

Incremental encoders

Solid shaft with clamping or synchro flange

100...5000 pulses per revolution

EIL580 - solid shaft



EIL580 with clamping flange

Features

- Size $\varnothing 58$ mm
- Precise optical sensing
- Output signal level TTL or HTL
- Clamping or synchro flange
- Connection axial, radial or tangential
- Pulses per revolution up to 5000
- High protection up to IP67
- High resistance to shock and vibrations

Technical data - electrical ratings

Voltage supply	5 VDC ± 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	≤ 70 mA
Pulses per revolution	100...5000
Phase shift	$90^\circ \pm 10^\circ$
Duty cycle	40...60 %
Reference signal	Zero pulse, width $90^\circ \pm 10$ %
Sensing method	Optical
Output frequency	≤ 300 kHz (TTL) ≤ 160 kHz (HTL)
Output signals	A+, B+, R+, A-, B-, R-
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	≤ 40 N axial ≤ 80 N radial
Protection DIN EN 60529	IP 65 (without shaft seal), IP 67 (with shaft seal)
Operating speed	≤ 6000 rpm (+20 °C, IP 67) ≤ 12000 rpm (+20 °C, IP 65)
Starting torque	≤ 0.01 Nm (+20 °C, IP 65) ≤ 0.02 Nm (+20 °C, IP 67)
Materials	Housing: aluminium die-cast Flange: aluminium 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	$\varnothing 10 \times 20$ mm, solid shaft with edge (clamping flange)
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EIL580 - synchro flange

Shaft type	$\varnothing 6 \times 10$ mm, solid shaft with edge (synchro flange)
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Part number

Clamping flange

EIL580-S **C** **10** **.A**

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
- P Cable tangential, 1 m
- Q Cable tangential, 2 m

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					Stock items	
100	300	720	1250	2500	EIL580-SC10.5FE.01024.A	EIL580-SC10.5FE.02048.A
120	360	800	1440	3000	EIL580-SC10.5FN.01024.A	EIL580-SC10.5FN.02048.A
150	400	900	1500	3600	Numerous stock items in single quantity will be supplied within 24 hours respectively one day ex works.	
200	500	1000	1800	4000		
250	512	1024	2000	4096		
256	600	1200	2048	5000		

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Part number

Synchro flange

EIL580-S **Y** **06** **.A**

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
- P Cable tangential, 1 m
- Q Cable tangential, 2 m

Protection

- 5 IP 65**
- 7 IP 67

Specification solid shaft

06 ø6 x 10 mm, with edge

Flange

Y Synchro flange, flute ø53 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	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-SY06.5FE.01024.A	EIL580-SY06.5FE.02048.A
EIL580-SY06.5FN.01024.A	EIL580-SY06.5FN.02048.A

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

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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 - clamping flange

11065915	Coupling CPS25 L=19 d1=04/d2=10
11065918	Coupling CPS25 L=19 d1=07/d2=10
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

Mounting accessories for EIL580 - clamping flange

11101893	Spring encoder arm
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Mounting accessories for EIL580 - synchro flange

11065916	Coupling CPS25 L=19 d1=06/d2=06
11065917	Coupling CPS25 L=19 d1=06/d2=08
11065922	Coupling CPS25 L=19 d1=10/d2=06
11065926	Coupling CPS25 L=19 d1=11/d2=06
11065928	Coupling CPS25 L=19 d1=12/d2=06
10141131	Spring washer coupling D1=06 / D2=06
10141132	Spring washer coupling D1=06 / D2=10
11034139	Spring washer coupling D1=06 / D2=16
11050507	Bellows coupling aluminium/stainless steel D1=06 / D2=10
10117667	Mounting adaptor for encoders with synchro flange
10117668	Set of eccentric fixings for mounting clamp (10117667) with 3x eccentric fixings, screws and nuts
11065545	Set of eccentric fixings type A
10158124	Bearing flange for encoders with synchro flange (Z 119.035)

For matching measuring wheels please see chapter accessories, "measuring wheels" (MR).

