

# Incremental encoders

With blind or through hollow shaft  
Increments per turn 100...5000

## EIL580 - hollow shaft - Preliminary



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
Resolution (steps/turn)	100...5000
Phase shift	$90^\circ \pm 10^\circ$
Scan ratio	40...60 %
Reference signal	Zero pulse, width $90^\circ \pm 10\%$
Sensing method	Optical
Output frequency	$\leq$ 300 kHz (TTL) $\leq$ 160 kHz (HTL)
Output circuit	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

- Precise optical sensing technique with latest technology
- Electric interface TTL and HTL
- Blind or through hollow shaft
- High protection class up to IP 67
- High shock and vibration resistance
- Extended operating temperature range 4,75...30 VDC
- Increments per turn max. 5000

### Technical data - mechanical design

Dimensions (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 die-cast Solid shaft: stainless steel
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 300 g, 6 ms
Connection	Flange connector M12, 8-pin Flange connector M23, 12-pin Cable
Weight approx.	400 g

### EIL580 - blind hollow shaft

Shaft	$\varnothing$ 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	$\varnothing$ 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  
Increments per turn 100...5000

## EIL580 - hollow shaft - Preliminary

### Part number

#### Blind hollow shaft

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

Operating temperature  
A -40...+85 °C

See part number (pulses)

Voltage supply / output circuit

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

Connection

- R Cable radial, 1 m
- L Cable radial, 2 m
- F Flange connector M23, 12-pin, radial, pin terminals, ccw
- B Flange connector M12, 8-pin, radial, pin terminals, ccw

Protection

- 5 IP 65
- 7 IP 67

Specification hollow shaft

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

Flange

- S With stator coupling ø63 mm

Shaft type

- B Blind hollow shaft

### Part number (pulses)

00100	00300	00720	01250	02500
00120	00360	00800	01440	03000
00150	00400	00900	01500	03600
00200	00500	01000	01800	04000
00250	00512	01024	02000	04096
00256	00600	01200	02048	05000

# Incremental encoders

## With blind or through hollow shaft

### Increments per turn 100...5000

#### EIL580 - hollow shaft - Preliminary

##### Part number

##### Through hollow shaft

EIL580- **T** **S** . . . . . **A**

Operating temperature  
A -40...+85 °C

See part number (pulses)

Voltage supply / output circuit

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

Connection

- R Cable radial, 1 m
- L Cable radial, 2 m
- F Flange connector M23, 12-pin, radial, pin terminals, ccw
- B Flange connector M12, 8-pin, radial, pin terminals, ccw

Protection

- 5 IP 65
- 7 IP 67

Specification hollow shaft

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

Flange

- S With stator coupling ø63 mm

Shaft type

- T Through hollow shaft

##### Part number (pulses)

00100	00300	00720	01250	02500
00120	00360	00800	01440	03000
00150	00400	00900	01500	03600
00200	00500	01000	01800	04000
00250	00512	01024	02000	04096
00256	00600	01200	02048	05000

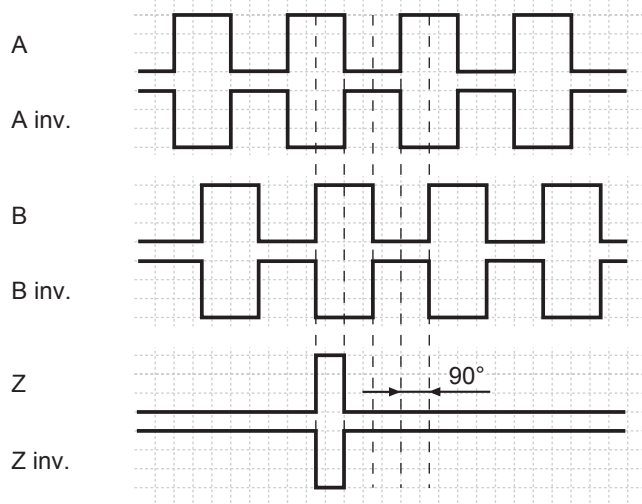
# Incremental encoders

With blind or through hollow shaft  
Increments per turn 100...5000

## EIL580 - hollow shaft - Preliminary

### Output signals

Clockwise rotating direction when looking at flange.



