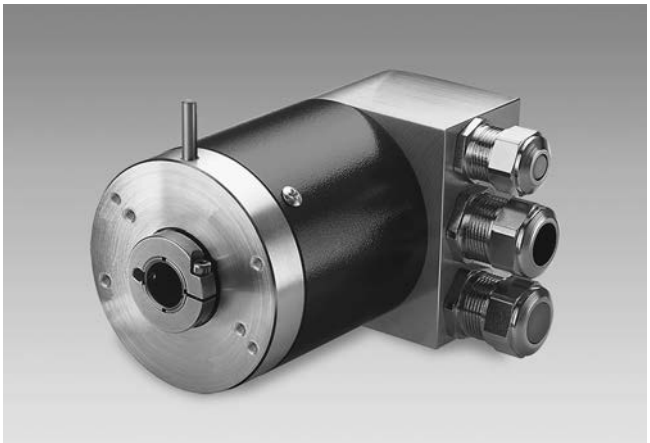
# Absolute encoders - modular bus covers

## High resolution, blind hollow shaft

## Optical singleturn encoders 18 bit

## GBAMS



GBAMS with modular bus cover

### Features

- **Encoder singleturn / bus cover**
- **Optical sensing method**
- **Total resolution up to 18 bit**
- **Blind hollow shaft ø12...ø15 mm**
- **CANopen®/DeviceNet/EtherCAT/EtherNet-IP SAEJ1939/PROFINET/POWERLINK/Profibus/SSI**
- **Cost-efficient mounting**
- **Code continuity check optional by bus**
- **Maximum resistant against magnetic fields**

### Technical data - electrical ratings

| | |
|---|---|
| Voltage supply | 10...30 VDC |
| Reverse polarity protection | Yes |
| Consumption w/o load | ≤100 mA (24 VDC) |
| Initializing time typ. | 250 ms after power on |
| Interfaces | CANopen®, DeviceNet, EtherCAT, EtherNet/IP, Profibus, PROFINET, POWERLINK, SAE J1939, SSI |
| Function | Singleturn |
| Device adress | Rotary switches in bus cover |
| Steps per revolution | ≤262144 / 18 bit |
| Absolute accuracy | ±0.01 ° |
| Sensing method | Optical |
| Code | Binary |
| Code sequence | CW/CCW programmable |
| Interference immunity | DIN EN 61000-6-2 |
| Emitted interference | DIN EN 61000-6-4 |
| Programmable parameters | Steps per revolution<br>Preset<br>Scaling<br>Rotating direction |
| Diagnostic function | Position or parameter error |
| Status indicator | DUO-LED integrated in bus cover |
| Approval | UL approval / E63076 |

### Technical data - mechanical design

| | |
|---|---|
| Size (flange) | ø58 mm |
| Shaft type | ø12...15 mm (blind hollow shaft) |
| Protection DIN EN 60529 | IP 54, IP 65 (optional) |
| Operating speed | ≤6000 rpm (mechanical)<br>≤6000 rpm (electric) |
| Starting acceleration | ≤1000 U/s² |
| Starting torque | ≤0.015 Nm (+25 °C) |
| Rotor moment of inertia | 20 gcm² |
| Materials | Housing: aluminium<br>Flange: aluminium<br>Bus cover: zinc die-cast |
| Operating temperature | -25...+85 °C<br>-40...+85 °C (optional) |
| Relative humidity | 95 % non-condensing |
| Resistance | DIN EN 60068-2-6<br>Vibration 10 g, 16-2000 Hz<br>DIN EN 60068-2-27<br>Shock 200 g, 6 ms |
| Weight approx. | 600 g |
| Connection | Bus cover |

## GBAMS

### Part number

**GBAMS.** [ ] [ **20** ] [ ]

Interface

| | |
|---|---|
| 3P32 | Profibus-DPV0 / cable gland |
| 3PA2 | Profibus-DPV0 / connector M12 |
| 3V32 | Profibus-DPV2 / cable gland |
| 3VA2 | Profibus-DPV2 / connector M12 |
| 3EA2 | PROFINET / connector M12 |
| EPA6 | EtherCAT / connector M12 |
| 8EA2 | EtherNet/IP / connector M12 |
| 5EA4 | POWERLINK / connector M12 |
| 5P32 | CANopen® / cable gland |
| 5PA2 | CANopen® / connector M12 |
| 8P22 | DeviceNet / cable gland |
| 8PA2 | DeviceNet / connector M12 |
| 2PA2 | SSI / connector M12 |
| 5B32 | SAEJ1939 / cable gland |
| 5BA2 | SAEJ1939 / connector M12 |

Blind hollow shaft

| | |
|---|---|
| 0 | ø12 mm, without pin |
| 1 | ø12 mm, pin 15 mm |
| B | ø12 mm, pin 9.5 mm |
| 4 | ø14 mm, without pin |
| 5 | ø14 mm, pin 15 mm |
| F | ø14 mm, pin 9.5 mm |
| U | ø15 mm, pin 15 mm / IP 54 |
| W | ø15 mm, without pin / IP 65 |

CD with file descriptions is not included in the delivery.
You may order them on CD as accessory under part number Z 150.022.

