

Encoders without bearings - absolute

Magnetic sensor bore max. $\varnothing 6$ mm

Magnetic single- or multiturn encoders / kit 12 bit ST / 18 bit MT, CANopen®

BMSK 42, BMMK 42 CANopen - MAGRES



BMMK 42 CANopen® with blind hollow shaft

Features

- Mini encoder / kit single- or multiturn / CANopen®
- Magnetic sensing
- Resolution: singleturn 12 bit, multiturn 18 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 typ.	100 mA (24 VDC, w/o load)
Sensing method	Magnetic
Initializing time typ.	170 ms after power on
Steps per turn	≤ 4096 / 12 bit
Absolute accuracy	$\pm 1^\circ$
Interface	CANopen®
Profile conformity	CANopen® CiA DSP 301 4.01, DSP 305 V1.0, DSP 406 V3.0
Code	Binary
Code sequence	CW default, programmable
Diagnostic functions	Position or parameter error Multiturn sensing
Programmable parameters	Operating modes Total resolution Scaling Rotation speed monitoring
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3
Approval	UL approval / E217823

BMMK 42

Number of turns	≤ 262144 / 18 bit
Function	Multiturn

BMSK 42

Function	Singleturn
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Technical data - mechanical design

Size (flange)	$\varnothing 42$ mm
Shaft type	$\varnothing 6$ mm (magnet bore)
Protection DIN EN 60529	IP 67
Gap tolerance	≤ 0.3 mm axial ≤ 0.1 mm radial
Operating temperature	$-20 \dots +85$ °C
Operating speed	≤ 12000 rpm (mechanical) ≤ 6000 rpm (electric)
Resistance	DIN EN 60068-2-6 Vibration 30 g, 10-2000 Hz DIN EN 60068-2-27 Shock 500 g, 6 ms
Materials	Housing: steel Flange: aluminium
Relative humidity	95 %
Connection	Connector M12, 5-pin Cable
Weight approx.	190 g

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Part number

Multiturn

BMMK 42L1N 24B 12/18 06

24B Voltage supply / signals
 12/18 Resolution
 12/18 bit single-/multiturn
 06 Solid shaft
 $\varnothing 6$ mm magnet bore
 N Connector M12,
 5-pin, radial
 5 Cable radial
 Connection

Singleturn

BMSK 42L1N 24B 12/00 06

24B Voltage supply / signals
 12/00 Resolution
 12 bit singleturn
 06 Solid shaft
 $\varnothing 6$ mm magnet bore
 N Connector M12,
 5-pin, radial
 5 Cable radial
 Connection

Accessories

Connectors and cables

10153968	Female connector M12, 5-pin, straight, less cable
11046264	Female connector M12, 5-pin, straight, 2 m cable
11046266	Female connector M12, 5-pin, straight, 5 m cable
10153969	Cable connector M12, 5-pin, CAN, 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
11144301	Cable with male/female M12, 5-pin, straight, A-coded, 0.3 m (stub line)
11144304	Cable with male/female M12, 5-pin, straight, A-coded, 2 m
11144306	Cable with male/female M12, 5-pin, straight, A-coded, 5 m

Mounting accessories

10112433 Hexagon wrench 2 mm

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.
CAN_L	CAN bus signal (dominant Low).
CAN_H	CAN bus signal (dominant High).
CAN_GND	GND relating to CAN interface.

CANopen® features

Bus protocol	CANopen®
Device profile	CANopen® - CiA DSP 406, V 3.0 (Device Class 2, CAN 2.0B)
Operating modes	- Event-triggered / Time-triggered - Remotely-requested - Sync (cyclic) / Sync (acyclic)
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 (multiturn)
Node Monitoring	Heartbeat or Nodeguarding
Default	50 kbit/s, Node ID 1

Terminal assignment

Cable

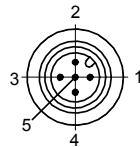
for connection reference -5

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	connected to housing	
Cable data	8 x 0.14 mm ²	

Connector M12 male

for connection reference -N

Connector	Signals	Description
Pin 1	n.c.	–
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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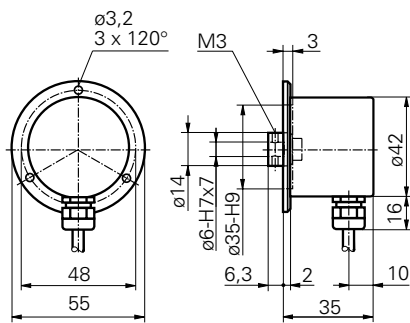
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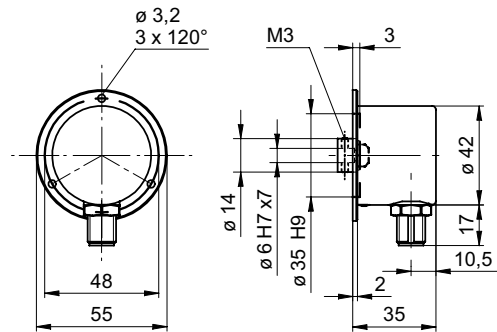
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Dimensions

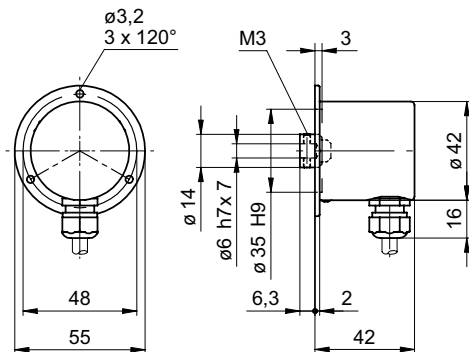
BMSK 42 CANopen® cable radial



BMSK 42 CANopen® connector M12 radial



BMMK 42 CANopen® cable radial



BMMK 42 CANopen® connector M12 radial

