Absolute encoders - bus interfaces

Shaft with clamping or synchro flange

Magnetic multiturn encoders 13 bit ST / 16 bit MT, Profibus-DP

BMMV 58 Profibus-DP - *MAGRES*

BMMV 58K Profibus-DP with clamping flange

Features

- **Encoder multiturn / Profibus-DP**
- **Magnetic sensing**
- **Resolution: singleturn 13 bit, multiturn 16 bit**
- **Integrated fieldbus interface**
- **2 x connector M12 for Bus-IN, Bus-OUT**
- **High resistance to shock and vibrations**
- **Resolution and zero point programmable**
- **Clamping or synchro flange**

Technical data - electrical ratings

Voltage supply	10...30 VDC
Consumption w/o load (typ.)	100 mA (24 VDC)
Initializing time (typ.)	170 ms after power on
Interface	Profibus-DPV0
Function	Multiturn
User address	Rotary switch in housing
Steps per turn	≤8192 / 13 bit
Number of turns	≤65536 / 16 bit
Absolute accuracy	±1 °
Sensing method	Magnetic
Code	Binary
Code sequence	CW default, programmable
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3
Programmable parameters	Operating modes Total resolution Preset Scaling
Diagnostic functions	Position or parameter error Multiturn sensing
Status indicator	DUO-LED integrated in housing
Approval	UL approval / E217823

Technical data - mechanical design

Dimensions (flange)	ø58 mm
Protection DIN EN 60529	IP 65
Operating speed	≤12000 rpm (mechanical) ≤6000 rpm (electric)
Operating torque typ.	0.023 Nm
Materials	Housing: aluminium Flange: aluminium
Operating temperature	-20...+85 °C
Relative humidity	95 %
Resistance	DIN EN 60068-2-6 Vibration 30 g, 10-2000 Hz DIN EN 60068-2-27 Shock 500 g, 6 ms
Weight approx.	300 g
Connection	Connector M8, 4-pin Connector M12, 5-pin
BMMV 58K	
Shaft	ø10 mm (clamping flange)
Flange	Clamping flange
Shaft loading	≤40 N axial ≤60 N radial
BMMV 58S	
Shaft	ø6 mm (synchro flange)
Flange	Synchro flange
Shaft loading	≤10 N axial ≤20 N radial

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Part number

Clamping flange

BMMV 58K1N | **24P** | **13/16** | **C0** | **W**

- **W** Connection: M12 for bus, M8 for voltage supply
- **C0** Shaft: ø10 mm, IP 65
- **13/16** Resolution: 13/16 bit single-/multiturn
- **24P** Voltage supply / signals: 10...30 VDC / Profibus-DPV0

Synchro flange

BMMV 58S1N | **24P** | **13/16** | **C6** | **W**

- **W** Connection: M12 for bus, M8 for voltage supply
- **C6** Shaft: ø6 mm, IP 65
- **13/16** Resolution: 13/16 bit single-/multiturn
- **24P** Voltage supply / signals: 10...30 VDC / Profibus-DPV0

Accessories

Connectors and cables	
10163310	Female connector M8, 4-pin, straight
10148326	Female connector M8, 4-pin, straight, 5 m cable
10148328	Female connector M8, 4-pin, angled, 5 m cable
10157909	Cable with male/female M12, Profibus, shielded, straight, B-coded, 2 m
10157910	Cable with male/female M12, Profibus, shielded, straight, B-coded, 5 m
10159389	Cable with male/female M12, Profibus, shielded, straight, B-coded, 0.3 m (stub line)
10157911	Cable with male/female M12, Profibus, shielded, angled, B-coded, 2 m
10157912	Cable with male/female M12, Profibus, shielded, angled, B-coded, 5 m
Mounting accessories for BMMV 58K	
10252773	Clamp set
11053277	Bellows coupling aluminium/stainless steel 10 mm
Mounting accessories for BMMV 58S	
10252773	Clamp set
Programming accessories	
10147362	CD-ROM with GSD-/EDS-/XML files and user manuals

