

# Incremental encoders

## Solid shaft with clamping or synchro flange

### 100...5000 pulses per revolution

#### EIL580 - solid shaft



EIL580 with clamping flange

#### Features

- Precise optical sensing technique with latest technology
- Electric interface TTL and HTL
- Clamping or synchro flange
- High protection max. IP 67
- High resistance to shock and vibrations
- Wide range voltage supply 4.75...30 VDC
- Max. 5000 pulses per revolution
- Connection radial or axial

#### 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°
Duty cycle	40...60 %
Reference signal	Zero pulse, width 90° $\pm$ 10 %
Sensing method	Optical
Output frequency	$\leq$ 300 kHz (TTL) $\leq$ 160 kHz (HTL)
Output stage	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

#### Technical data - mechanical design

Size (flange)	$\varnothing$ 58 mm
Shaft loading	$\leq$ 40 N axial $\leq$ 80 N radial
Protection DIN EN 60529	IP 65 (without shaft seal), IP 67 (with shaft seal)
Operating speed	$\leq$ 6000 rpm (+20 °C, IP 67) $\leq$ 12000 rpm (+20 °C, IP 65)
Starting torque	$\leq$ 0.01 Nm (+20 °C, IP 65) $\leq$ 0.02 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.	300 g

#### EIL580 - clamping flange

Shaft type	$\varnothing$ 10 x 20 mm, solid shaft with edge (clamping flange)
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#### EIL580 - synchro flange

Shaft type	$\varnothing$ 6 x 10 mm, solid shaft with edge (synchro flange)
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### 100...5000 pulses per revolution

EIL580 - solid shaft

#### Part number

#### Clamping flange

EIL580-S C 10 . . . . . A

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

Pulse number - see table

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
- T Cable axial, 1 m
- U Cable axial, 2 m
- D Flange connector M23, 12-pin, axial, pin terminals, ccw
- A Flange connector M12, 8-pin, axial, pin terminals, ccw

Protection

- 5 IP 65**
- 7 IP 67

Specification solid shaft

10 ø10 x 20 mm, with edge

Flange

C Clamping flange, centering collar ø36 mm, M3/M4

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	<b>360</b>	800	1440	3000
150	400	900	1500	<b>3600</b>
200	500	<b>1000</b>	1800	4000
250	512	<b>1024</b>	2000	<b>4096</b>
<b>256</b>	600	1200	<b>2048</b>	5000

