

# Incremental encoders

## Solid shaft with synchro flange

### 100...5000 pulses per revolution

EIL580-SY - OptoPulse®



EIL580-SY with synchro flange

#### Features

- Size  $\varnothing$ 58 mm
- Precise optical sensing
- Output signal level TTL or HTL
- 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 $\pm$ 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 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)	$\varnothing$ 58 mm
Shaft type	$\varnothing$ 6 x 10 mm, solid shaft with flat
Admitted shaft load	$\leq$ 40 N axial $\leq$ 80 N radial
Flange	Synchro flange
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	$\leq$ 0.015 Nm (+20 °C, IP 65) $\leq$ 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



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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

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=6 / D2=6 (Z 121. C02)
10141132	Spring washer coupling D1=6 / D2=10 (Z 121. C01)
11034139	Spring washer coupling D1=6 / D2=16 (Z 121. C05)
11050507	Bellows coupling aluminium/stainless steel D1=06 / D2=10
10117667	Mounting adaptor for encoders with synchro flange (Z 119.015)
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)

##### Mounting accessories

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

# Incremental encoders

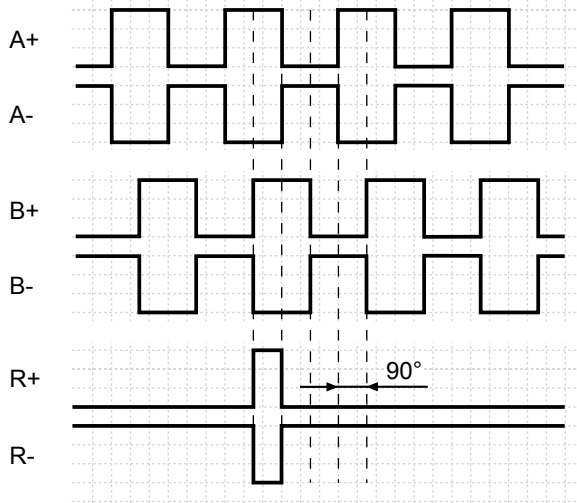
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#### Output signals

Clockwise rotating direction when looking at flange.



#### Trigger level

Outputs	TTL/RS422
Output level High	$\geq 2.5$ V
Output level Low	$\leq 0.5$ V
Load	$\leq 20$ mA

Outputs	HTL/Push-pull
Output level High	$\geq U_B - 3$ V
Output level Low	$\leq 1.5$ V
Load	$\leq 20$ mA

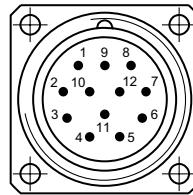
#### Terminal assignment

##### 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

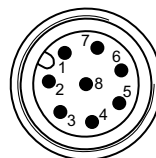
Screen: Connected to housing

Cable data: PVC, [4x2x0.14 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	A+
4	A-
5	B+
6	B-
7	R+
8	R-



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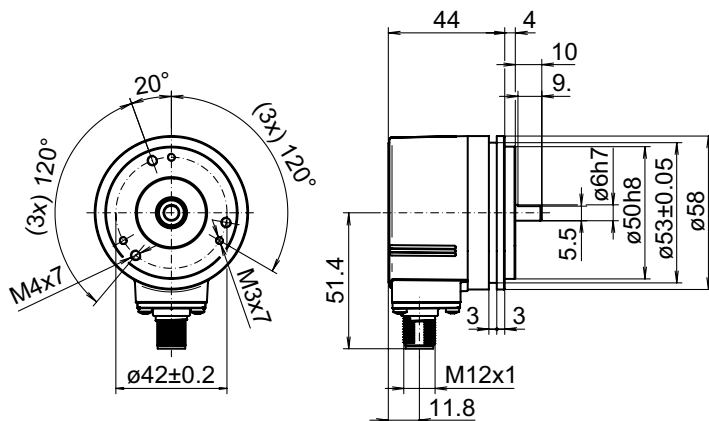
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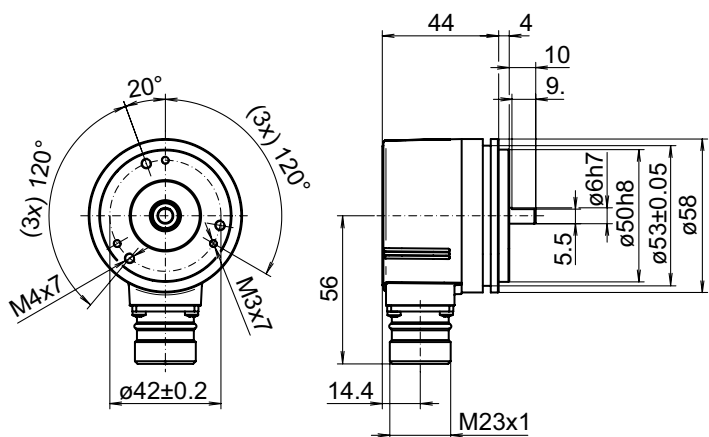
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#### Dimensions

