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Incremental encoders

Solid shaft with clamping or synchro flange

100…5000 pulses per revolution

EIL580 - solid shaft



EIL580 with clamping flange

Features

- **Size ø58 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 IP 67**
- **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° ±10°
Scan ratio	40...60 %
Reference signal	Zero pulse, width 90° ±10 %
Sensing method	Optical
Output frequency	≤300 kHz (TTL) ≤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

Technical data - mechanical design

Size (flange)	ø58 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	ø10 x 20 mm, solid shaft with edge (clamping flange)
EIL580 - synchro flange	
Shaft type	ø6 x 10 mm, solid shaft with flat edge (synchro flange)

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100…5000 pulses per revolution

EIL580 - solid shaft

Part number

Clamping flange

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

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Incremental encoders

Solid shaft with clamping or synchro flange

100…5000 pulses per revolution

EIL580 - solid shaft

Part number

Synchro flange

EIL580-S | **Y** | **06** | **.** | | | | **.** | | **.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 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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EIL580 - solid 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 - 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	Tether arm

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): 3x eccentric fixings, screws and nuts
11065545	Set of eccentric fixings type A
10158124	Bearing flange for encoders with synchro flange (Z 119.035)

Matching measuring wheels available as accessories, see under “measuring wheels” (MR).

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Incremental encoders

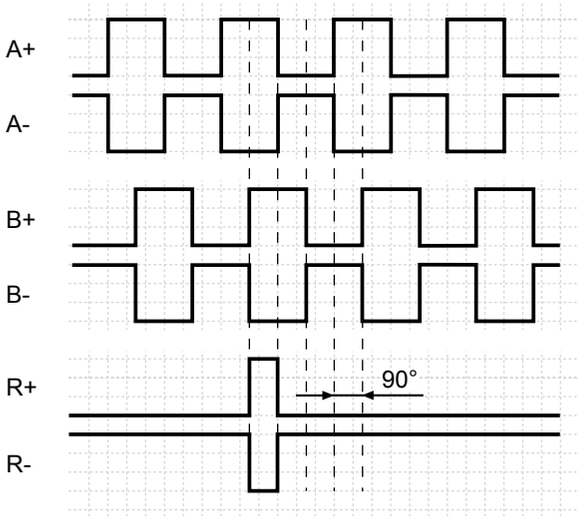
Solid shaft with clamping or synchro flange

100…5000 pulses per revolution

EIL580 - solid shaft

Output signals

Clockwise rotating direction when looking at flange.



Trigger level

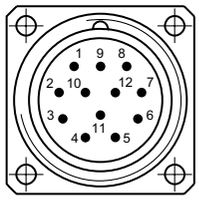
Outputs	TTL/RS422
Output level High	≥2.5 V
Output level Low	≤0.5 V
Load	≤20 mA

Outputs	HTL/Push-pull
Output level High	≥UB -3 V
Output level Low	≤1.5 V
Load	≤20 mA

Terminal assignment

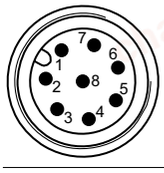
Flange connector M23, 12-pin / cable

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-



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Incremental encoders

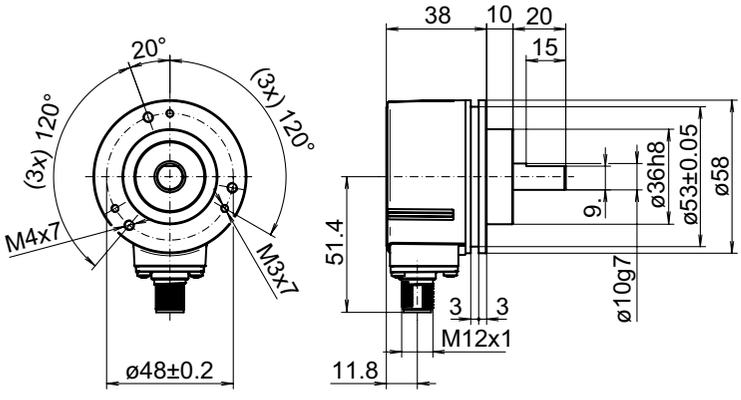
Solid shaft with clamping or synchro flange

