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Incremental encoders

Solid shaft with clamping or synchro flange

1…65536 pulses per revolution programmable

EIL580P - solid shaft



EIL580P with clamping flange

Features

- **Size ø58 mm**
- **Precise optical sensing**
- **Output signal level programmable (TTL or HTL)**
- **Clamping or synchro flange**
- **Connection axial, radial or tangential**
- **Pulses per revolution 1...65536, programmable**
- **High protection up to IP 67**
- **High resistance to shock and vibrations**

Technical data - electrical ratings	
Voltage supply	4.75...30 VDC
Reverse polarity protection	Yes
Short-circuit proof	Yes
Consumption w/o load	≤70 mA
Initializing time	≤30 ms after power on
Pulses per revolution	1...65536
Scan ratio	45...55 % typical at 2048 ppr
Reference signal	Zero pulse 90° or 180°
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
Programmable parameters	Output level TTL/HTL Pulse number 1...65536 Zero pulse width 90°/180° Zero pulse position Signal sequence
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...+100 °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
EIL580P - clamping flange	
Shaft type	ø10 x 20 mm, solid shaft with edge (clamping flange)
EIL580P - synchro flange	
Shaft type	ø6 x 10 mm, solid shaft with flat edge (synchro flange)

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Solid shaft with clamping or synchro flange

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EIL580P - solid shaft

Part number

Clamping flange

EIL580P-S	C	10	.			F	.	01024	.	B

Operating temperature
B -40...+100 °C

Pulses programmable
01024 1...65536 programmable (factory setting: 1024)

Voltage supply / output stages
F 4.75...30 VDC, TTL/RS422, 6 channels (Vout = 5 VDC) - Factory setting
HTL/push pull 6 channel (Vout = Vin) - programmable by customer

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).

* only available in protection 5 = IP 65

(Factory setting: 1024 ppr, Vout = 5 VDC TTL, signal sequence A leading B (CW), zero pulse 90° A&B high)

Stock items

EIL580P-SC10.5FF.01024.B | EIL580P-SC10.5RF.01024.B

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

1…65536 pulses per revolution programmable

EIL580P - solid shaft

Part number

Synchro flange

EIL580P-S	Y	06	.			F	.	01024	.	B

Operating temperature
B -40...+100 °C

Pulses programmable
01024 1...65536 programmable (factory setting: 1024)

Voltage supply / output stages
F 4.75...30 VDC, TTL/RS422, 6 channels (Vout = 5 VDC) - Factory setting
HTL/push pull 6 channel (Vout = Vin) - programmable by customer

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).

* only available in protection 5 = IP 65

(Factory setting: 1024 ppr, Vout = 5 VDC TTL, signal sequence A leading B (CW), zero pulse 90° A&B high)

Stock items

EIL580P-SY06.5FF.01024.B | EIL580P-SY06.5RF.01024.B

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

1…65536 pulses per revolution programmable

EIL580P - 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
11119280	Connection cable connector M12 / connector D-SUB, 0.2 m
11119720	Connection cable connector M12 / connector D-SUB, 1 m
11119257	Connection cable connector M23 / connector D-SUB, 0.2 m (S2BG12/K4SG9)
11119723	Connection cable connector M23 / connector D-SUB, 1 m (S2BG12/K4SG9)

Mounting accessories for EIL580P - 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

Mounting accessories for EIL580P - clamping flange

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	Tether arm

Mounting accessories for EIL580P - 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)

Programming accessories

11120657	Handheld Programming Tool Z-PA-EI-H
11120547	PC Programming Tool Z-PA-EI-P

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

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Incremental encoders

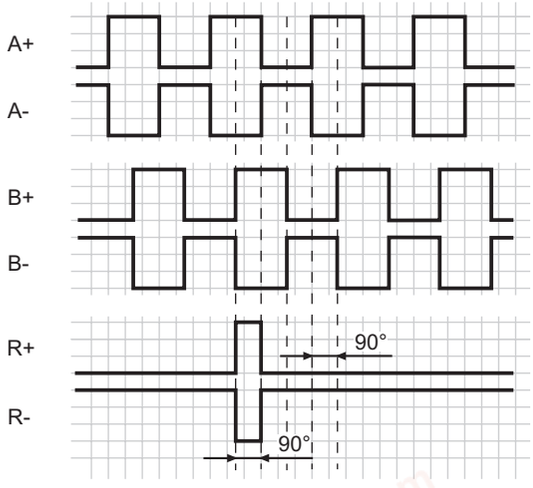
Solid shaft with clamping or synchro flange

