

EN580E.IL-T - TTL/HTL

Through hollow shaft

Up to 4096 pulses per revolution

Overview

- Size $\varnothing 58$ mm
- Precise optical sensing
- Output signal level TTL or HTL
- Pulses per revolution up to 4096
- High connection flexibility thanks to flexible M12 connector and flylead connector M23



Technical data

Technical data - electrical ratings

Voltage supply	5 VDC ± 5 % 8...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	1024 2048 4096
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	≤ 300 kHz (TTL) ≤ 160 kHz (HTL)
Output signals	A+, B+, R+, A-, B-, R-
Output stages	TTL/RS422 HTL/push-pull
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-4
Approval	UL-Listing: E217823

Technical data - mechanical design

Size (flange)	$\varnothing 58$ mm
Shaft type	$\varnothing 12$ mm (through hollow shaft) $\varnothing 14$ mm (through hollow shaft)
Motor shaft tolerance	± 0.2 mm (axial offset) ≤ 0.1 mm (radial offset) ≤ 0.1 mm (concentricity)
Protection EN 60529	IP 54 (flange side) IP 65 (housing side)
Operating speed	≤ 6000 rpm (+25 °C)
Starting torque	≤ 0.04 Nm
Material	Housing: aluminium Solid shaft: stainless steel
Operating temperature	-25...+100 °C (see general information) Max. temperature at the cable: +85 °C
Relative humidity	95 % non-condensing
Resistance	EN 60068-2-6 Vibration 10 g, 10-2000 Hz EN 60068-2-27 Shock 100 g, 11 ms
Connection	Connector M12, 8-pin, flexible Flange socket M23, 12-pin (with sense) Flylead connector M23, 12-pin, tangential, length 300 mm (with sense)
Weight approx.	300 g

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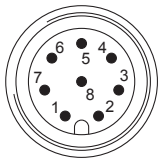
General information

Self-heating correlated to installation and ambient conditions as well as to electronics and supply voltage must be considered for precise thermal dimensioning. Operating the encoder close to the maximum limits requires measuring the real prevailing temperature at the encoder flange.

Terminal assignment

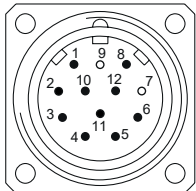
Connector M12, 8-pin

Pin	Assignment
1	0 V
2	+Vs
3	A+
4	A-
5	B+
6	B-
7	R+
8	R-



Flange socket M23, 12-pin, male contact, CCW

Pin	Assignment
1	B-
2	+Vs Sense
3	R+
4	R-
5	A+
6	A-
7	–
8	B+
9	–
10	0 V
11	0 V Sense
12	+Vs

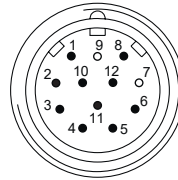


Terminal assignment

Flylead connector M23, 12-pin, male contacts, CCW

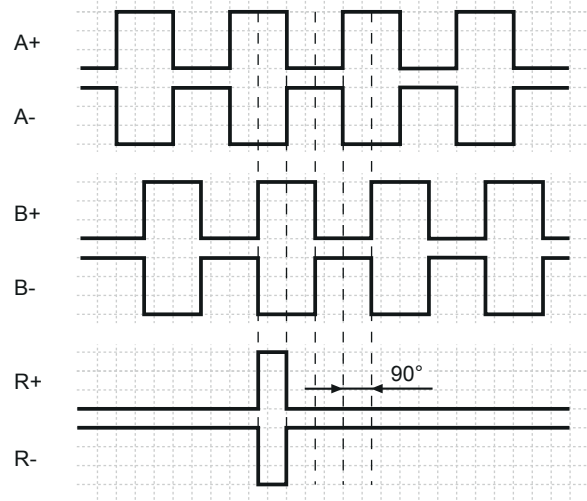
Pin	Assignment
1	B-
2	+Vs Sense
3	R+
4	R-
5	A+
6	A-
7	–
8	B+
9	–
10	0 V
11	0 V Sense
12	+Vs

Screen: connected to housing



Output signals

Clockwise rotating direction when looking at flange.