100…5000 pulses per revolution

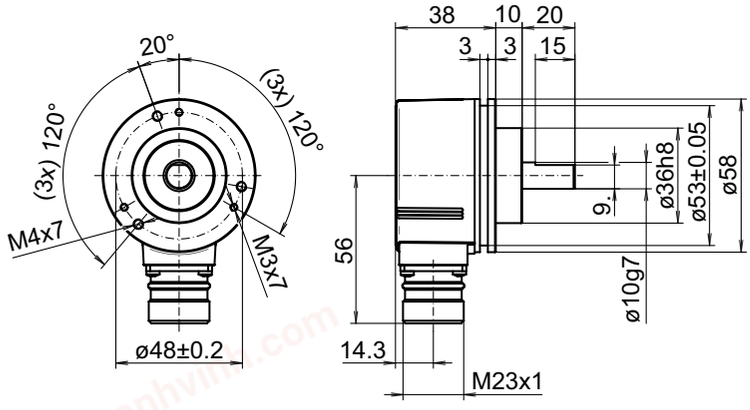
EIL580 - solid shaft

Dimensions

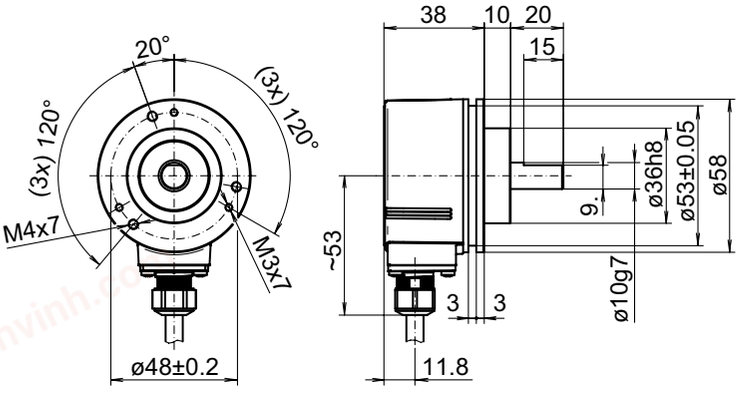
Clamping flange, flange connector M12, radial



Clamping flange, flange connector M23, radial



Clamping flange, cable radial



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Incremental encoders

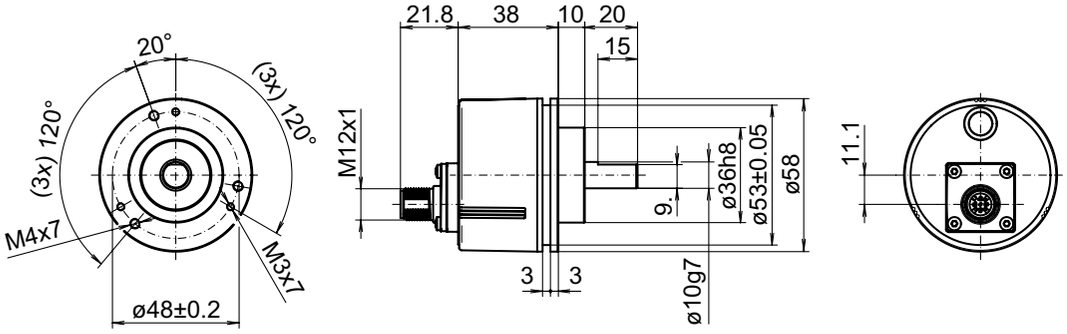
Solid shaft with clamping or synchro flange

