin, M12 x 1 socket Cage tension spring terminals

NBN3-F31K-E8



NBN3-F31K-E8-K



NBN3-F31K-E8-V1-V1



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]	77.5		
Width W [mm]	65		
Height H [mm]	35		
Connector length l _{c1} [mm]	10		
Connector length l _{c2} [mm]	-	10	
Connector length l _{c3} [mm]	-		10

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BT65A

Activator for F31 series, 80x30 mount, <58mm shaft diam., 20mm and 30mm actuator height

BT115A

Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <110mm ring diam.

BT65B

Activator for F31 series, 80x30 mount, <53mm shaft diam., 20mm actuator height

BT115B

Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <105mm ring diam.

VMA-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, Form A on M12, 2+PE, LED, Z diode, PVC cable

VMB-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, Form B on M12, 2+PE, LED, Z diode, PUR cable

VMC-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, model C on M12, 2 + PE, LED, zener diode, PVC cable

VMCI-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, model C (ind) on M12, 2 + PE, LED, zener diode, PVC cable

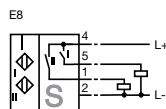
VMBI-2+P/Z2-0,3M-PVC-V1-W-Y

Valve connector, Form B (ind) on M12, 2+PE, LED, Z-Diode, PVC cable

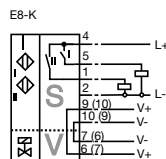
Electrical Connection



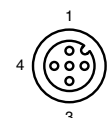
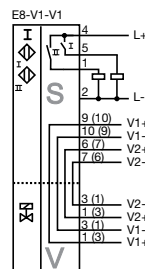
NBN3-F31K-E8



NBN3-F31K-E8-K



NBN3-F31K-E8-V1-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)



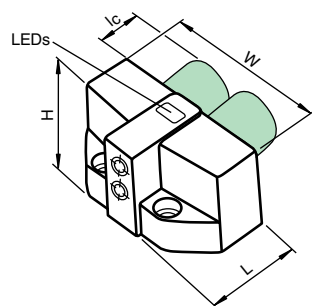


Properties

- F31 housing
- 3 mm, flush mountable
- AS interface
- Cable and connector versions

Benefits

- LED indicators for switching state and valve output
- NAMUR compliant mounting - hole spacing 30 x 80 and 30 x 130



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Installation	flush mountable
Output type	programmable
Operating voltage	26.5 ... 31.9 V via AS-i bus system
Switching frequency	0 ... 100 Hz
LED PWR	AS-Interface voltage; LED green
LED IN	switching state (input); LED yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Connection (system side)	M12 x 1, 4-pin



Model Number

LED OUT	binary LED yellow/red yellow: switching state red: lead breakage/short-circuit
Connection (valve side)	0.5 m, PVC cable M12 x 1, 4-pin

NCN3-F31-B3B-V1

NCN3-F31-B3B-V1-K

NCN3-F31-B3B-V1-V1



Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●
CCC approval	CCC approval / marking not required for sensors rated ≤36 V			

Dimensions

Length L [mm]			36
Width W [mm]			65
Height H [mm]			33.5
Connector length L _c [mm]	10	12	15

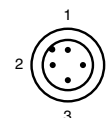
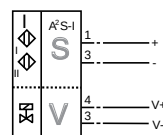
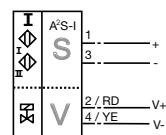
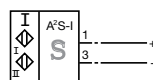
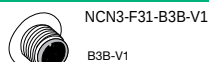
Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BT65A	Activator for F31 series, 80x30 mount, <58mm shaft diam., 20mm and 30mm actuator height
BT115A	Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <110mm ring diam.
BT65B	Activator for F31 series, 80x30 mount, <53mm shaft diam., 20mm actuator height
BT115B	Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <105mm ring diam.
V1-W-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, angled
V1-G-BK2M-PUR-U	Female cordset, M12, 4-pin, PUR cable, straight
V1-G	4-pin, M12 female field-attachable connector, straight

Electrical Connection



Note: S = system side, V = valve side



Properties

- F31K housing
- 3 mm, flush mountable
- AS interface
- Terminal compartment

Benefits

- LED indicators for switching state and valve output
- NAMUR compliant mounting - hole spacing 30 x 80 and 30 x 130

Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

Model Number	NCN3-F31K-B3B-B31
Rated operating distance	3 mm
Installation	flush mountable
Output type	programmable
Operating voltage	26.5 ... 31.9 V via AS-i bus system
Switching frequency	0 ... 100 Hz
LED PWR	AS-Interface voltage; LED green
LED IN	switching state (input); LED yellow
LED OUT	binary LED yellow/red yellow: switching state red: lead breakage/short-circuit
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Housing material	PBT
Protection degree	IP67
Connection (system side)	screw terminals
Connection (valve side)	screw terminals



Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Length L [mm]	77.5
Width W [mm]	65
Height H [mm]	35
Connector length l _{c1} [mm]	10
Connector length l _{c2} [mm]	10

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BT65A

Activator for F31 series, 80x30 mount, <58mm shaft diam., 20mm and 30mm actuator height

BT115A

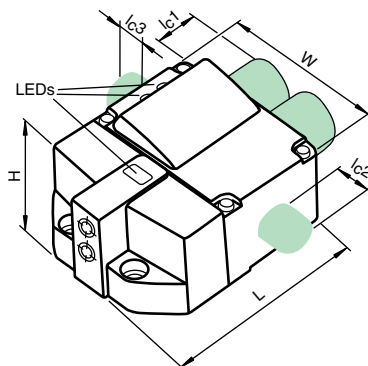
Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <110mm ring diam.

BT65B

Activator for F31 series, 80x30 mount, <53mm shaft diam., 20mm actuator height

BT115B

Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <105mm ring diam.

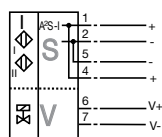


Electrical Connection



NCN3-F31K-B3B-B31

B3B-V1-K



Note: S = system side, V = valve side





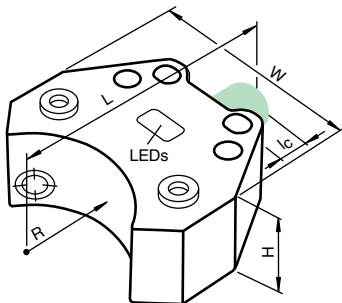
Properties

- F25 housing
- 3 mm, flush mountable
- NAMUR dual output
- Cable and connector versions

Benefits

- EX approval 1G applicable up to zone 0
- Intrinsically safe when connected to approved device
- FM Class & Division approvals
- NAMUR compliant mounting - hole spacing 30 x 80

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Installation	flush mountable
Output type	NAMUR Dual NC
Type of voltage	DC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Reverse polarity protection	✓
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 1500 Hz
Suitable for 2:1 technology	✓, Reverse polarity protection diode not required
Switching state indication	LED, yellow
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Protection degree	IP67

Model Number

Installation type	compact design for box installation and direct installation
Connection type	Connector M12 x 1, 4-pin Cable PVC, 180 mm

NCN3-F25-N4-0,14

NCN3-F25F-N4-V1

NCN3-F25-N4-V1



Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	1G; 2G; 3G 1G; 2G; 3G; 3D

Approvals and Certificates

FM control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

Dimensions

Length L [mm]	52	62	61
Width W [mm]		52	
Height H [mm]		20	
Connector length l _c [mm]	0	17	9

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BT32-F25-0	Activator for F25 series, 80x30 mount, <34mm shaft diam., 20mm actuator height
BT33-F25-0	Activator for F25 series, 80x30 mount, <34mm shaft diam., 30mm actuator height
BT34-F25-4	Activator for F25 series, 130x30 mount, >34mm shaft diam., 50mm actuator height
V1-G	4-pin, M12 female field-attachable connector, straight
V1-G-N4-5M-PUR	Female cordset, M12, 4-pin, NAMUR, PUR cable, straight
KCD2-SR-Ex2	2-channel isolated amplifier

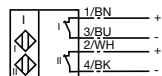
For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection

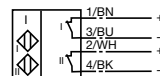


NCN3-F25-N4-0,14

N4

NCN3-F25F-N4-V1
NCN3-F25-N4-V1

N4





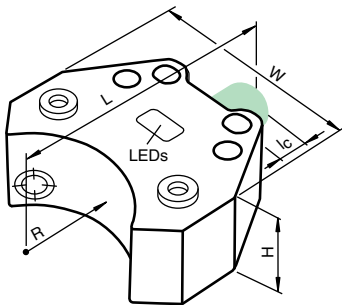
Properties

- F25 housing
- 3 mm, flush mountable
- NAMUR dual output
- Cable and connector versions

Benefits

- EX approval 1G applicable up to zone 0
- FM Class & Division approvals
- Usable up to SIL3 acc. to IEC 61508
- LED indicators for switching state and valve output
- NAMUR compliant mounting - hole spacing 30 x 80

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Installation	flush mountable
Output type	NAMUR Dual NC
Type of voltage	DC
Nominal voltage	8.2 V (R_i approx. 1 k Ω)
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 1500 Hz
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Housing material	PBT
Protection degree	IP67

Model Number

Connection type	Connector M12 x 1, 4-pin Cable PVC, 180 mm
-----------------	---

NCN3-F25-SN4-0,14



NCN3-F25-SN4-V1



Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	1G; 2G; 3G

Approvals and Certificates

FM control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤ 36 V

Dimensions

Length L [mm]	52	61
Width W [mm]	52	
Height H [mm]	20	
Connector length l_c [mm]	0	9

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BT32-F25-0	Activator for F25 series, 80x30 mount, <34mm shaft diam., 20mm actuator height
BT33-F25-0	Activator for F25 series, 80x30 mount, <34mm shaft diam., 30mm actuator height
BT34-F25-4	Activator for F25 series, 130x30 mount, >34mm shaft diam., 50mm actuator height
V1-G	4-pin, M12 female field-attachable connector, straight
V1-G-N4-5M-PUR	Female cordset, M12, 4-pin, NAMUR, PUR cable, straight



Danger!