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Trigger level

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

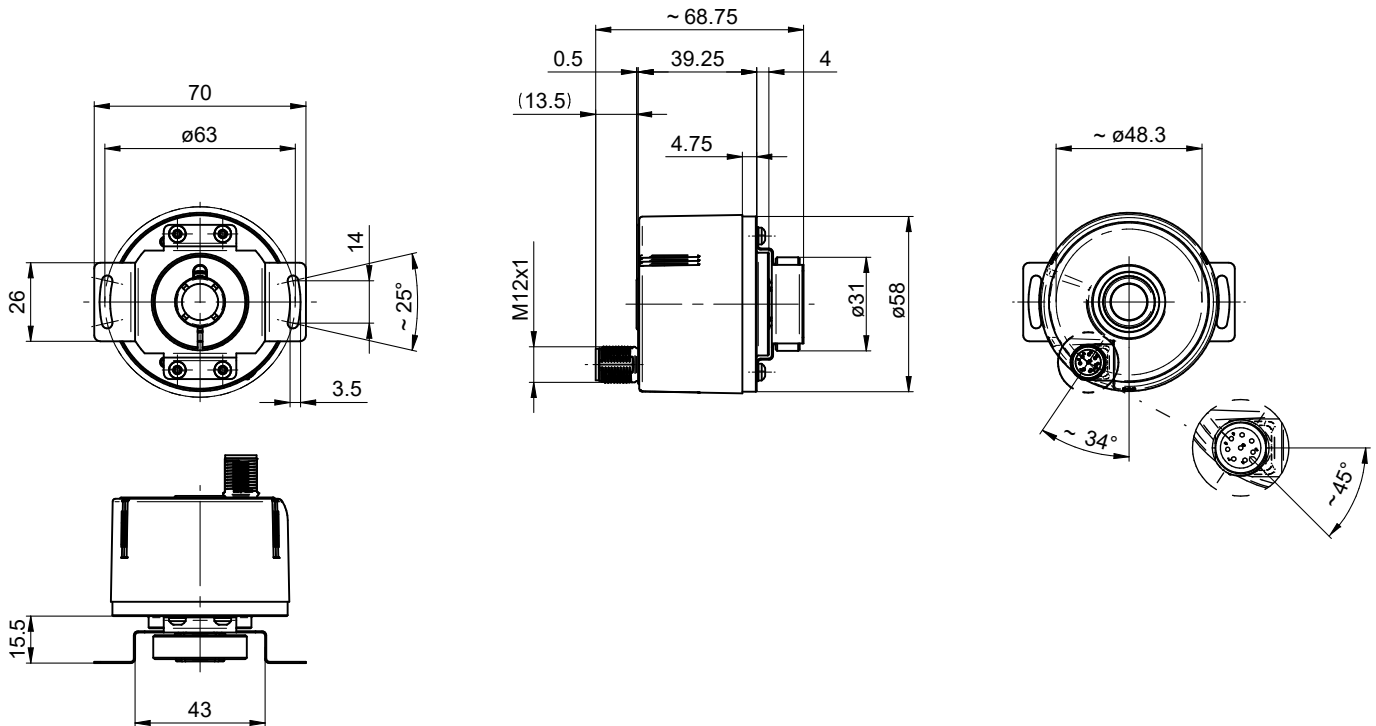
Outputs	HTL/Push-pull
Output level High	$\geq U_B - 3 \text{ V}$
Output level Low	$\leq 1.5 \text{ V}$
Load	$\leq 20 \text{ mA}$

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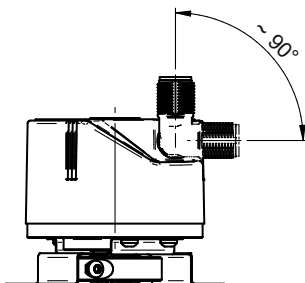
Through hollow shaft