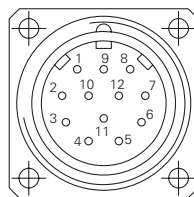
### Terminal assignment

#### Flange connector M23, 12-pin / cable

Pin	Core color	Assignment
1	pink	Signal B inv.
2	–	–
3	blue	Signal Z (zero pulse)
4	red	Signal Z inv. (zero pulse inv.)
5	green	Signal A
6	yellow	Signal A inv.
7	–	–
8	grey	Signal B
9	–	–
10	white	GND
11	–	–
12	brown	UB

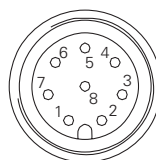
Screen: Connected to housing

Cable data: PVC, 4x2x0.14 mm<sup>2</sup>, bending radius >32.5 mm  
Outer diameter 6.5 mm



#### Flange connector M12, 8-pin

Pin	Assignment
1	GND
2	UB
3	Signal A
4	Signal A inv.
5	Signal B
6	Signal B inv.
7	Signal Z (zero pulse)
8	Signal Z inv. (zero pulse inv.)



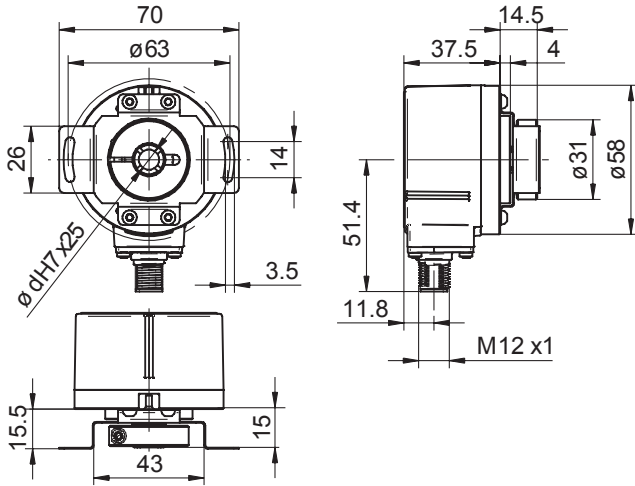
# Incremental encoders

With blind or through hollow shaft  
 Increments per turn 100...5000

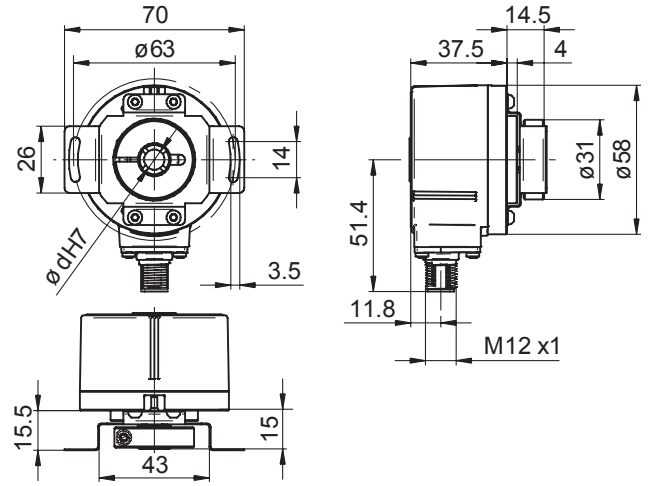
## EIL580 - hollow shaft - Preliminary

### Dimensions

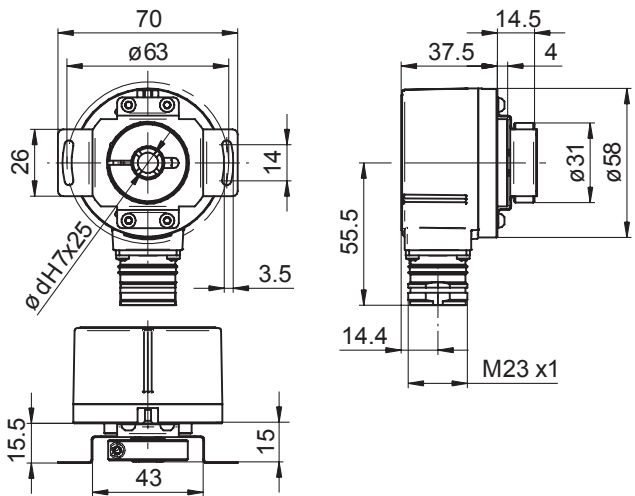
EIL580 - blind hollow shaft, flange connector M12



