

Model Number

PVM58N-011YYR0BN-1213 #124651

Features

- **Industrial standard housing Ø58 mm**
- **PROFIBUS interface**
- **25-bit multiturn**
- **Speed transfer**
- **Extended scaling functions**
- **Programmable limit switches**
- **Commissioning mode**
- **Clamping flange**

Description

This series of PROFIBUS rotary encoders is based on the modern fast technology of singleturn sampling and the mechanical gear box of the multiturn unit. The absolute encoder corresponds to the PROFIBUS profile for encoders, order no. 3.062. Operation is supported based on Class 1 and Class 2.

For operation based on Class 1, position data and diagnostic data bytes 1 ... 16 are available. In addition, the direction of the code can be selected as either cw ascending (clockwise rotation, code course ascending) or cw descending (clockwise rotation, code course descending).

If the rotary encoder is operated according to Class 2, additional functions to those from Class 1 are available. These include scaling of the resolution per revolution and the overall resolution, as well as the preset function. In addition, expanded diagnostic reporting is supported.

Besides, the rotary encoder offers extended functionalities such as speed transfer, extended scaling functions, programmable limit switches and a commissioning mode.

The removable connecting hood contains a slide switch for setting the terminating resistor and the rotary switches for setting the address. Assign a fixed address and bus termination to the encoder with this switches.

The device is designed for shaft mounting and is available in clamping flange design.

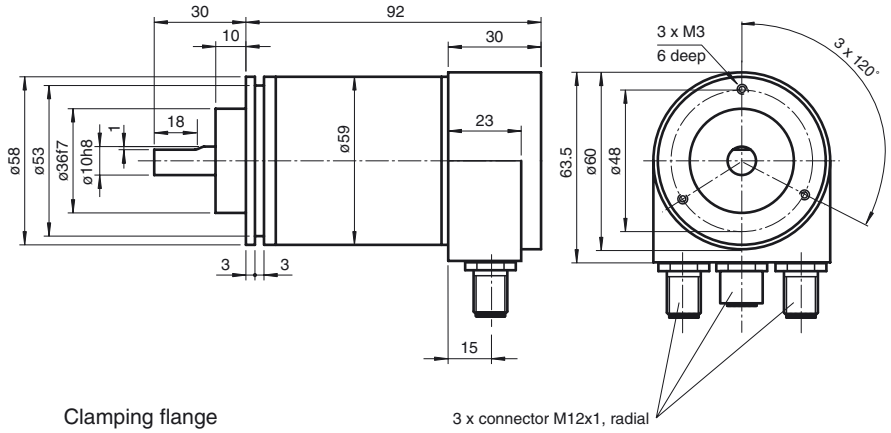
Technical data

Functional safety related parameters	
$MTTF_d$	70 a
Mission Time (T_M)	20 a
L_{10h}	1.9 E+11 at 6000 rpm and 20/40 N axial/radial shaft load
Diagnostic Coverage (DC)	0 %
Electrical specifications	
Operating voltage U_B	10 ... 30 V DC
Current consumption	max. 230 mA at 10 V DC, max. 100 mA at 24 V DC
Power consumption P_0	max. 2.5 W
Linearity	± 2 LSB at 16 Bit, ± 1 LSB at 13 Bit, ± 0,5 LSB at 12 Bit
Output code	binary code
Code course (counting direction)	programmable, cw ascending (clockwise rotation, code course ascending) cw descending (clockwise rotation, code course descending)
Interface	
Interface type	PROFIBUS
Resolution	
Single turn	13 Bit
Multiturn	12 Bit
Overall resolution	25 Bit
Transfer rate	0.0096 ... 12 MBit/s
Standard conformity	PNO profile 3.062, RS-485
Connection	
Connector	3 x round connectors M12 x 1
Standard conformity	
Degree of protection	DIN EN 60529, shaft side: IP64 (without shaft seal)/IP66 (with shaft seal) housing side: IP65
Climatic testing	DIN EN 60068-2-3, no moisture condensation
Emitted interference	EN 61000-6-4:2007
Noise immunity	EN 61000-6-2:2005
Shock resistance	DIN EN 60068-2-27, 100 *g*, 6 ms
Vibration resistance	DIN EN 60068-2-6, 10 *g*, 10 ... 2000 Hz
Ambient conditions	
Operating temperature	-40 ... 85 °C (-40 ... 185 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications	
Material	housing: powder coated aluminum flange: aluminum shaft: stainless steel
Mass	approx. 600 g
Rotational speed	max. 12000 min^{-1}
Moment of inertia	30 gcm^2
Starting torque	≤ 3 Ncm (version without shaft seal)
Shaft load	
Axial	40 N
Radial	110 N

