

# Incremental encoders

## Solid shaft with clamping or synchro flange

1...65536 pulses per revolution programmable

### EIL580P - solid shaft



EIL580P with clamping flange

#### Features

- Size  $\varnothing 58$  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	$\leq 70$ mA
Initializing time	$\leq 30$ ms after power on
Pulses per revolution	1...65536
Scan ratio	45...55 % typical at 2048 ppr
Reference signal	Zero pulse $90^\circ$ or $180^\circ$
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
Programmable parameters	Output level TTL/HTL Pulse number 1...65536 Zero pulse width $90^\circ/180^\circ$ 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)	$\varnothing 58$ mm
Shaft loading	$\leq 40$ N axial $\leq 80$ N radial
Protection DIN EN 60529	IP 65 (without shaft seal), IP 67 (with shaft seal)
Operating speed	$\leq 6000$ rpm ( $+20^\circ\text{C}$ , IP 67) $\leq 12000$ rpm ( $+20^\circ\text{C}$ , IP 65)
Starting torque	$\leq 0.01$ Nm ( $+20^\circ\text{C}$ , IP 65) $\leq 0.02$ Nm ( $+20^\circ\text{C}$ , IP 67)
Materials	Housing: aluminium die-cast Flange: aluminium Solid shaft: stainless steel
Operating temperature	$-40...+100^\circ\text{C}$
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	$\varnothing 10 \times 20$ mm, solid shaft with edge (clamping flange)
------------	--

#### EIL580P - synchro flange

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

# Incremental encoders

## Solid shaft with clamping or synchro flange

### 1...65536 pulses per revolution programmable

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.

# 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.

# 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).

# Incremental encoders

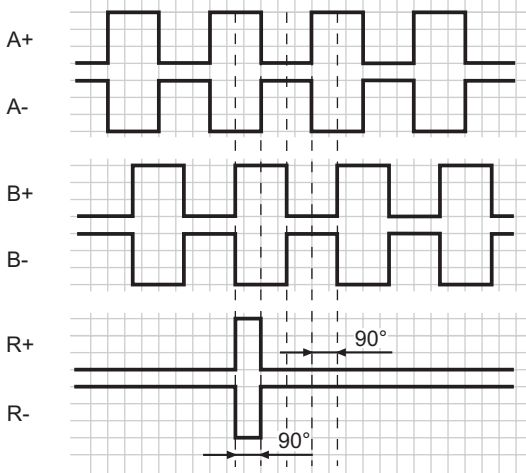
## Solid shaft with clamping or synchro flange

1...65536 pulses per revolution programmable

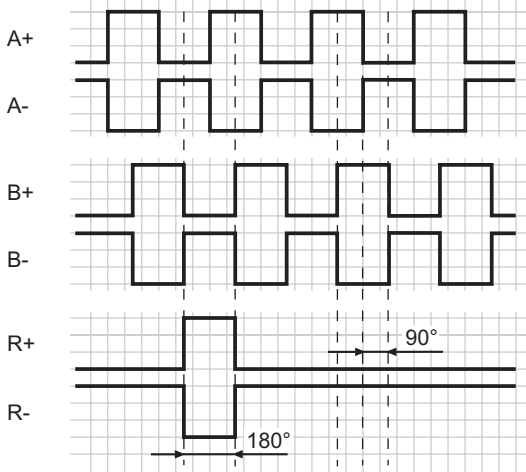
### EIL580P - solid shaft

#### 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

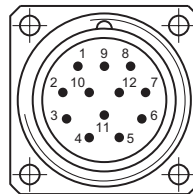
#### Terminal assignment

##### 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	–	R-Teach <sup>1)</sup>
8	grey	B+
9	–	–
10	white	GND
11	–	–
12	brown	UB

Screen: Connected to housing

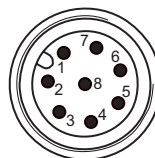
Cable data: PUR, [4x2x0,14 mm<sup>2</sup>], bending radius >45,8 mm, outer diameter 6.1 mm