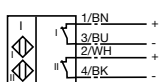
In safety-related applications the sensor must be operated with a qualified fail safe interface from Pepperl+Fuchs, such as KFD2-SH-EX1. Consider the "exida Functional Safety Assessment" document which is available on www.pepperl-fuchs.com as an integral part of this product's documentation.

Electrical Connection



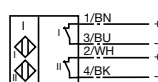
NCN3-F25-SN4-0,14

N4



NCN3-F25-SN4-V1

N4





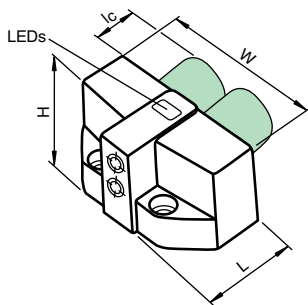
Properties

- F31 housing
- 3 mm, flush mountable
- NAMUR dual output
- Cable and connector versions

Benefits

- EX approval 1G applicable up to zone 0
- FM Class & Division approvals
- Intrinsically safe when connected to approved device
- LED indicators for switching state and valve output
- NAMUR compliant mounting - hole spacing 30 x 80

Application Note: Reference appendix, data sheet, operating instructions, and appropriate standards. To be used within the electrical, environmental, and mechanical limitations of the device and area.



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	3 mm
Installation	flush mountable
Output type	NAMUR, dual NC
Type of voltage	DC
Nominal voltage	8.2 V (R _i approx. 1 kΩ)
Reverse polarity protection	✓
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching frequency	0 ... 200 Hz
Suitable for 2:1 technology	✓, Reverse polarity protection diode not required
Switching state indication	LED, yellow
Ambient temperature	-25 ... 100 °C (-13 ... 158 °F)
Housing material	PBT

Model Number

Valve status indication	LED, yellow
Protection degree	IP66 / IP67
	IP67
Connection (system side)	Connector M12 x 1, 4-pin
	Connector M18 x 1, 4-pin
	Connector Rd24 x 1/8, 6-pin + PE
	PVC cable, 5 m
Connection (valve side)	Connector Rd24 x 1/8, 6-pin + PE
	PVC cable, 0.5 m

NCN3-F31-N4-K	NCN3-F31-N4-K-K	NCN3-F31-N4-V16-K	NCN3-F31-N4-V1	NCN3-F31-N4-V18	NCN3-F31-N4-V16-V16
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•

Use in the Hazardous Area

Use in the hazardous area	see instruction manuals
Category	1G; 2G
	1G; 2G; 3G

•	•	•	•	•	•
•	•	•	•	•	•

Approvals and Certificates

FM control drawing	116-0165F
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for sensors rated ≤36 V

•	•	•	•	•	•
•	•	•	•	•	•

Dimensions

Length L [mm]	36
Width W [mm]	65
Height H [mm]	33.5
Connector length l _c [mm]	16 28 28 10 22 28

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

BT65A

Activator for F31 series, 80x30 mount, <58mm shaft diam., 20mm and 30mm actuator height

BT115A

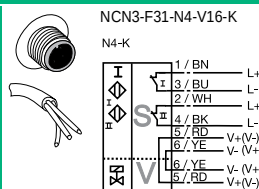
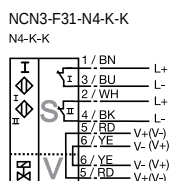
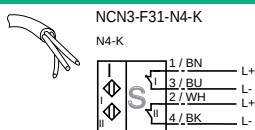
Activator for F31 series, 130x30 mount, <90mm shaft diam., 30mm and 50mm actuator height, <110mm ring diam.

KCD2-SR-Ex2

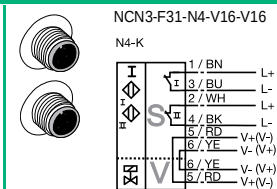
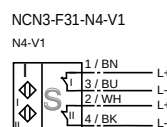
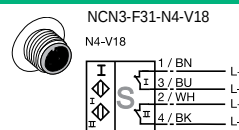
2-channel isolated amplifier

For detailed information on isolated amplifiers refer to the data sheets at www.pepperl-fuchs.us