Incremental encoders

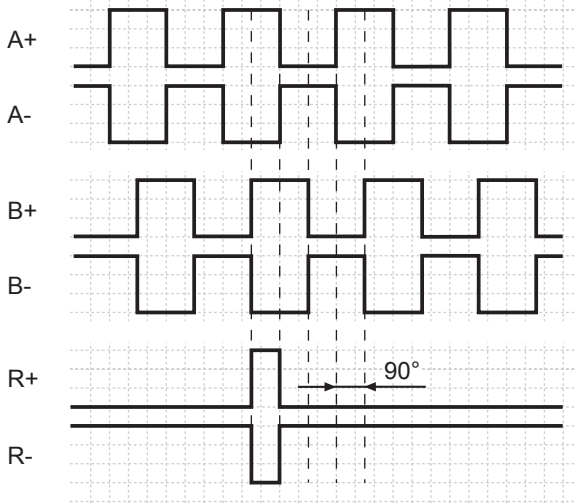
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Output signals

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	$\leq 20 \text{ mA}$

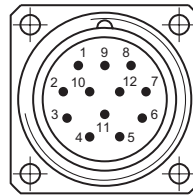
Terminal assignment

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

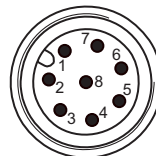
Screen: Connected to housing

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-



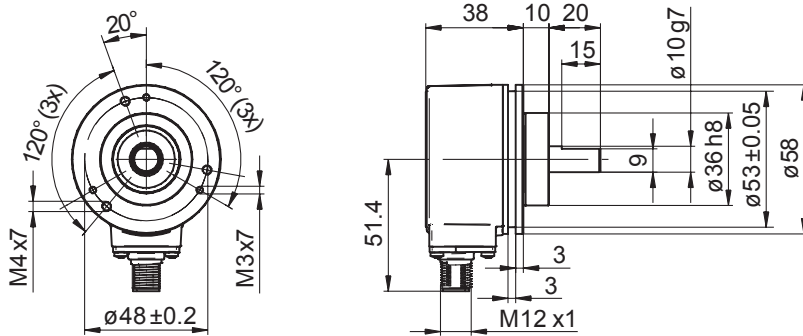
Incremental encoders

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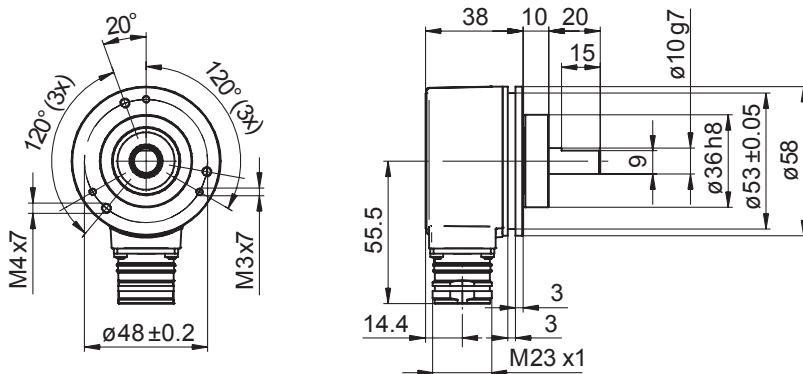
EIL580 - solid shaft

Dimensions

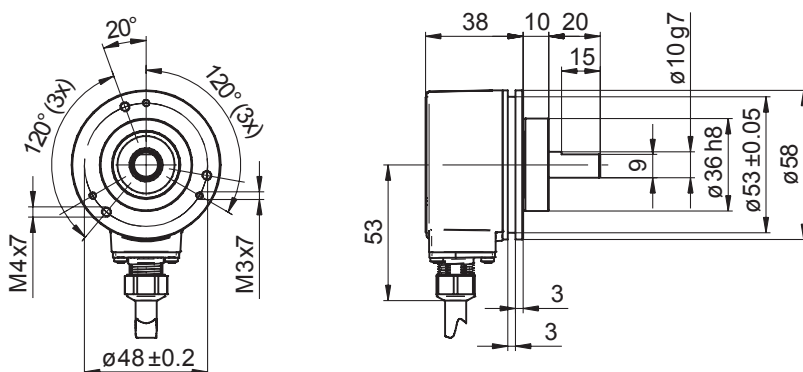
Clamping flange, flange connector M12, radial