<sup>1)</sup> The R-Teach input is used to set the reference pulse (zero pulse) on the current shaft position.  
R-Teach = UB ≥ 200 ms

##### Flange connector M12, 8-pin

Pin	Assignment
1	GND
2	UB
3	A+
4	A-
5	B+
6	B-
7	R+
8	R-



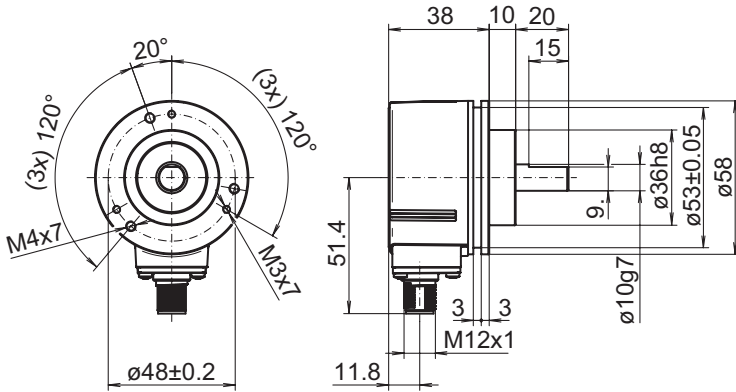
# Incremental encoders

Solid shaft with clamping or synchro flange  
1...65536 pulses per revolution programmable

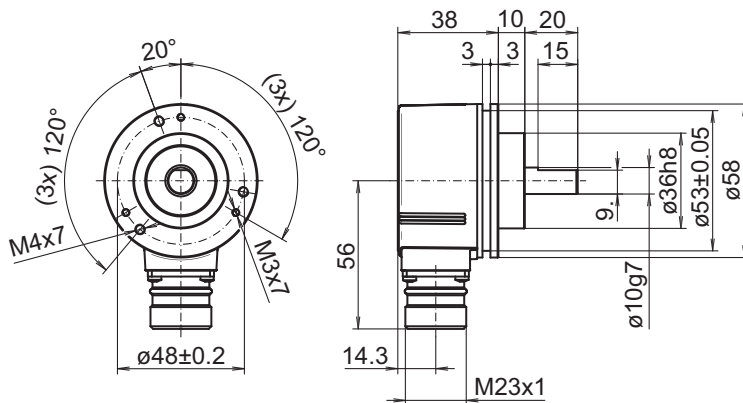
EIL580P - solid shaft

## Dimensions

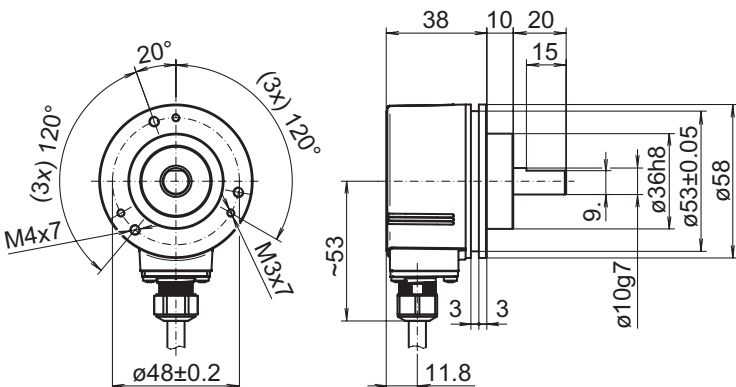
### Clamping flange, flange connector M12, radial



