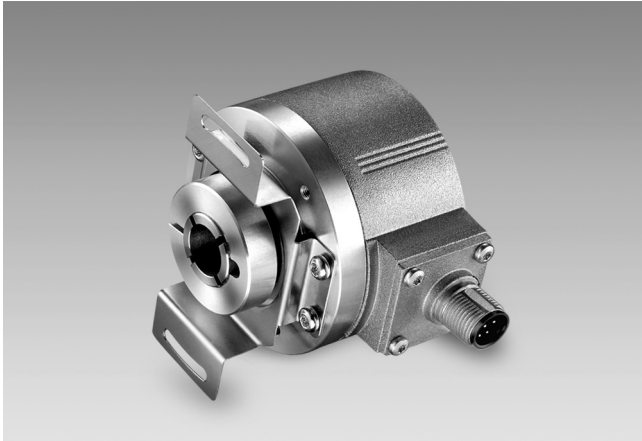


Incremental encoders

With blind or through hollow shaft
100...5000 pulses per revolution

EIL580 - hollow shaft



EIL580 with blind hollow shaft

Technical data - electrical ratings

| | |
|-----------------------------|--|
| Voltage supply | 5 VDC \pm 5 % 8...30 VDC 4.75...30 VDC |
| Reverse polarity protection | Yes |
| Short-circuit proof | Yes (HTL) Yes (TTL, max. 1 s and 1 signal) |
| Consumption w/o load | \leq 70 mA |
| Pulses per revolution | 100...5000 |
| Phase shift | 90° \pm 10° |
| Scan ratio | 40...60 % |
| Reference signal | Zero pulse, width 90° \pm 10 % |
| Sensing method | Optical |
| Output frequency | \leq 300 kHz (TTL) \leq 160 kHz (HTL) |
| Output signals | A+, B+, R+, A-, B-, R- |
| Output stages | TTL/RS422 HTL/push-pull |
| Interference immunity | DIN EN 61000-6-2 |
| Emitted interference | DIN EN 61000-6-3 |
| Approval | UL 508 / CSA 22.2 |

Features

- Size \varnothing 58 mm
- Precise optical sensing
- Output signal level TTL or HTL
- Blind or through hollow shaft, \varnothing 8...15 mm
- Connection axial, radial or tangential
- Pulses per revolution up to 5000
- High protection up to IP 67
- High resistance to shock and vibrations

Technical data - mechanical design

| | |
|-------------------------|--|
| Size (flange) | \varnothing 58 mm |
| Motor shaft tolerance | 0.2 mm axial 0.03 mm radial |
| Protection DIN EN 60529 | IP 65 (without shaft seal), IP 67 (with shaft seal) |
| Starting torque | \leq 0.02 Nm (+20 °C, IP 65) \leq 0.025 Nm (+20 °C, IP 67) |
| Materials | Housing: aluminium die-cast Flange: aluminium |
| Operating temperature | -40...+85 °C |
| Relative humidity | 90 % non-condensing |
| Resistance | DIN EN 60068-2-6 Vibration 30 g, 10-2000 Hz DIN EN 60068-2-27 Shock 250 g, 6 ms |
| Connection | Flange connector M12, 8-pin Flange connector M23, 12-pin Cable |
| Weight approx. | 300 g |

EIL580 - blind hollow shaft

| | |
|-----------------|--|
| Shaft type | \varnothing 8...15 mm (blind hollow shaft) |
| Operating speed | \leq 6000 rpm (+20 °C, IP 67) \leq 8000 rpm (+20 °C, IP 65) |

EIL580 - through hollow shaft

| | |
|-----------------|--|
| Shaft type | \varnothing 8...15 mm (through hollow shaft) |
| Operating speed | \leq 3000 rpm (+20 °C, IP 67) \leq 6000 rpm (+20 °C, IP 65) |

Incremental encoders

With blind or through hollow shaft
100...5000 pulses per revolution

EIL580 - hollow shaft

Part number

Blind hollow shaft

EIL580- **B** **.A**

Pulse number - see table

Voltage supply / output stages

- E 5 VDC, TTL/RS422, 6 channels**
- H 8...30 VDC, TTL/RS422, 6 channels
- N 8...30 VDC, HTL/push-pull, 6 channels**
- Q 4.75...30 VDC, HTL/push-pull, 6 channels

Connection

- R Cable radial, 1 m**
- L Cable radial, 2 m
- F Flange connector M23, 12-pin, radial, male, ccw**
- B Flange connector M12, 8-pin, radial, male, ccw
- T Cable axial, 1 m
- U Cable axial, 2 m
- D Flange connector M23, 12-pin, axial, male, ccw
- A Flange connector M12, 8-pin, axial, male, ccw
- P Cable tangential, 1 m
- Q Cable tangential, 2 m