Electrical Connection



Note: S = system side, V = valve side

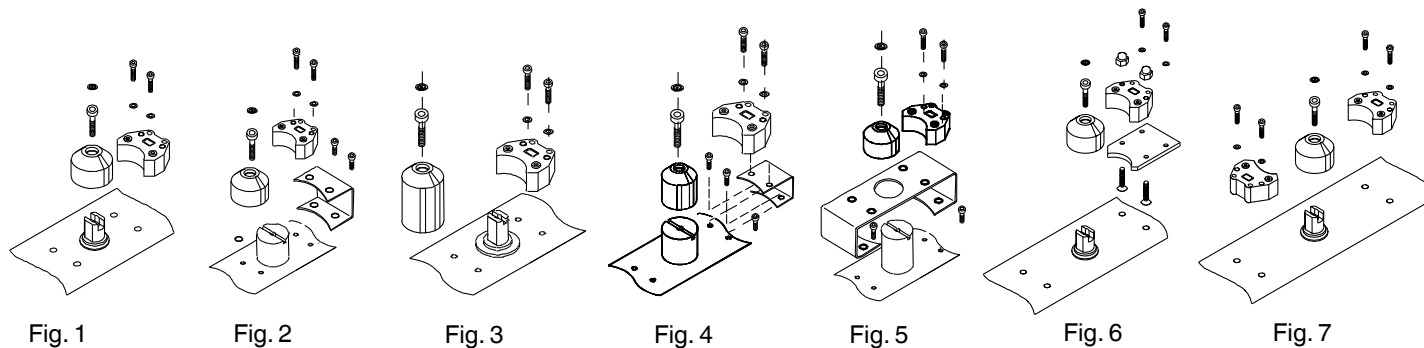


Actuator (Puck), Mounting Sets, and Brackets for Position Feedback Sensors (-F25 Series)

Mounting kit ¹⁾	Shaft diameter ²⁾	Shaft height	Mounting hole pattern	Includes:		Fig.
				Actuator	Bracket	
BT32-F25-0	< 34 mm	20 mm	30 mm x 80 mm	BT32	–	1
BT33-F25-0	< 34 mm	30 mm	30 mm x 80 mm	BT33	–	3
BT34-F25-2	preferably > 34 mm	20/30 mm	30 mm x 80 mm	BT34	K2	2
BT34-F25-3	preferably > 34 mm	30 mm	30 mm x 130 mm	BT34	K3	4
BT34-F25-4	preferably > 34 mm	50 mm	30 mm x 130 mm	BT34	K4	5
MH5-F25-Y43089	< 34 mm	20/30 mm	30 mm x 130 mm	–	Metal plate	6
MH20-F25-Y43090	Height compensation for mounting second sensor			–	Plastic plate	7

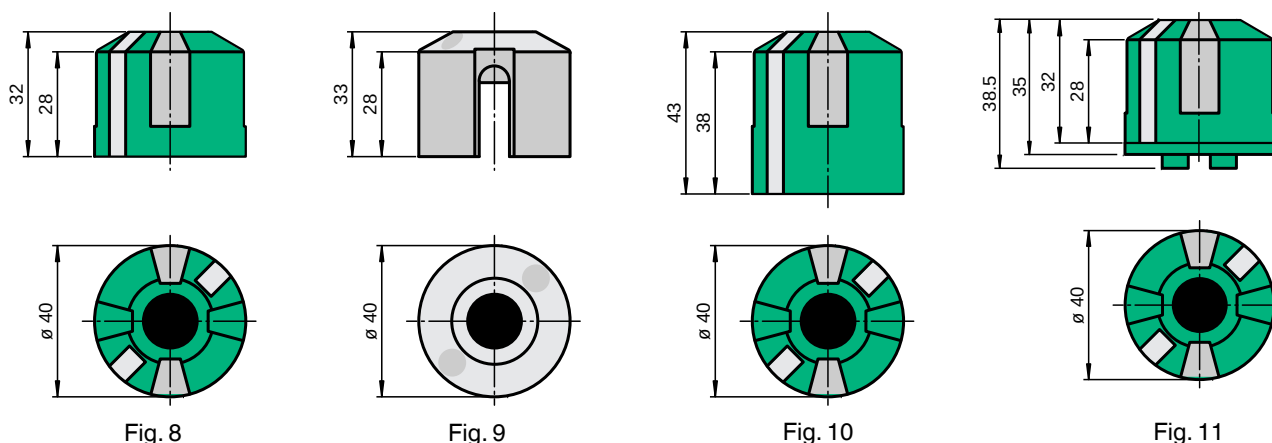
¹⁾ Includes mounting screws for the respective double sensor

²⁾ If the ring is higher than 3 mm, the height of the snap ring is the determining factor rather than the shaft diameter.



