EN580E.IL-SC - TTL/HTL

Solid shaft with clamping flange

Up to 4096 pulses per revolution

Overview

- Size ø58 mm
- Precise optical sensing
- Output signal level TTL or HTL
- Pulses per revolution up to 4096
- High connection flexibility thanks to flexible M12 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 ° ±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	EN 61000-6-2
Emitted interference	EN 61000-6-4
Approval	UL-Listing: E217823

Technical data - mechanical design

Size (flange)	ø58 mm
Shaft type	ø10 x 20 mm, solid shaft with flat
Admitted shaft load	≤40 N axial ≤80 N radial
Flange	Clamping flange
Protection EN 60529	IP 54 (flange side) IP 65 (housing side)
Operating speed	≤6000 rpm (+25 °C)
Starting torque	≤0.02 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 30 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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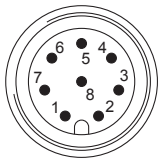
General information

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

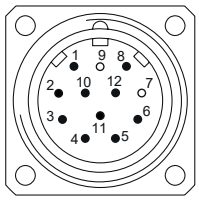
Connector M12, 8-pin

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

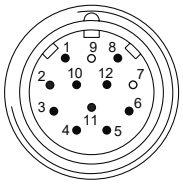
Pin	Assignment
1	B-
2	+Vs Sense
3	R+
4	R-
5	A+
6	A-
7	–
8	B+
9	–
10	0 V
11	0 V Sense
12	+Vs



Terminal assignment

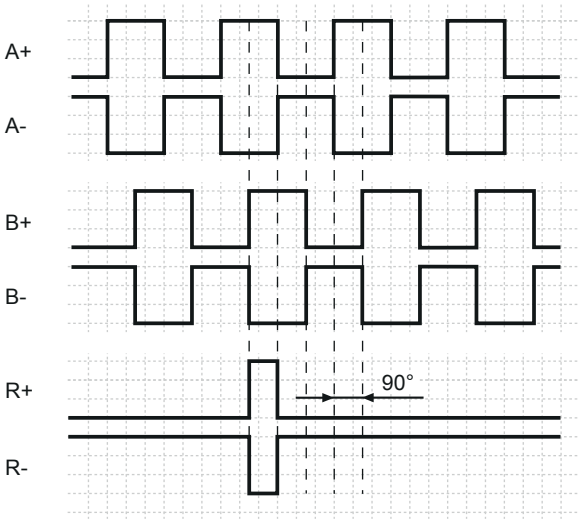
Flylead connector M23, 12-pin, male contacts, CCW

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	≥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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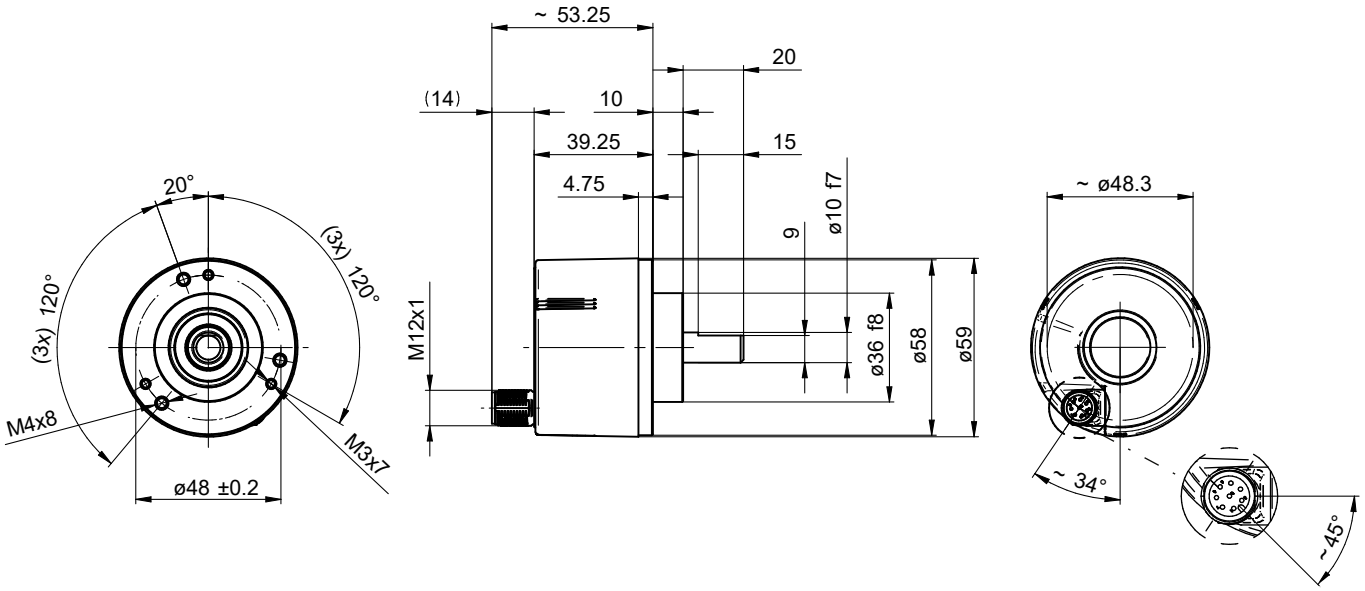
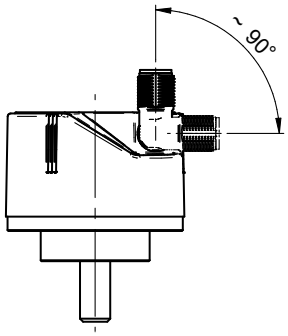
Dimensions