Protection

- 5 IP 65**
- 7 IP 67

Specification hollow shaft

- 08 ø8 mm, clamping ring at A side | U4 ø1/2" (12.7 mm), clamping ring at A side
- U3 ø3/8" (9,52 mm), clamping ring at A side | **14 ø14 mm, clamping ring at A side**
- 10 ø10 mm, clamping ring at A side** | **15 ø15 mm, clamping ring at A side**
- 12 ø12 mm, clamping ring at A side**

Flange

- N Without stator coupling
- T With stator coupling ø63 mm**
- P Torque pin 3 mm, axial/radial

Shaft type

- B Blind hollow shaft

Printed in **bold** = standard items (up to the quantity of 10 will be supplied within 5 working days).

Pulse number

| | | | | |
|------------|------------|-------------|-------------|-------------|
| 100 | 300 | 720 | 1250 | 2500 |
| 120 | 360 | 800 | 1440 | 3000 |
| 150 | 400 | 900 | 1500 | 3600 |
| 200 | 500 | 1000 | 1800 | 4000 |
| 250 | 512 | 1024 | 2000 | 4096 |
| 256 | 600 | 1200 | 2048 | 5000 |

Stock items

| | |
|-------------------------|-------------------------|
| EIL580-BT12.5FE.01024.A | EIL580-BT12.5FE.02048.A |
| EIL580-BT12.5FN.01024.A | EIL580-BT12.5FN.02048.A |
| EIL580-BT14.5FE.01024.A | EIL580-BT14.5FE.02048.A |
| EIL580-BT14.5FN.01024.A | EIL580-BT14.5FN.02048.A |

Numerous stock items in single quantity will be supplied within 24 hours respectively one day ex works.

Incremental encoders

With blind or through hollow shaft

100...5000 pulses per revolution

EIL580 - hollow shaft

Part number

Through hollow shaft

EIL580- T A

Pulse number - see table

Voltage supply / output stages

- E 5 VDC, TTL/RS422, 6 channels**
- H 8...30 VDC, TTL/RS422, 6 channels
- N 8...30 VDC, HTL/push-pull, 6 channels**
- Q 4.75...30 VDC, HTL/push-pull, 6 channels

Connection

- R Cable radial, 1 m**
- L Cable radial, 2 m
- F Flange connector M23, 12-pin, radial, male, ccw**
- B Flange connector M12, 8-pin, radial, male, ccw
- P Cable tangential, 1 m
- Q Cable tangential, 2 m

Protection

- 5 IP 65**
- 7 IP 67

Specification hollow shaft

- | | | | |
|-----------|--|--|---|
| 08 | ø8 mm, clamping ring at A side | | 15 ø15 mm, clamping ring at A side |
| U3 | ø3/8" (9,52 mm), clamping ring at A side | | V3 ø3/8" (9,52 mm), clamping ring at B side |
| 10 | ø10 mm, clamping ring at A side | | B0 ø10 mm, clamping ring at B side |
| 12 | ø12 mm, clamping ring at A side | | B2 ø12 mm, clamping ring at B side |
| U4 | ø1/2" (12.7 mm), clamping ring at A side | | V4 ø1/2" (12.7 mm), clamping ring at B side |
| 14 | ø14 mm, clamping ring at A side | | B4 ø14 mm, clamping ring at B side |

Flange

- N Without stator coupling
- T With stator coupling ø63 mm**
- P Torque pin 3 mm, axial/radial

Shaft type

- T Through hollow shaft

Printed in **bold** = standard items (up to the quantity of 10 will be supplied within 5 working days).

Pulse number

| | | | | |
|------------|------------|-------------|-------------|-------------|
| 100 | 300 | 720 | 1250 | 2500 |
| 120 | 360 | 800 | 1440 | 3000 |
| 150 | 400 | 900 | 1500 | 3600 |
| 200 | 500 | 1000 | 1800 | 4000 |
| 250 | 512 | 1024 | 2000 | 4096 |
| 256 | 600 | 1200 | 2048 | 5000 |

Stock items

| | |
|-------------------------|-------------------------|
| EIL580-TT12.5FE.01024.A | EIL580-TT12.5FE.02048.A |
| EIL580-TT12.5FN.01024.A | EIL580-TT12.5FN.02048.A |
| EIL580-TT14.5FE.01024.A | EIL580-TT14.5FE.02048.A |
| EIL580-TT14.5FN.01024.A | EIL580-TT14.5FN.02048.A |

Numerous stock items in single quantity will be supplied within 24 hours respectively one day ex works.