Individual part	Shaft diameter	Shaft height	Number of switching targets	Notes	Fig.
Actuator ³⁾					
BT32	≤ 34 mm	20 mm	2	Active height: 28 mm	8
BT32XS	≤ 34 mm	20 mm	1	As per BT32, with reverse-damping operation	9
BT32XAS	≤ 34 mm	20 mm	2	As per BT32, with reverse-damping operation	9
BT33	≤ 34 mm	30 mm	2	Active height: 38 mm	10
BT34	≥ 34 mm	≥ 20 mm	2	Active height: 28 mm, sitting on the drive shaft	11
BT37	≥ 34 mm	20 mm	1	Actuator BT37 with 4 mm groove for mounting on drive	–
MountingBracket					
K2	–	–	–	Mounting hole pattern 30 mm x 80 mm	2
K3	–	–	–	Mounting hole pattern 30 mm x 130 mm	4
K4	–	–	–	Mounting hole pattern 30 mm x 130 mm	5

³⁾ Actuator only, sensor mounting hardware not included



Refer to General Notes Relating to Product Information

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Actuators (Pucks) for the -F31 / -F31K / -F31K2 Series with Fixed Switching Positions

The following actuators are made from conductive plastic that prevents build-up of electrostatic charge and therefore can be used in hazardous areas. The adjustment surface of the BT65XA and BT115XA actuators is made out of stainless steel (V2A) with openings at the actuating positions. This results in an inverted operating principle.

Actuator	Drive shaft diameter	Shaft height	Mounting hole pattern	Notes	Illustration
BT65A	< 58 mm	20 mm and 30 mm	30 mm x 80 mm	Snap ring diameter max. 65 mm, Snap ring height max. 6 mm. For right and left rotating drives with 90°/180° rotation.	
BT65X					
BT65XA					
BT115A	< 90 mm	30 mm and 50 mm	30 mm x 130 mm	Snap ring diameter max. 110 mm, Snap ring height max. 7 mm. For right and left rotating drives with 90°/180° rotation.	
BT115X					
BT115XA					

Actuators (Pucks) for the -F31 / -F31K Series with Adjustable Sensing Positions

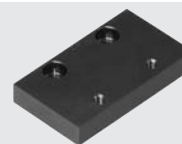
Actuator	Drive shaft diameter	Shaft height	Mounting hole pattern	Notes	Illustration
BT65B	< 58 mm	20 mm and 30 mm *)	30 mm x 80 mm	Snap ring diameter max. 65 mm, snap ring height max. 6 mm	
BT115B	< 90 mm	30 mm and 50 mm	30 mm x 130 mm	Snap ring diameter max. 110 mm, snap ring height max. 7 mm	

*) 30 mm using MH-BT65B mounting base

MH-BT65B Mounting Base

MH-BT65B

Mounting plate for using BT65B actuators on drives with:
hole dimension 80 mm x 30 mm
hole dimension 130 mm x 30 mm
and drive shaft height 30 mm





Assembly set with switch plate for mounting of inductive valve sensors on manual operated valves acc. to ISO5211-DIN3337.
The assembly set includes a 2-parts mounting bracket with switch plate, a driver stem and a lock nut.

Properties

- Simple mounting
- Conforming to standards
- Adjustable in height
- Adjustable shaft extension

Benefits

- Suitable for use in hazardous areas due to conductive material
- Sturdy holder consisting of stainless steel and Vestamid
- Easy standard installation acc. to ISO5211-DIN3337

