Baumer
Passion for Sensors

Incremental encoders

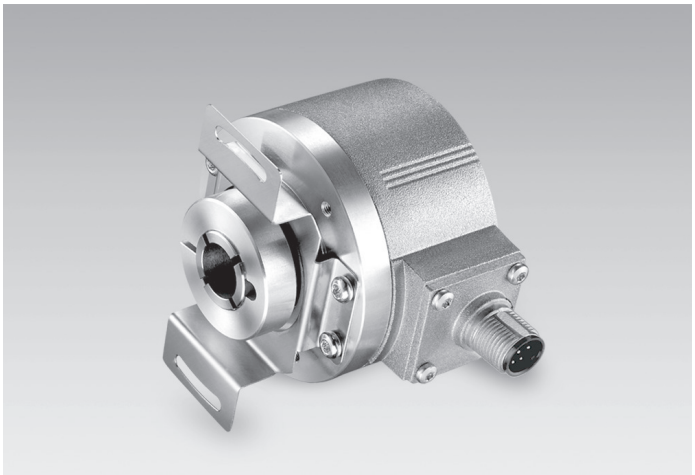
EIL580-T - Option 6301

With through hollow shaft

100…5000 pulses per revolution

Overview

- Size ø58 mm
- Precise optical sensing
- Output signal level TTL or HTL
- Through hollow shaft, ø8…15 mm
- Connection radial or tangential
- Pulses per revolution up to 5000
- High protection up to IP 67
- High resistance to shock and vibrations
- Option 6301, hybrid ball bearings for protection against shaft currents



Technical data

Technical data - electrical ratings

Voltage supply	5 VDC ±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	≤70 mA
Pulses per revolution	100 … 5000
Phase shift	90 ° ±10°
Duty cycle	40…60 %
Reference signal	Zero pulse, width 90° ±10 %
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
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)	ø58 mm
Shaft type	ø8...15 mm (through hollow shaft) ø9.52 mm (through hollow shaft) ø12.7 mm (through hollow shaft)
Protection DIN EN 60529	IP 65 (without shaft seal) IP 67 (with shaft seal)
Operating speed	≤3000 rpm (+20 °C, IP 67) ≤6000 rpm (+20 °C, IP 65)
Starting torque	≤0,025 Nm (+20 °C, IP 65) ≤0,03 Nm (+20 °C, IP 67)
Material	Housing: aluminium die-cast Flange: aluminium
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 250 g, 6 ms
Connection	Flange connector M12, 8-pin Flange connector M23, 12-pin Cable
Weight approx.	300 g

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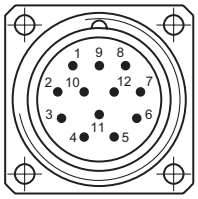
Terminal assignment

Flange connector M23, 12-pin / cable

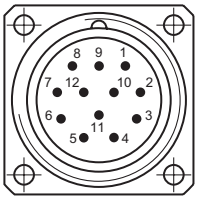
Pin	Core color	Assignment
1	pink	B-
2	–	–
3	blue	R+
4	red	R-
5	green	A+
6	yellow	A-
7	–	–
8	grey	B+
9	–	–
10	white	GND
11	–	–
12	brown	UB

Screen: Connected to housing

Cable data: PVC, [4x2x0.14 mm²], bending radius >32.5 mm, outer diameter approx. 6.4 mm



Flange connector M23, pin contacts, 12-pin, counterclockwise (CCW)



Flange connector M23, pin contacts, 12-pin, clockwise (CW)

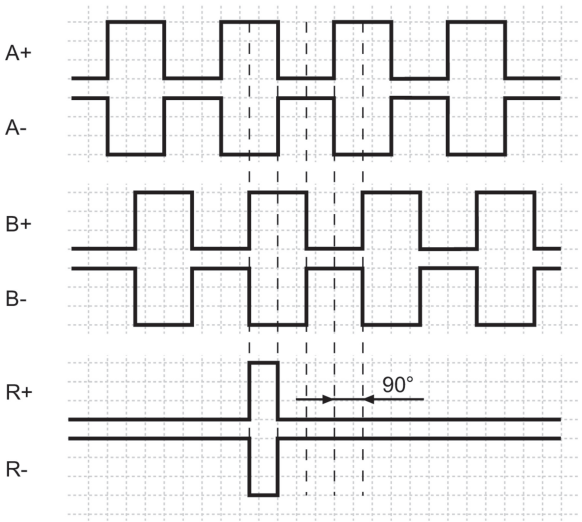
Flange connector M12, 8-pin

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



Output signals

Clockwise rotating direction when looking at 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