Incremental encoders

With blind or through hollow shaft

100...5000 pulses per revolution

EIL580 - hollow shaft

Accessories

Connectors and cables

| | |
|----------|---|
| 10127844 | Connection cable 2 m shielded with female connector M12, 8-pin, straight (ESG 34FH0200G) |
| 10129332 | Connection cable 5 m shielded with female connector M12, 8-pin, straight (ESG 34FH0500G) |
| 10129333 | Connection cable 10 m shielded with female connector M12, 8-pin, straight (ESG 34FH1000G) |
| 11053961 | Connection cable 2 m shielded with female connector M12, 8-pin, angled (ESW 33FH0200G) |
| 11053962 | Connection cable 5 m shielded with female connector M12, 8-pin, angled (ESW 33FH0500G) |
| 10170054 | Connection cable 10 m shielded with female connector M12, 8-pin, angled (ESW 33FH1000G) |
| 10164705 | Connector M23, 12-pin |
| 11095302 | Connection cable 1 m shielded with female connector M23, 12-pin |
| 11100408 | Connection cable 2 m shielded with female connector M23, 12-pin |
| 11100430 | Connection cable 5 m shielded with female connector M23, 12-pin |
| 11100431 | Connection cable 10 m shielded with female connector M23, 12-pin |

Mounting accessories for EIL580 - blind hollow shaft

| | |
|----------|--|
| 11066081 | Torque arm, 1-arm, bolt circle $\varnothing 82$ mm, mounting M4 (mounting kit 003) |
| 11066083 | Torque arm, 1-arm, bolt circle $\varnothing 74...94$ mm, mounting M4/M5 (mounting kit 006) |
| 11073119 | Torque arm, 1-arm, bolt circle $\varnothing 65.5...281$ mm, mounting M4, can be cut to length (mounting kit 021) |
| 11067367 | Torque arm, 1-arm, bolt circle $\varnothing 74...94$ mm, mounting M6 (mounting kit 028) |
| 11113210 | Torque arm, 1-arm, bolt circle $\varnothing 63...94$ mm, mounting M4 (mounting kit 047) |
| 11129153 | Torque arm, 1-arm open, bolt circle $\varnothing 41...54$ mm, mounting M4 (mounting kit 200) |
| 11100198 | Stator coupling, 2-armed, bolt circle $\varnothing 63$ mm, mounting M3 (mounting kit 046) |
| 11106627 | Fan cover clip 8 mm |
| 11094674 | Clamping ring 12/31/ 8 M3 8.8 for EIL580 hollow shaft $\varnothing 8...10$ mm for clamping at A or B side |

Mounting accessories for EIL580 - blind hollow shaft

| | |
|----------|---|
| 11094675 | Clamping ring 17/31/ 8 M3 8.8 for EIL580 hollow shaft $\varnothing 12...15$ mm for clamping at A side |
|----------|---|

Mounting accessories for EIL580 - through hollow shaft

| | |
|----------|--|
| 11066081 | Torque arm, 1-arm, bolt circle $\varnothing 82$ mm, mounting M4 (mounting kit 003) |
| 11066083 | Torque arm, 1-arm, bolt circle $\varnothing 74...94$ mm, mounting M4/M5 (mounting kit 006) |
| 11073119 | Torque arm, 1-arm, bolt circle $\varnothing 65.5...281$ mm, mounting M4, can be cut to length (mounting kit 021) |
| 11067367 | Torque arm, 1-arm, bolt circle $\varnothing 74...94$ mm, mounting M6 (mounting kit 028) |
| 11113210 | Torque arm, 1-arm, bolt circle $\varnothing 63...94$ mm, mounting M4 (mounting kit 047) |
| 11129153 | Torque arm, 1-arm open, bolt circle $\varnothing 41...54$ mm, mounting M4 (mounting kit 200) |
| 11100198 | Stator coupling, 2-armed, bolt circle $\varnothing 63$ mm, mounting M3 (mounting kit 046) |
| 11106627 | Fan cover clip 8 mm |
| 11094674 | Clamping ring 12/31/ 8 M3 8.8 for EIL580 hollow shaft $\varnothing 8...10$ mm for clamping at A or B side |
| 11094675 | Clamping ring 17/31/ 8 M3 8.8 for EIL580 hollow shaft $\varnothing 12...15$ mm for clamping at A side |
| 11123483 | Clamping ring 16/31/ 8 M3 8.8 for EIL580 hollow shaft $\varnothing 12...14$ mm for clamping at B side |

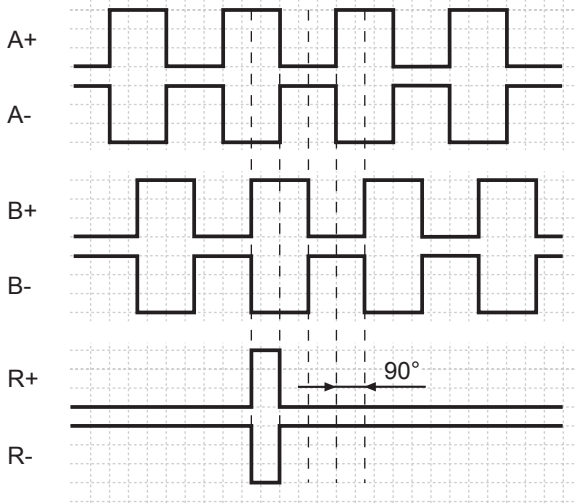
Incremental encoders

With blind or through hollow shaft
100...5000 pulses per revolution

EIL580 - hollow shaft

Output signals

Clockwise rotating direction when looking at flange.



