

# 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	$90^\circ \pm 10^\circ$
Duty cycle	40...60 %
Reference signal	Zero pulse, width $90^\circ \pm 10\%$
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

# Incremental encoders

## Solid shaft with synchro flange

### 100...5000 pulses per revolution

EIL580-SY - OptoPulse®

#### Part number

EIL580-S Y 06 .       .     .A

Pulse number - see table

Voltage supply / output stages

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, male contacts, 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 flat

Flange

Y Synchro flange, flute ø53 mm, M3/M4

#### 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	02048	5000

# Incremental encoders

## Solid shaft with synchro flange

### 100...5000 pulses per revolution

#### EIL580-SY - OptoPulse®

#### 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)
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

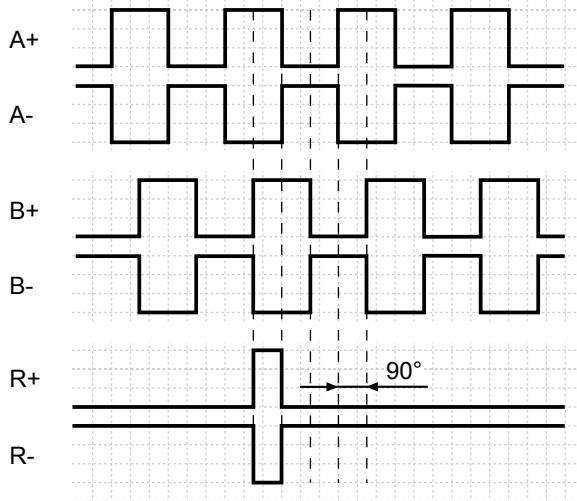
## Solid shaft with synchro flange

### 100...5000 pulses per revolution

EIL580-SY - OptoPulse®

#### 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

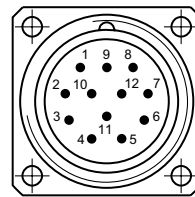
