



## Model Number

PVM14

## Features

- 25-bit multiturn
- 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 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 (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

### Electrical specifications

Operating voltage  $U_B$  10 ... 30 V DC

No-load supply current  $I_0$  max. 190 mA

Linearity  $\pm 1$  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

Single turn 13 Bit

Multiturn 12 Bit

Overall resolution 25 Bit

Transfer rate 0.0096 ... 12 MBit/s

Standard conformity PNO profile 3.062

### Connection

Cable  $\varnothing$ 11.2 mm, 9-core, 2 m

### Standard conformity

Protection degree 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<sup>-1</sup>

Moment of inertia 400 gcm<sup>2</sup>

Starting torque  $\leq 5$  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

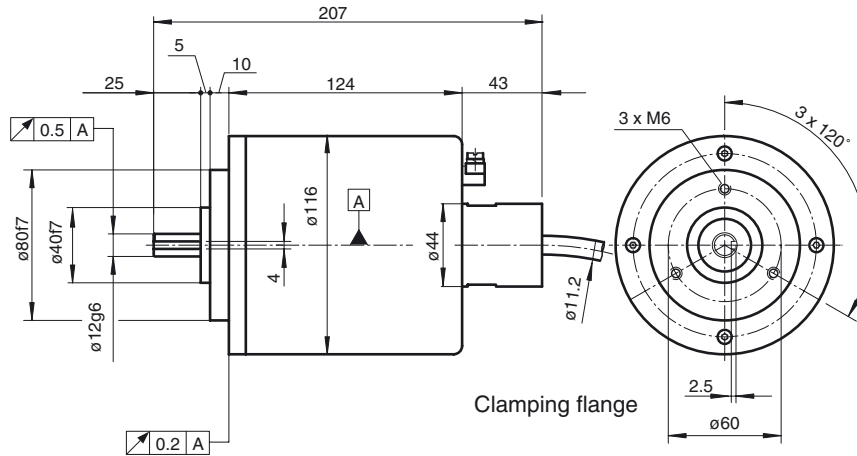
Group, category, type of protection (Ex) II 2G Ex db IIC T6 Gb

(Ex) 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

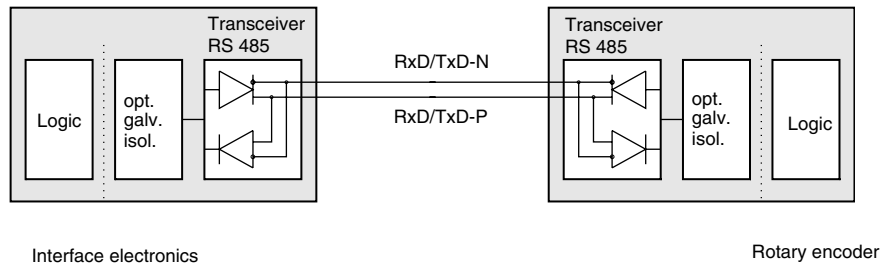
**Dimensions**



**Electrical connection**

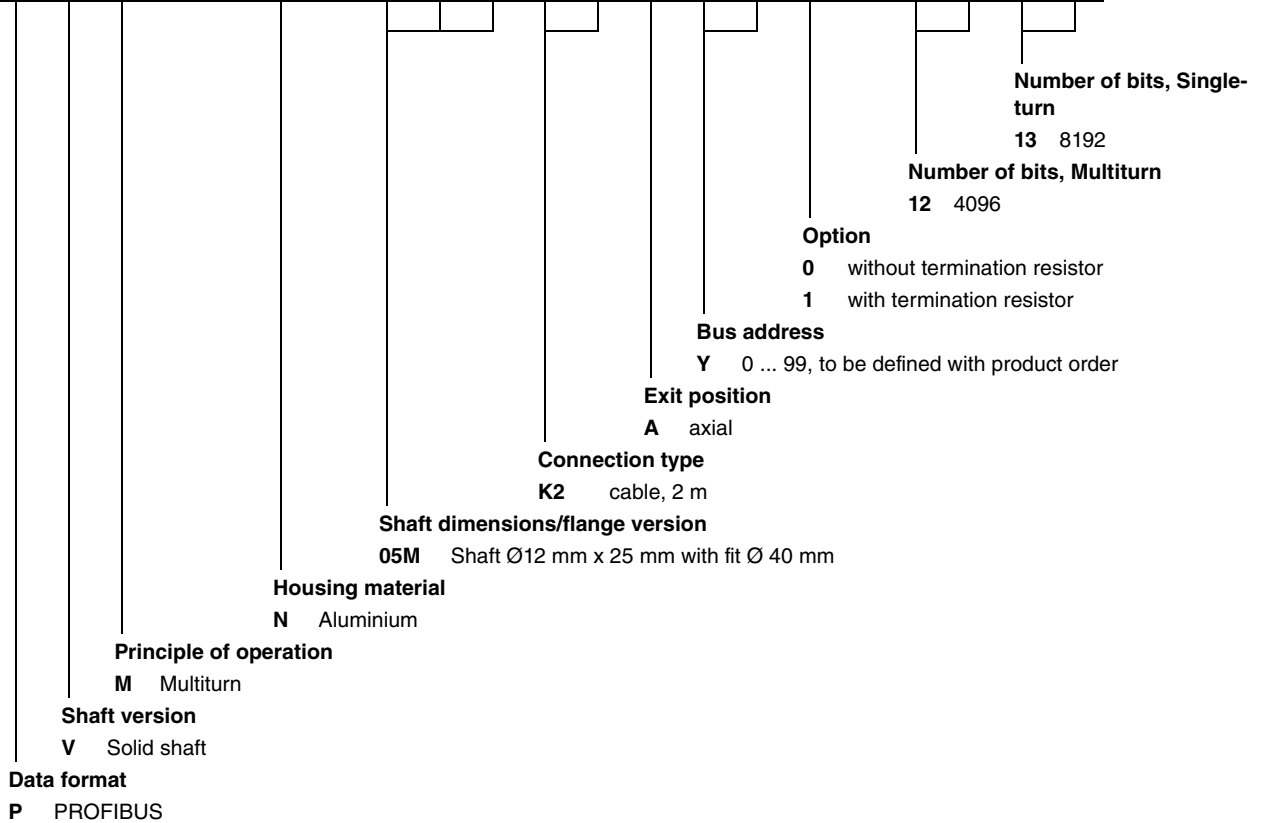
Signal	Cable Ø11.2 mm, 9-core	Description
GND encoder	1	
$U_S$ encoder	2	
RxD/TxD-P	3	Data wire B (pair 1), bus in
RxD/TxD-N	4	Data wire A (pair 1), bus in
RxD/TxD-P	5	Data wire B (pair 2), bus out
RxD/TxD-N	6	Data wire A (pair 2), bus out
n. c.	7	
n. c.	8	
potential earth	GN/YE	

Interface



Order code

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



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