Trigger level

| Outputs | TTL/RS422 |
|-------------------|----------------------|
| Output level High | $\geq 2.5 \text{ V}$ |
| Output level Low | $\leq 0.5 \text{ V}$ |
| Load | $\leq 20 \text{ mA}$ |

| Outputs | HTL/Push-pull |
|-------------------|--------------------------|
| Output level High | $\geq U_B - 3 \text{ V}$ |
| Output level Low | $\leq 1.5 \text{ V}$ |
| Load | $\leq 20 \text{ mA}$ |

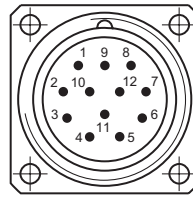
Terminal assignment

Flange connector M23, 12-pin / cable

| Pin | Core color | Assignment |
|-----|------------|------------|
| 1 | pink | B- |
| 2 | – | – |
| 3 | blue | R+ |
| 4 | red | R- |
| 5 | green | A+ |
| 6 | yellow | A- |
| 7 | – | – |
| 8 | grey | B+ |
| 9 | – | – |
| 10 | white | GND |
| 11 | – | – |
| 12 | brown | UB |

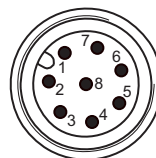
Screen: Connected to housing

Cable data: PVC, 4x2x0.14 mm², bending radius >32.5 mm
Outer diameter 6.5 mm



Flange connector M12, 8-pin

| Pin | Assignment |
|-----|------------|
| 1 | GND |
| 2 | UB |
| 3 | A+ |
| 4 | A- |
| 5 | B+ |
| 6 | B- |
| 7 | R+ |
| 8 | R- |