### Clamping flange, flange connector M23, radial



### Clamping flange, cable radial



# Incremental encoders

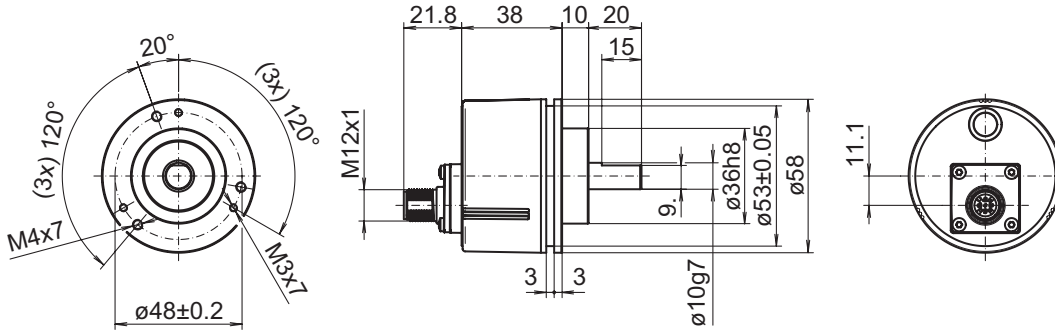
Solid shaft with clamping or synchro flange

1...65536 pulses per revolution programmable

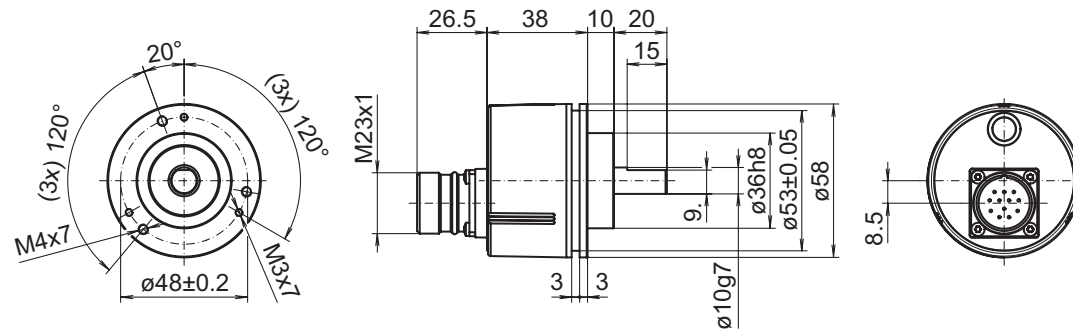
## EIL580P - solid shaft

### Dimensions

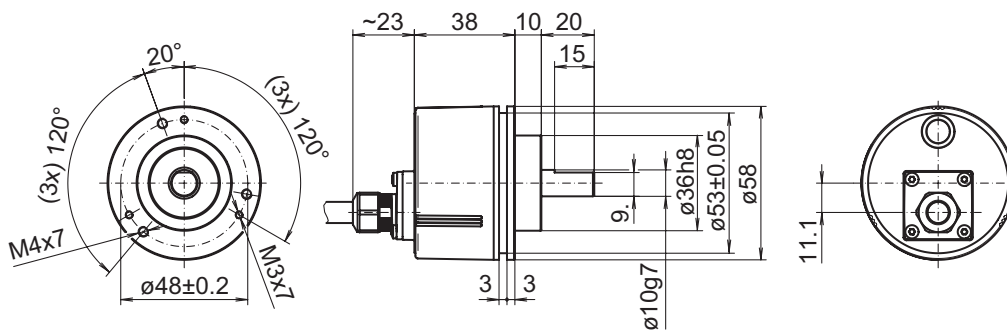
#### Clamping flange, flange connector M12, axial