#### Stock items

EIL580-SC10.5FE.01024.A | EIL580-SC10.5FE.02048.A  
EIL580-SC10.5FN.01024.A | EIL580-SC10.5FN.02048.A

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

# Incremental encoders

## Solid shaft with clamping or synchro flange

### 100...5000 pulses per revolution

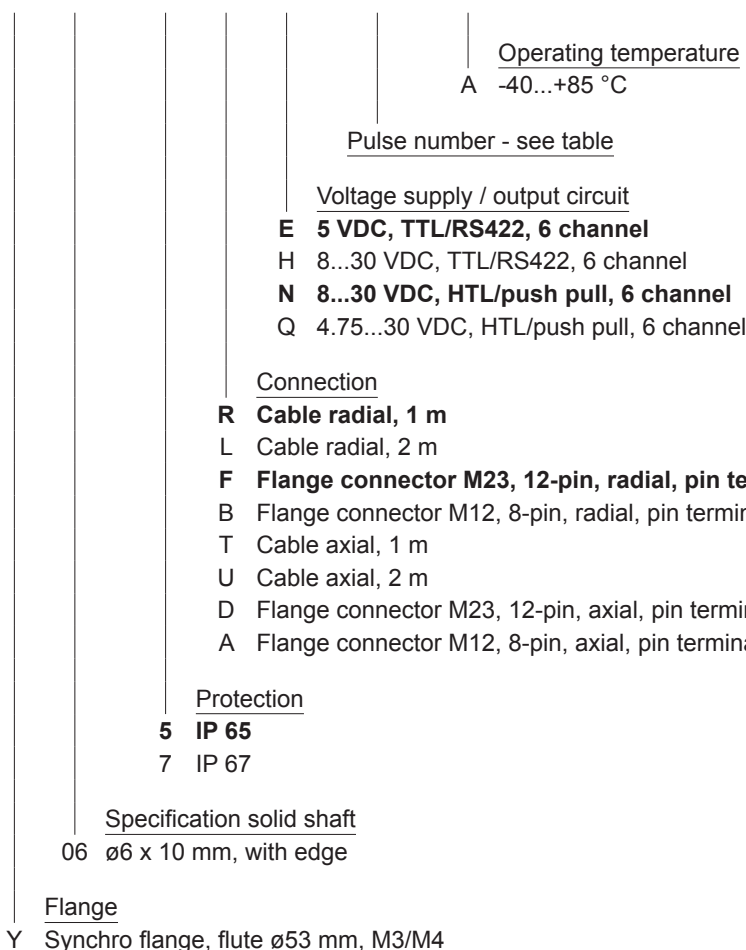
#### EIL580 - solid shaft

##### Part number

##### Synchro flange

EIL580-S 

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

##### Pulse number

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

# Incremental encoders

## Solid shaft with clamping or synchro flange

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#### EIL580 - solid shaft

Accessories		Accessories	
<b>Connectors and cables</b>		<b>Mounting accessories for EIL580 - synchro flange</b>	
10127844	Connection cable 2 m shielded with female connector M12, 8-pin, straight (ESG 34FH0200G)	11065916	Coupling CPS25 L=19 d1=06/d2=06
10129332	Connection cable 5 m shielded with female connector M12, 8-pin, straight (ESG 34FH0500G)	11065917	Coupling CPS25 L=19 d1=06/d2=08
10129333	Connection cable 10 m shielded with female connector M12, 8-pin, straight (ESG 34FH1000G)	11065922	Coupling CPS25 L=19 d1=10/d2=06
11053961	Connection cable 2 m shielded with female connector M12, 8-pin, angled (ESW 33FH0200G)	11065926	Coupling CPS25 L=19 d1=11/d2=06
11053962	Connection cable 5 m shielded with female connector M12, 8-pin, angled (ESW 33FH0500G)	11065928	Coupling CPS25 L=19 d1=12/d2=06
10170054	Connection cable 10 m shielded with female connector M12, 8-pin, angled (ESW 33FH1000G)	10141131	Spring washer coupling D1=06 / D2=06
10164705	Connector M23, 12-pin	10141132	Spring washer coupling D1=06 / D2=10
11095302	Connection cable 1 m shielded with female connector M23, 12-pin	11034139	Spring washer coupling D1=06 / D2=16
11100408	Connection cable 2 m shielded with female connector M23, 12-pin	11050507	Bellows coupling aluminium/stainless steel D1=06 / D2=10
11100430	Connection cable 5 m shielded with female connector M23, 12-pin	10117667	Mounting adaptor for encoders with synchro flange
11100431	Connection cable 10 m shielded with female connector M23, 12-pin	10117668	Set of eccentric fixings for mounting clamp (10117667) with 3x eccentric fixings, screws and nuts
<b>Mounting accessories for EIL580 - clamping flange</b>		11065545	Set of eccentric fixings type A
11065915	Coupling CPS25 L=19 d1=04/d2=10	10158124	Bearing flange for encoders with synchro flange (Z 119.035)
11065918	Coupling CPS25 L=19 d1=07/d2=10	For matching measuring wheels please see chapter accessories, "measuring wheels" (MR).	
11065920	Coupling CPS25 L=19 d1=08/d2=10		
11065921	Coupling CPS25 L=19 d1=09/d2=10		
11065922	Coupling CPS25 L=19 d1=10/d2=06		
11065923	Coupling CPS25 L=19 d1=10/d2=10		
11065924	Coupling CPS25 L=19 d1=10/d2=11		
11065925	Coupling CPS25 L=19 d1=10/d2=12		
10141132	Spring washer coupling D1=06 / D2=10		
10141133	Spring washer coupling D1=10 / D2=10		
11034138	Spring washer coupling D1=10 / D2=16		
11034140	Spring washer coupling D1=10 / D2=14		
11034141	Spring washer coupling D1=10 / D2=12		
11050507	Bellows coupling aluminium/stainless steel D1=06 / D2=10		
11101781	Double loops coupling D1=10 / D2=10		
10125051	Mounting adaptor for encoders with clamping flange		
11065545	Set of eccentric fixings type A		
11101893	Spring encoder arm		