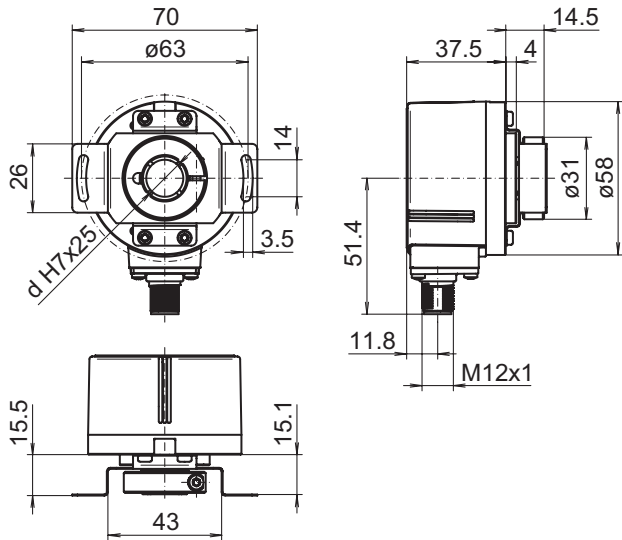
Incremental encoders

With blind or through hollow shaft
100...5000 pulses per revolution

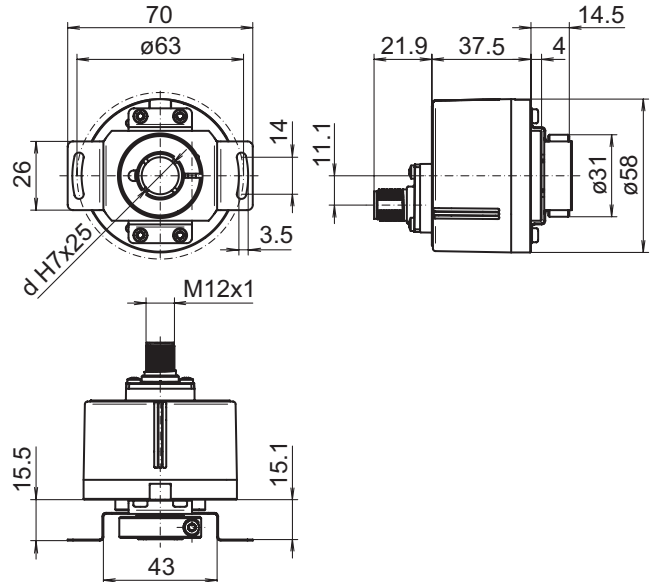
EIL580 - hollow shaft

Dimensions

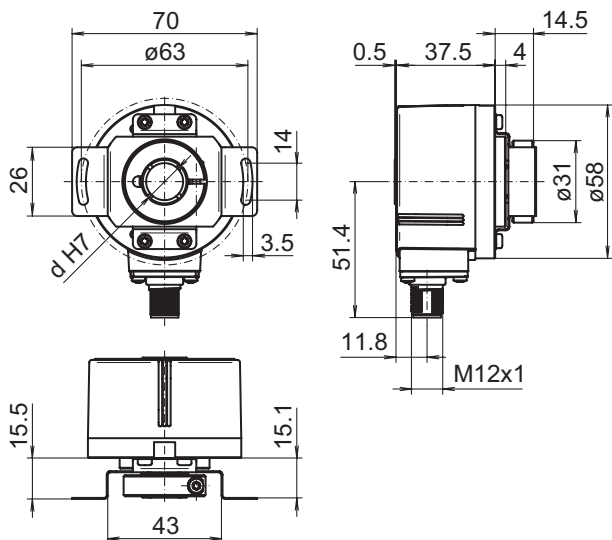
Clamping ring at A-side:
Blind hollow shaft, flange connector M12 radial



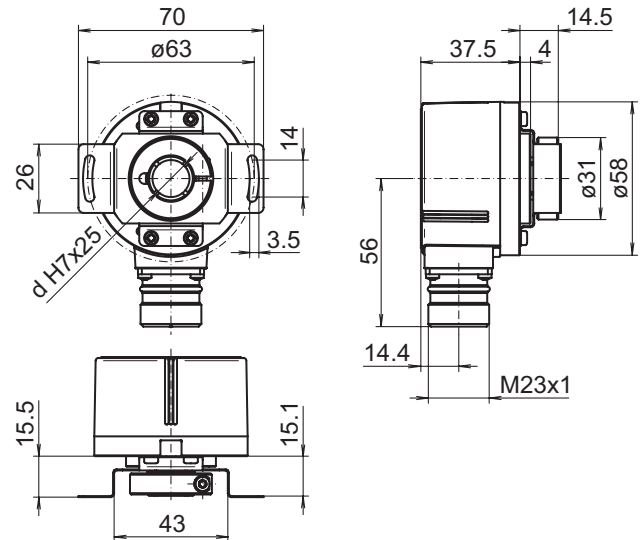
Clamping ring at A-side:
Blind hollow shaft, flange connector M12 axial



