

Absolute encoders - bus interfaces

Shaft max. $\varnothing 10$ mm

Magnetic single- or multiturn encoders 12 bit ST / 16 bit MT, DeviceNet

BMSV 42, BMMV 42 DeviceNet - MAGRES



BMMV 42 DeviceNet with shaft

Features

- Mini encoder single- or multiturn / DeviceNet
- Magnetic sensing
- Resolution: singleturn 12 bit, multiturn 16 bit
- Housing $\varnothing 42$ mm
- Integrated fieldbus interface
- High resistance to shock and vibrations
- Resolution and zero point programmable

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	DeviceNet
Profile conformity	Device Profile Encoder V 1.0
Steps per turn	≤ 4096 / 12 bit
Absolute accuracy	$\pm 1^\circ$
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
Approval	UL approval / E217823
BMSV 42	
Function	Singleturn
BMMV 42	
Function	Multiturn
Number of turns	≤ 65536 / 16 bit

Technical data - mechanical design

Dimensions (flange)	$\varnothing 42$ mm
Shaft	$\varnothing 6$ mm $\varnothing 10$ mm
Protection DIN EN 60529	IP 65
Operating speed	≤ 12000 rpm (mechanical) ≤ 6000 rpm (electric)
Shaft loading	≤ 10 N axial ≤ 25 N radial
Materials	Housing: steel Flange: aluminium
Operating temperature	$-20 \dots +85$ °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.	190 g
Connection	Connector M12, 5-pin Cable

BMSV 42

Operating torque typ. 0.0093 Nm

BMMV 42

Operating torque typ. 0.026 Nm

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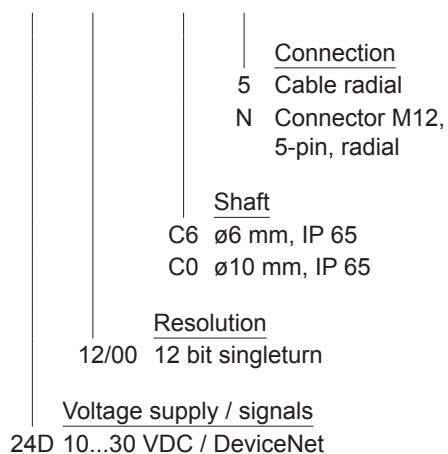
BMSV 42, BMMV 42 DeviceNet - MAGRES

Part number

Singleturn

BMSV 42S1N

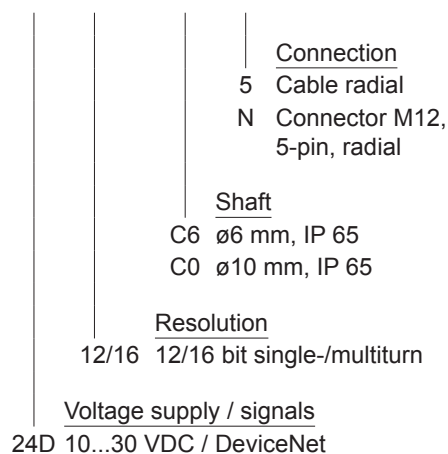
24D	12/00		
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Multiturn

BMMV 42S1N

24D	12/16		
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Accessories

Connectors and cables for BMSV 42

10153968	Female connector M12, 5-pin, A-coded, straight
10144720	Female connector M12, 5-pin, A-coded, straight, shielded, 2 m
10137485	Female connector M12, 5-pin, A-coded, straight, shielded, 5 m
10153969	Cable connector M12, CAN, 5-pin, straight
10153972	T-junction M12 CAN (1 male/2 female)
10153974	Terminating resistor CAN

Connectors and cables for BMMV 42

10153968	Female connector M12, 5-pin, A-coded, straight
10144720	Female connector M12, 5-pin, A-coded, straight, shielded, 2 m
10137485	Female connector M12, 5-pin, A-coded, straight, shielded, 5 m
10153969	Cable connector M12, CAN, 5-pin, straight
10153972	T-junction M12 CAN (1 male/2 female)
10153974	Terminating resistor CAN
10158249	Cable with male/female M12, 5-pin, angled, A-coded, 2 m
10156842	Cable with male/female M12, 5-pin, angled, A-coded, 5 m
10159388	Cable with male/female M12, 5-pin, shielded, straight, A-coded, 0.3 m (stub line)
10161398	Cable with male/female M12, 5-pin, shielded, straight, A-coded, 2 m

