

Incremental encoders

Solid shaft with clamping or synchro flange

1...65536 pulses per revolution programmable

EIL580P - solid shaft - OptoPulse®



EIL580P with clamping flange

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 |

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 - mechanical design

| | |
|-------------------------|--|
| Size (flange) | ø58 mm |
| Admitted shaft load | ≤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 | ≤0.015 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) ø9.525 mm (3/8") x 20 mm, solid shaft with edge |
|------------|---|

EIL580P - synchro flange

| | |
|------------|---|
| Shaft type | ø6 x 10 mm, solid shaft with flat edge (synchro flange) |
|------------|---|

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Part number

Clamping flange

EIL580P-S C . . . 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 channel (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

- U3 $\varnothing 9.525$ mm (3/8") x 20 mm, with edge
- 10 $\varnothing 10$ x 20 mm, with edge**

Flange

- C Clamping flange, centering collar $\varnothing 36$ mm, M3/M4

Printed in **bold** = standard items (up to the quantity of 10 will be supplied within 5 working days).

(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

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EIL580P - solid shaft - OptoPulse®

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 channel (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).

(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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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

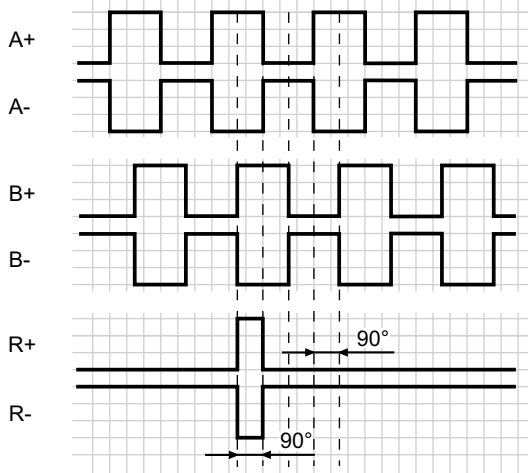
Solid shaft with clamping or synchro flange

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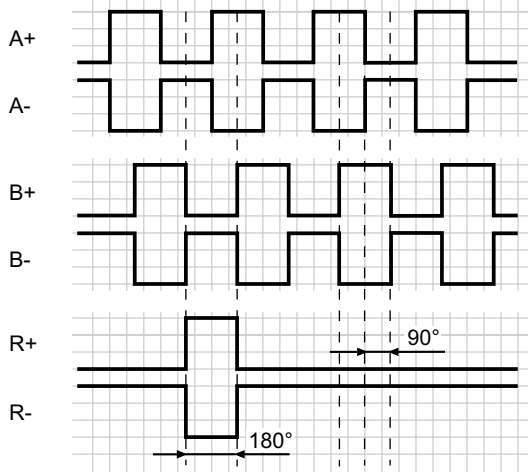
EIL580P - solid shaft - OptoPulse®

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 |

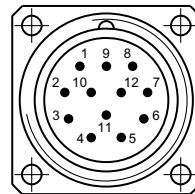
Terminal assignment

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-Set ¹⁾ |
| 8 | grey | B+ |
| 9 | – | – |
| 10 | white | GND |
| 11 | – | – |
| 12 | brown | UB |

Screen: Connected to housing

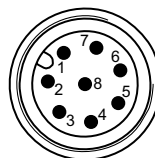
Cable data: PUR, [4x2x0,14 mm²], bending radius >45,8 mm, outer diameter 6.1 mm



¹⁾ The R-Set input is used to set the reference pulse (zero pulse) on the current shaft position.
R-Set = 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