Up to 4096 pulses per revolution

Dimensions



Through hollow shaft, connector M12



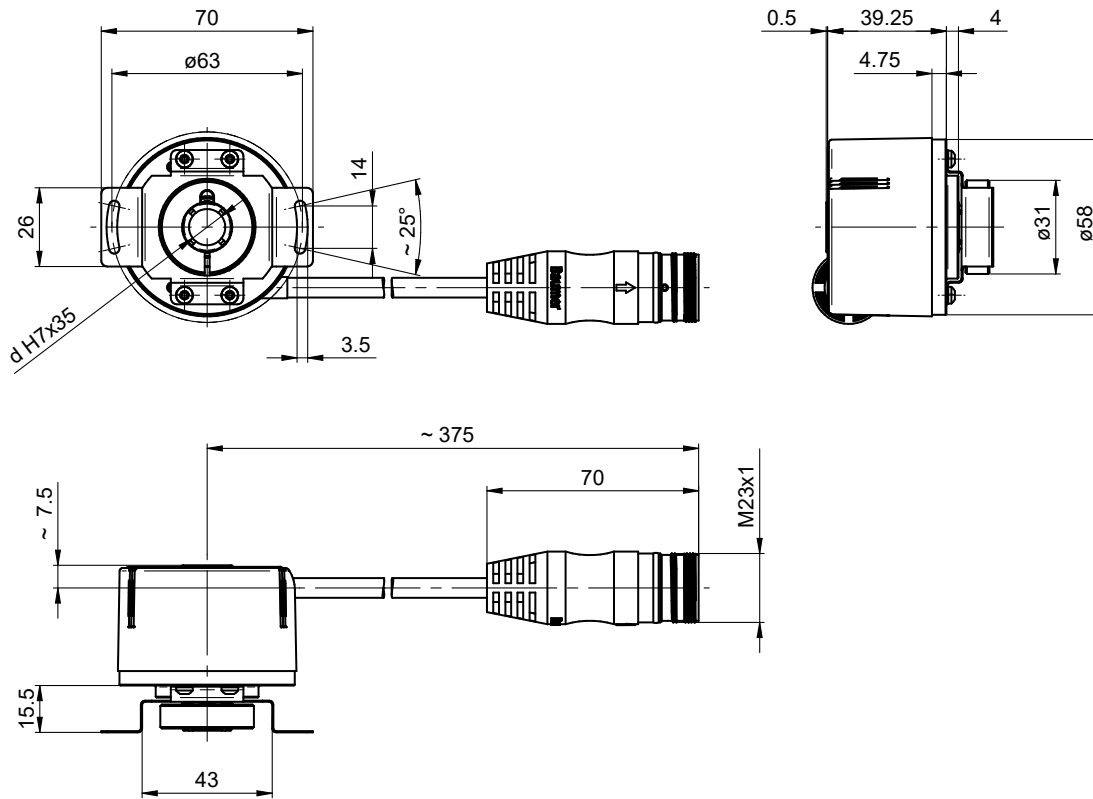
Through hollow shaft, flexible connector M12

