

Data Sheet for Angle Sensors

Hall-Effect Single-Turn Rotary Encoder

Series MAB40



- 40 mm housing diameter
- 2 precision ball bearings
- Integrated serial peripheral Interface (SPI)
- Protection Class IP67
- Electrical angle 360°
- 14 Bit resolution
- Supply voltage: 5V

Based on its robust housing and the precision ball bearings the MAB40 is applicable especially in harsh conditions. The high IP protection class of IP67 ex works underlines the before mentioned suitability. The installation is either possible via front-side tapped holes or on the basis of optionally available servo clamps.

Electrical Data

| | |
|---|-----------------|
| Effective electrical angle | 360° |
| Tolerance independent linearity (IEC 60393) | ±0.3 % @ 360° |
| Output signal | SPI |
| Resolution | 14 Bit (0,022°) |
| Update rate | 200 µs |
| Supply voltage | 5 VDC ±10% |
| Current consumption (no load) | ≤ 12 mA |

Mechanical data and environment

| | |
|-----------------------------------|---------------------------|
| Mechanical and environmental data | Endless |
| Bearing | 2 precision ball bearings |
| Maximum rotational speed | 1000 rpm |
| Operational torque | Typically < 3 Ncm |
| IP Protection grade (IEC 60529) | IP67 |
| Operating temperature range | -25..+85 °C |
| Storage temperature range | -40..+85 °C |
| Material housing | Aluminium |
| Material shaft | Stainless steel |
| Mass | app. 90 g |

Accessory

| | |
|---|---|
| Small parts (not included in delivery, please order separate) | 3 pieces synchro clamps SFN1 (M3 x 0,5) |
|---|---|

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Order code

Description

| | | | | | |
|---|--------------|-------------------|-------|---------|---------------|
| Series MAB40 | MAB40 | | | | |
| Resolution / Supply Voltage / Output signal 14 Bit High Speed / 5 V \pm 10% / SPI | | 14HS 05SPI | | | |
| Zero point alignment (*) | | | N (*) | | |
| Other shaft length [mm] (*) | | | | Axx (*) | |
| Cable output Axial - 1 m Axial [m] (*) | | | | | - CVxx (*) |

bold print = standard option

(*) = on request available for projects

Additional options:

For higher quantities or on-going demand, additional options are available as described below on request:

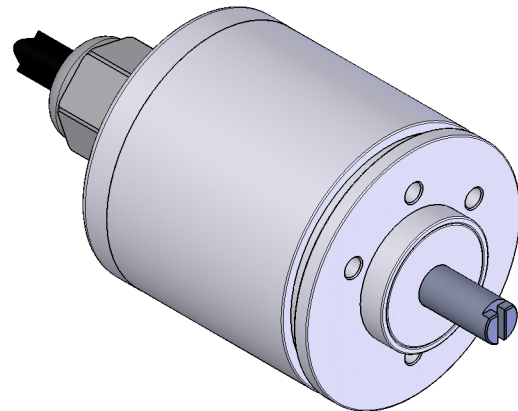
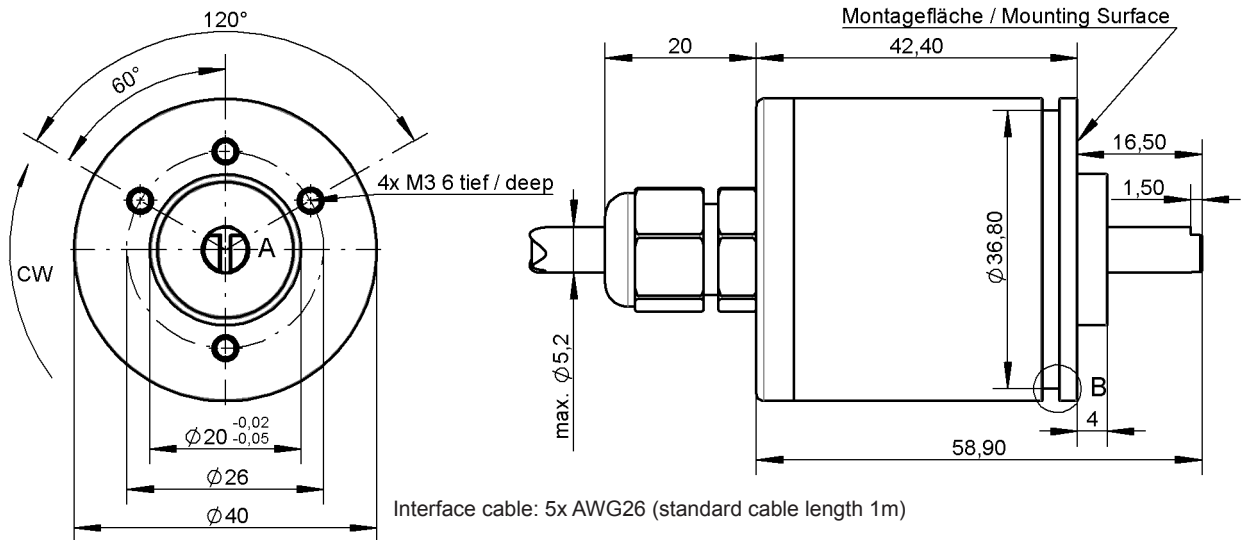
- Other operational torque
- Special shaft design
- Special housing design
- Mu-Metall-shield
- Mounting of cable and connector