Clamping ring at A-side:
Through hollow shaft, flange connector M12 radial



Clamping ring at A-side:
Blind hollow shaft, flange connector M23 radial



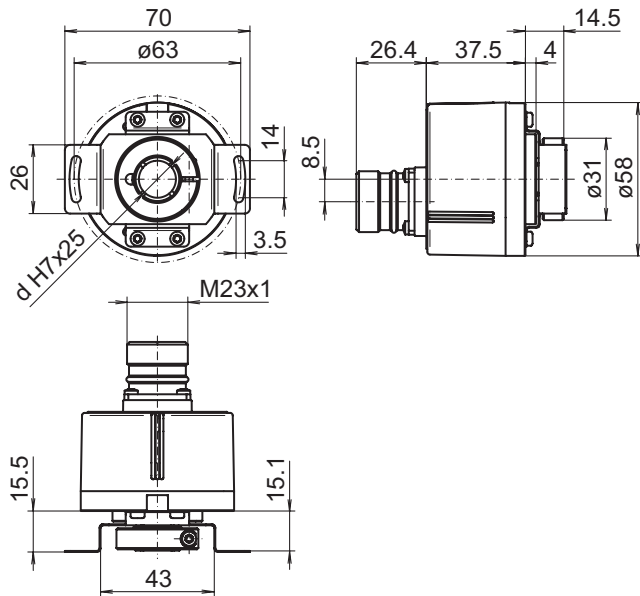
Incremental encoders

With blind or through hollow shaft
100...5000 pulses per revolution

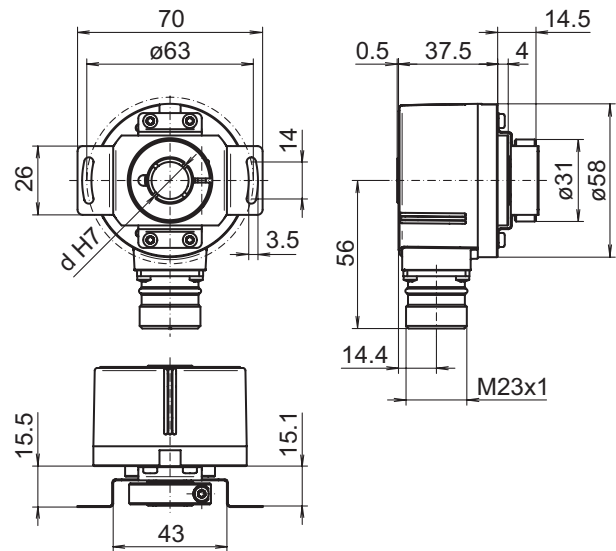
EIL580 - hollow shaft

Dimensions

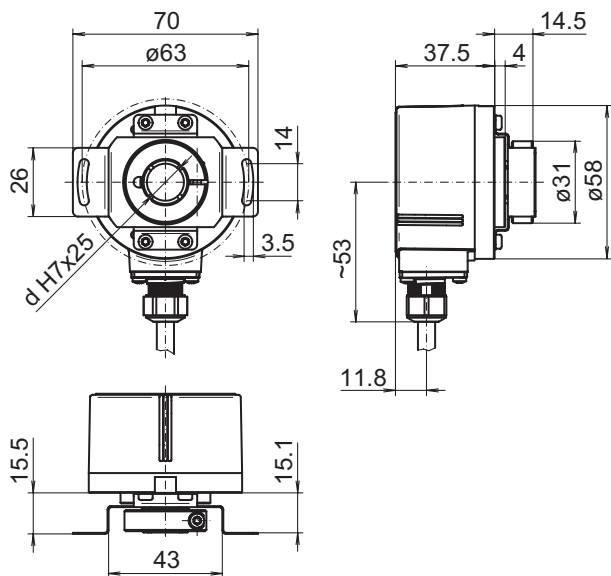
Clamping ring at A-side:
Blind hollow shaft, flange connector M23 axial



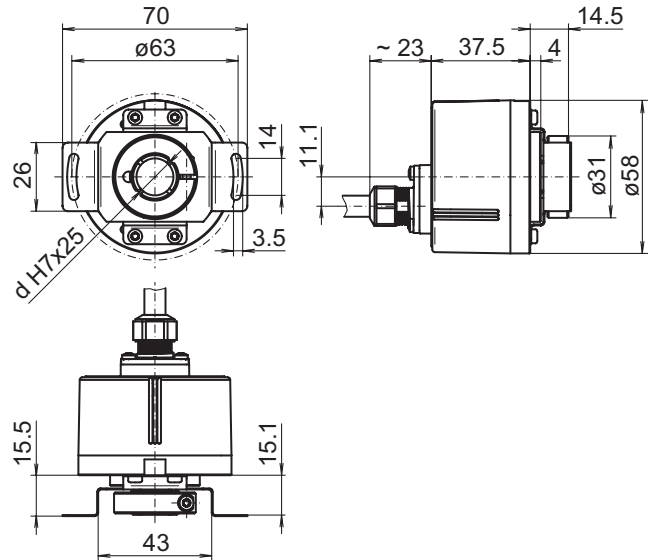
Clamping ring at A-side:
Through hollow shaft, flange connector M23 radial



