

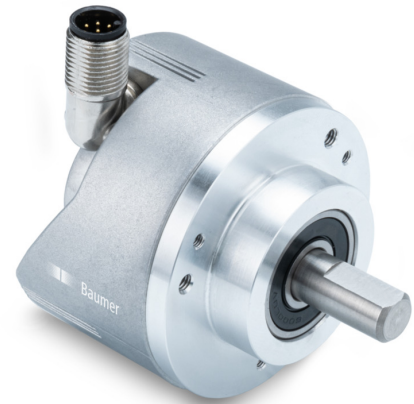
## EN580E.ML-SC10.GA1B1.13120.H

Solid shaft with clamping flange, optical multiturn encoders 13 bit ST / 12 bit MT, BiSS C Certified

Article number: 11245798

### Overview

- Absolute encoder multiturn
- Optical sensing method
- Resolution: singleturn 13 bit, multiturn 12 bit
- Clamping flange
- Maximum resistant against magnetic fields
- High connection flexibility thanks to flexible connector M12



### Technical data

#### Technical data - electrical ratings

|                             |  |
|-----------------------------|--|
| Voltage supply              | 8...30 VDC   |
| Reverse polarity protection | Yes  |
| Short-circuit proof         | Yes  |
| Consumption w/o load        | ≤80 mA (24 VDC)  |
| Interface                   | BiSS C Certified   |
| Function                    | Multiturn  |
| Steps per revolution        | 8192 / 13 bit  |
| Number of revolutions       | 4096 / 12 bit  |
| Absolute accuracy           | ±0.03 °  |
| Sensing method              | Optical  |
| Code                        | Binary   |
| Code sequence               | CW: ascending values with clockwise sense of rotation; looking at flange |
| Input signals               | BiSS clock (MA)<br>Zero setting input<br>Counting direction              |
| Output stages               | BiSS data: Linedriver RS422  |
| Output signals              | BiSS data (SLO)  |
| Clock frequency             | 80...10000 kHz   |
| Interference immunity       | EN 61000-6-2   |

#### Technical data - electrical ratings

|   |  |
|---|--|
| Emitted interference                      | EN 61000-6-4   |
| Approval                                  | UL Class 2   |
| <b>Technical data - mechanical design</b> |  |
| Size (flange)                             | ø58 mm   |
| Shaft type                                | ø10 x 20 mm, solid shaft with flat   |
| Flange                                    | Clamping flange  |
| Protection EN 60529                       | IP 54 (flange side)<br>IP 65 (housing side)                                |
| Operating speed                           | ≤6000 rpm (+25 °C)   |
| Starting torque                           | ≤0.02 Nm   |
| Admitted shaft load                       | ≤40 N axial<br>≤80 N radial  |
| Material                                  | Housing: aluminium<br>Shaft: stainless steel                               |
| Operating temperature                     | -25...+85 °C (see general information)                                     |
| Relative humidity                         | 95 % non-condensing  |
| Resistance                                | EN 60068-2-6 Vibration 30 g, 10-2000 Hz<br>EN 60068-2-27 Shock 100 g, 6 ms |
| Weight approx.                            | 400 g  |
| Connection                                | Connector M12, 8-pin, flexible   |

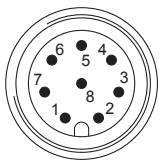
## General information

Self-heating correlated to installation and ambient conditions as well as to electronics and supply voltage must be considered for precise thermal dimensioning. Operating the encoder close to the maximum limits requires measuring the real prevailing temperature at the encoder flange.

## Terminal assignment

### Connector M12, 8-pin

| Pin | Assignment |
|-----|------------|
| 1   | 0 V        |
| 2   | +Vs        |
| 3   | MA+        |
| 4   | MA-        |
| 5   | SLO+       |
| 6   | SLO-       |
| 7   | SET        |
| 8   | DIR        |



## Terminal significance

|     |  |
|-----|--|
| SET | <p>Zero setting input.<br/>Input for zero setting at any position.<br/>The zero setting operation is triggered by a high pulse and has to be in line with the selected direction of rotation (DIR).<br/>Impulse duration &gt;100 ms.<br/>Connect to 0 V after zero setting for maximum interference immunity.</p>  |
| DIR | <p>Counting direction input.<br/>This input is standard on high.<br/>DIR-High means ascending output data with clockwise shaft rotation when looking at flange.<br/>DIR-Low means ascending values with counterclockwise shaft rotation when looking at flange.<br/>For maximum interference immunity connect to +Vs respectively 0 V depending on counting direction.</p> |