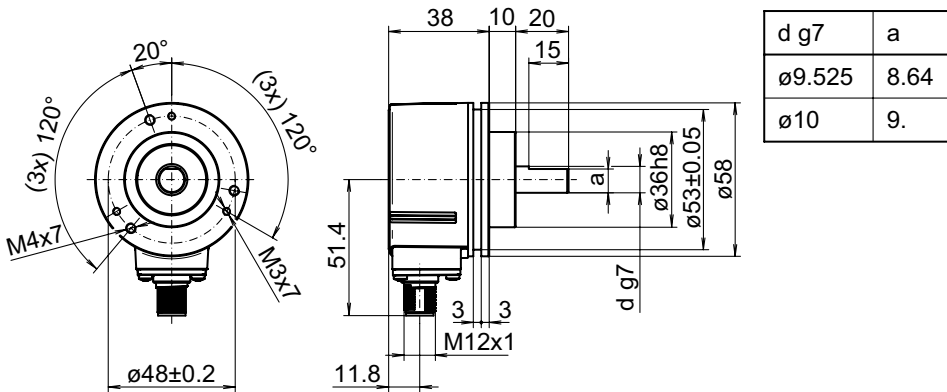
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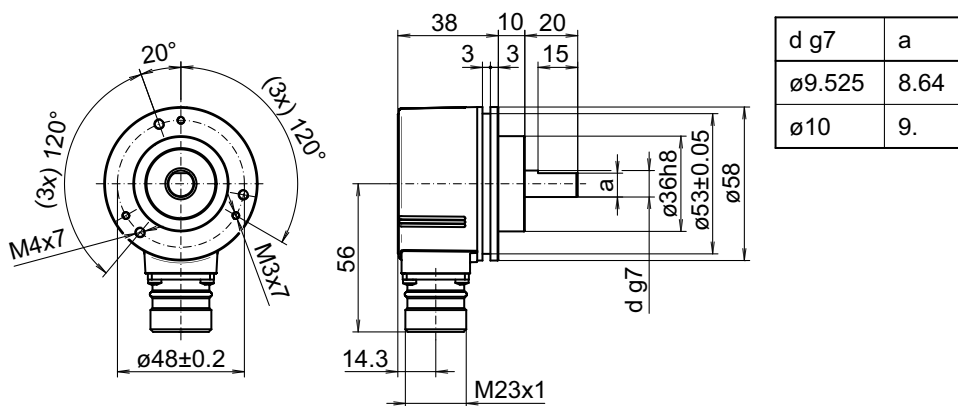
EIL580P - solid shaft - *OptoPulse*®

Dimensions

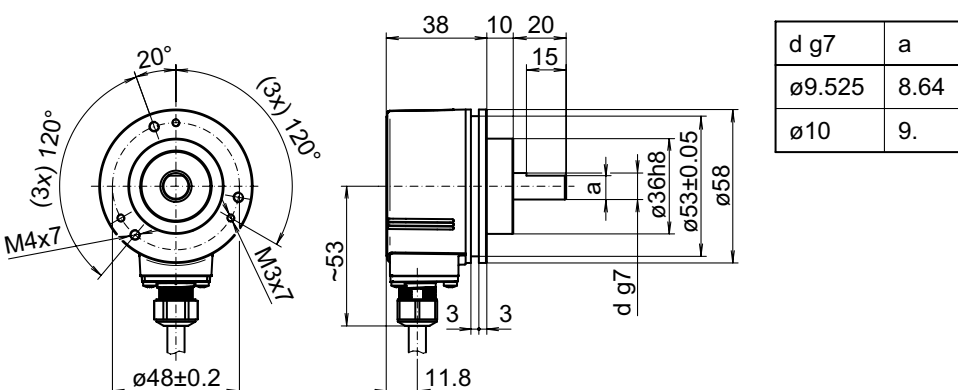
Clamping flange, flange connector M12, radial