Clamping flange, connector M12



Clamping flange, flexible connector M12

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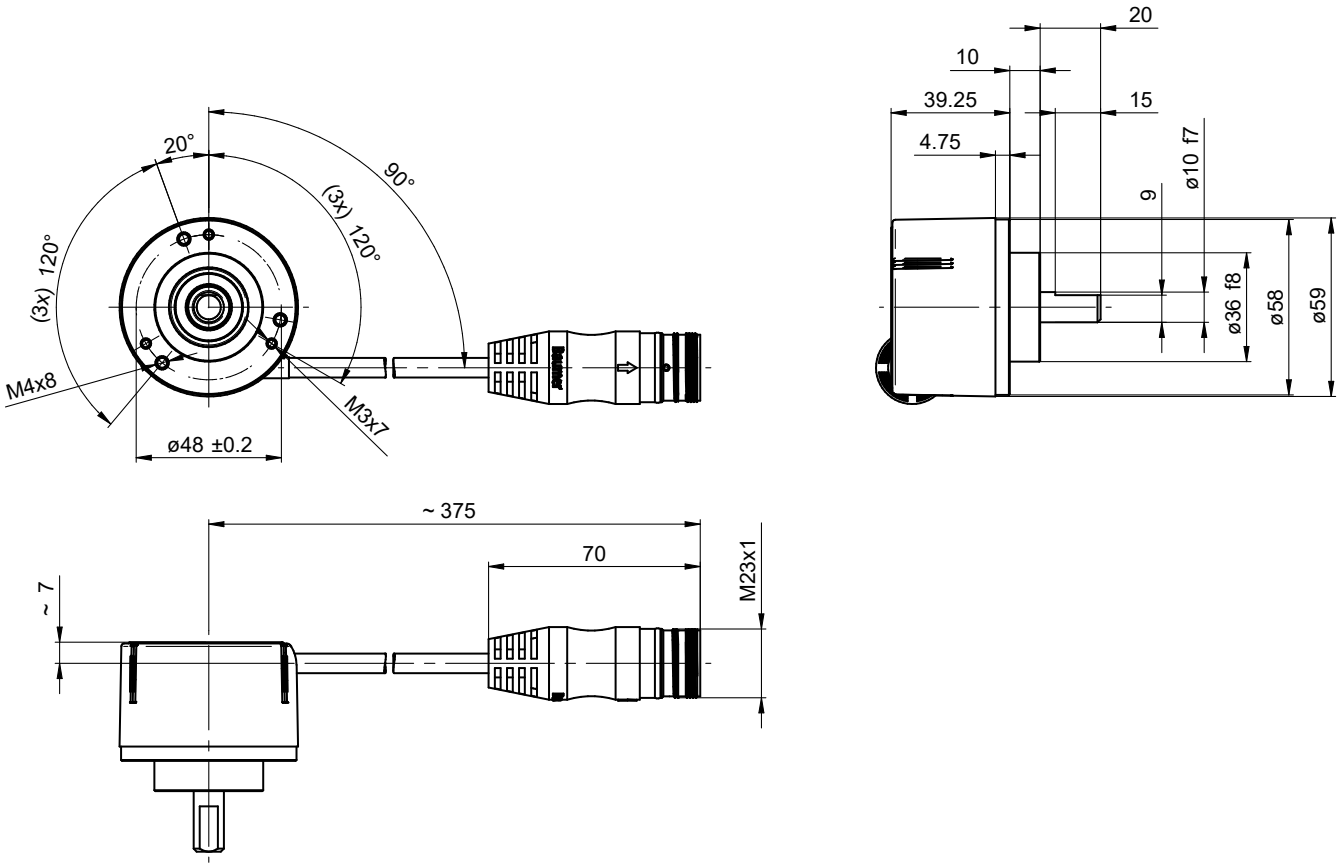
Solid shaft with clamping flange