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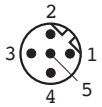
Terminal significance	
+Vs	Encoder supply voltage.
0 V	Encoder ground connection relating to +Vs.
+VsDP	Supply voltage VP Profibus +5 VDC, to supply an external terminating resistor.
0 VDP	Data Ground Profibus (reference potential to +VsDP), to supply an external terminating resistor.
A line green	Profibus-DP signal cable green (RxD / TxD – P)
B line red	Profibus-DP signal cable red (RxD / TxD – N)

Profibus-DP features	
Bus protocol	Profibus-DP
Profibus Features	Device Class 1 and 2
Preset	Parameter for setting the encoder to a requested position value assigned to a defined shaft position of the system. The offset of encoder zero point and mechanical zero point is stored in the encoder.
Rotating direction	Parameter for defining the rotating direction in which there have to be ascending or descending position values. Default setting: ascending position values when looking at the flange and rotating the shaft clockwise.
Scaling	Parameter defining the steps per turn as well as the total resolution.
Diagnosis	The encoder supports the following error warnings: - Position and parameter error - Lithium battery voltage control (Multiturn)
Default	Node ID 3

Terminal assignment

Connector M12 Bus-IN male

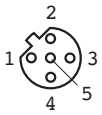
Connector	Signals	Description
Pin 1	n.c.	–
Pin 2	A line green	Cable green / Profibus-DP
Pin 3	n.c.	–
Pin 4	B line red	Cable red / Profibus-DP
Pin 5	n.c.	–
B-coded		



Connector M12 Bus-OUT female

Connector	Signals	Description
Pin 1	+VsDP	VP Profibus +5 VDC [1]
Pin 2	A line green	Cable green / Profibus-DP
Pin 3	0 VDP	DGND Profibus [1]
Pin 4	B line red	Cable red / Profibus-DP
Pin 5	n.c.	–
B-coded		

[1] for optional external terminating resistor



Connector M8 supply voltage

Connector	Signals	Description
Pin 1	+Vs	Supply voltage
Pin 2	n.c.	–
Pin 3	n.c.	–
Pin 4	0 V	Supply voltage

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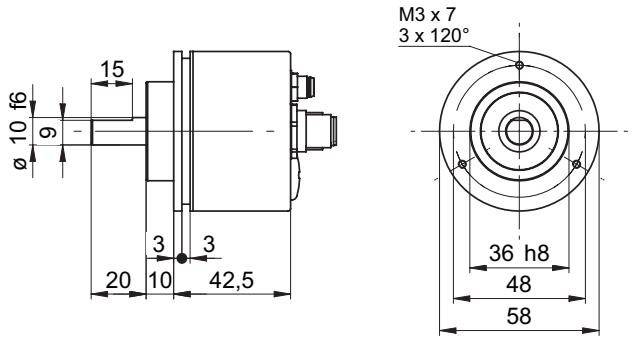
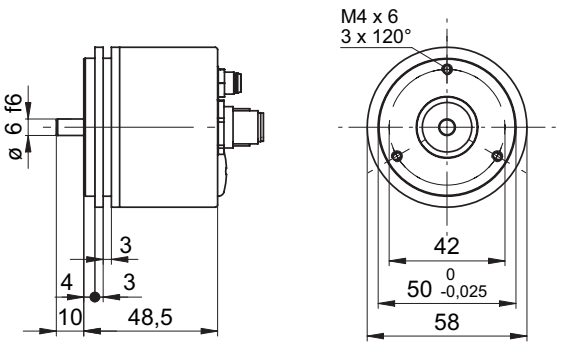
Dimensions

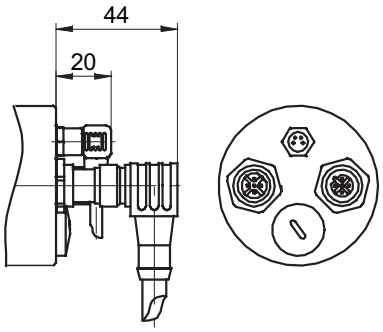
BMMV 58 Profibus-DP clamping flange



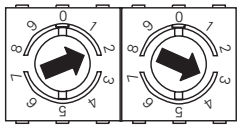
BMMV 58 Profibus-DP synchro flange



BMMV 58 Profibus-DP connector dimensions



User address



Address can be set with rotary switches.
Example: User address 23

Terminating resistor

ON = Last User
OFF = User X