1…65536 pulses per revolution programmable

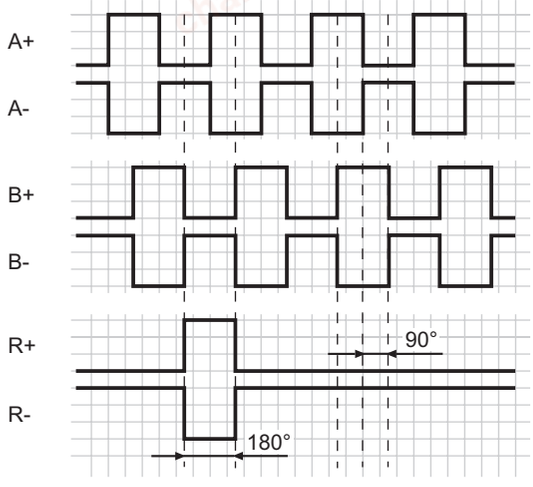
EIL580P - solid shaft

Output signals

Zero pulse electrical 90° A&B high
(Factory setting at clockwise rotation (CW)
in view of the encoder flange)



Zero pulse electrical 180° B low
(at clockwise rotation (CW)
in view of the encoder flange)



Trigger level

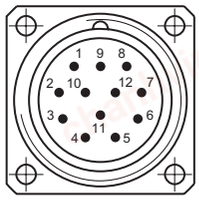
Outputs	TTL/RS422
Output level High	≥2.5 V
Output level Low	≤0.5 V
Load	≤20 mA

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:	PUR, [4x2x0.14 mm²], bending radius >45.8 mm, Outer diameter 6.1 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

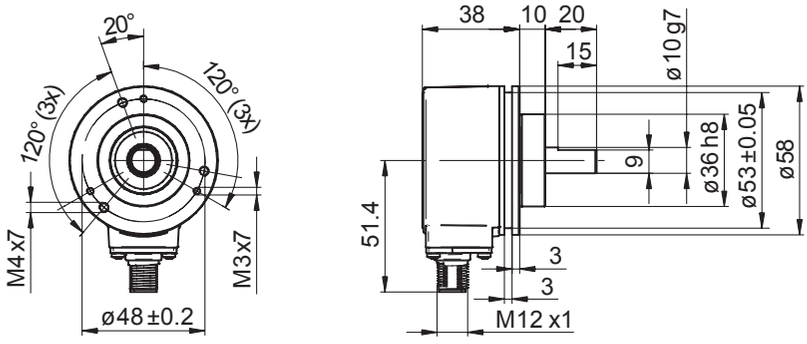
Solid shaft with clamping or synchro flange

1…65536 pulses per revolution programmable

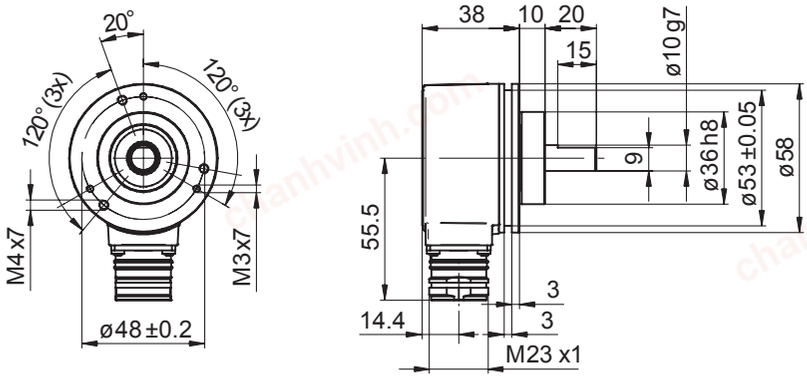
EIL580P - solid shaft

Dimensions

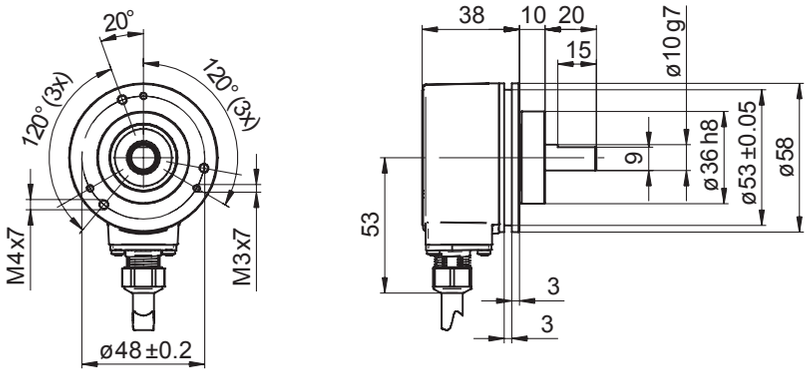
Clamping flange, flange connector M12, radial