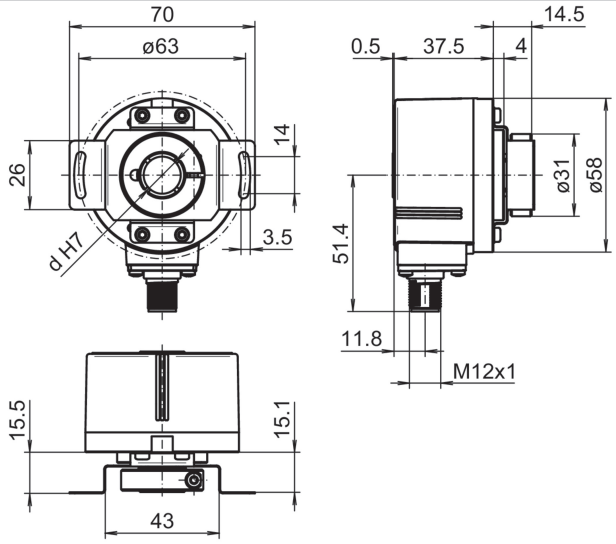
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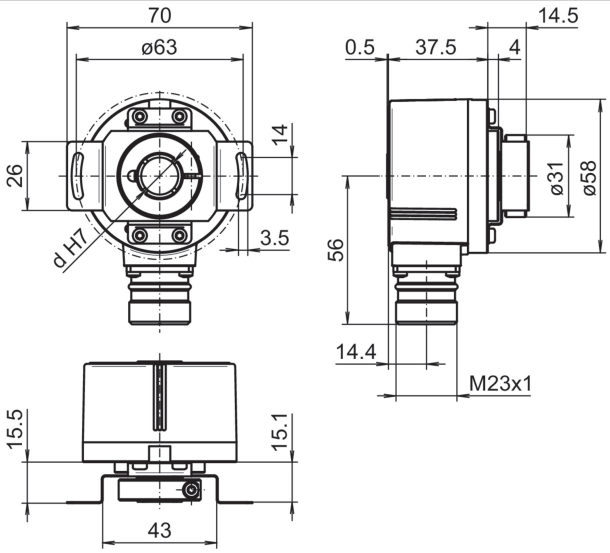
With through hollow shaft

100…5000 pulses per revolution

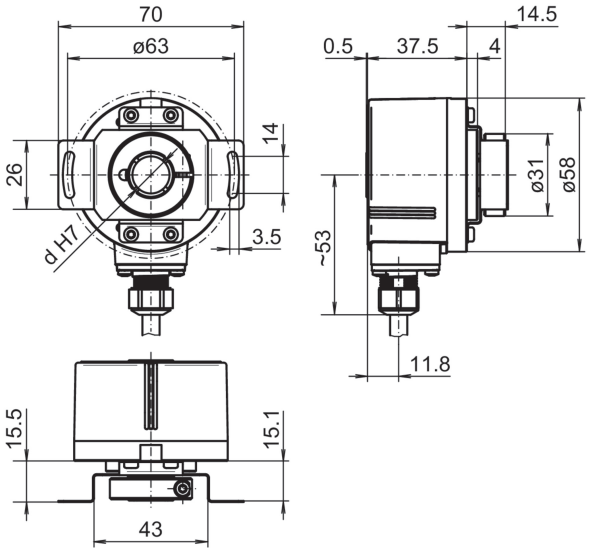
Dimensions



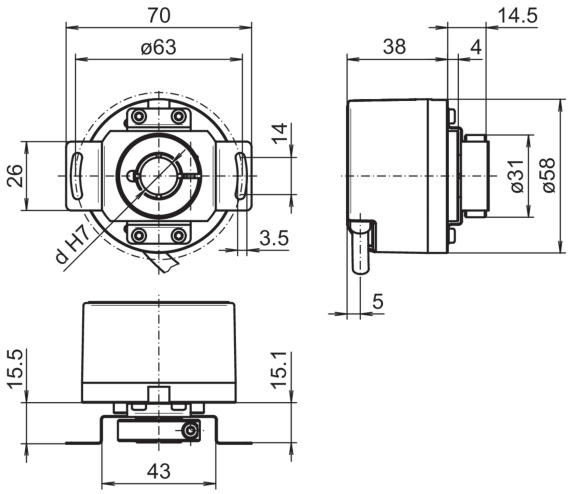
Clamping ring at A-side: Through hollow shaft, flange connector M12 radial