Up to 4096 pulses per revolution

Dimensions



Clamping flange, flylead connector M23

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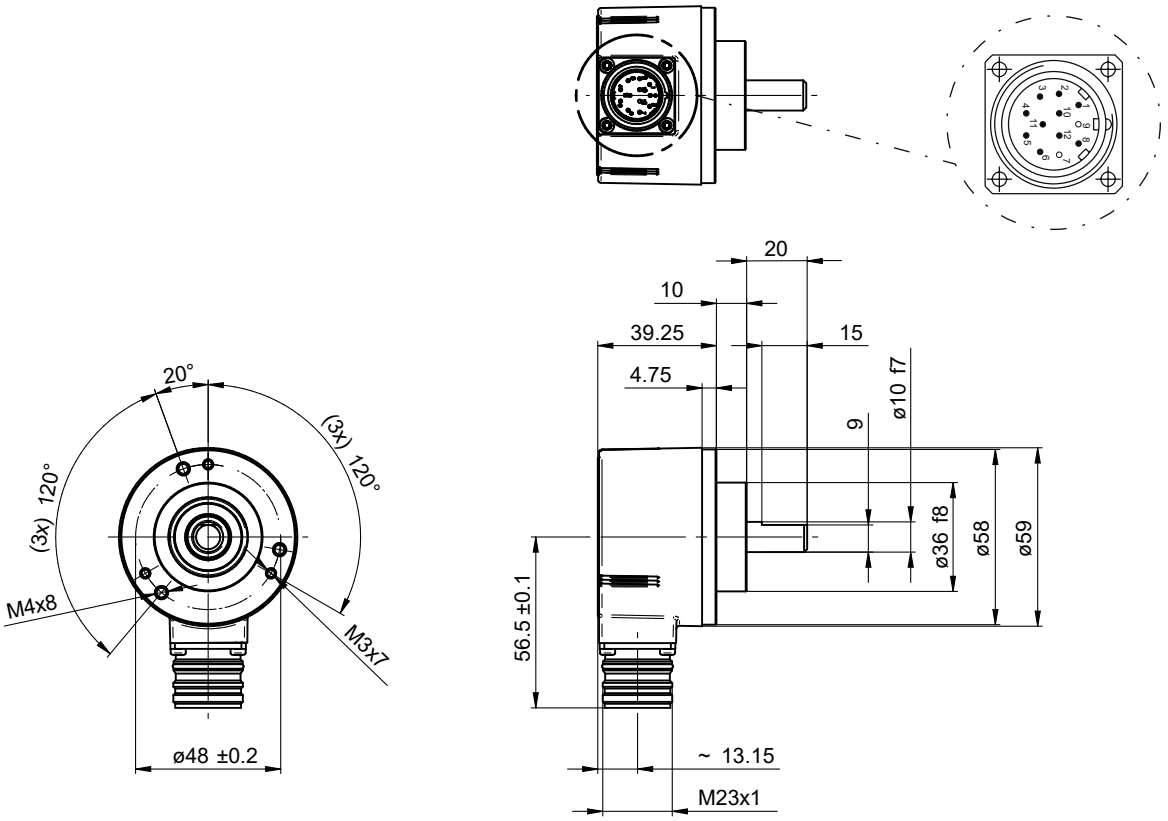
Solid shaft with clamping flange

Up to 4096 pulses per revolution

Dimensions



Clamping flange, flange socket M23

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Ordering reference

	EN	580	E	.	I	L	-	S	C	10	.	G	##	##	.	#####	.	K
Product																		
Encoder	EN																	
Series																		
580		580																
Focus																		
Essential			E															
Function																		
Incremental					I													
Sensing																		
Optical						L												
Shaft type																		
Solid shaft								S										
Flange (shaft)																		
Clamping flange, centering collar ø36 x 10 mm, pitch circle diameter 48 mm - 3xM3/3xM4									C									
Shaft																		
ø10 x 20 mm, with flat										10								
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																		
-25…+100°C																		K

Accessories

Mounting accessories	
11101781	Double loops coupling (D1=10 / D2=10)
11050507	Bellows coupling (D1=06 / D2=10)
11065923	Coupling CPS25 (L=19, D1=10 / D2=10)
11065922	Coupling CPS25 (L=19, D1=10 / D2=06)
10141132	Spring washer coupling (D1=6 / D2=10)
10141133	Spring washer coupling (D1=10 / D2=10)
11069337	Coupling CPS37 (L=24, D1=10 / D2=06)
11069340	Coupling CPS37 (L=24, D1=10 / D2=10)
11053277	Bellows coupling (D1=10 / D2=10)
11101893	Spring encoder arm
10125051	Mounting adaptor