Clamping flange, flange connector M23, radial



Clamping flange, cable radial



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Incremental encoders

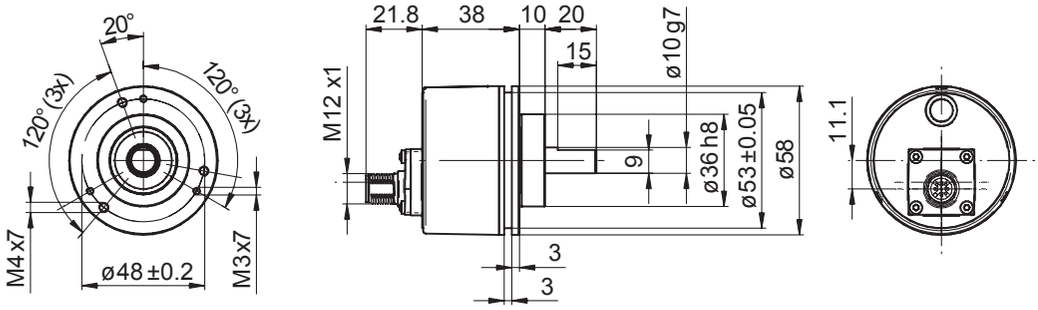
Solid shaft with clamping or synchro flange

1…65536 pulses per revolution programmable

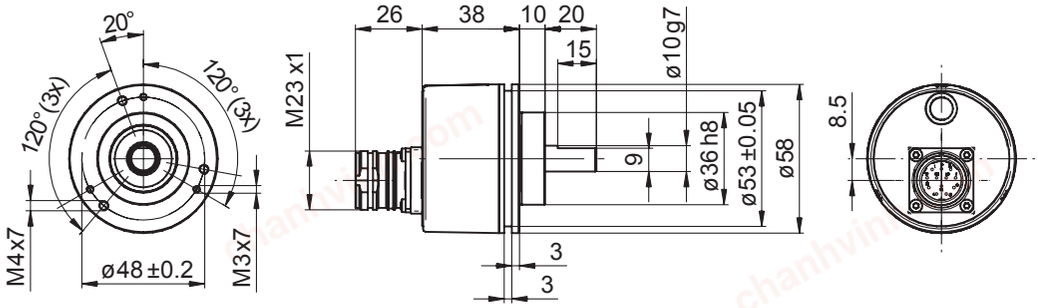
EIL580P - solid shaft

Dimensions

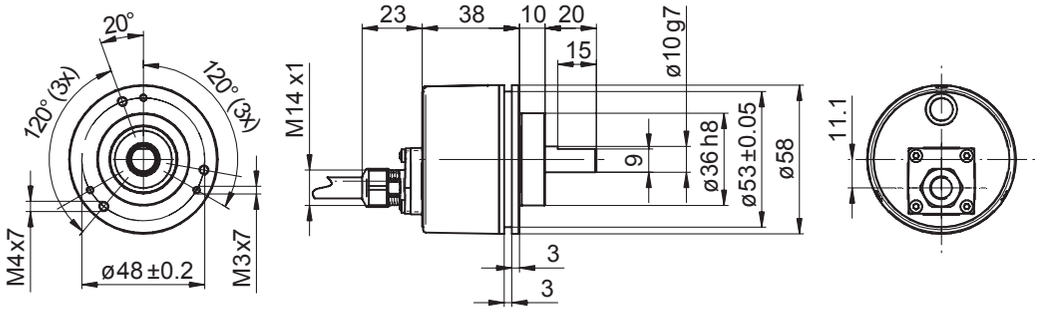
Clamping flange, flange connector M12, axial