Clamping flange, flange connector M23, radial



Clamping flange, cable radial



Incremental encoders

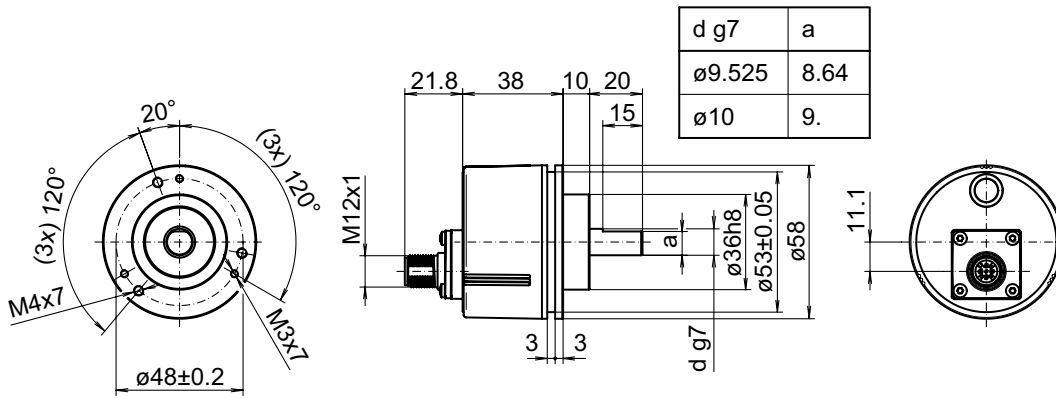
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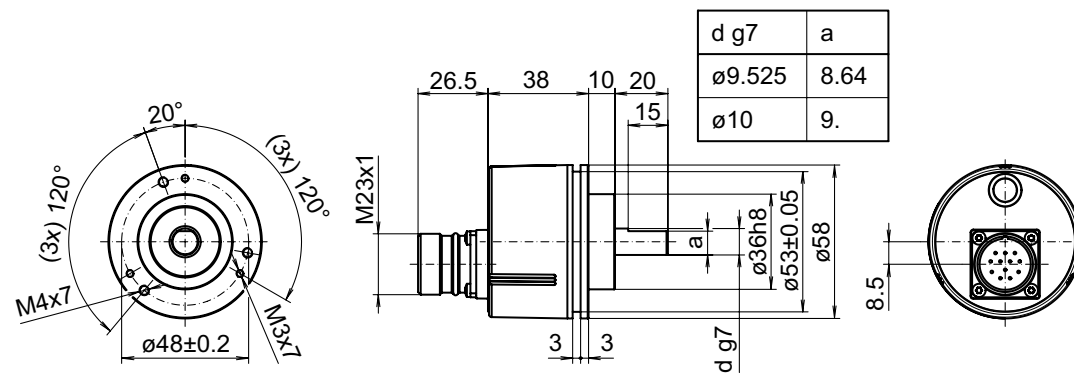
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Dimensions

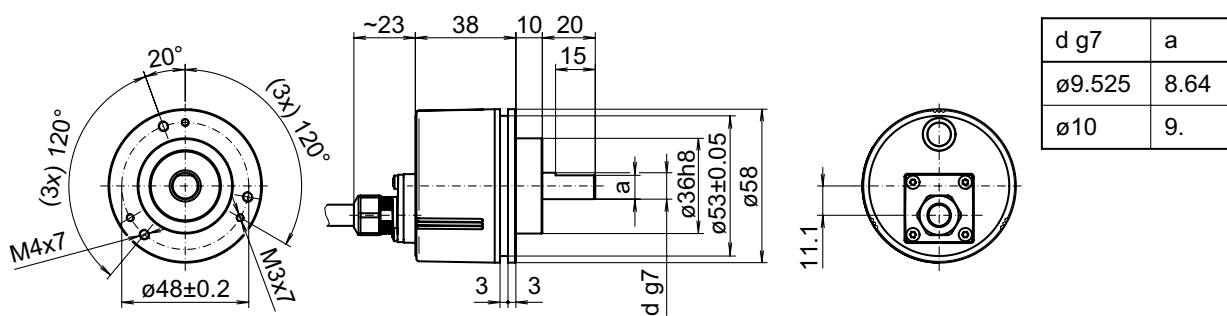
Clamping flange, flange connector M12, axial