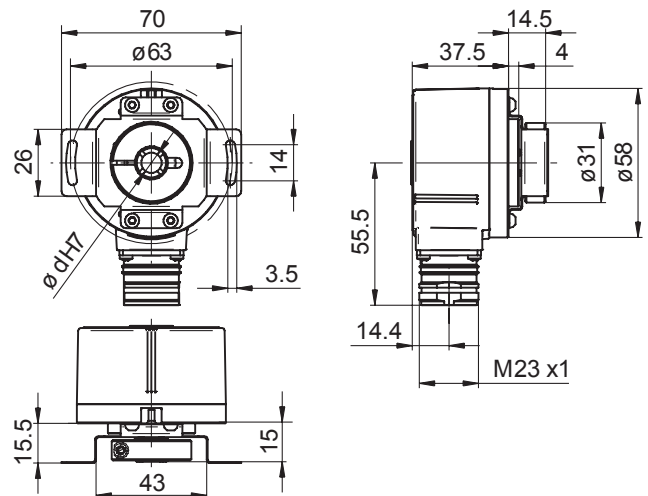
EIL580 - through hollow shaft, flange connector M12



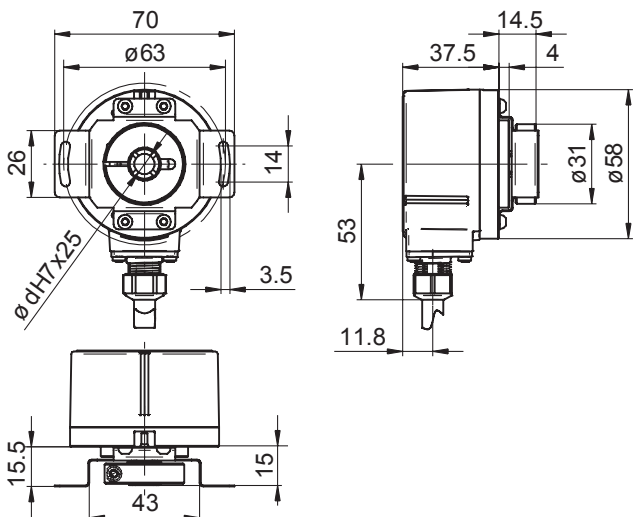
EIL580 - blind hollow shaft, flange connector M23



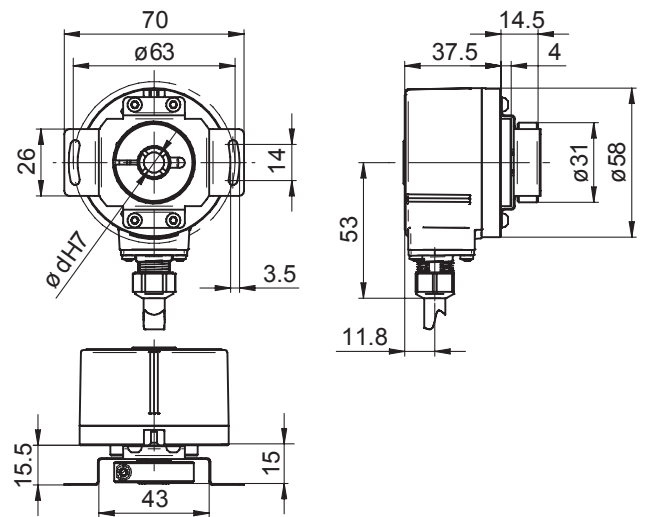
EIL580 - through hollow shaft, flange connector M23



EIL580 - blind hollow shaft, cable



EIL580 - through hollow shaft, cable



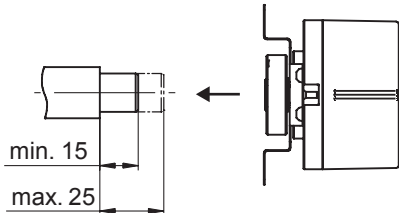
# Incremental encoders

With blind or through hollow shaft  
Increments per turn 100...5000

## EIL580 - hollow shaft - Preliminary

### Dimensions

EIL580 - blind hollow shaft, shaft mount



EIL580 - through hollow shaft, shaft mount

