

Model Number

PVS14

Features

- 13 Bit singleturn
- ATEX approval
- Flameproof enclosure
- PROFIBUS interface
- Class 1 and 2 in accordance with PNO profile 3.062

Description

This series of PROFIBUS rotary encoders is based on the modern fast technology of singleturn sampling. 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 (clockwise ascending) or ccw (clockwise 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 with 59 bytes. The hours of operation counter can either be fully activated, passively activated for summation or deactivated.

The shaft is specially equipped with a feather key groove for receiving a belt pulley or similar device. The permissible radial force is 80 N, while the permissible axial force is 60 N.

One special feature is the mechanical versatility of the flange. The absolute encoder has one centering shoulder with a diameter of 40 mm and one with a diameter of 80 mm. Three M6 holes are available for fastening.

Technical data

General specifications

Detection type	photoelectric sampling
Device type	Singleturn absolute encoder

Electrical specifications

Operating voltage U_B	10 ... 30 V DC
No-load supply current I_0	max. 190 mA
Linearity	± 1 LSB
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	13 Bit
Single turn	13 Bit
Transfer rate	0.0096 ... 12 MBit/s
Standard conformity	PNO profile 3.062

Connection

Cable	\varnothing 11.2 mm, 9-core, 2 m
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Standard conformity

Degree of protection	DIN EN 60529, IP66
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, 3 ms
Vibration resistance	DIN EN 60068-2-6, 10 g, 10 ... 2000 Hz

Ambient conditions

Operating temperature	
Gas Ex-area	-40 ... 55 °C (-40 ... 131 °F)
Dust Ex-area	-30 ... 55 °C (-22 ... 131 °F)
Storage temperature	
Gas Ex-area	-40 ... 70 °C (-40 ... 158 °F)
Dust Ex-area	-30 ... 70 °C (-22 ... 158 °F)

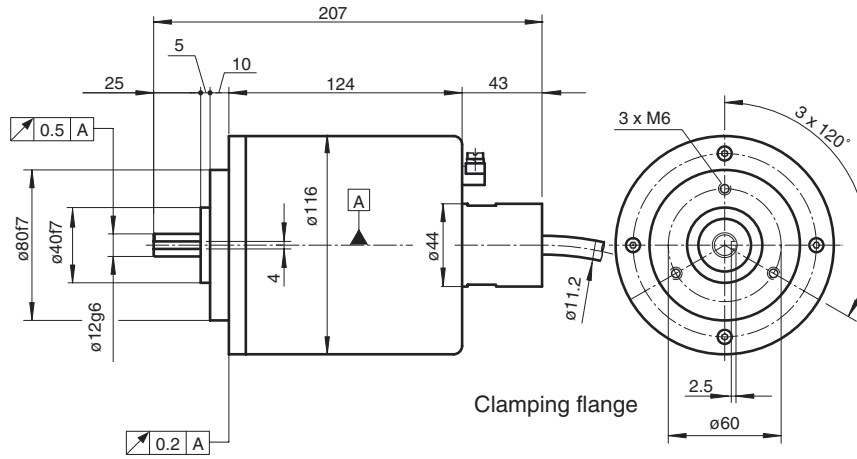
Mechanical specifications

Material	
Housing	aluminum
Flange	aluminum
Shaft	Stainless steel
Mass	approx. 3400 g
Rotational speed	max. 6000 min ⁻¹
Moment of inertia	400 gcm ²
Starting torque	≤ 5 Ncm
Shaft load	
Axial	60 N
Radial	80 N

Data for application in connection with Ex-areas

EC-Type Examination Certificate	ZELM 02 ATEX 0078 X
Group, category, type of protection	II 2G Ex db IIC T6 Gb II 2D Ex tb IIIC T80°C Db IP66
Directive conformity	
Directive 94/9/EC	EN 60079-0:2012 EN 60079-1:2007 EN 60079-31:2009

