

# Absolute encoders - modular bus covers

Shaft with clamping or synchro flange

Magnetic single- or multiturn encoders 12 bit ST / 18 bit MT

## BMSV 58, BMMV 58 flexible - MAGRES



BMMV 58K flexible with clamping flange

### Features

- Encoder single- or multiturn / bus cover
- Magnetic sensing
- Resolution: singleturn 12 bit, multiturn 18 bit
- Modular fieldbus interfaces
- High resistance to shock and vibrations
- Resolution and zero point programmable
- CANopen/DeviceNet/EtherCAT/EtherNet-IP/SAEJ1939  
PROFINET/Power over EtherCAT/POWERLINK  
Profibus
- 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   |
| Interfaces                  | CANopen, DeviceNet, EtherCAT, EtherNet/IP, PoE, Profibus-DPV0/V2, PROFINET, POWERLINK, SAEJ1939 |
| User address                | Rotary switch in bus cover  |
| Steps per turn              | ≤4096 / 12 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     | Steps per revolution<br>Number of revolutions<br>Preset<br>Scaling<br>Rotational direction      |
| Diagnostic functions        | Position or parameter error<br>Multiturn sensing  |
| Status indicator            | DUO-LED integrated in bus cover   |
| Approval                    | UL approval / E217823   |
| <b>BMSV 58K, BMSV 58S</b>   |   |
| Function                    | Singleturn  |
| <b>BMMV 58K, BMMV 58S</b>   |   |
| Function                    | Multiturn   |
| Number of turns             | ≤262144 / 18 bit  |

### Technical data - mechanical design

|                           |  |
|---------------------------|--|
| Dimensions (flange)       | ø58 mm   |
| Protection DIN EN 60529   | IP 65  |
| Operating speed           | ≤12000 rpm (mechanical)<br>≤6000 rpm (electric)  |
| Operating torque typ.     | 0.023 Nm   |
| Materials                 | Housing: aluminium<br>Flange: aluminium<br>Bus cover: zinc die-cast                      |
| Operating temperature     | -20...+85 °C   |
| Relative humidity         | 95 %   |
| Resistance                | DIN EN 60068-2-6<br>Vibration 30 g, 10-2000 Hz<br>DIN EN 60068-2-27<br>Shock 200 g, 6 ms |
| Weight approx.            | 480 g  |
| Connection                | Bus cover  |
| <b>BMSV 58K, BMMV 58K</b> |  |
| Shaft                     | ø10 mm (clamping flange)   |
| Flange                    | Clamping flange  |
| Shaft loading             | ≤40 N axial<br>≤60 N radial  |
| <b>BMSV 58S, BMMV 58S</b> |  |
| Shaft                     | ø6 mm (synchro flange)   |
| Flange                    | Synchro flange   |
| Shaft loading             | ≤10 N axial<br>≤20 N radial  |

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## Shaft with clamping or synchro flange

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#### Part number

#### Singleturn clamping flange

BMSV 58K1N   12/00  C0

|     |             |                       |    |   |
|-----|-------------|-----------------------|----|---|
|     |             |                       |    | Connection  |
|     |             |                       | G  | Basic encoder without bus cover                         |
|     |             |                       | D  | Complete encoder with bus cover / cable gland (w/o 246) |
|     |             |                       | E  | Complete encoder with bus cover, M12                    |
|     |             |                       |    | Shaft   |
|     |             |                       | C0 | ø10 mm, IP 65   |
|     |             |                       |    | Resolution  |
|     |             | 12/00                 |    | 12 bit singleturn                                       |
|     |             |                       |    | Voltage supply / signals                                |
| 24B | 10...30 VDC | / CANopen             |    |   |
| 24D | 10...30 VDC | / DeviceNet           |    |   |
| 24P | 10...30 VDC | / Profibus-DPV0       |    |   |
| 24Q | 10...30 VDC | / Profibus-DPV2       |    |   |
| 246 | 10...30 VDC | / EtherCAT            |    |   |
| 24I | 10...30 VDC | / EtherNet/IP         |    |   |
| 242 | 10...30 VDC | / Power over EtherCAT |    |   |
| 24L | 10...30 VDC | / POWERLINK           |    |   |
| 24H | 10...30 VDC | / PROFINET            |    |   |
| 24J | 10...30 VDC | / SAEJ1939            |    |   |
| 24C | 10...30 VDC | / basic encoder       |    |   |