Clamping ring at A-side: Through hollow shaft, flange connector M23 radial



Clamping ring at A-side: Through hollow shaft, cable radial



Clamping ring at A-side: Through hollow shaft, cable tangential

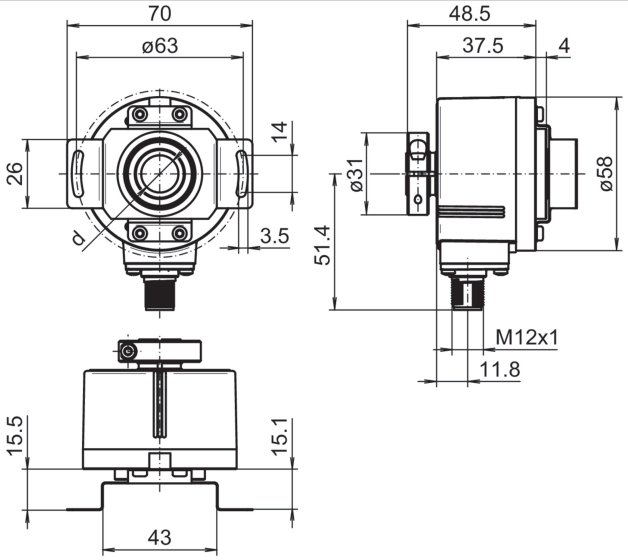
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EIL580-T - Option 6301

With through hollow shaft

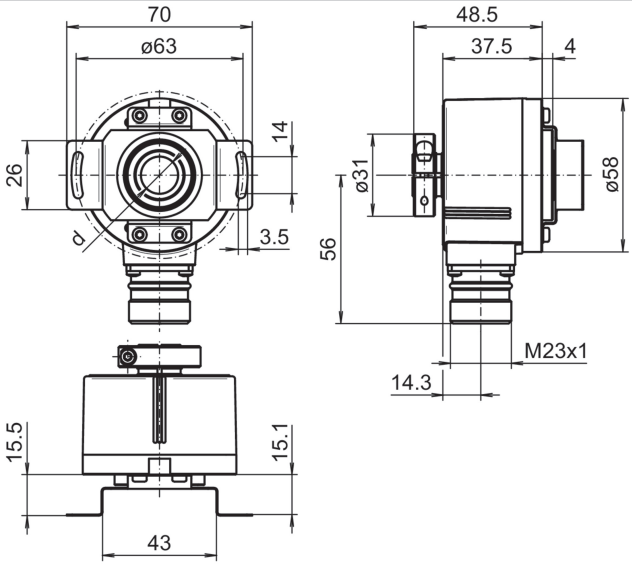
100…5000 pulses per revolution

Dimensions



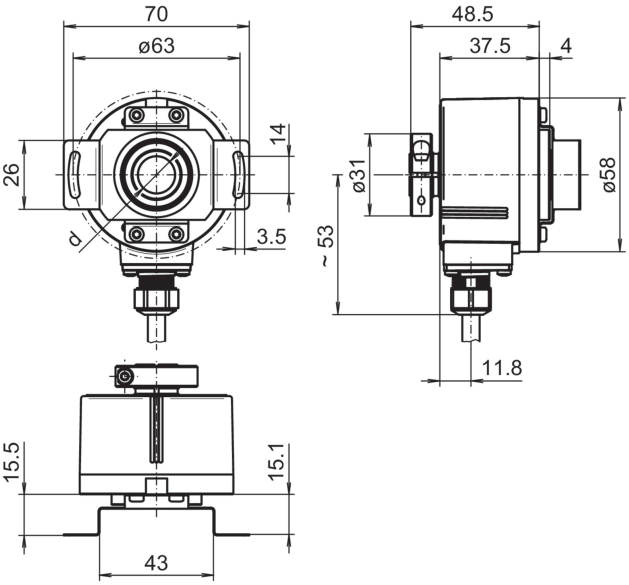
d H7: ø10, ø12, ø14
d G7: ø3/8" (ø9.52), ø1/2" (ø12.7)