Approvals and certificates	
UL approval	cULus Listed, General Purpose, Class 2 Power Source

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Dimensions

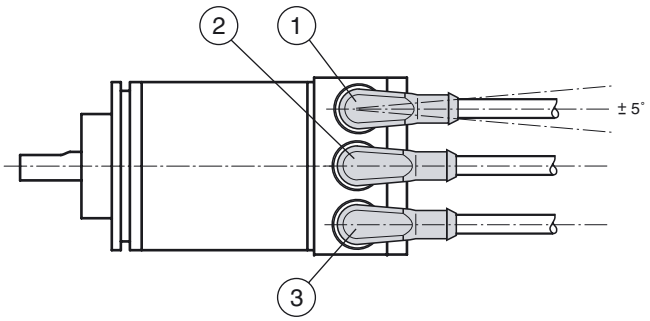


Clamping flange

3 x connector M12x1, radial

Electrical connection

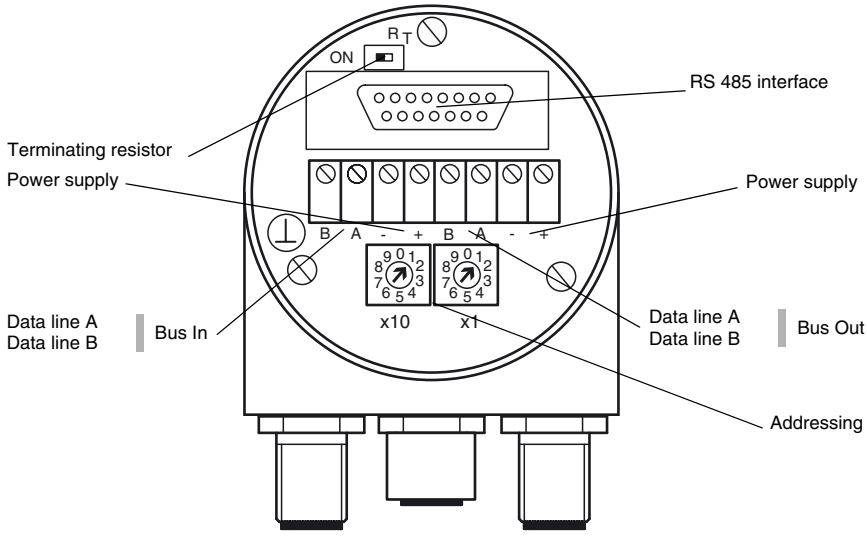
Position	Connector	Pin	Wire Colour	Explanation/connection with terminal
1	Plug, 5 pin, B-coded	2	white	A (left) Bus In
		4	black	B (left) Bus In
2	Socket, 5 pin, B-coded	2	white	A (right) Bus Out
		4	black	B (right) Bus Out
3	Plug, 4 pin, A-coded	1	brown	+ Power Supply
		3	blue	- Power Supply



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Refer to “General Notes Relating to Pepperl+Fuchs Product Information”.
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Operating elements

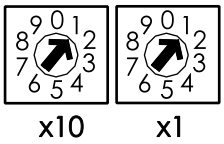


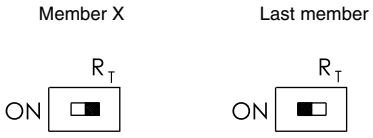
Adjusting the member address

The member address can be adjusted with the rotary switches. The address can be defined between 1 and 99, and may only be assigned once.