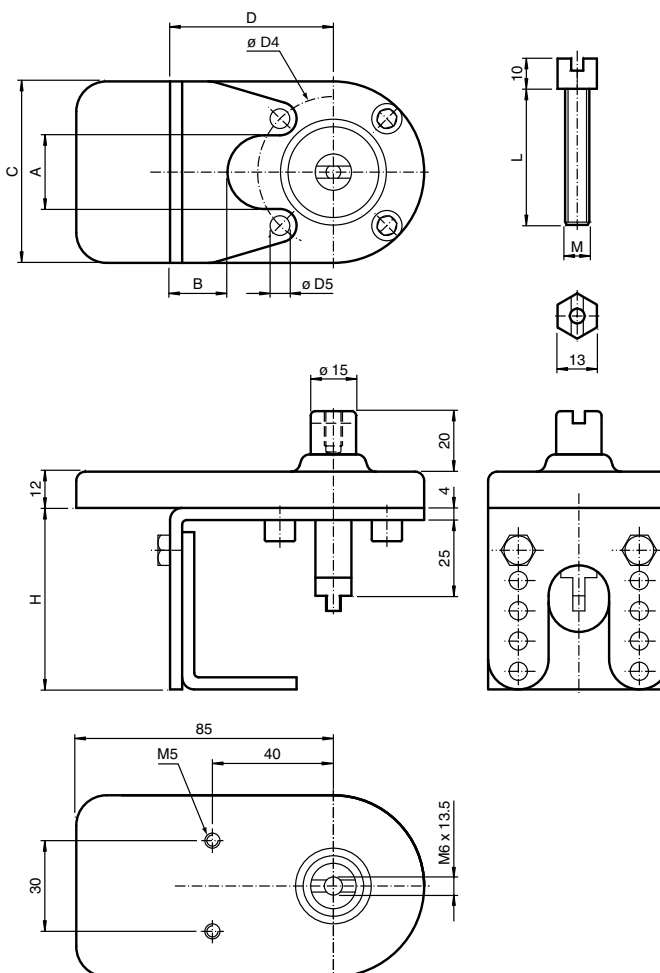
Technical Data

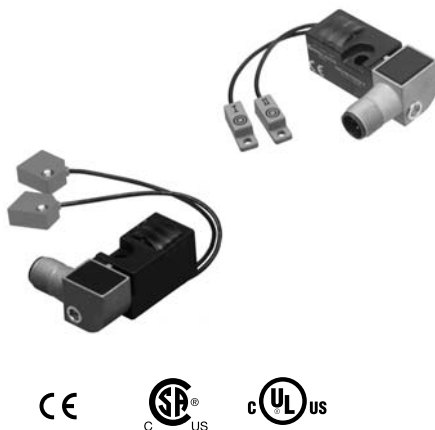
For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Suitable sensors	Double sensor, -F25 series with actuator BT32... Double sensor, -F31 series with actuator BT65A Double sensor, -F31K series with actuator BT65A
Material	Mounting bracket and nut: stainless steel 1.4301 Tappet and shaft: Stainless steel 1.4305 / AISI 303 (V2A) Sensor plate: Vestamid (PA 12), conductive

Model Number	MH-BT-F03-M5	MH-BT-F04-M5	MH-BT-F04-M6	MH-BT-F05-M5	MH-BT-F05-M6	MH-BT-F07-M5	MH-BT-F07-M6	MH-BT-F07-M8	MH-BT-F10-M8	MH-BT-F10-M10	MH-BT-F10-M12	MH-BT-F12-M10
Dimensions												
A [mm]	16	20.7	20.7	24.36	24.36	34.36	34.5	34.5	52.12	52.12	52.12	66.39
B [mm]	20	20	20	15	15	15	15	15	15	15	15	15
C [mm]	60	60	60	60	60	64.5	64.5	64.5	93	93	93	111
D [mm]	54	54	54	54	54	54	54	54	74	74	74	74
Ø D4 [mm]	36	42	42	50	50	70	70	70	102	102	102	125
Ø D5 [mm]	5.3	5.3	5.3	6.5	6.5	8.5	8.5	8.5	11	11	11	13
H	60 mm / 70 mm / 80 mm / 90 mm / 100 mm, adjustable								80 mm / 90 mm / 100 mm / 110 mm / 120 mm, adjustable			
L [mm]	25	25	50	25	50	25	50	45	45	60	50	60
M [mm]	5	5	6	5	6	5	6	8	8	10	12	10



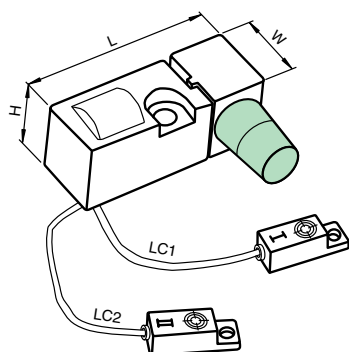


Properties

- Compact F58 housing
- 2 mm sensing range in aluminum
- DC, 3-wire switching outputs
- Adjustable connector version

Benefits

- Flexible mounting due to adjustable plug in 45° grid
- Models with different cable length
- High visibility multi-band LED



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	2 mm
Installation	flush in aluminum, non-flush in steel
Operating voltage	10 ... 30 V DC
Reverse polarity protection	✓
Load current	0 ... 100 mA
Short-circuit protection	✓, self checking
Constant magnetic field	100 mT
Alternating magnetic field	100 mT
Operating voltage display	LED green
Switching state indication	switching state "close" = LED red (S2) switching state "open" = LED yellow (S1)
Material	amplifier; PBT, PA6 + GD-ZN AL4 oscillators; PBT
Connection type	Connector M12 x 1 , 4-pin



Model Number

Output type	PNP	Dual NO	1	2	3	4	5	6	7	8	9	10
	NPN	Dual NO										
No-load supply current	≤ 15 mA		●		●	●	●	●	●	●	●	●
	≤ 35 mA			●								
Switching frequency	0 ... 100 Hz		●									●
	0 ... 25 Hz			●	●	●	●	●	●	●	●	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)			●	●	●	●	●	●	●	●	
	0 ... 50 °C (32 ... 122 °F)		●									●
Protection degree	IP65		●		●	●	●	●	●	●	●	●
	IP67			●								

Approvals and Certificates

UL approval	cULus Listed, General Purpose	
CSA approval	cCSAus Listed, General Purpose	
CCC approval	CCC approval / marking not required for sensors rated ≤36 V	