### Accessories

**Connectors and cables**

| | |
|---|---|
| 11034355 | Cable connector M12, 4-pin, on both sides, D-coded, 5 m cable (Z 185.E05) |
| 11034304 | Female connector M12, 8-pin, straight, 2 m cable (Z 174.003) |
| 11034305 | Female connector M12, 8-pin, straight, 5 m cable (Z 174.005) |

**Mounting accessories**

| | |
|---|---|
| 10140347 | Torque support and spring washer for encoders with 9.5 mm pin (Z 119.024) |
| 10139345 | Torque support by rubber buffer for encoders with 15 mm pin (Z 119.041) |
| 10147837 | Spring coupling for one-side attachment, length 35 mm (Z 119.050) |
| 11034106 | Spring coupling for motor's fan guard (Z 119.053) |
| 10165157 | Spring coupling for encoders with ø58 mm housing, hole distance 73 mm (Z 119.072) |
| 11034121 | Spring coupling for encoders with ø58 mm housing, hole distance 68 mm (Z 119.073) |
| 11034123 | Spring coupling for one-side attachment, length 115 mm (Z 119.076) |
| 11003562 | Spring coupling for encoders with ø58 mm housing, hole distance 63 mm (Z 119.082) |
| 11098229 | Clamping ring set 16/30x6 - stainless steel (Z 119.092) |

**Programming accessories**

| | |
|---|---|
| 10146710 | CD with describing files & manuals (Z 150.022) |
| 11034193 | Programming cable for encoders with SSI bus cover, CD with software and manual (Z 139.008) |

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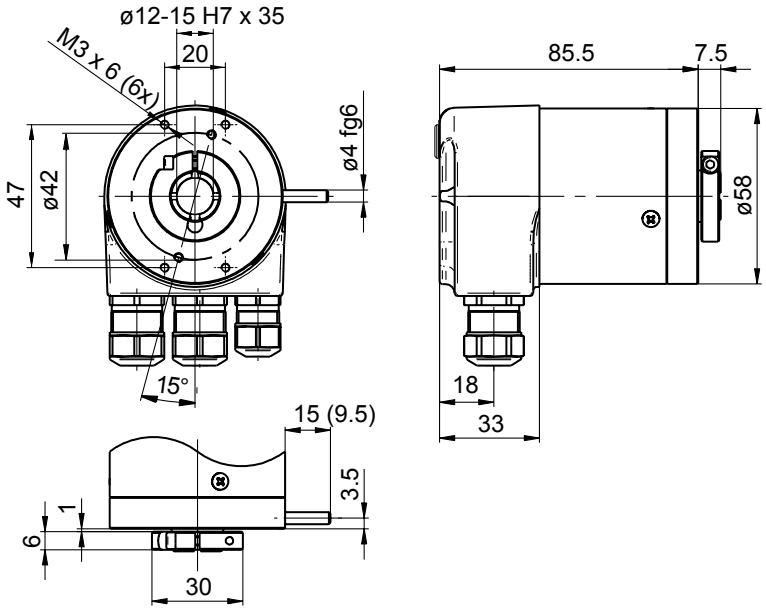
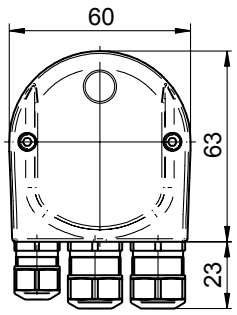
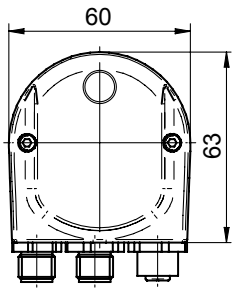
### Dimensions



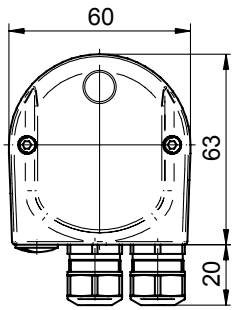

**Profibus-DP/CANopen®**



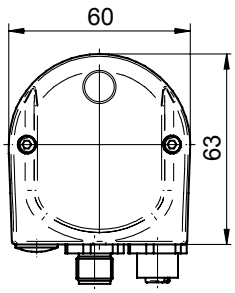

**Profibus-DP - M12**



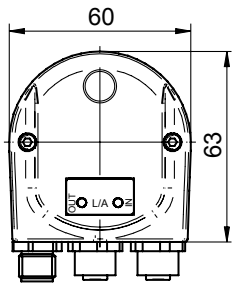

**DeviceNet**



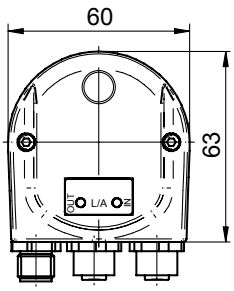

**CANopen®/DeviceNet M12**



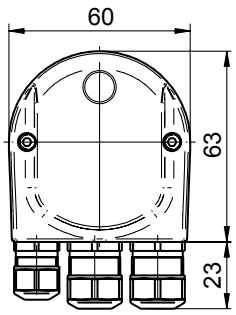

**EtherCAT/EtherNet-IP**




**PROFINET/POWERLINK**




**SAEJ1939**




**SAEJ1939 - M12**