#### Clamping flange, flange connector M23, axial



#### Clamping flange, cable axial



# Incremental encoders

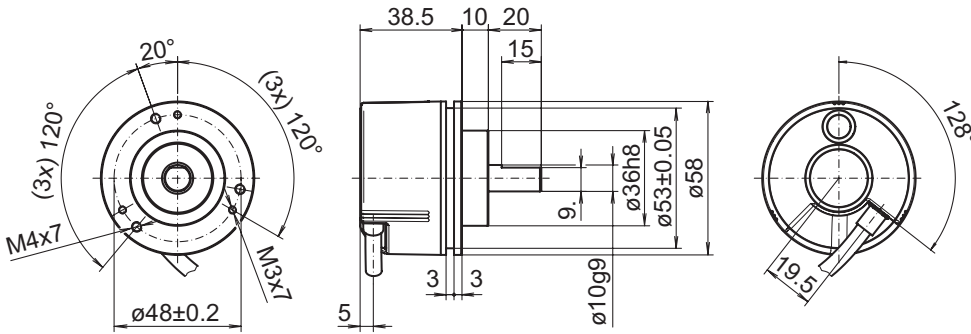
## Solid shaft with clamping or synchro flange

### 1...65536 pulses per revolution programmable

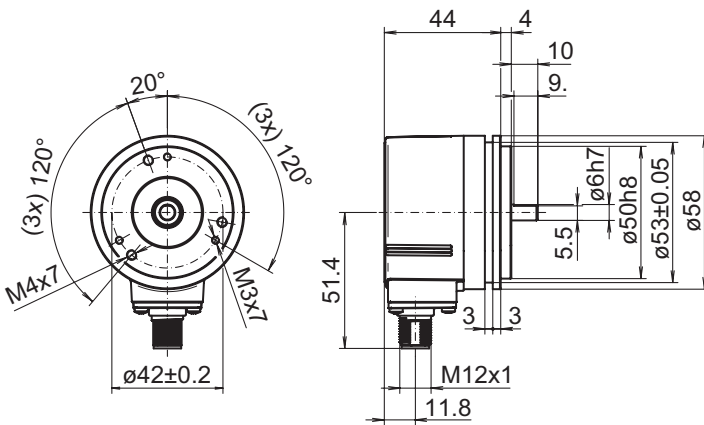
EIL580P - solid shaft

#### Dimensions

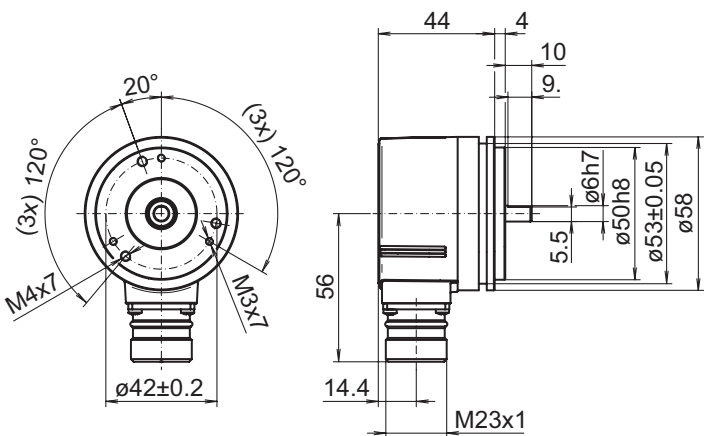
##### Clamping flange, cable tangential



##### Synchro flange, flange connector M12, radial



##### Synchro flange, flange connector M23, radial





# Incremental encoders

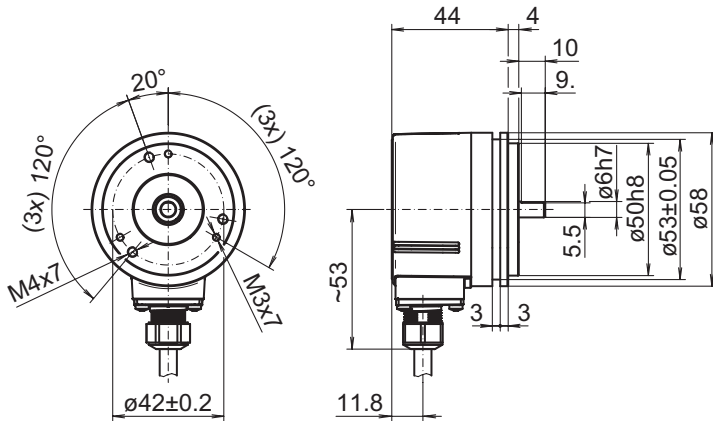
## Solid shaft with clamping or synchro flange

