

Incremental encoders

Solid shaft with clamping or synchro flange

Increments per turn 100...5000

EIL580 - solid shaft



EIL580 with clamping flange

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
Resolution (steps/turn)	100...5000
Phase shift	90° \pm 10°
Scan ratio	40...60 %
Reference signal	Zero pulse, width 90° \pm 10 %
Sensing method	Optical
Output frequency	\leq 300 kHz (TTL) \leq 160 kHz (HTL)
Output circuit	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

Features

- Precise optical sensing technique with latest technology
- Electric interface TTL and HTL
- Clamping or synchro flange
- High protection max. IP 67
- High resistance to shock and vibrations
- Wide range voltage supply 4.75...30 VDC
- Increments per turn max. 5000

Technical data - mechanical design

Dimensions (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 °C, IP 67) \leq 12000 rpm (+20 °C, IP 65)
Starting torque	\leq 0.01 Nm (+20 °C, IP 65) \leq 0.02 Nm (+20 °C, IP 67)
Materials	Housing: aluminium die-cast Flange: aluminium die-cast 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
EIL580 - clamping flange	
Shaft type	\varnothing 10 x 20 mm, solid shaft with edge (clamping flange)
EIL580 - synchro flange	
Shaft type	\varnothing 6 x 10 mm, solid shaft with edge (synchro flange)

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Part number

Clamping flange

EIL580-S **C** **10** **A**

Operating temperature
A -40...+85 °C

See part number (pulses)

Voltage supply / output circuit

- 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, pin terminals, ccw**
- B Flange connector M12, 8-pin, radial, pin terminals, ccw

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).

Part number (pulses)

00100	00300	00720	01250	02500
00120	00360	00800	01440	03000
00150	00400	00900	01500	03600
00200	00500	01000	01800	04000
00250	00512	01024	02000	04096
00256	00600	01200	02048	05000

Stock items

EIL580-SC10.5FE.01024.A | EIL580-SC10.5FE.02048.A
EIL580-SC10.5FN.01024.A | EIL580-SC10.5FN.02048.A

Numerous stock items in single quantity will be supplied within 24 hours respectively one day ex works.

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Part number

Synchro flange

EIL580-S **Y** **06** **A**

Operating temperature
A -40...+85 °C

See part number (pulses)

Voltage supply / output circuit

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, pin terminals, ccw

B Flange connector M12, 8-pin, radial, pin terminals, ccw

Protection

5 IP 65

7 IP 67

Specification solid shaft

06 ø6 x 10 mm, with edge

Flange

Y Synchro flange, synchro flute ø52 mm, M3/M4

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

Part number (pulses)

00100	00300	00720	01250	02500
00120	00360	00800	01440	03000
00150	00400	00900	01500	03600
00200	00500	01000	01800	04000
00250	00512	01024	02000	04096
00256	00600	01200	02048	05000

Stock items

EIL580-SY06.5FE.01024.A	EIL580-SY06.5FE.02048.A
EIL580-SY06.5FN.01024.A	EIL580-SY06.5FN.02048.A

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	Female connector M12, 8-pin, straight, 2 m, shielded (ESG 34FH0200G)
10129332	Female connector M12, 8-pin, straight, 5 m, shielded (ESG 34FH0500G)
10129333	Female connector M12, 8-pin, straight, 10 m, shielded (ESG 34FH1000G)
11053961	Female connector M12, 8-pin, angled, 2 m, shielded (ESW 33FH0200G)
11053962	Female connector M12, 8-pin, angled, 5 m, shielded (ESW 33FH0500G)
10170054	Female connector M12, 8-pin, angled, 10 m, shielded (ESW 33FH1000G)
10164705	Connector S2BG12, M23, 12-pin
11095302	Connector S2BG12, M23, 12-pin, 1 m cable
11100408	Connector S2BG12, M23, 12-pin, 2 m cable
11100430	Connector S2BG12, M23, 12-pin, 5 m cable
11100431	Connector S2BG12, M23, 12-pin, 10 m cable

Mounting accessories for EIL580 - 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
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	Spring encoder arm

Mounting accessories for EIL580 - 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

Mounting accessories for EIL580 - synchro flange

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) with 3x eccentric fixings, screws and nuts
11065545	Set of eccentric fixings type A

For matching measuring wheels please see chapter accessories, "measuring wheels" (MR).