#### Multiturn clamping flange

BMMV 58K1N    C0

|     |             |                       |    |   |
|-----|-------------|-----------------------|----|---|
|     |             |                       |    | Connection  |
|     |             |                       | G  | Basic encoder without bus cover                         |
|     |             |                       | D  | Complete encoder with bus cover / cable gland (w/o 246) |
|     |             |                       | E  | Complete encoder with bus cover, M12                    |
|     |             |                       |    | Shaft   |
|     |             |                       | C0 | ø10 mm, IP 65   |
|     |             |                       |    | Resolution  |
|     |             | 12/18                 |    | 12/18 bit single-/multiturn (only CANopen)              |
|     |             | 12/16                 |    | 12/16 bit single-/multiturn                             |
|     |             |                       |    | Voltage supply / signals                                |
| 24B | 10...30 VDC | / CANopen             |    |   |
| 24D | 10...30 VDC | / DeviceNet           |    |   |
| 24P | 10...30 VDC | / Profibus-DPV0       |    |   |
| 24Q | 10...30 VDC | / Profibus-DPV2       |    |   |
| 246 | 10...30 VDC | / EtherCAT            |    |   |
| 24I | 10...30 VDC | / EtherNet/IP         |    |   |
| 242 | 10...30 VDC | / Power over EtherCAT |    |   |
| 24L | 10...30 VDC | / POWERLINK           |    |   |
| 24H | 10...30 VDC | / PROFINET            |    |   |
| 24J | 10...30 VDC | / SAEJ1939            |    |   |
| 24C | 10...30 VDC | / basic encoder       |    |   |

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## BMSV 58, BMMV 58 flexible - MAGRES

### Part number

#### Singleturn synchro flange

BMSV 58S1N  12/00 C6

|     |                                   |    |   |
|-----|-----------------------------------|----|---|
|     |                                   |    | Connection  |
|     |                                   | G  | Basic encoder without bus cover                         |
|     |                                   | D  | Complete encoder with bus cover / cable gland (w/o 246) |
|     |                                   | E  | Complete encoder with bus cover, M12                    |
|     |                                   |    | <u>Shaft</u>  |
|     |                                   | C6 | ø6 mm, IP 65  |
|     |                                   |    | <u>Resolution</u>                                       |
|     | 12/00                             |    | 12 bit singleturn                                       |
|     |                                   |    | <u>Voltage supply / signals</u>                         |
| 24B | 10...30 VDC / CANopen             |    |   |
| 24D | 10...30 VDC / DeviceNet           |    |   |
| 24P | 10...30 VDC / Profibus-DPV0       |    |   |
| 24Q | 10...30 VDC / Profibus-DPV2       |    |   |
| 246 | 10...30 VDC / EtherCAT            |    |   |
| 24I | 10...30 VDC / EtherNet/IP         |    |   |
| 242 | 10...30 VDC / Power over EtherCAT |    |   |
| 24L | 10...30 VDC / POWERLINK           |    |   |
| 24H | 10...30 VDC / PROFINET            |    |   |
| 24J | 10...30 VDC / SAEJ1939            |    |   |
| 24C | 10...30 VDC / basic encoder       |    |   |

#### Multiturn synchro flange

BMMV 58S1N   C6

|     |                                   |    |   |
|-----|-----------------------------------|----|---|
|     |                                   |    | Connection  |
|     |                                   | G  | Basic encoder without bus cover                         |
|     |                                   | D  | Complete encoder with bus cover / cable gland (w/o 246) |
|     |                                   | E  | Complete encoder with bus cover, M12                    |
|     |                                   |    | <u>Shaft</u>  |
|     |                                   | C6 | ø6 mm, IP 65  |
|     |                                   |    | <u>Resolution</u>                                       |
|     | 12/18                             |    | 12/18 bit single-/multiturn (only CANopen)              |
|     | 12/16                             |    | 12/16 bit single-/multiturn                             |
|     |                                   |    | <u>Voltage supply / signals</u>                         |
| 24B | 10...30 VDC / CANopen             |    |   |
| 24D | 10...30 VDC / DeviceNet           |    |   |
| 24P | 10...30 VDC / Profibus-DPV0       |    |   |
| 24Q | 10...30 VDC / Profibus-DPV2       |    |   |
| 246 | 10...30 VDC / EtherCAT            |    |   |
| 24I | 10...30 VDC / EtherNet/IP         |    |   |
| 242 | 10...30 VDC / Power over EtherCAT |    |   |
| 24L | 10...30 VDC / POWERLINK           |    |   |
| 24H | 10...30 VDC / PROFINET            |    |   |
| 24J | 10...30 VDC / SAEJ1939            |    |   |
| 24C | 10...30 VDC / basic encoder       |    |   |

CD with file descriptions is not included in the delivery. You may order them on CD as accessory free-of-charge under part number 10147362.