Clamping ring at A-side:
Blind hollow shaft, cable radial



Clamping ring at A-side:
Blind hollow shaft, cable axial



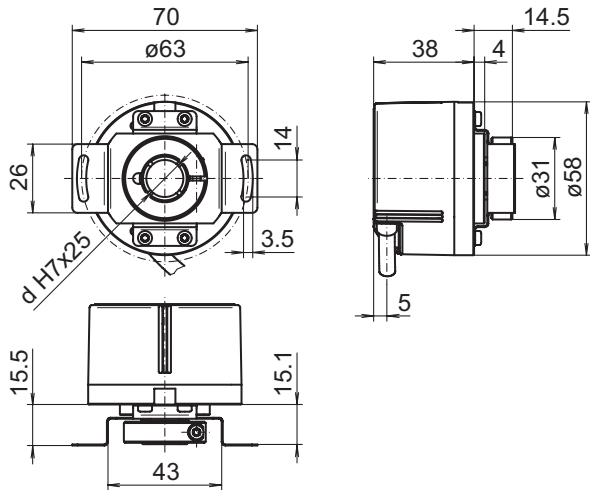
Incremental encoders

With blind or through hollow shaft
100...5000 pulses per revolution

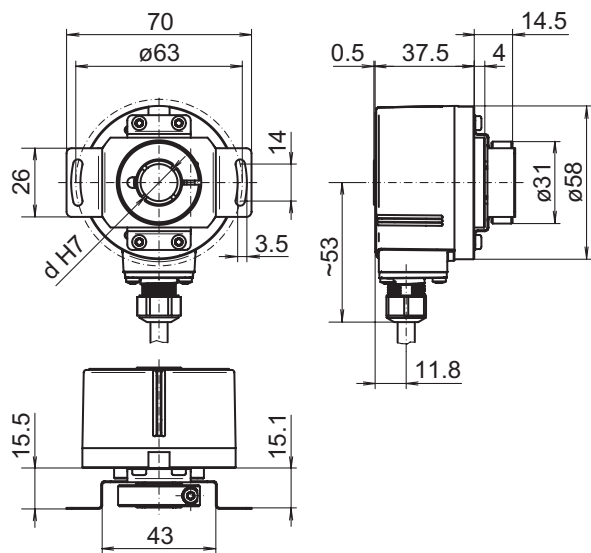
EIL580 - hollow shaft

Dimensions

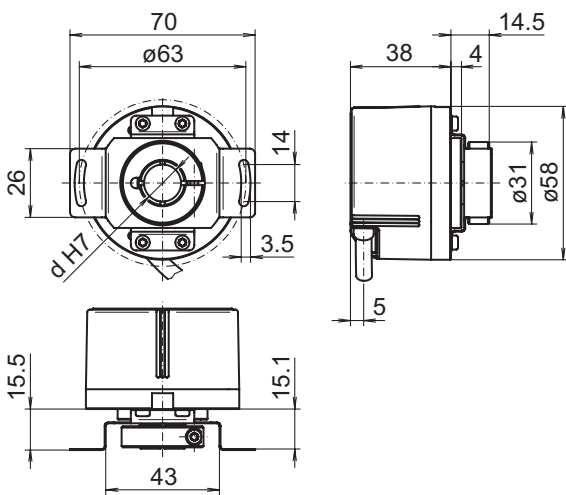
Clamping ring at A-side:
Blind hollow shaft, cable tangential



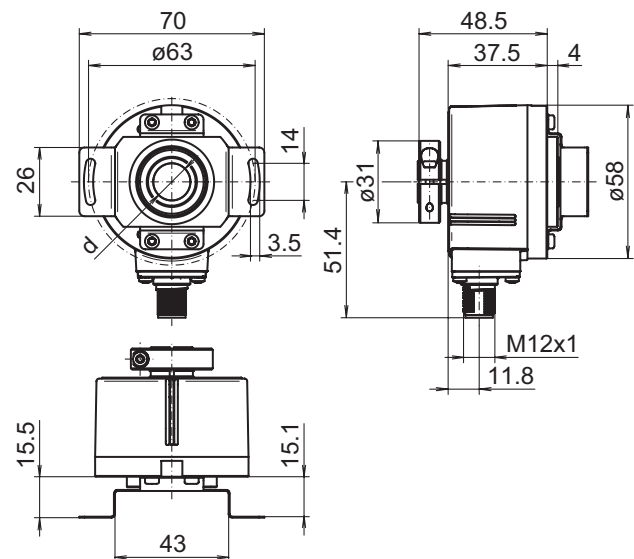
Clamping ring at A-side:
Through hollow shaft, cable radial



Clamping ring at A-side:
Through hollow shaft, cable tangential



Clamping ring at B-side:
Through hollow shaft, flange connector M12 radial



d H7: $\varnothing 10$, $\varnothing 12$, $\varnothing 14$
d G7: $\varnothing 3/8$ " ($\varnothing 9.52$), $\varnothing 1/2$ " ($\varnothing 12.7$)