Clamping flange, flange connector M23, axial



Clamping flange, cable axial



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Incremental encoders

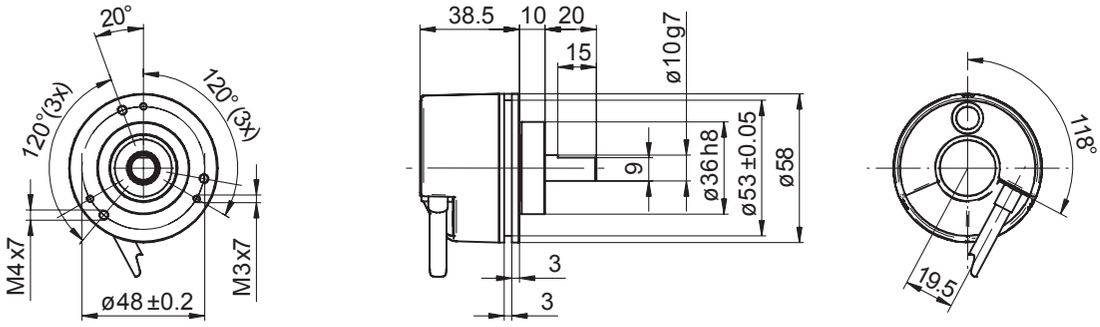
Solid shaft with clamping or synchro flange

1…65536 pulses per revolution programmable

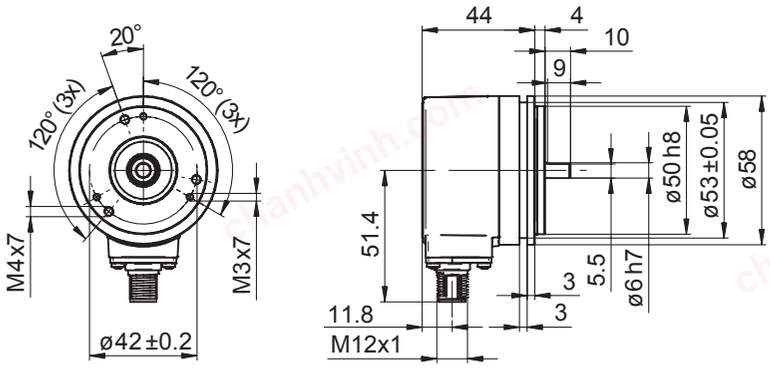
EIL580P - solid shaft

Dimensions

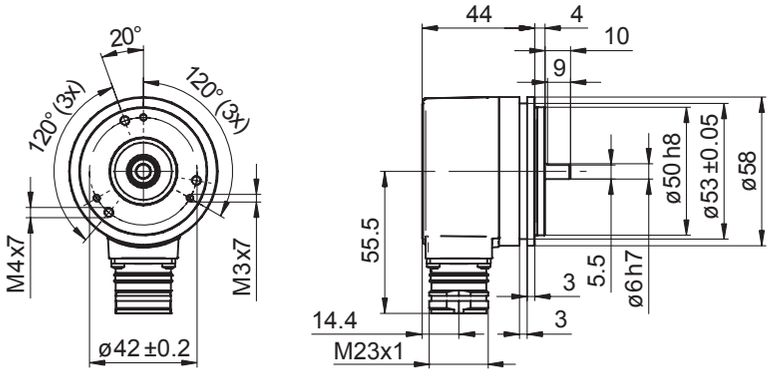
Clamping flange, cable tangential



Synchro flange, flange connector M12, radial



Synchro flange, flange connector M23, radial



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Incremental encoders

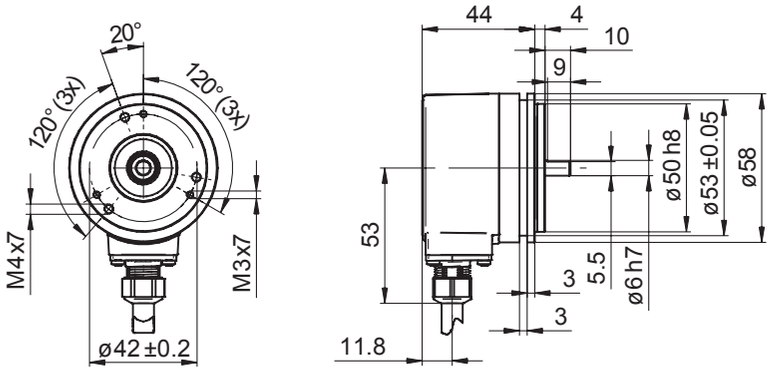
Solid shaft with clamping or synchro flange