Clamping flange, flange connector M23, radial



Clamping flange, cable radial



Incremental encoders

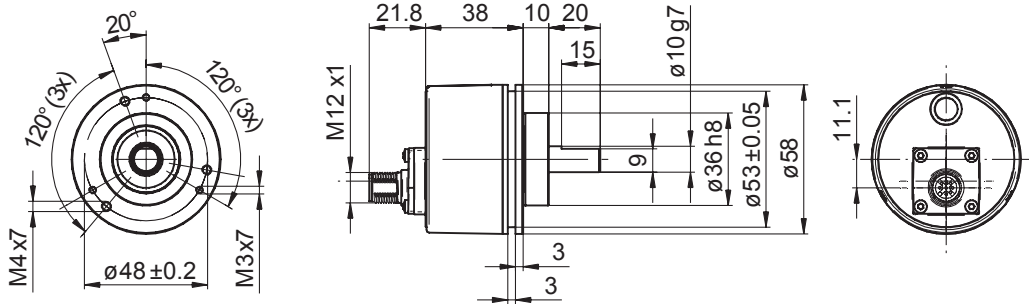
Solid shaft with clamping or synchro flange

100...5000 pulses per revolution

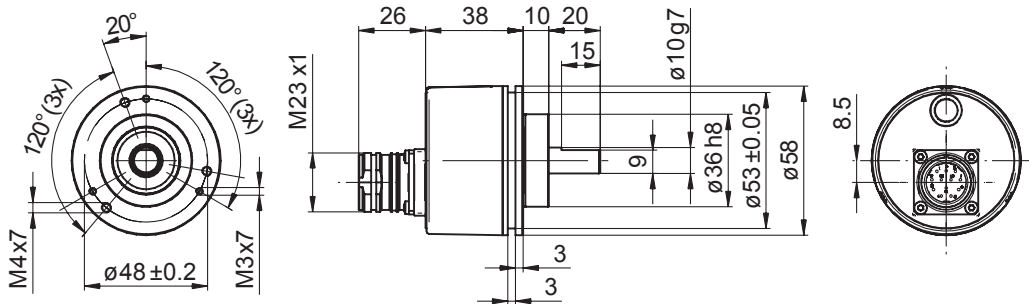
EIL580 - solid shaft

Dimensions

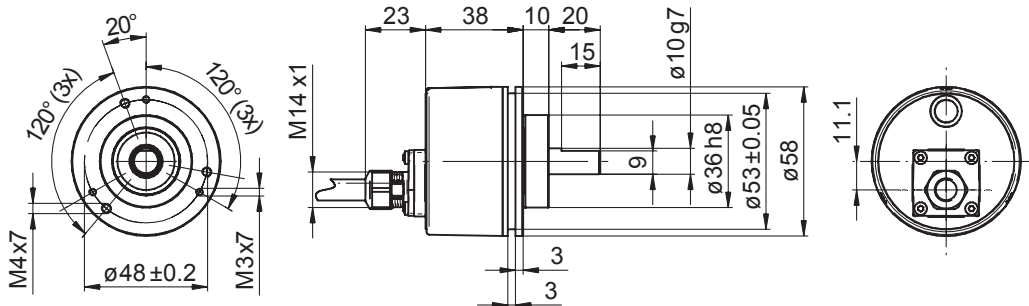
Clamping flange, flange connector M12, axial



