

Absolute encoders - bus interfaces

Encoder with cable-pull

Magnetic multiturn encoders 12 bit ST / 18 bit MT, CANopen®

BMMS K50 CANopen® / cable-pull - MAGRES



BMMS K50 CANopen® with connector M12

Features

- Encoder with cable-pull / CANopen®
- Encoder multiturn
- Magnetic sensing
- Resolution: 0.1 mm/step
- Integrated fieldbus interface
- Integrated control system (differential control)
- Measuring length max. 5000 mm

Technical data - electrical ratings

| | |
|-------------------------|---|
| Voltage supply | 10...30 VDC |
| Consumption typ. | 50 mA (24 VDC, w/o load) |
| Interface | CANopen® |
| Function | Multiturn |
| Profile conformity | CANopen® CiA DSP 301 4.01, DSP 305 V1.0, DSP 406 V3.0 |
| Resolution | 0.1 mm/step |
| Number of steps | 50000 (5000 mm) |
| Sensing method | Magnetic |
| Linearity | 0.45 % of whole measuring range |
| Code | Binary |
| Code sequence | Programmable |
| Interference immunity | DIN EN 61000-6-2 |
| Emitted interference | DIN EN 61000-6-3 |
| Programmable parameters | Operating modes Total resolution Scaling Rotation speed monitoring |
| Diagnostic functions | Position or parameter error Multiturn sensing |

Technical data - mechanical design

| | |
|-------------------------|---|
| Protection DIN EN 60529 | IP 65 (connector model), IP 67 (cable model) |
| Materials | Encoder housing: aluminium Cable-pull housing: PA6 GF30 Cable: Stainless steel cable sheathed with polyamide |
| Operating temperature | -40...+85 °C |
| Service life | Type >500000 strokes |
| Measuring length | 5000 mm |
| Distance/revolution | 239.7 ±0,6 mm |
| Pull-in force | >3 N |
| Pull-out force | ≤9 N |
| Relative humidity | 95 % |
| Resistance | DIN EN 60068-2-6 Vibration 10 g, 10-2000 Hz DIN EN 60068-2-27 Shock 50 g, 11 ms |
| Weight approx. | 600 g |
| Connection | Connector M12, 5-pin Cable |

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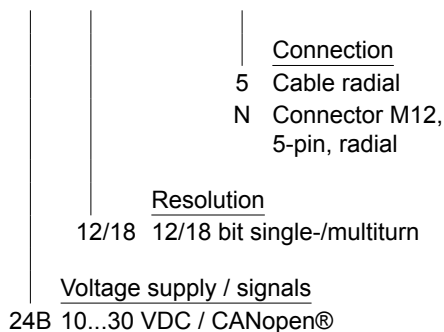
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Part number

BMMS K505N 24B 12/18 00



Accessories

Connectors and cables

| | |
|----------|---|
| 10153968 | Female connector M12, 5-pin, straight, without cable |
| 11046266 | Female connector M12, 5-pin, straight, 5 m cable |
| 10153972 | T-junction M12 CAN (1 male/2 female) |
| 10153974 | Terminating resistor CAN |
| 10156842 | Cable with male/female M12, 5-pin, angled, A-coded, 5 m |
| 11144306 | Cable with male/female M12, 5-pin, straight, A-coded, 5 m |

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. |
| Drain | Housing. |

CANopen® features

| | |
|--------------------|--|
| Bus protocol | CANopen® ISO / DIS 11898 |
| 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 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. |
| Scaling | Parameter defining the steps. |
| Diagnosis | The encoder supports the following error warnings: - Position error redundancy system - Position and parameter error - Lithium battery voltage (multiturn) |
| Node Monitoring | Heartbeat or Nodeguarding |
| Default | 50 kbit/s, Node ID 1 |

Terminal assignment

Cable

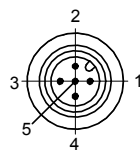
for connection reference **-5**

| Core colour | Signals | Description |
|-------------|--------------------------|---------------------|
| blue | d.u. | do not use |
| yellow | CAN_L | Bus (dominant LOW) |
| grey | CAN_GND | CAN Ground |
| red | d.u. | do not use |
| pink | n.c. | - |
| white | 0 V | Supply voltage |
| green | CAN_H | Bus (dominant HIGH) |
| - | n.c. | - |
| brown | +Vs | Supply voltage |
| Screen | connected to housing | |
| Cable data | 8 x 0.14 mm ² | |

Connector M12 male

for connection reference **-N**

| Conn. | Signals | Description |
|-------|---------|---------------------|
| Pin 1 | n.c. | Not connected |
| Pin 2 | +Vs | Supply voltage |
| Pin 3 | CAN_GND | CAN Ground |
| Pin 4 | CAN_H | Bus (dominant HIGH) |
| Pin 5 | CAN_L | Bus (dominant LOW) |



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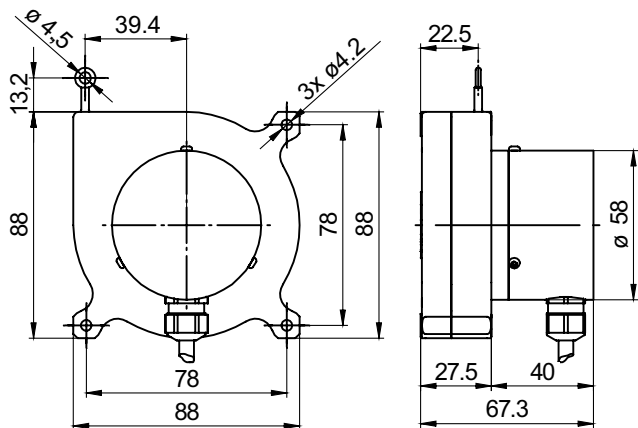
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Dimensions

BMMS K50 cable radial



BMMS K50 connector output M12