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Drawing



Cable and pin assignment

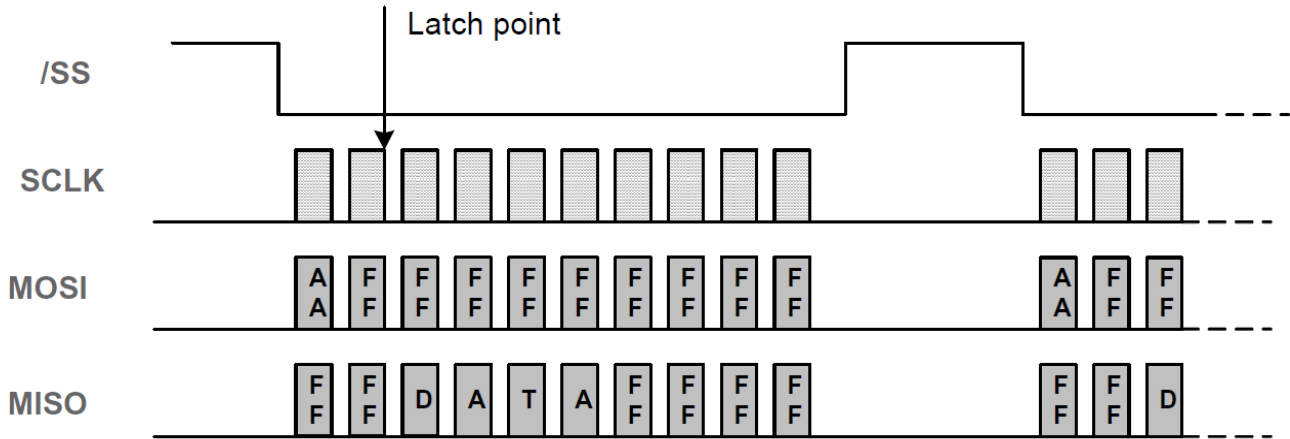
| Cable colour: | Function: |
|---------------|------------|
| red | VSUP |
| black | GND |
| brown | Data |
| orange | Clock |
| yellow | Chipselect |

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Timing SPI-Interface



For exact specifications of the output signals please look at the data sheets and application notes of chip manufacturer Melexis:

Manufacturer: Melexis
 IC Model: MLX90316EDC
 Internet: www.melexis.com