Clamping flange, flange connector M23, axial



Clamping flange, cable axial



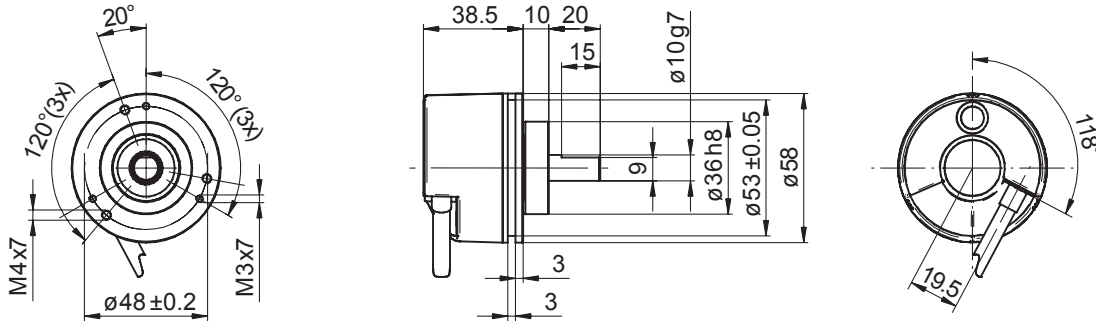
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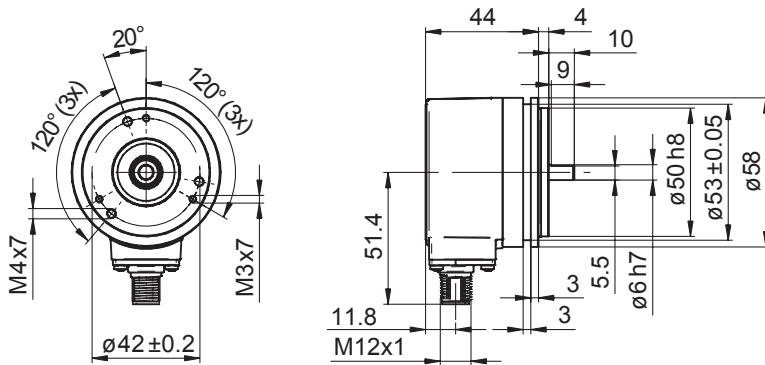
EIL580 - solid shaft

Dimensions

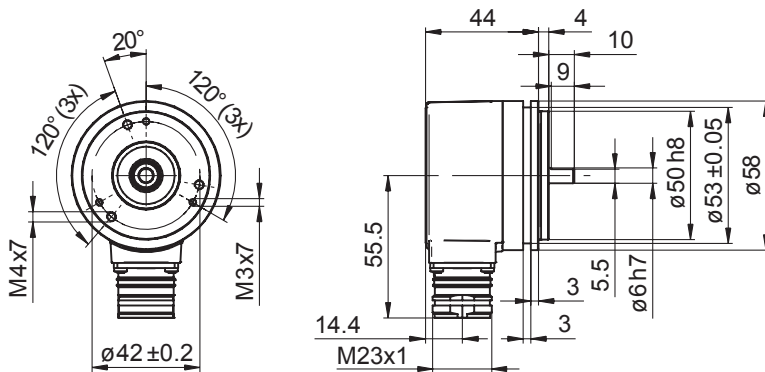
Clamping flange, cable tangential



Synchro flange, flange connector M12, radial



Synchro flange, flange connector M23, radial



Incremental encoders

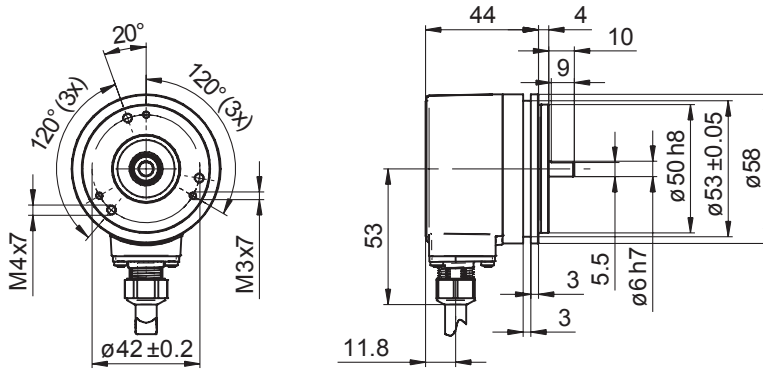
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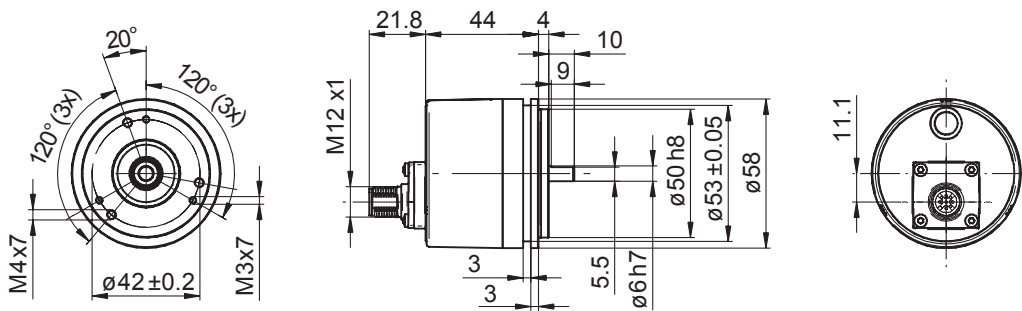
EIL580 - solid shaft