# Incremental encoders

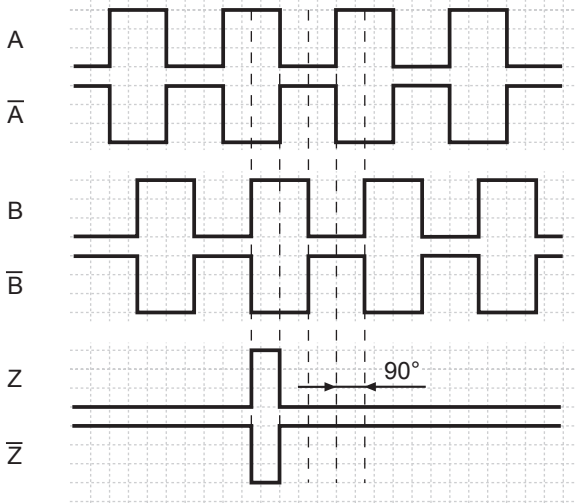
Solid shaft with clamping or synchro flange

100...5000 pulses per revolution

## EIL580 - solid 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	$\leq 20 \text{ mA}$

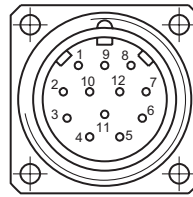
### Terminal assignment

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

Pin	Core color	Assignment
1	pink	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

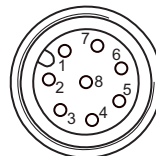
Screen: Connected to housing

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

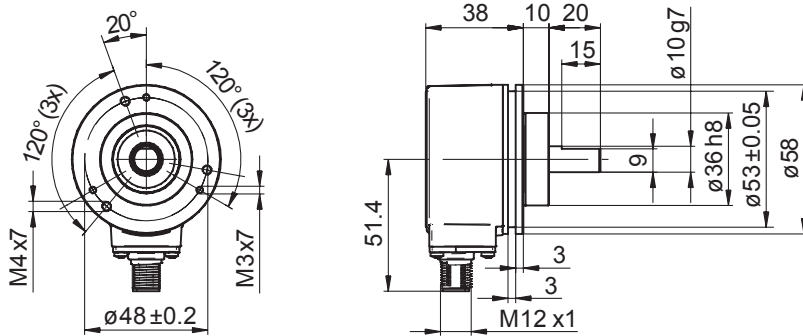
## Solid shaft with clamping or synchro flange

### 100...5000 pulses per revolution

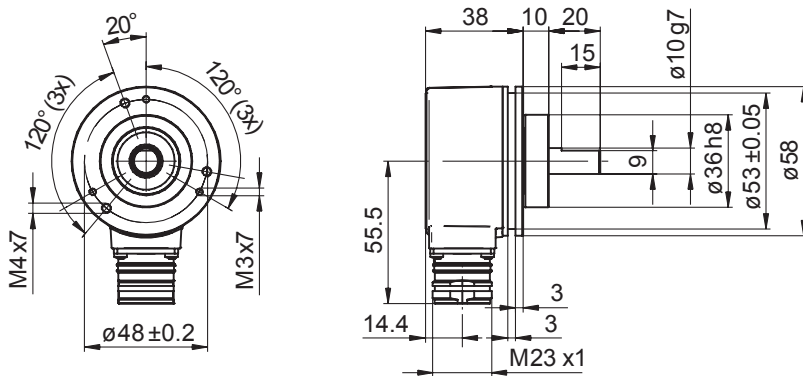
EIL580 - solid shaft

#### Dimensions

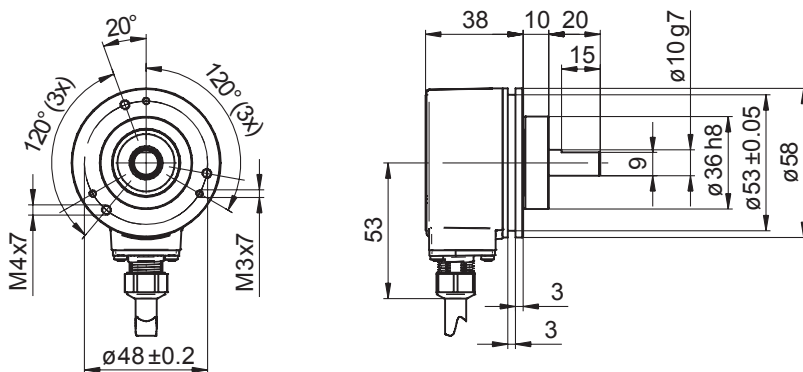
##### Clamping flange, flange connector M12, radial