Clamping ring at B-side: Through hollow shaft, flange connector M12 radial



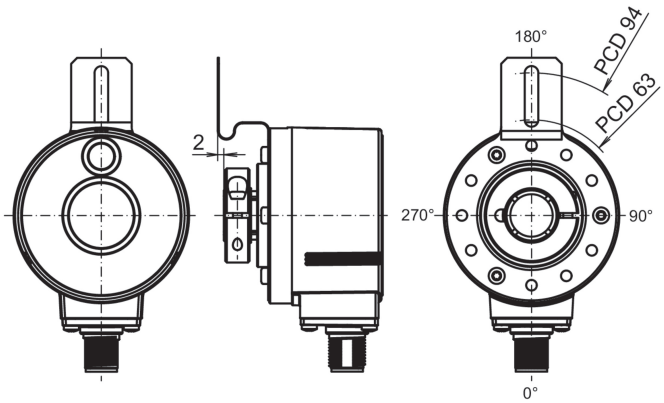
d H7: ø10, ø12, ø14
d G7: ø3/8" (ø9.52), ø1/2" (ø12.7)

Clamping ring at B-side: Through hollow shaft, flange connector M23 radial



d H7: ø10, ø12, ø14
d G7: ø3/8" (ø9.52), ø1/2" (ø12.7)

Clamping ring at B-side: Through hollow shaft, cable radial



Flange version M: Mounting position torque support

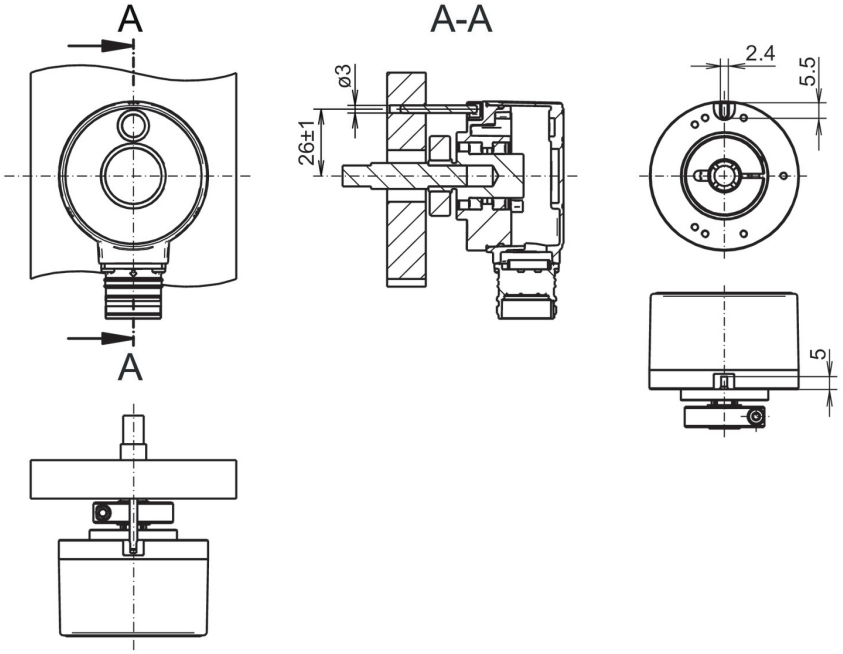
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EIL580-T - Option 6301