Incremental encoders

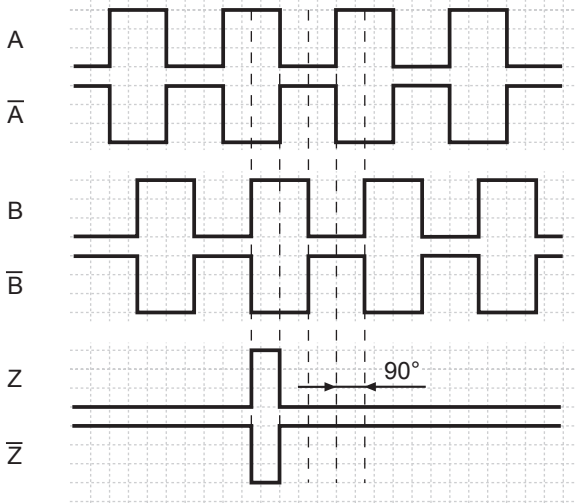
Solid shaft with clamping or synchro flange

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Output signals

Clockwise rotating direction when looking at flange.



Trigger level

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

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

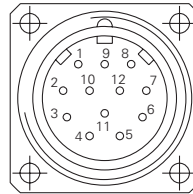
Terminal assignment

Flange connector M23, 12-pin / cable

Pin	Core color	Assignment
1	pink	Signal B inv.
2	–	–
3	blue	Signal Z (zero pulse)
4	red	Signal Z inv. (zero pulse inv.)
5	green	Signal A
6	yellow	Signal A inv.
7	–	–
8	grey	Signal B
9	–	–
10	white	GND
11	–	–
12	brown	UB

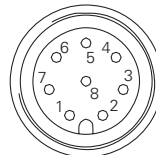
Screen: Connected to housing

Cable data: PVC, 4x2x0.14 mm², bending radius >32.5 mm
Outer diameter 6.5 mm



Flange connector M12, 8-pin

Pin	Assignment
1	GND
2	UB
3	Signal A
4	Signal A inv.
5	Signal B
6	Signal B inv.
7	Signal Z (zero pulse)
8	Signal Z inv. (zero pulse inv.)



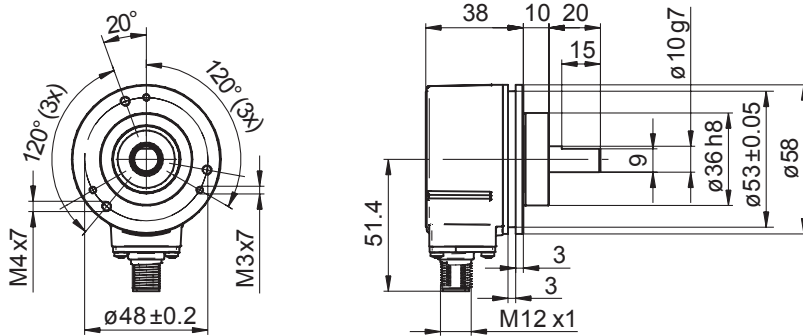
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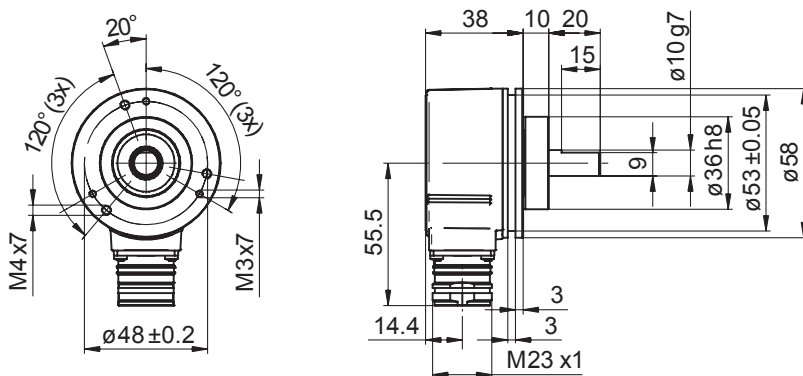
EIL580 - solid shaft