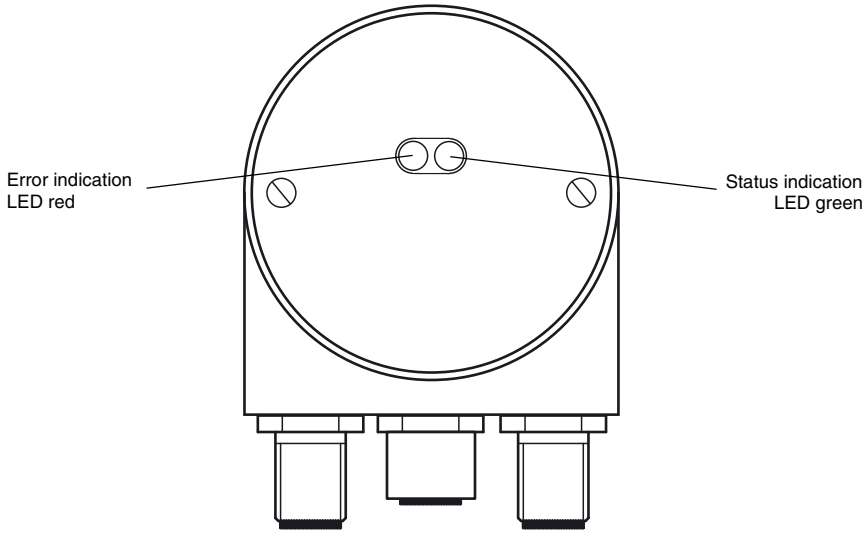
Adjusting the terminating resistor

The terminating resistor R_T (121 Ω) can be switched into the circuit with the switch:



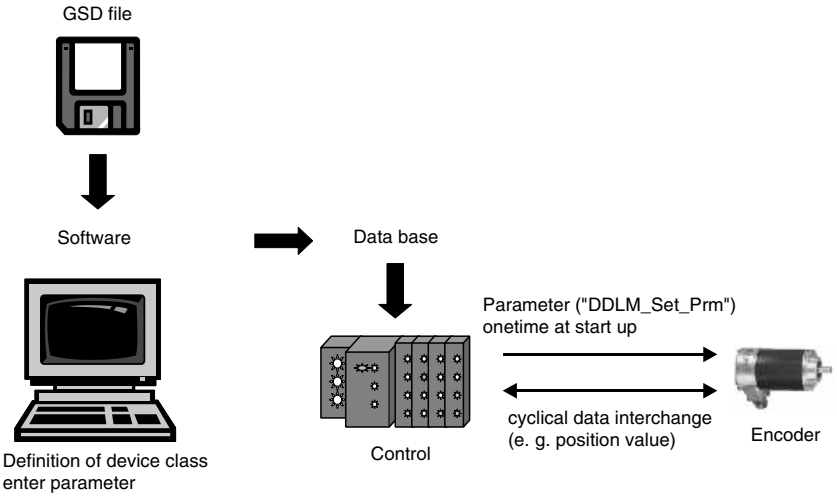


Indicating elements



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Principle of data transmission



Parameter table encoder classes P+F 2.1 and P+F 2.2

Octet number (Byte)	Parameter	Bit number
1...8	PROFIBUS standard parameters	
9	Direction of rotation	0
	Class 2 functionality	1
	Commissioning Diagnostics	2
	Scaling function	3
	Reserved	4
	Reserved	5
	Activate manufacturer specific parameters (Octet 26)	6
	Reserved	7
10 ... 13	Desired measuring steps (reference: Octet 26, Bit 0 and 1)	
14 ... 17	Overall resolution	
18 ... 25	Reserved	
26	Reference for desired measuring steps	0
		1
	Activate commissioning mode	2
	Reduced diagnosis	3
	Reserved	4
	Activate lower software limit switch	5
	Activate upper software limit switch	6
	Activation of the parameters from Octet 27	7
27 ... 30	Lower limit switch	
31 ... 34	Upper limit switch	
35 ... 38	Physical measuring steps	
39	Reserved	0
	Rotary encoder type (singleturn or multiturn)	1
	Reserved	2
	Reserved	3
	Selection of the unit for speed transfer	4
		5
	Reserved	6
	Reserved	7

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Accessories

For type	Accessories	Name/defining feature	Order code
PVM58*-011	Couplings	D1: Ø10 mm, D2: Ø10 mm	9401
		D1: Ø10 mm, D2: Ø10 mm	9404
		D1: Ø10 mm, D2: Ø10 mm	9409
		D1: Ø10 mm, D2: Ø10 mm	KW
	Measurement wheels with circumference of 500 mm	Plastic	9101, 10
		Pimpled rubber	9102, 10
		Knurled aluminium	9103, 10
		Knurled plastic	9112, 10
	Measurement wheels with circumference of 200 mm	Plastic	9108, 10
		Pimpled rubber	9109, 10
		Knurled aluminium	9110, 10
		Knurled plastic	9113, 10
	Mounting aids	Mounting bracket	9203
		Mounting bracket	9213

For additional information on the accessories, please see the "Accessories" section.