Dimensions

Length L [mm]	47
Width W [mm]	18
Height H [mm]	18
Cable length LC1 [mm]	1001001001201401602005080
Cable length LC2 [mm]	1001001001201401602005080

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

V1-G-OR2M-POC

Female cordset, M12, 4-pin, TPE cable, welding-bead resistant, straight

V1-G-BK2M-PUR-U H/S

Female cordset. M12. 4-pin, irradiated PUR cable, straight

V1-W-BK2M-PUR-U H/S

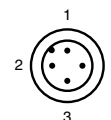
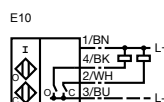
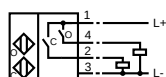
Female cordset. M12. 4-pin. irradiated PUR cable. angled

Electrical Connection



NBN2-F581-100S6-E8-V1
NBN2-F581-120S6-E8-V1
NBN2-F581-140S6-E8-V1
NBN2-F581-160S6-E8-V1
NBN2-F581-200S6-E8-V1
NBN2-F581-50S6-E8-V1
NBN2-F581-80S3-E8-V1
NBN2-F583-100S3-E8-V1

NBN2-F581-100S6-E10-V1



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Note: oscillator I is assigned to O (yellow LED), oscillator II is assigned to C (red LED)

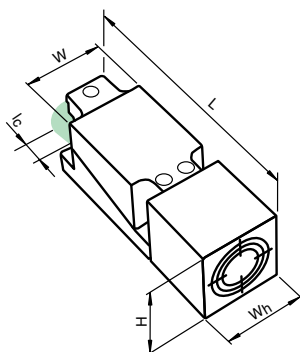


Properties

- Limit switch style housing
- 15 mm, flush mountable
- DC, 3-wire switching output
- Terminal compartment

Benefits

- Sensor head can be positioned 5-ways
- Low speed detection monitoring



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Rated operating distance	15 mm
Installation	flush
Output type	PNP NO
Operating voltage	15 ... 60 V DC
No-load supply current	≤ 25 mA
Reverse polarity protection	✓
Short-circuit protection	✓, self checking
Load current	0 ... 100 mA
Switching state indication	LED yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Connection type	screw terminals



Model Number

	NJ15+U4+DW1-1	NJ15+U2+DW1-10	NJ15+U4+DW1-10
Frequency range	0.1 ... 1 Hz, adjustable		
	1 ... 10 Hz, adjustable		
Housing material	PBT housing/PBT base		
	PBT housing/metal base		

Approvals and Certificates

UL approval	cULus Listed, General Purpose			
CSA approval	cCSAus Listed, General Purpose			
CCC approval	Certified by China Compulsory Certification (CCC)			

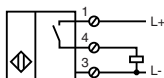
Dimensions

Length L [mm]	118
Width W [mm]	40
Head width W _h [mm]	40
Height H [mm]	40
Connector length l _c [mm]	0
Connector thread	conduit entrance with 1/2" NPT opening

Electrical Connection



NJ15+U2+DW1-10
NJ15+U4+DW1-1
NJ15+U4+DW1-10



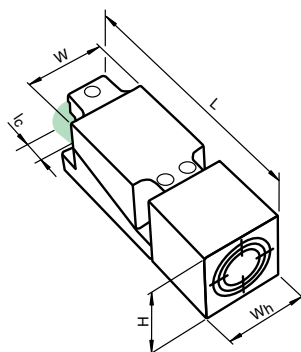


Properties

- Limit switch style housing
- 15 mm and 40 mm sensing ranges
- AC, 3-wire switching output
- Terminal compartment

Benefits

- Sensor head can be positioned 5-ways
- Low speed detection monitoring



Technical Data

For detailed data and product description refer to the data sheets at www.pepperl-fuchs.us

General Data

Output type	NO
Load current	0 ... 150 mA
Switching state indication	LED yellow
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Protection degree	IP67
Connection type	screw terminals



Note

In the temperature range below 0 °C, permissible operating voltage U_b 80 ... 253 V
Safety fuse ≤ 0.2 A (quick-blow) according to IEC 60127-2.
Recommendation: after a short circuit, check that the device is functioning correctly.

Model Number

		NJ15+U4+DW2-1	NJ15+U2+DW2-10	NJ15+U4+DW2-10	NJ15+U2+DW2-100	NJ15+U4+DW2-100	NJ40+U4+DW2-1
Rated operating distance	15 mm	●	●	●	●	●	●
	40 mm						
Installation	flush	●	●	●	●	●	●
	non-flush						●
Frequency range	0.1 ... 1 Hz, adjustable	●					●
	1 ... 10 Hz, adjustable		●	●			
	10 ... 100 Hz, adjustable				●	●	
Operating voltage	20 ... 253 V AC		●				
	90 ... 250 V AC	●		●	●	●	●
Housing material	PBT housing/PBT base		●		●		
	PBT housing/metal base	●		●		●	●