##### Clamping flange, flange connector M23, radial



##### Clamping flange, cable radial



# Incremental encoders

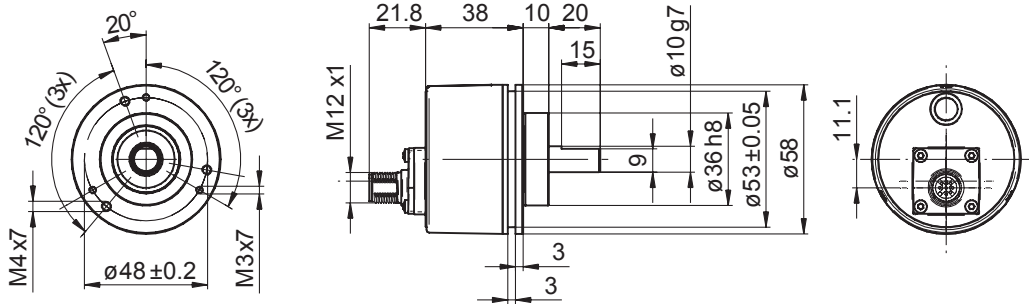
Solid shaft with clamping or synchro flange

100...5000 pulses per revolution

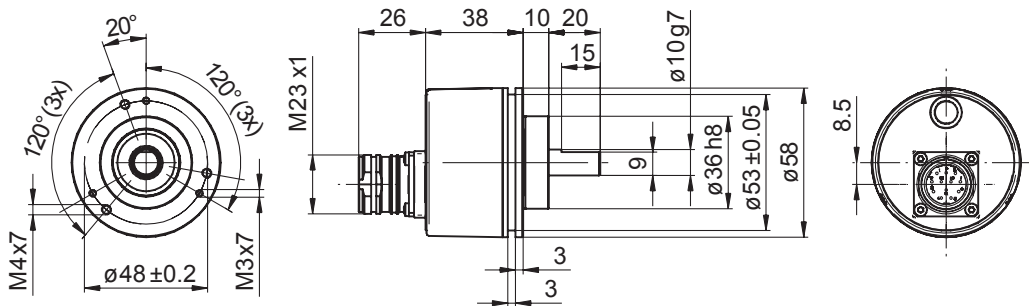
## EIL580 - solid shaft

### Dimensions

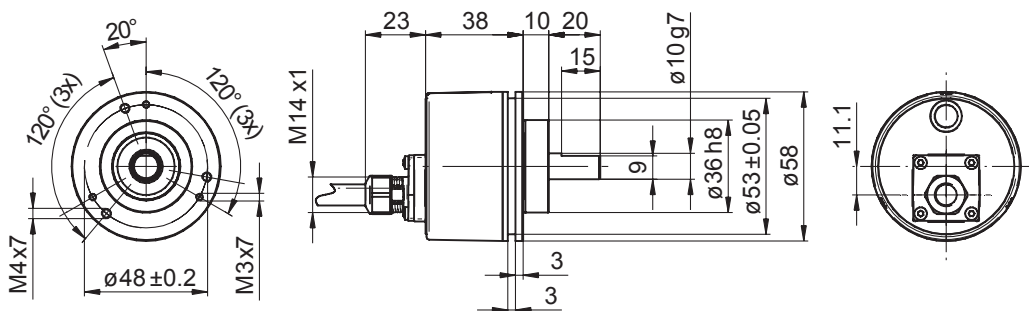
#### Clamping flange, flange connector M12, axial



#### Clamping flange, flange connector M23, axial



#### Clamping flange, cable axial



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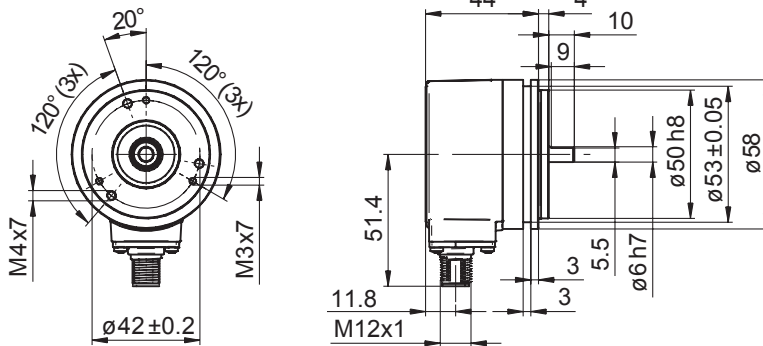
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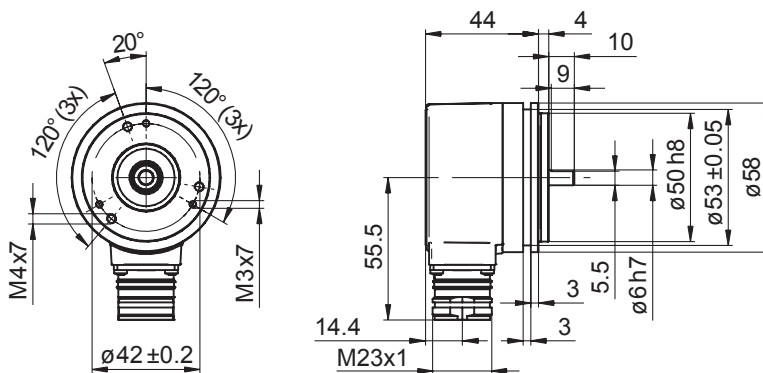
EIL580 - solid shaft