100…5000 pulses per revolution

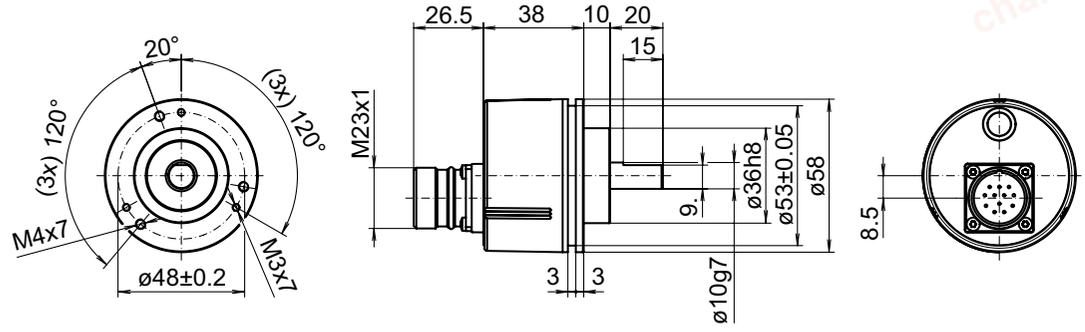
EIL580 - solid shaft

Dimensions

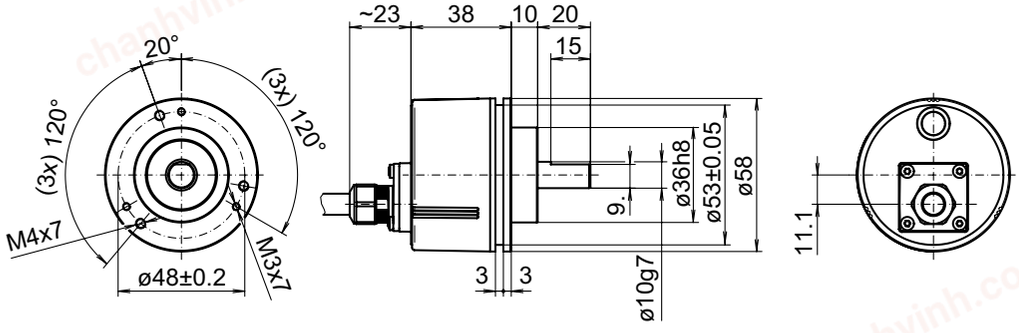
Clamping flange, flange connector M12, axial



Clamping flange, flange connector M23, axial



Clamping flange, cable axial



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Incremental encoders

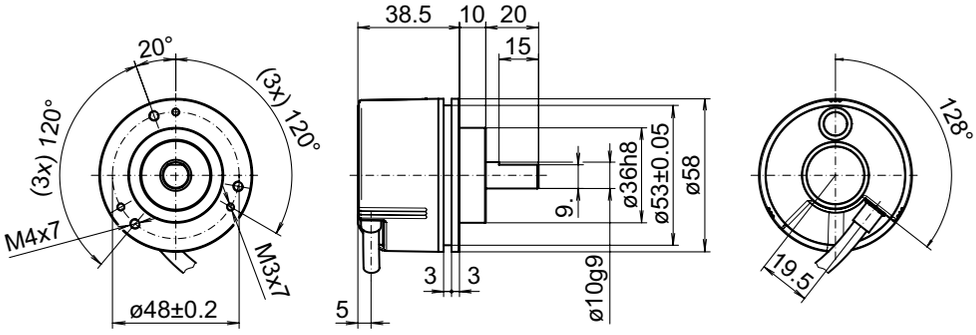
Solid shaft with clamping or synchro flange