1…65536 pulses per revolution programmable

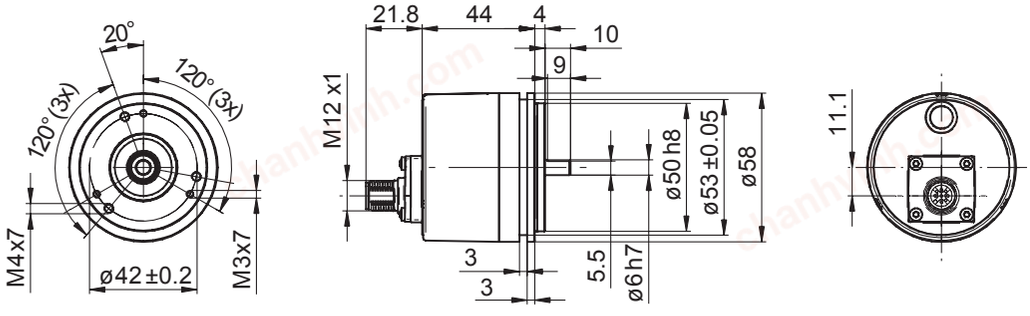
EIL580P - solid shaft

Dimensions

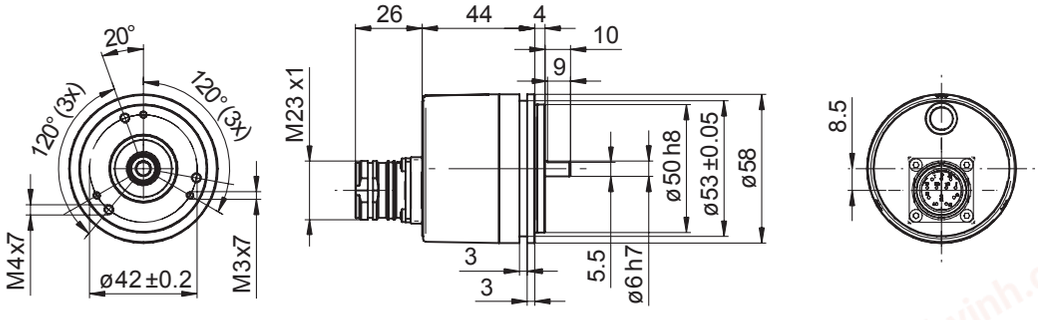
Synchro flange, cable radial



Synchro flange, flange connector M12, axial



Synchro flange, flange connector M23, axial



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Incremental encoders

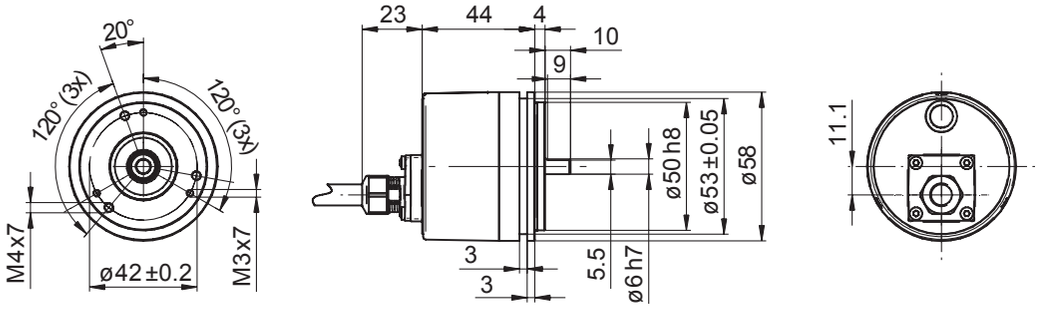
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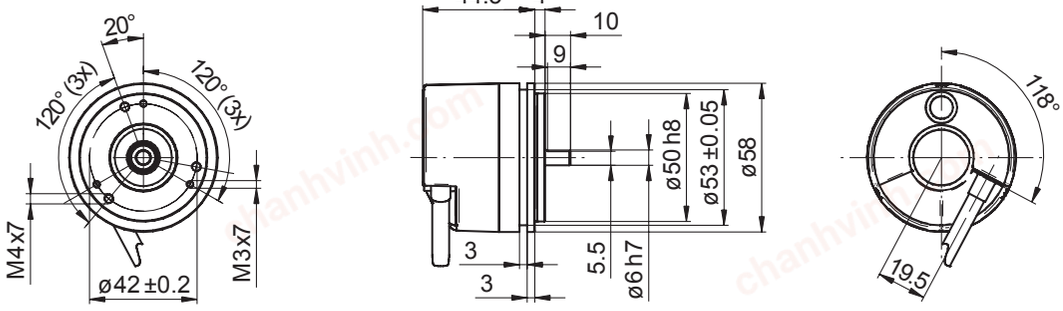
EIL580P - solid shaft

Dimensions

Synchro flange, cable axial



Synchro flange, cable tangential



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