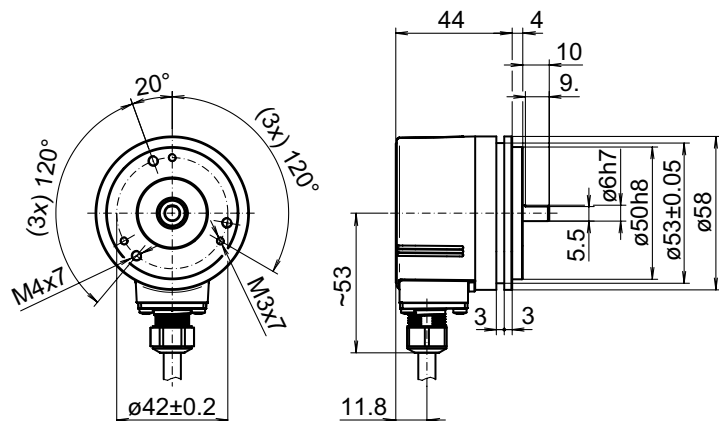
##### Flange connector M12, radial



##### Flange connector M23, radial



##### Cable, radial



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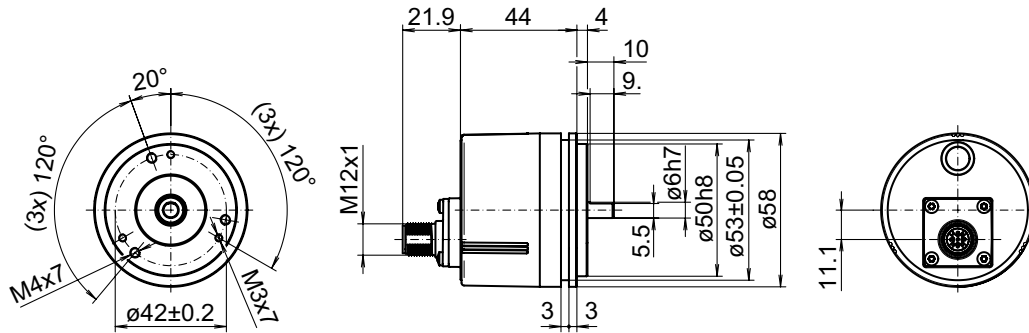
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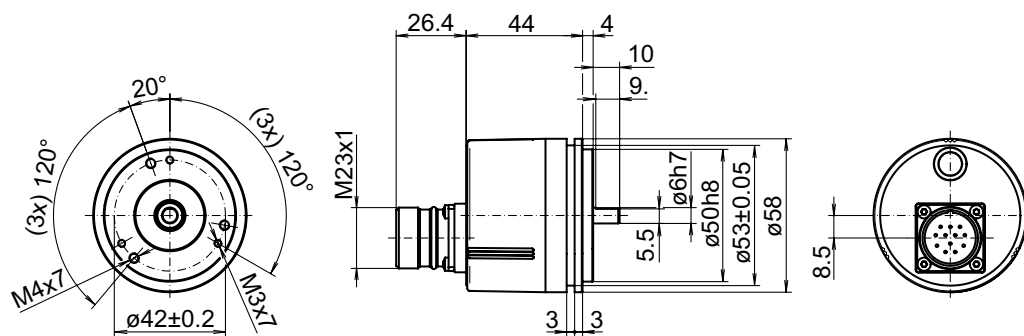
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#### Dimensions

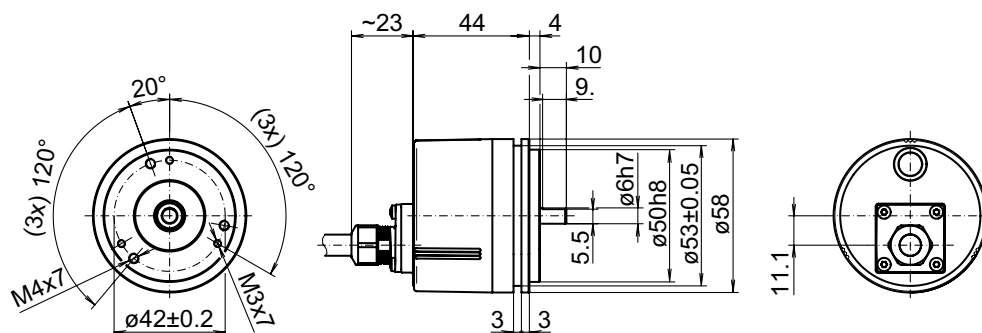
##### Flange connector M12, axial



##### Flange connector M23, axial



##### Cable, axial



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#### Dimensions

Cable, tangential