Dimensions

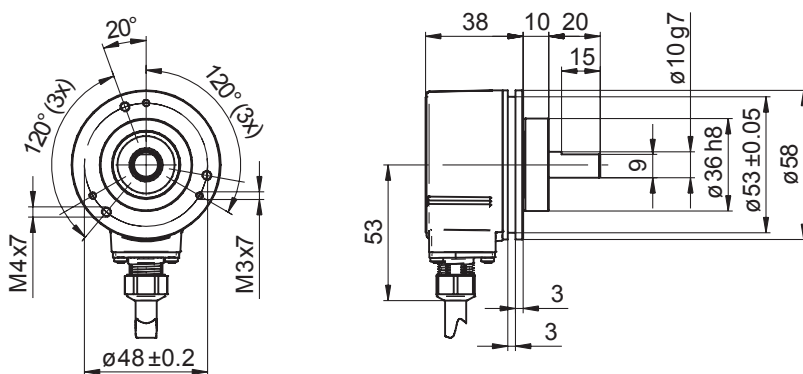
EIL580 - clamping flange, flange connector M12, radial



EIL580 - clamping flange, flange connector M23, radial



EIL580 - clamping flange, cable radial



Incremental encoders

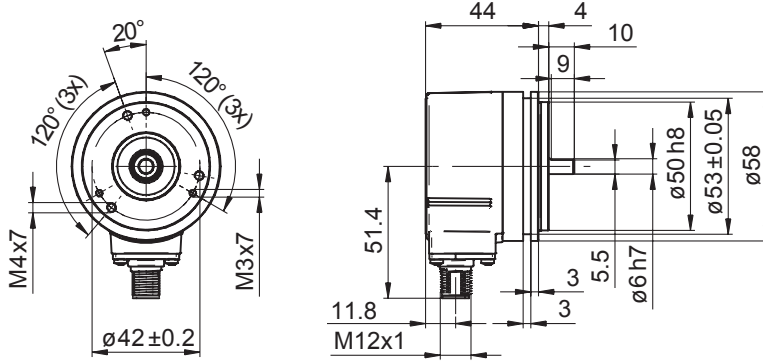
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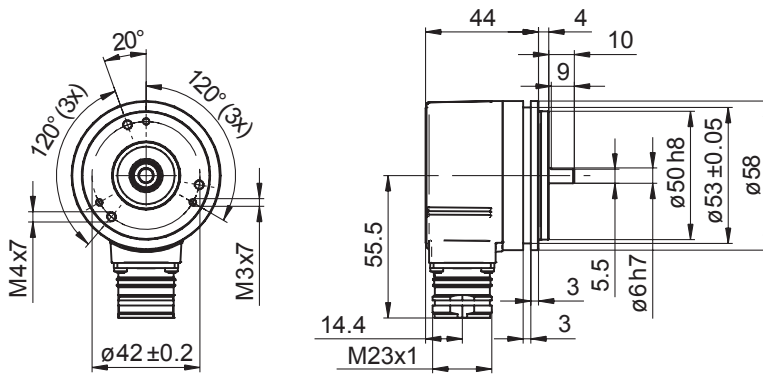
EIL580 - solid shaft

Dimensions

EIL580 - synchro flange, flange connector M12, radial



EIL580 - synchro flange, flange connector M23, radial



EIL580 - synchro flange, cable radial