Approvals and Certificates

UL approval	cULus Listed, General Purpose	●	●	●	●	●	●
CSA approval	cCSAus Listed, General Purpose	●	●	●	●	●	●

Dimensions

Length L [mm]		118	128
Width W [mm]		40	
Head width W_h [mm]		40	55
Height H [mm]		40	55
Connector length l_c [mm]		0	
Connector thread		conduit entrance with 1/2" NPT opening	

Accessories

These and more accessories can be found in chapter 10

See pages from 970 ... for cordsets See pages 1066 ... for mounting accessories

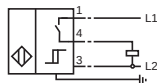
MHW 01

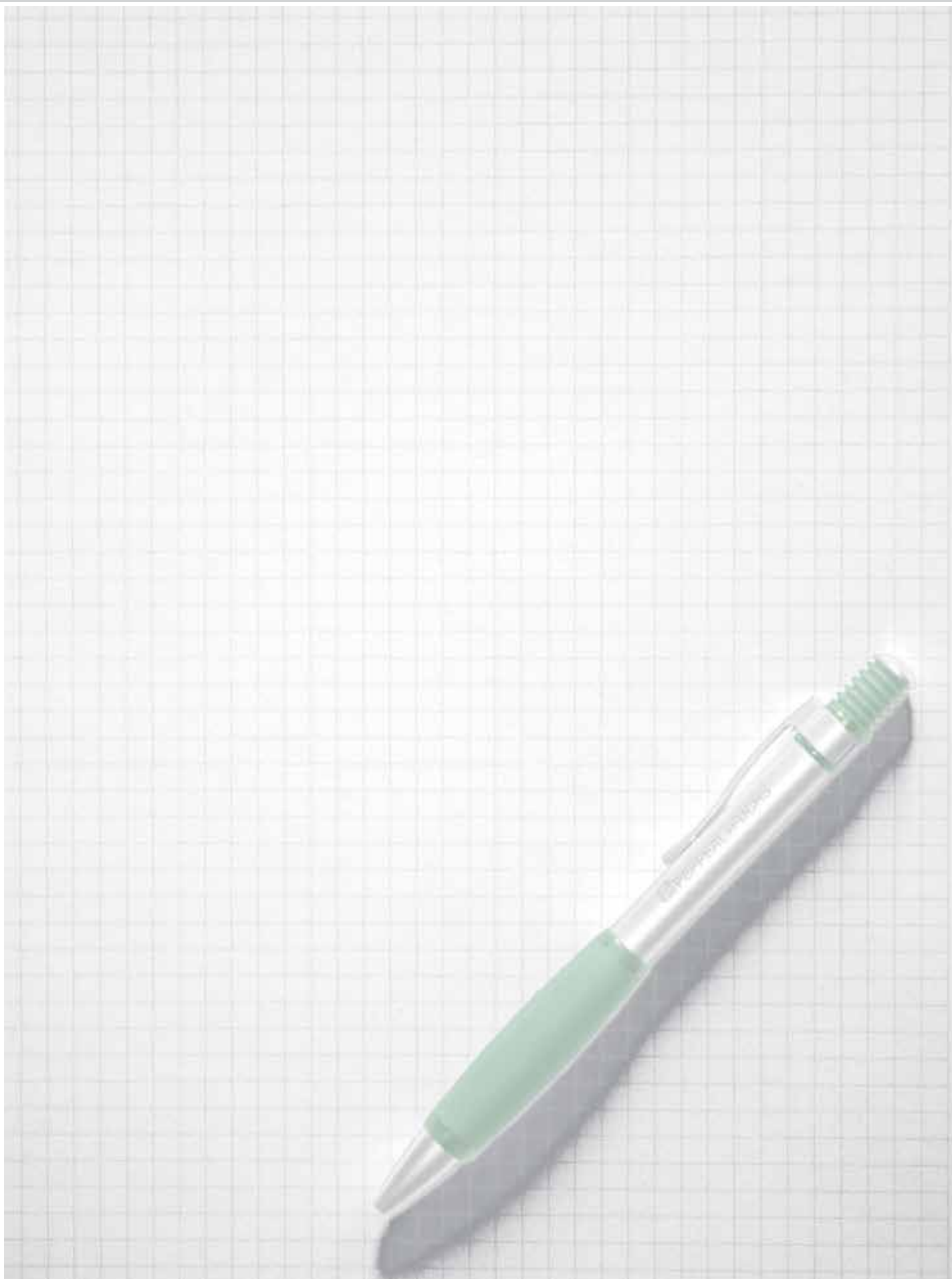
Modular mounting bracket

Electrical Connection



NJ15+U2+DW2-10
NJ15+U2+DW2-100
NJ40+U4+DW2-1
NJ15+U4+DW2-1
NJ15+U4+DW2-10
NJ15+U4+DW2-100





Refer to General Notes Relating to Product Information

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