#### Dimensions

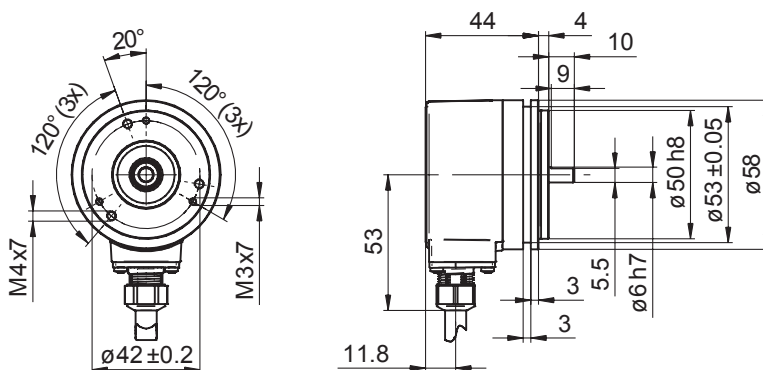
##### Synchro flange, flange connector M12, radial



##### Synchro flange, flange connector M23, radial



##### Synchro flange, cable radial





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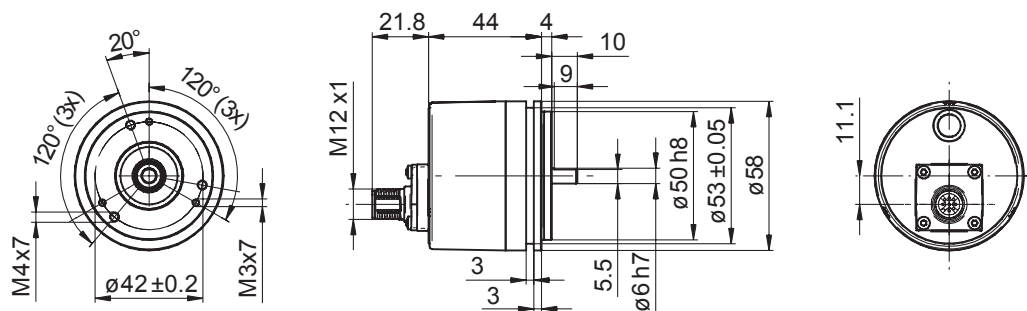
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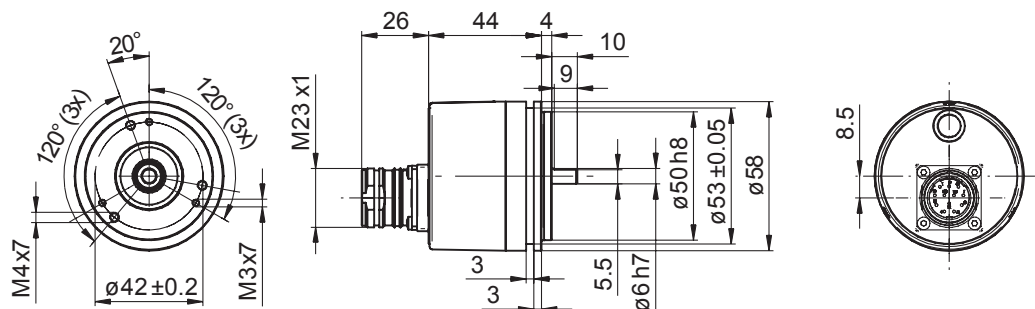
## EIL580 - solid shaft

### Dimensions

#### Synchro flange, flange connector M12, axial



#### Synchro flange, flange connector M23, axial



#### Synchro flange, cable axial