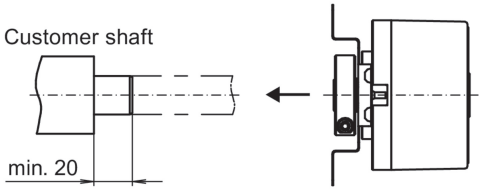
With through hollow shaft

100…5000 pulses per revolution

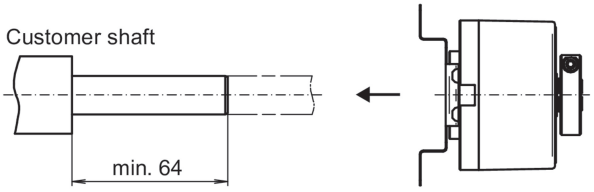
Dimensions



Flange version P: Pin torque support, axial, clamping ring at A-side



Clamping ring at A-side: Through hollow shaft



Clamping ring at B-side: Through hollow shaft

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EIL580-T - Option 6301

With through hollow shaft

100…5000 pulses per revolution

Ordering reference

	EIL580	-	T	#	##	.	#	##	#	.	######	.	A	/	6301
Product															
	EIL580														
Shaft type															
Through hollow shaft			T												
Flange (Hollow shaft)															
Without stator coupling				N											
With stator coupling, 1-armed, hole circle ø63...94 mm, M4, mounting position 180°				M											
With stator coupling ø63 mm				T											
Pin torque support 3 mm, axial/radial				P											
Through hollow shaft															
ø8 mm, clamping ring, A-side					08										
ø3/8" (ø9.52 mm), clamping ring, A-side					U3										
ø10 mm, clamping ring, A-side					10										
ø12 mm, clamping ring, A-side					12										
ø1/2" (ø12.7 mm), clamping ring, A-side					U4										
ø14 mm, clamping ring, A-side					14										
ø15 mm, clamping ring, A-side					15										
ø3/8" (ø9.52 mm), clamping ring, B-side					V3										
ø10 mm, clamping ring, B-side					B0										
ø12 mm, clamping ring, B-side					B2										
ø1/2" (ø12.7 mm), clamping ring, B-side					V4										
ø14 mm, clamping ring, B-side					B4										
Protection class															
IP 65							5								
IP 67							7								
Connection															
Cable radial, 1 m								R							
Cable radial, 2 m								L							
Flange socket radial, M23, 12-pin, male contacts, CCW(1)								F							
Flange socket radial, M12, 8-pin, male contacts, CCW								B							
Cable tangential, 1 m								P							
Cable tangential, 2 m								Q							
Flange socket radial, M23, 12-pin, male contacts, CW(2)								E							
Voltage supply / output															
5 VDC, TTL/RS422, 6 channel									E						
8...30 VDC, TTL/RS422, 6 channel (Vout=5V)									H						
8...30 VDC, HTL/push pull, 6 channel									N						
4,75...30 VDC, HTL/push pull, 6 channel (Vout=Vin)									Q						

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With through hollow shaft

100…5000 pulses per revolution

Ordering reference

EIL580	-	T	#	##	.	#	##	#	.	######	.	A	/	6301

Pulses per revolution

100	100
120	120
150	150
200	200
250	250
256	256
300	300
360	360
400	400
440	440
500	500
512	512
600	600
720	720
800	800
900	900
1000	1000
1024	1024
1200	1200
1250	1250
1440	1440
1500	1500
1800	1800
2000	2000
2048	2048
2500	2500
3000	3000
3600	3600
4000	4000
4096	4096
5000	5000

Operating temperature

-40...+85 °C	A

/

Option Mechanics

Hybrid ball bearings

(1) Use suitable connection cables and M23 connectors with clockwise direction (CW). You can find these in our accessories “Connectors and cables”.
(2) Use suitable connection cables and M23 connectors with counterclockwise direction (CCW). You can find these in our accessories “Connectors and cables”.

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Accessories

Mounting accessories

11066083	Mounting kit 006
11073119	Mounting kit 021
11067367	Mounting kit 028
11100198	Mounting kit 046
11113210	Mounting kit 047
11124300	Mounting kit 048
11106627	Fan cover clip 8 mm
11094674	Clamping ring 12/31/ 8 M3 8.8 for EIL580 hollow shaft ø8...10 mm for clamping at A or B side
11094675	Clamping ring 17/31/ 8 M3 8.8 for EIL580 hollow shaft ø12...15 mm for clamping at A side
11123483	Clamping ring 16/31/ 8 M3 8.8 for EIL580 hollow shaft ø12...14 mm for clamping at B side
11116921	Insulating sleeve ø10 mm/ø12 mm/25 mm long
11116923	Insulating sleeve ø12 mm/ø14 mm/25 mm long

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	Female connector M23, 12-pin, CW
11095302	Female connector M23, 12-pin, CW, with cable 1 m
11100408	Female connector M23, 12-pin, CW, with cable 2 m
11100430	Female connector M23, 12-pin, CW, with cable 5 m
11100431	Female connector M23, 12-pin, CW, with cable 10 m
11074551	Female connector M23, 12-pin, CCW
11222560	Female connector M23, 12-pin, CCW, with cable 1 m
11222561	Female connector M23, 12-pin, CCW, with cable 2 m
11222562	Female connector M23, 12-pin, CCW, with cable 5 m
11222563	Female connector M23, 12-pin, CCW, with cable 10 m

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