#### Terminal assignment

##### 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

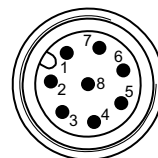
Screen: Connected to housing

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-



# Incremental encoders

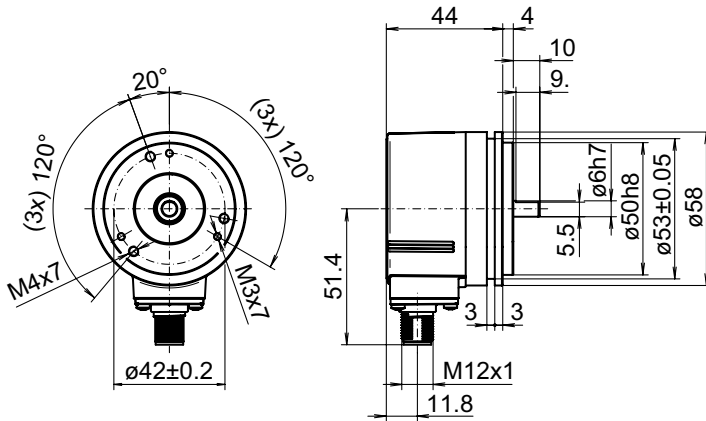
## Solid shaft with synchro flange

### 100...5000 pulses per revolution

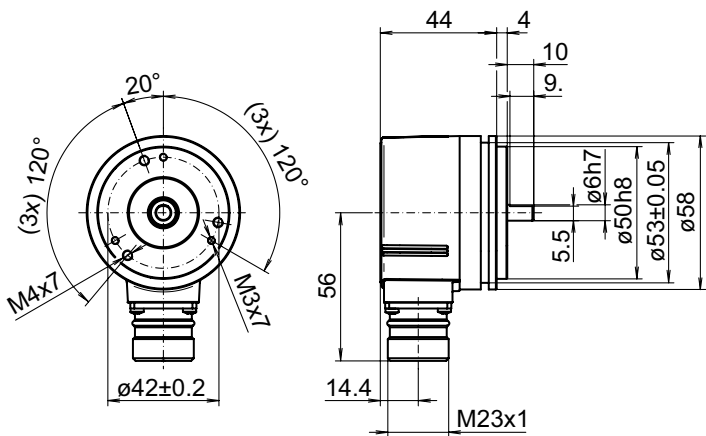
EIL580-SY - OptoPulse®

#### Dimensions

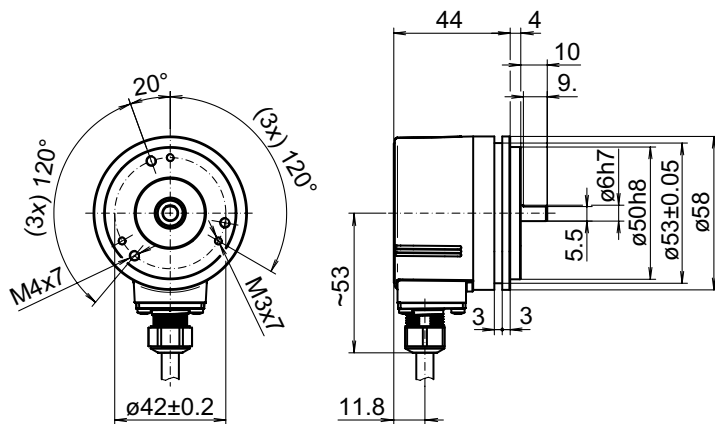
##### Flange connector M12, radial



##### Flange connector M23, radial



##### Cable, radial



# Incremental encoders

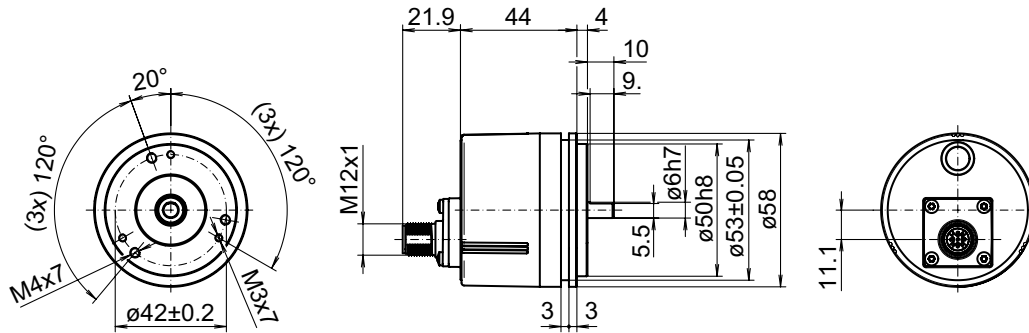
## Solid shaft with synchro flange

### 100...5000 pulses per revolution

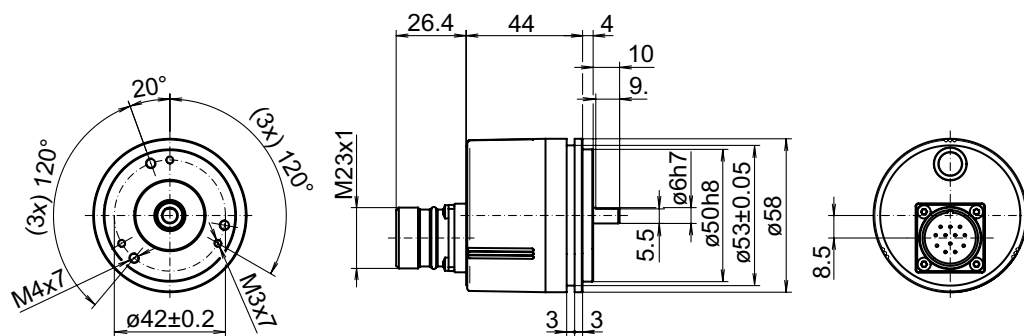
EIL580-SY - *OptoPulse*®

#### Dimensions

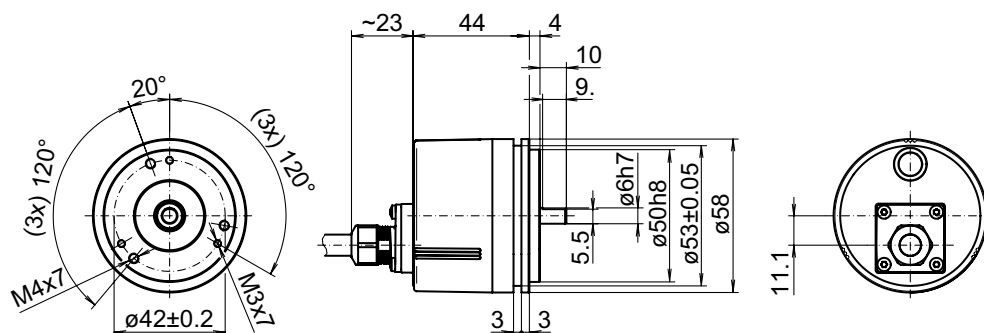
##### Flange connector M12, axial



##### Flange connector M23, axial



##### Cable, axial



# Incremental encoders

## Solid shaft with synchro flange

### 100...5000 pulses per revolution

EIL580-SY - OptoPulse®

#### Dimensions

Cable, tangential