Dimensions

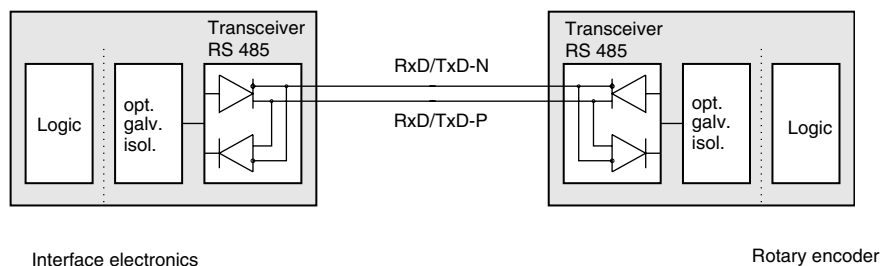


Electrical connection

Signal	Cable Ø11.2 mm, 9-core	Description
GND encoder	1	
U_S encoder	2	
RxD/TxD-P	3	Data wire B (pair 1), bus in
RxD/TxD-N	4	Data wire A (pair 1), bus in
RxD/TxD-P	5	Data wire B (pair 2), bus out
RxD/TxD-N	6	Data wire A (pair 2), bus out
n. c.	7	
n. c.	8	
potential earth	GN/YE	

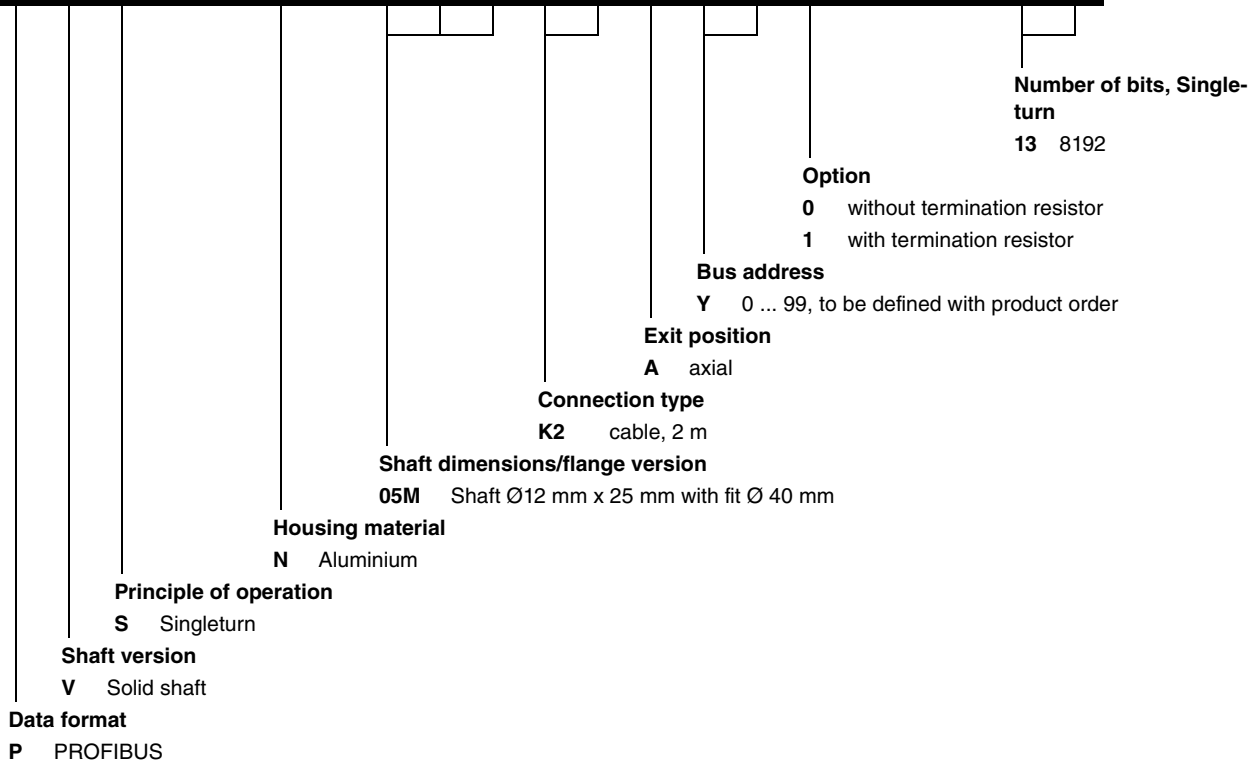
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Interface



Order code

P V S 1 4 N - 0 5 M K 2 A - 0 0 1 3



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