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Through hollow shaft

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Dimensions



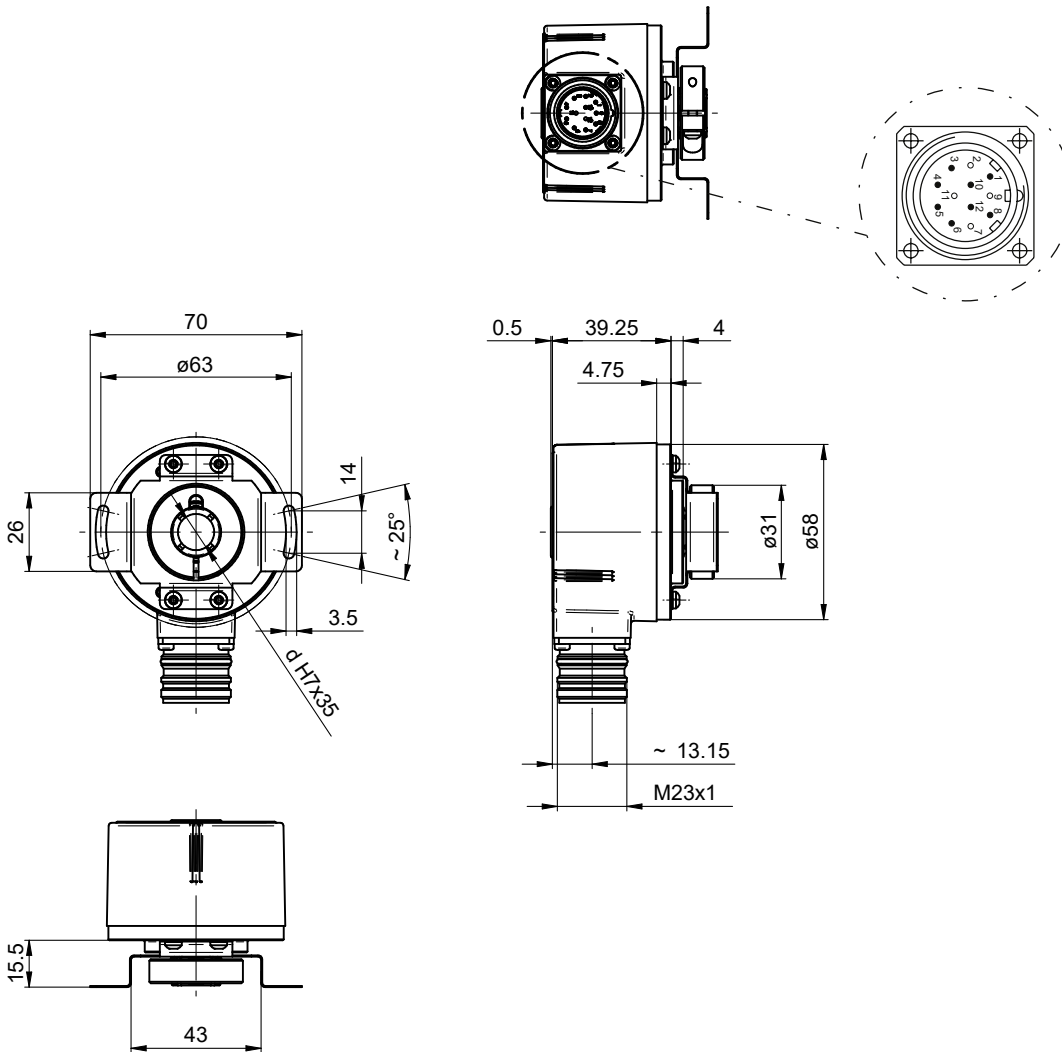
Through hollow shaft, flylead connector M23

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Dimensions



Through hollow shaft, flange socket M23

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Ordering reference

	EN	580	E	.	I	L	-	T	T	##	.	G	##	##	.	#####	.	K
Product																		
Encoder	EN																	
Series																		
580		580																
Focus																		
Essential			E															
Function																		
Incremental					I													
Sensing																		
Optical						L												
Shaft type																		
Through hollow shaft								T										
Flange (Hollow shaft)																		
With stator coupling ø63 mm								T										
Through hollow shaft																		
ø12 mm, clamping ring, A-side										12								
ø14 mm, clamping ring, A-side										14								
Protection class																		
Flange: IP 54, Housing: IP 65												G						
Connection																		
Connector moveable, M12, 8-pin, male contacts, CCW (A-cod)													A1					
Flange socket radial, M23, 12-pin, male contacts, CCW													B1					
Flylead connector, M23, 12-pin, male contacts, CCW, tangential, 0.3 m													E1					
Voltage supply / output																		
8...30 VDC, HTL/push pull, 6 channel														H1				
5 VDC ±5 %, TTL/RS422, 6 channel														T1				
5 VDC ±5 %, TTL/RS422, 6 channel + Sense														T2				
Pulse number																		
1024																01024		
2048																02048		
4096																04096		
Operating temperature																		K
-25...+100°C																		

Accessories

Mounting accessories

11066083	Torque arm, 1-arm (mounting kit 006)
11073119	Torque arm, 1-arm (mounting kit 021)
11067367	Torque arm, 1-arm (mounting kit 028)
11100198	Stator coupling, 2-armed (mounting kit 046)
11113210	Torque arm, 1-arm (mounting kit 047)
11124300	Torque arm, 1-arm (mounting kit 048)
11155325	Rigid mounting plate, 1-arm (mounting kit 099)