Clamping flange, flange connector M23, axial



Clamping flange, cable axial



Incremental encoders

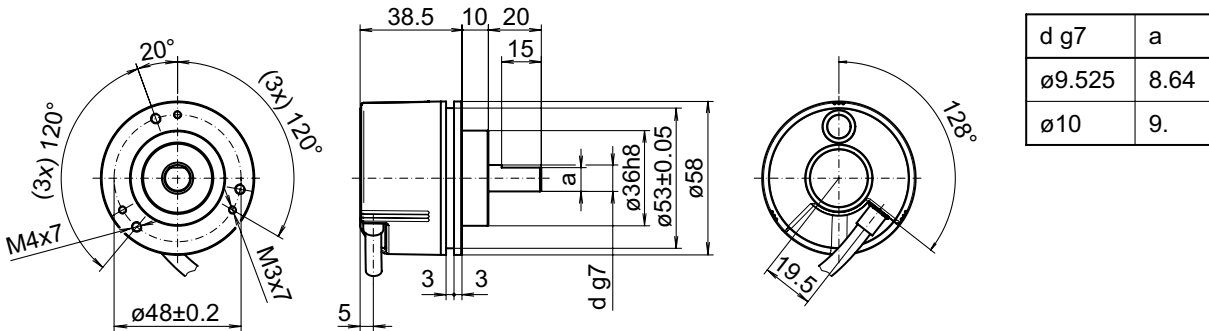
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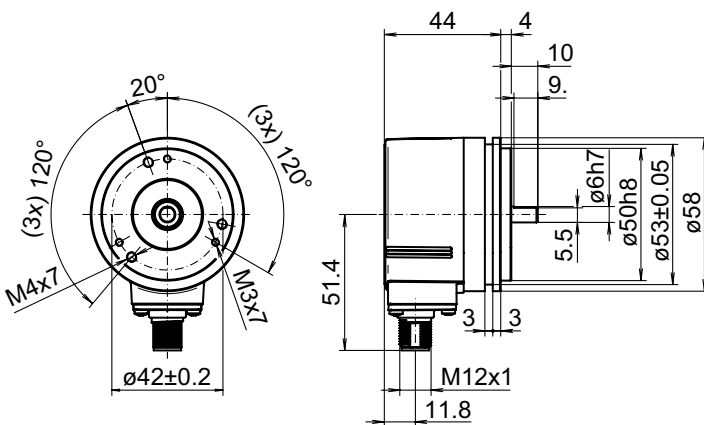
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Dimensions