100…5000 pulses per revolution

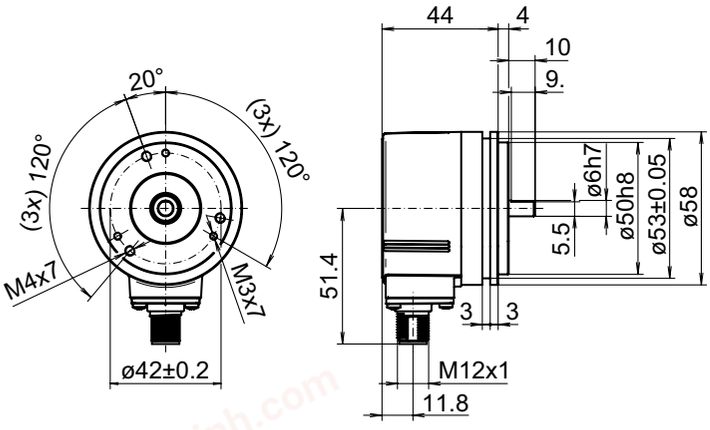
EIL580 - solid shaft

Dimensions

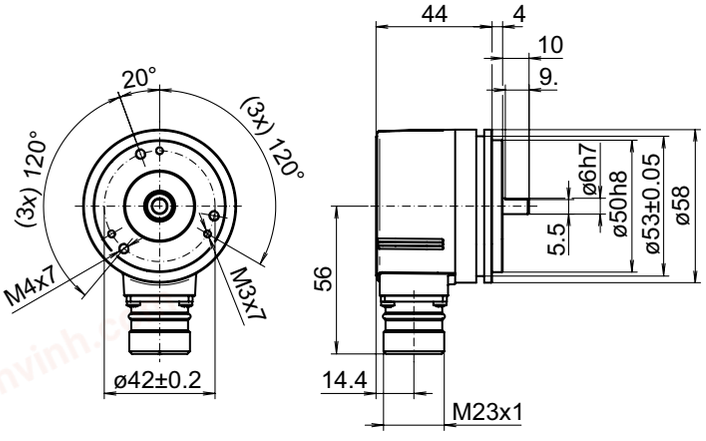
Clamping flange, cable tangential



Synchro flange, flange connector M12, radial



Synchro flange, flange connector M23, radial



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Incremental encoders

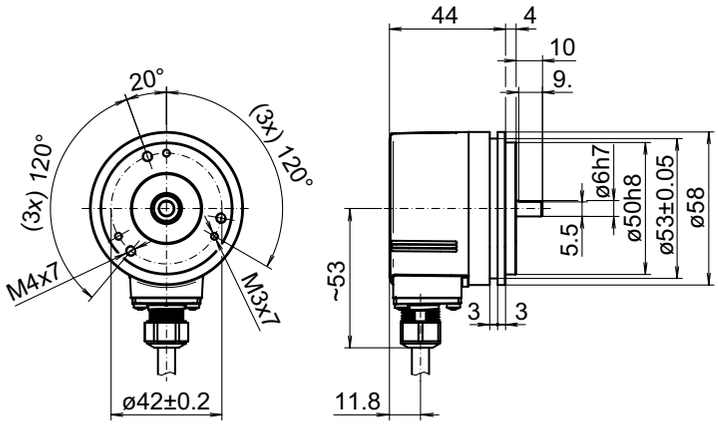
Solid shaft with clamping or synchro flange