Mounting accessories

10110616	Clamp set
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Accessories

11053277	Bellows coupling aluminium/stainless steel 10 mm
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Programming accessories

10147362	CD-ROM with GSD-/EDS-/XML files and user manuals
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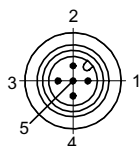
BMSV 42, BMMV 42 DeviceNet - MAGRES

Terminal significance	
+Vs	Encoder supply voltage.
0 V	Encoder ground connection relating to +Vs.
CAN_L	CAN bus signal (dominant Low).
CAN_H	CAN bus signal (dominant High).
CAN_GND	GND relating to CAN interface.

DeviceNet features	
Bus protocol	DeviceNet
Device profile	Device Profile for Encoders V 1.0
Operating modes	- I/O-Polling - Cyclic - Change of State
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	125 kbit/s, Mac Id 63

Terminal assignment		
Cable for connection reference -5		
Core colour	Signals	Description
brown	+Vs	Supply voltage
white	0 V	Supply voltage
green	CAN_H	Bus (dominant HIGH)
yellow	CAN_L	Bus (dominant LOW)
grey	CAN_GND	CAN Ground
pink	n.c.	–
blue	d.u.	do not use
red	d.u.	do not use
Screen	CAN_SHLD	CAN Shield
Cable data		8 x 0,14 mm ²

Connector M12 male		
for connection reference -N		
Connector	Signals	Description
Pin 1	CAN_SHLD	CAN Shield
Pin 2	+Vs	Supply voltage
Pin 3	CAN_GND	CAN Ground / 0 V
Pin 4	CAN_H	Bus (dominant HIGH)
Pin 5	CAN_L	Bus (dominant LOW)



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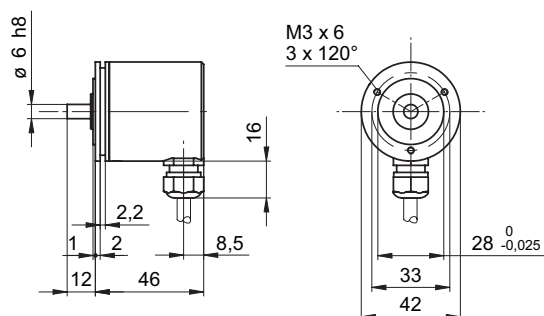
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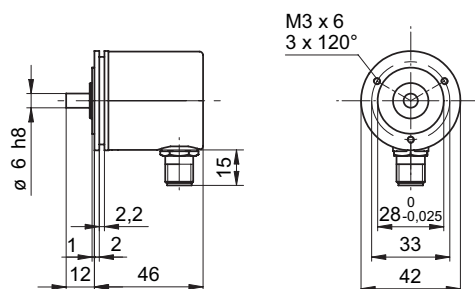
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Dimensions

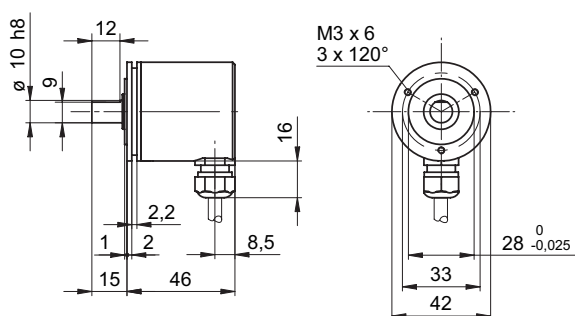
BMSV/BMMV 42 DeviceNet shaft 6 mm, cable



BMSV/BMMV 42 DeviceNet shaft 6 mm, connector M12



BMSV/BMMV 42 DeviceNet shaft 10 mm, cable



BMSV/BMMV 42 DeviceNet shaft 10 mm, connector M12