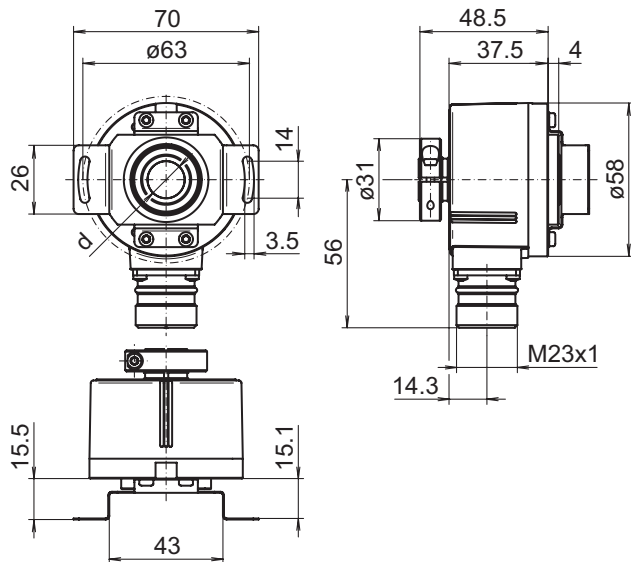
Incremental encoders

With blind or through hollow shaft
100...5000 pulses per revolution

EIL580 - hollow shaft

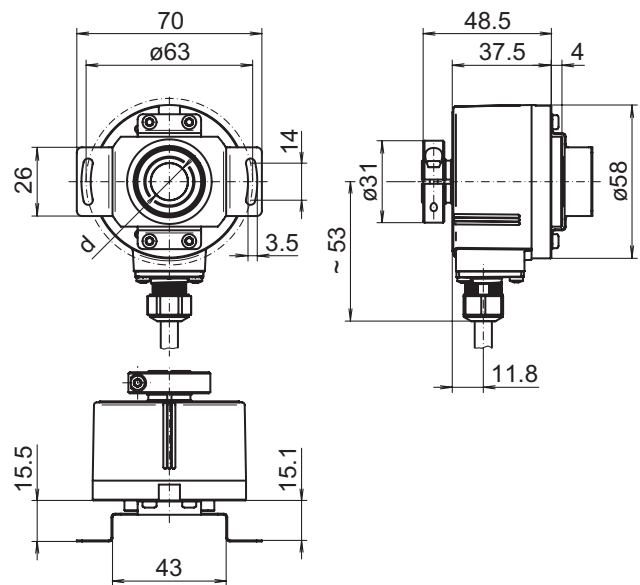
Dimensions

Clamping ring at B-side:
Through hollow shaft, flange connector M23 radial



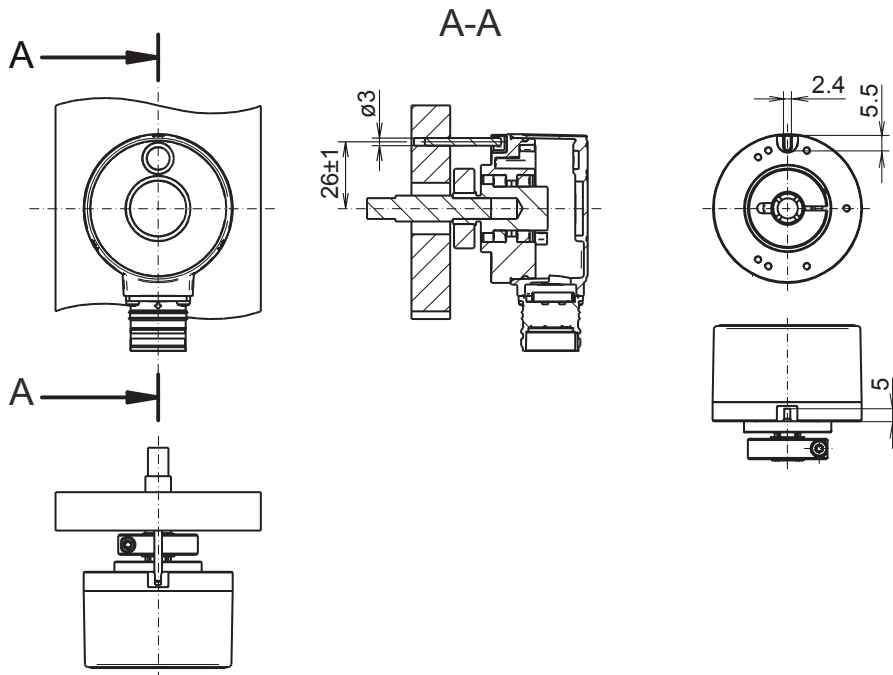
d H7: $\varnothing 10$, $\varnothing 12$, $\varnothing 14$
d G7: $\varnothing 3/8''$ ($\varnothing 9.52$), $\varnothing 1/2''$ ($\varnothing 12.7$)

Clamping ring at B-side:
Through hollow shaft, cable radial



d H7: $\varnothing 10$, $\varnothing 12$, $\varnothing 14$
d G7: $\varnothing 3/8''$ ($\varnothing 9.52$), $\varnothing 1/2''$ ($\varnothing 12.7$)

Pin torque support, axial, clamping ring at A-side



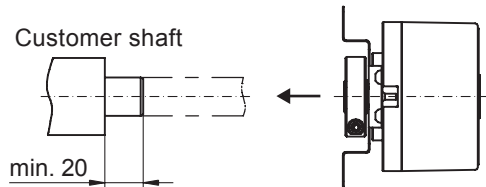
Incremental encoders

With blind or through hollow shaft
100...5000 pulses per revolution

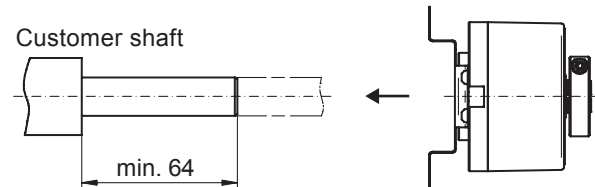
EIL580 - hollow shaft

Dimensions

Clamping ring at A-side: Through hollow shaft



Clamping ring at B-side: Through hollow shaft



Blind hollow shaft