100…5000 pulses per revolution

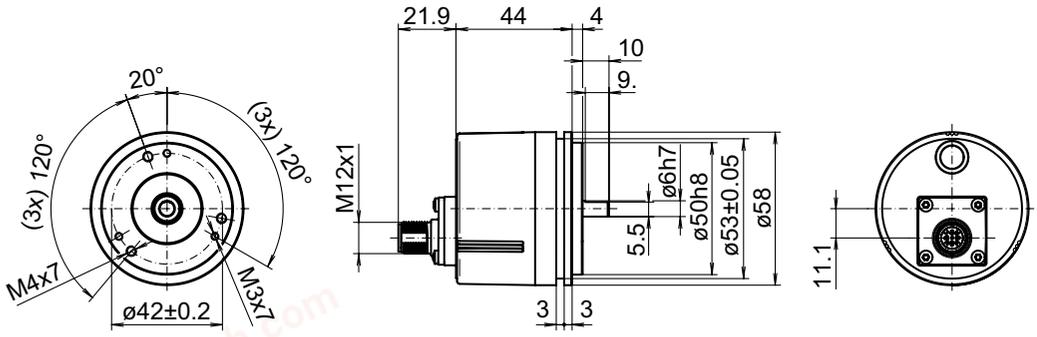
EIL580 - solid shaft

Dimensions

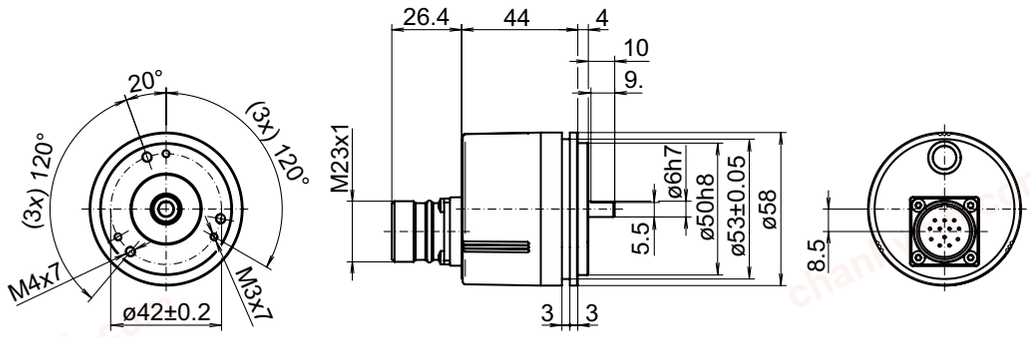
Synchro flange, cable radial



Synchro flange, flange connector M12, axial



Synchro flange, flange connector M23, axial



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Incremental encoders

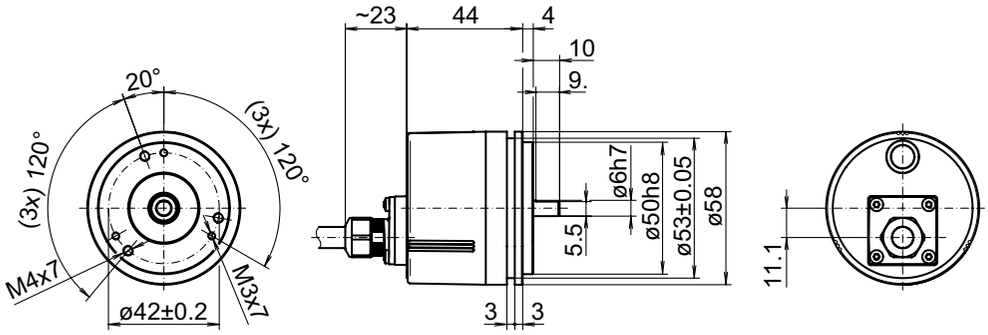
Solid shaft with clamping or synchro flange

100…5000 pulses per revolution

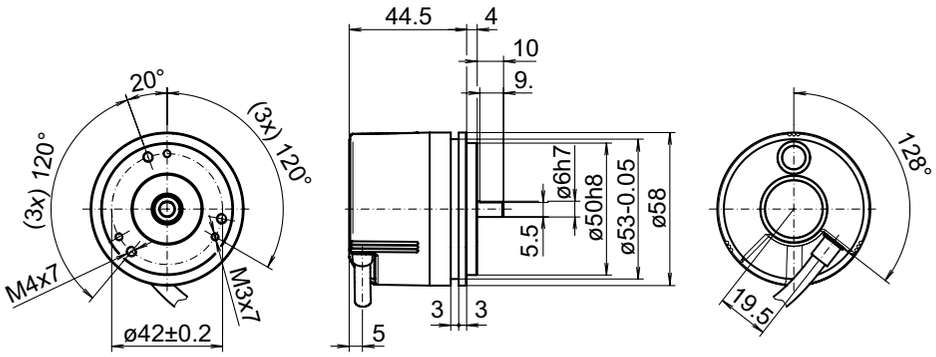
EIL580 - solid shaft

Dimensions

Synchro flange, cable axial



Synchro flange, cable tangential



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