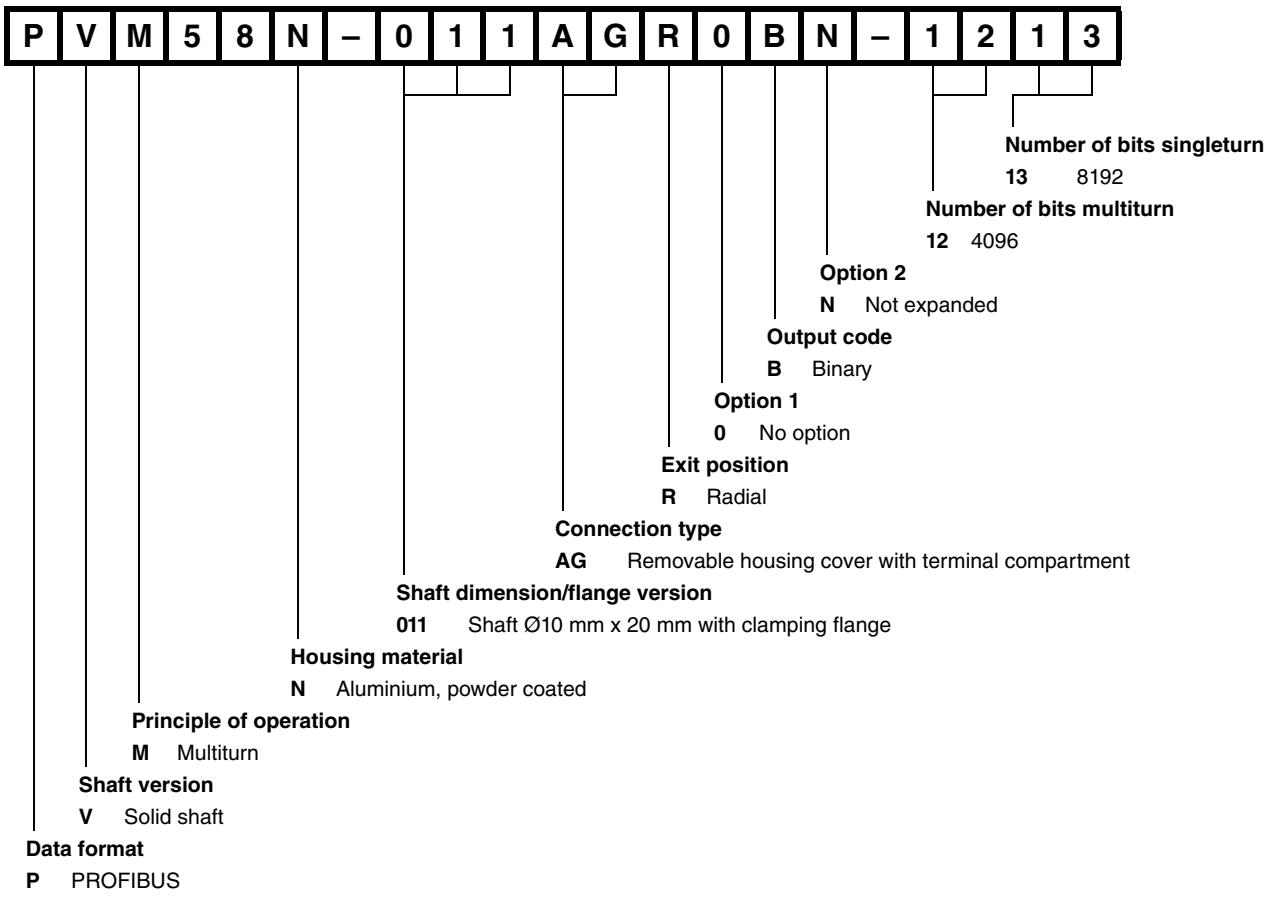
Safety sticker

The below shown safety sticker is included with delivery. It should be placed at a suitable place on the encoder housing after installation.



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Order code



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