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##### Accessories

##### Connectors and cables

|          |  |
|----------|--|
| 10160565 | Cable connector/connector M12, EtherCAT, straight, 5 m                               |
| 10144720 | Female connector M12, 5-pin, A-coded, straight, shielded, 2 m                        |
| 10153968 | Female connector M12, 5-pin, A-coded, straight                                       |
| 10157909 | Cable with male/female M12, Profibus, shielded, straight, B-coded, 2 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                 |

##### Mounting accessories for BMSV 58K, BMMV 58K

|          |  |
|----------|--|
| 10252773 | Clamp set $\varnothing 15$ mm                    |
| 11053277 | Bellows coupling aluminium/stainless steel 10 mm |

##### Mounting accessories for BMSV 58S, BMMV 58S

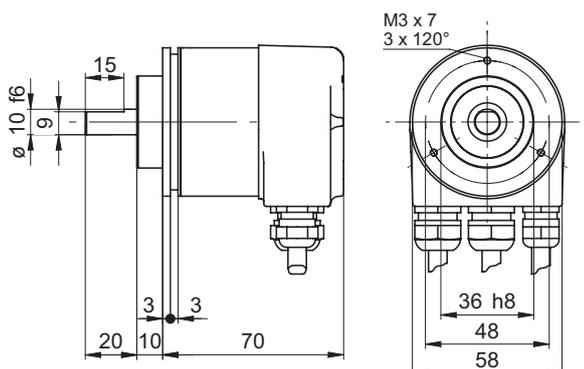
|          |                               |
|----------|-------------------------------|
| 10252773 | Clamp set $\varnothing 15$ mm |
|----------|-------------------------------|

##### Programming accessories

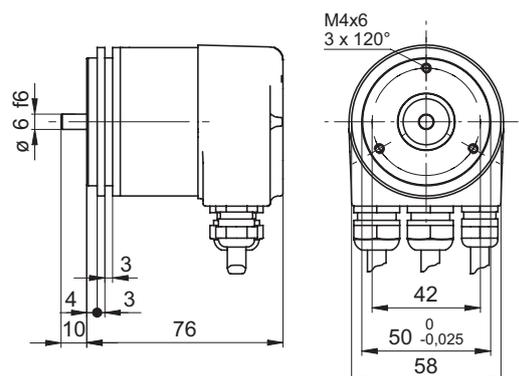
|          |  |
|----------|--|
| 10147362 | CD-ROM with GSD-/EDS-/XML files and user manuals |
|----------|--|

##### Dimensions

BMSV/BMMV 58 flexible clamping flange, bus cover



BMSV/BMMV 58 flexible synchro flange, bus cover



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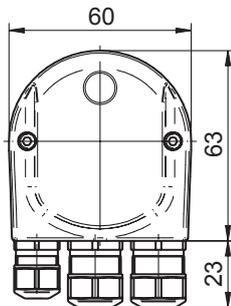
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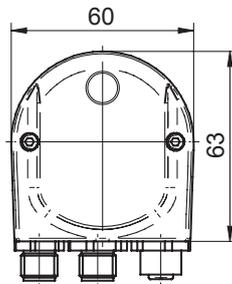
BMSV 58, BMMV 58 flexible - MAGRES

## Dimensions

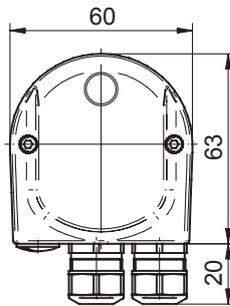
Profibus-DP/CANopen



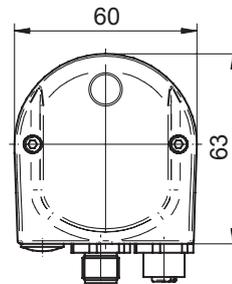
Profibus-DP - M12



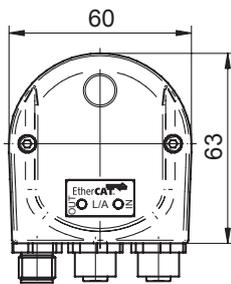
DeviceNet



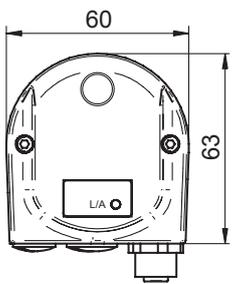
CANopen/DeviceNet M12



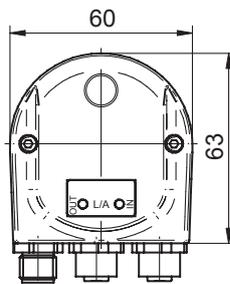
EtherCAT/EtherNet-IP



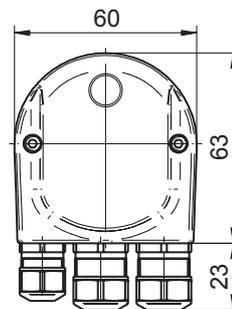
Power over EtherCAT



PROFINET/POWERLINK



SAEJ1939



SAEJ1939 - M12