1...65536 pulses per revolution programmable

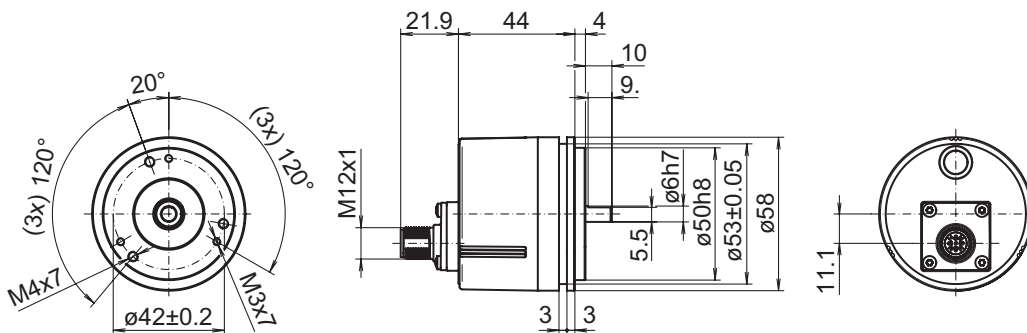
### EIL580P - solid shaft

#### Dimensions

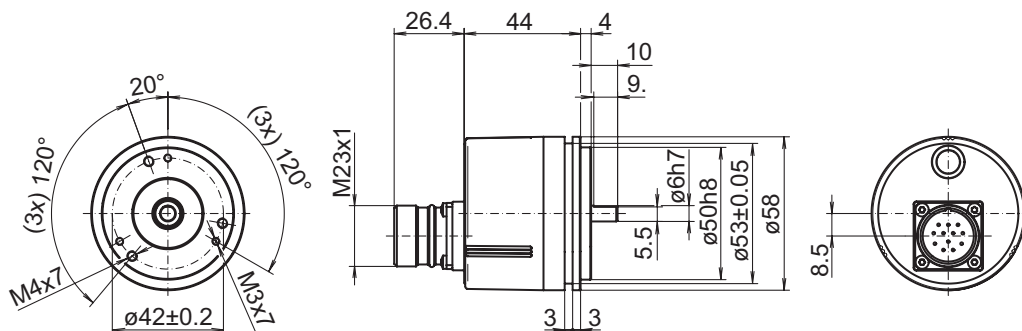
##### Synchro flange, cable radial



##### Synchro flange, flange connector M12, axial



##### Synchro flange, flange connector M23, axial



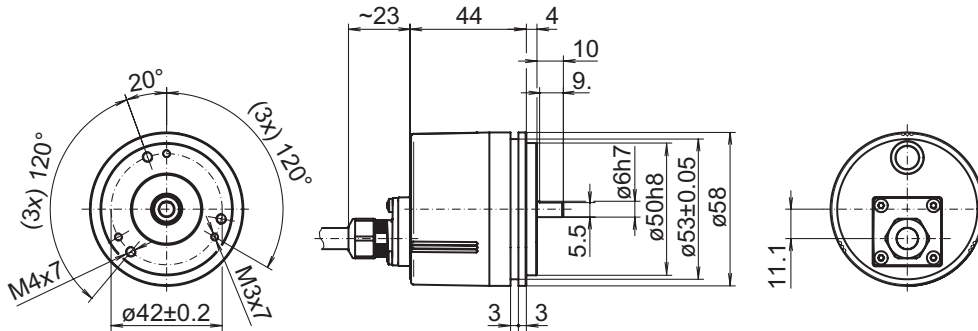
# Incremental encoders

Solid shaft with clamping or synchro flange  
1...65536 pulses per revolution programmable

EIL580P - solid shaft

## Dimensions

### Synchro flange, cable axial



### Synchro flange, cable tangential