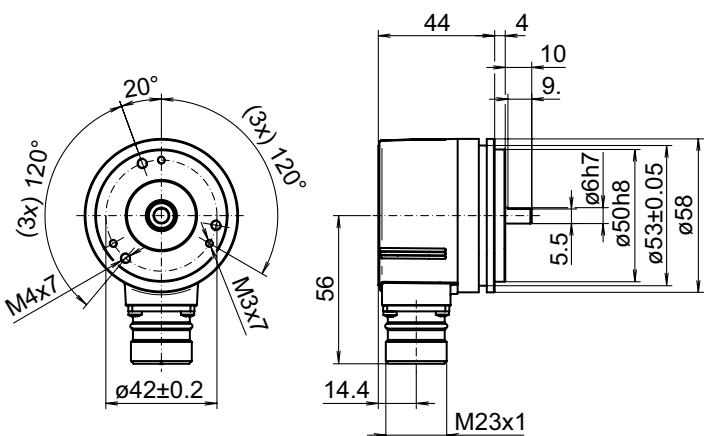
Clamping flange, cable tangential



Synchro flange, flange connector M12, radial



Synchro flange, flange connector M23, radial



Incremental encoders

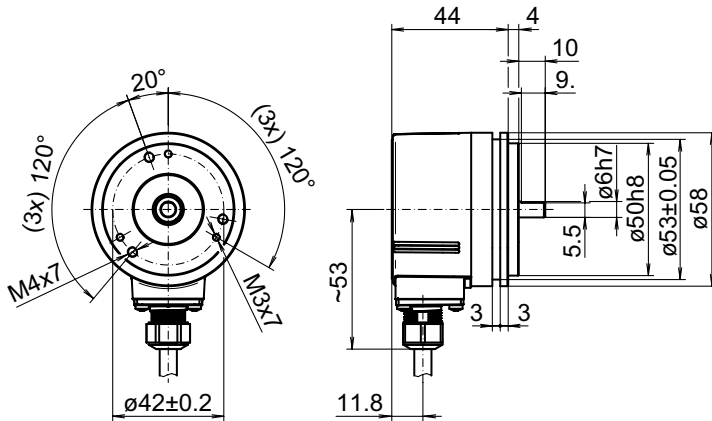
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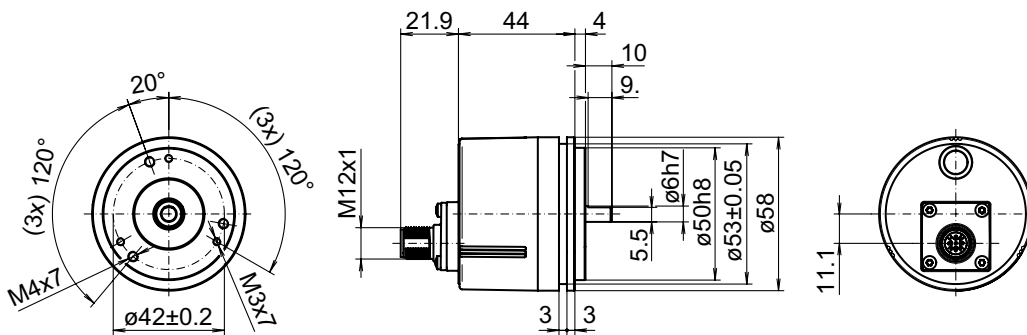
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Dimensions

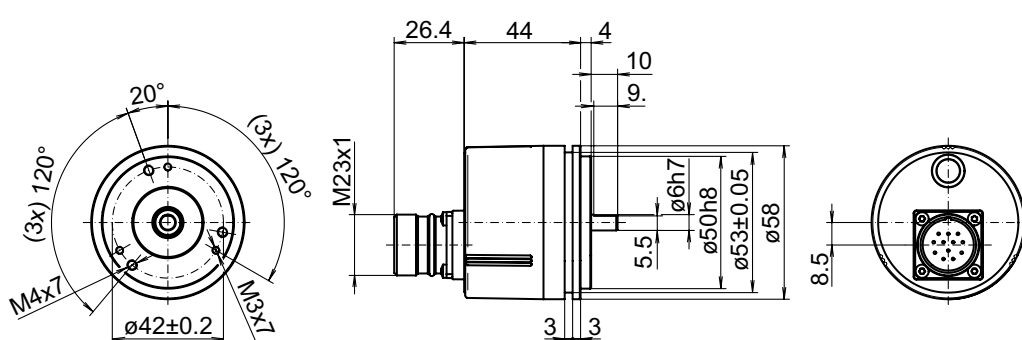
Synchro flange, cable radial



Synchro flange, flange connector M12, axial



Synchro flange, flange connector M23, axial



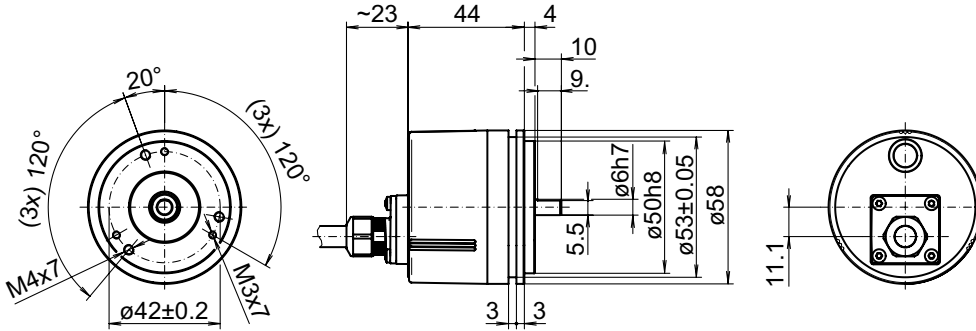
Incremental encoders

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

EIL580P - solid shaft - *OptoPulse*®

Dimensions

Synchro flange, cable axial



Synchro flange, cable tangential

