

EAM580-SY - EtherCAT

Solid shaft with synchro flange

Magnetic multiturn encoders 14 bit ST / 16 bit MT

Overview

- Encoder multiturn / EtherCAT
- Precise magnetic sensing
- Resolution max. 30 bit (14 bit ST, 16 bit MT)
- Angular accuracy up to $\pm 0.15^\circ$
- High protection up to IP 67
- High resistance to shock and vibrations
- LED status display



Technical data

Technical data - electrical ratings

| | |
|-----------------------|--|
| Voltage supply | 10...30 VDC |
| Consumption typ. | 90 mA (24 VDC, w/o load) |
| Initializing time | ≤ 10 s after power on |
| Interface | EtherCAT |
| Function | Multiturn |
| Steps per revolution | ≤ 16384 / 14 bit |
| Number of revolutions | ≤ 65536 / 16 bit |
| Absolute accuracy | $\pm 0.15^\circ$ (+20 $\pm 15^\circ$ C) $\pm 0.25^\circ$ (-40...+85 $^\circ$ C) |
| Sensing method | Magnetic |
| Interference immunity | EN 61000-6-2 |
| Emitted interference | EN 61000-6-4 |
| Status indicator | 4x LED integrated in housing |
| Approval | UL approval / E217823 |

Technical data - mechanical design

| | |
|---------------|---|
| Size (flange) | $\varnothing 58$ mm |
| Shaft type | $\varnothing 6 \times 10$ mm, solid shaft with flat |
| Flange | Synchro flange |

Technical data - mechanical design

| | |
|-----------------------|--|
| Protection EN 60529 | IP 65 (without shaft seal) IP 67 (with shaft seal) |
| Operating speed | ≤ 6000 rpm |
| Starting torque | ≤ 2 Ncm (+20 $^\circ$ C, IP 65) ≤ 2.5 Ncm (+20 $^\circ$ C, IP 67) |
| Moment of inertia | 15.38 gcm ² |
| Admitted shaft load | ≤ 40 N axial ≤ 80 N radial |
| Material | Housing: steel zinc-coated Flange: aluminium Hollow shaft: stainless steel |
| Operating temperature | -40...+85 $^\circ$ C (see general information) |
| Relative humidity | 95 % |
| Resistance | EN 60068-2-6 Vibration 30 g, 10-2000 Hz EN 60068-2-27 Shock 250 g, 6 ms |
| Weight approx. | 360 g |
| Connection | Flange connector 3xM12 |

Optional

- Protection against corrosion CX (C5-M)

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General information

Self-heating interrelated to speed, protection, attachment method and ambient conditions as well electronics and supply voltage must be considered for precise thermal dimensioning. Self-heating is supposed to approximate 6 K (IP 65 protection) respectively 12 K (IP 67 protection) per 1000 rpm. Operating the encoder close to the maximum limits requires measuring the real prevailing temperature at the encoder flange.

Terminal assignment

Voltage supply

| Pin | Assigned | Significance |
|-----|----------|----------------|
| 1 | +Vs | Voltage supply |
| 2 | d.u. | Do not connect |
| 3 | 0 V | Ground |
| 4 | d.u. | Do not connect |



1 x flange connector M12 (male), A-coded

EtherCAT (data line)

| Pin | Assigned | Significance |
|-----|----------|--------------------|
| 1 | TxD+ | Transmission data+ |
| 2 | RxD+ | Receiving data+ |
| 3 | TxD- | Transmission data- |
| 4 | RxD- | Receiving data- |



2 x flange connector M12 (female), D-coded

EtherCAT features

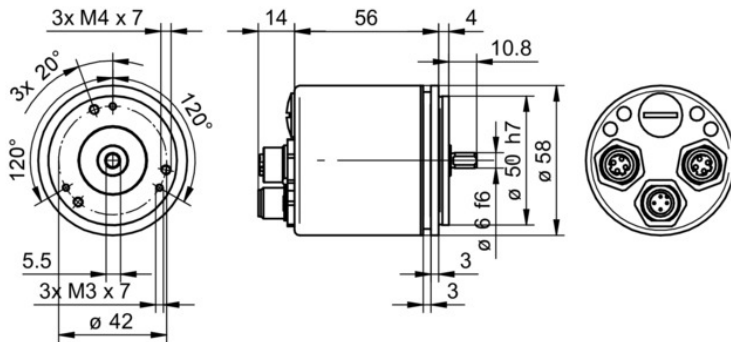
| | |
|----------------------|---|
| Bus protocol | EtherCAT |
| Device profile | Encoder-Profil CANopen® CiA 406 Vers. 4.0.2 from 18.08.2016 |
| Operating modes | Free Run, Synchronous with SM3 Event, DC Mode (Distributed Clocks) |
| Cycle time | Min. 62.5 µs |
| Features | <ul style="list-style-type: none"> - Gear factor (round shaft) and endless loop mode - Time stamp (time of position data acquisition) - Plausibility check of the configurable parameters - Comprehensive diagnostic functions - Preset button for position - File Access over EtherCAT (FoE) |
| Process data | <ul style="list-style-type: none"> - Position value 32 bits input data with/without speed 32 bits - Extensive process data mapping |
| LED status indicator | 2x Link/Activity, RUN, ERR |

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Dimensions



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Ordering reference

| | | | | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|---|---|
| | EAM580 | - | S | Y | 6 | . | # | Y | EC | . | 14 | 16 | 0 | . | A |
| Product | EAM580 | | | | | | | | | | | | | | |
| Shaft type | Solid shaft | | S | | | | | | | | | | | | |
| Flange (shaft) | Synchro flange, centering collar ø50 x 4 mm, flute ø53 mm, pitch circle diameter ø42 - 3xM3/3xM4 | | | Y | | | | | | | | | | | |
| Shaft | ø6 x 10 mm, with flat | | | | 6 | | | | | | | | | | |
| Protection class | IP 65 | | | | | | | 5 | | | | | | | |
| | IP 67 | | | | | | | 7 | | | | | | | |
| Connection | Flange socket axial M12, 4-pin, female contacts, CW, 1 x M12, 4-pin, male contacts, CCW | | | | | | | | Y | | | | | | |
| Voltage supply / interface | 10...30 VDC, EtherCAT | | | | | | | | | EC | | | | | |
| Resolution Singleturn | 14 Bit | | | | | | | | | | | 14 | | | |
| Resolution Multiturn | 16 Bit | | | | | | | | | | | | 16 | | |
| Resolution supplement | No option | | | | | | | | | | | | | 0 | |
| Operating temperature | -40...+85 °C | | | | | | | | | | | | | | A |

Accessories

Mounting accessories

| | |
|----------|---|
| 10252773 | Clamp set ø15 mm |
| 11050507 | Bellows coupling (D1=06 / D2=10) |
| 11065922 | Coupling CPS25 (L=19, D1=10 / D2=06) |
| 11065916 | Coupling CPS25 (L=19, D1=06 / D2=06) |
| 10141132 | Spring washer coupling (D1=6 / D2=10) |
| 10141131 | Spring washer coupling (D1=6 / D2=6) |
| 11069333 | Coupling CPS37 (L=24, D1=06 / D2=06) |
| 11069337 | Coupling CPS37 (L=24, D1=10 / D2=06) |
| 10117667 | Mounting adaptor |
| 10117668 | Set of eccentric fixings for mounting clamp (10117667) |