Dimensions

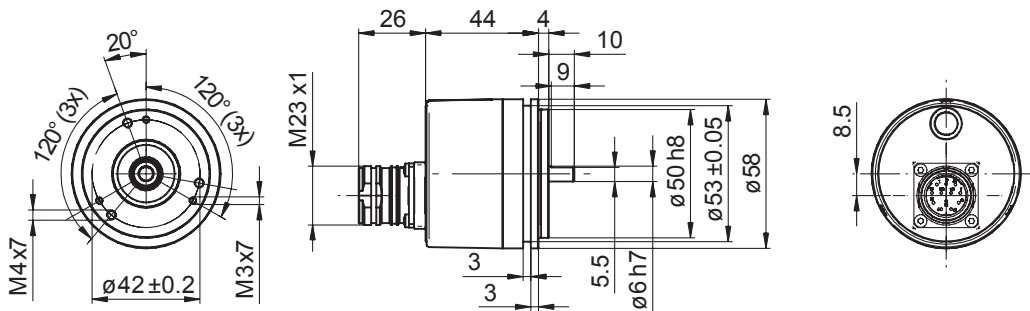
Synchro flange, cable radial



Synchro flange, flange connector M12, axial



Synchro flange, flange connector M23, axial



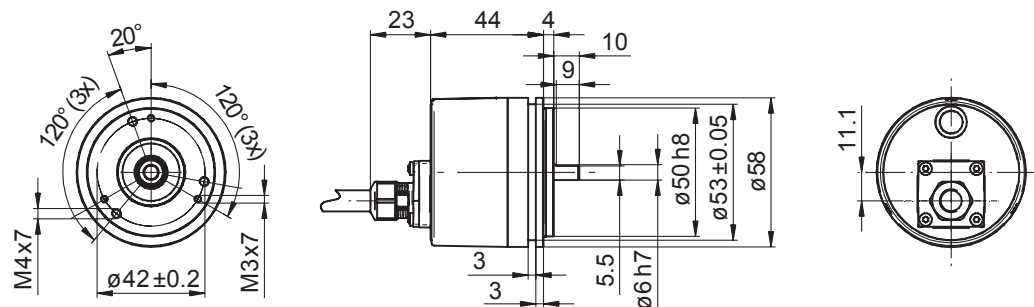
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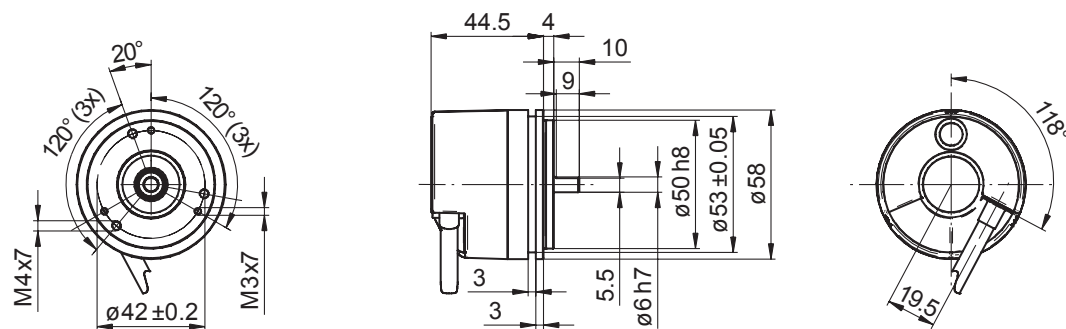
EIL580 - solid shaft

Dimensions

Synchro flange, cable axial



Synchro flange, cable tangential



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