## Trigger level

| BiSS C       | Circuit                               |
|--------------|---------------------------------------|
| BiSS C-Clock | RS422 with terminating resistor 120 Ω |
| BiSS C-Data  | RS422                                 |

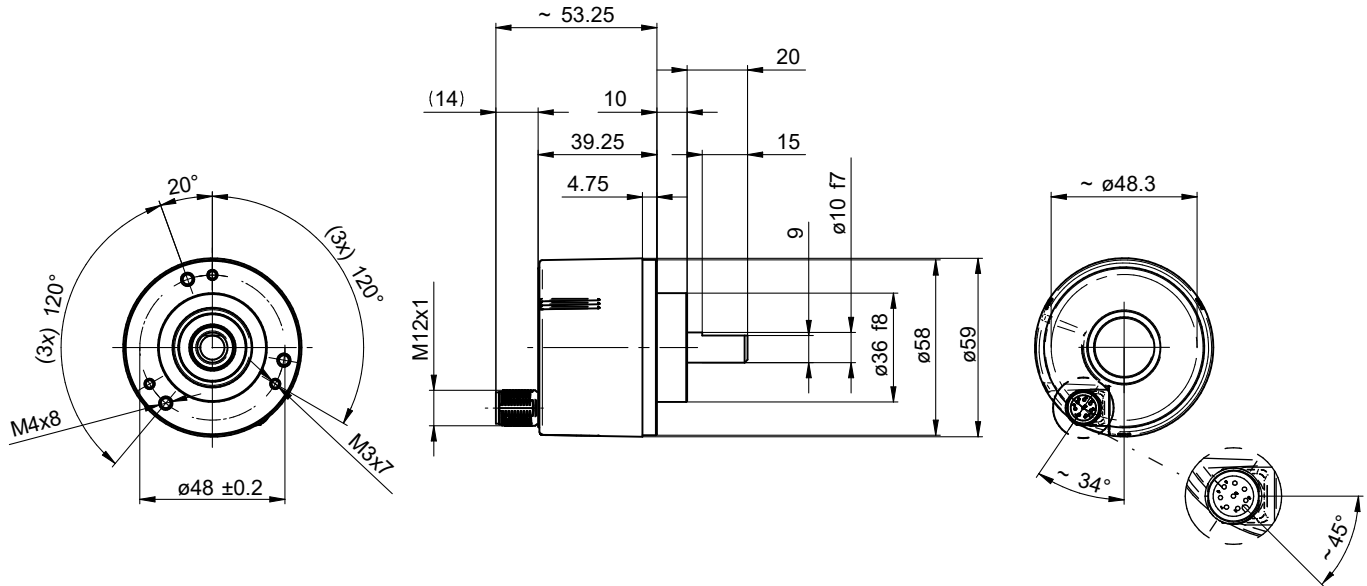
| Control inputs   | Input circuit |
|------------------|---------------|
| Input level High | >0.7 UB       |
| Input level Low  | <0.3 UB       |
| Input resistance | 10 kΩ         |

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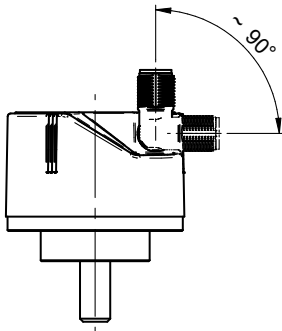
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## Dimensions



Clamping flange, connector M12



Clamping flange, flexible connector M12

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## Accessories

### Mounting accessories

|          |  |
|----------|--|
| 11101781 | Double loops coupling (D1=10 / D2=10)              |
| 11050507 | Bellows coupling (D1=06 / D2=10)                   |
| 11065923 | Coupling CPS25 (L=19, D1=10 / D2=10)               |
| 11065922 | Coupling CPS25 (L=19, D1=10 / D2=06)               |
| 10141132 | Spring washer coupling (D1=6 / D2=10)              |
| 10141133 | Spring washer coupling (D1=10 / D2=10)             |
| 11069337 | Coupling CPS37 (L=24, D1=10 / D2=06)               |
| 11069340 | Coupling CPS37 (L=24, D1=10 / D2=10)               |
| 11053277 | Bellows coupling (D1=10 / D2=10)                   |
| 11101893 | Spring encoder arm                                 |
| 10125051 | Mounting adaptor for encoders with clamping flange |