

EN580E.IL-SU - TTL/HTL

Solid shaft with synchro flange

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 due 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	$\varnothing 6 \times 10$ mm, solid shaft with flat
Admitted shaft load	≤ 40 N axial ≤ 80 N radial
Flange	Synchro 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 connector M23, 12-pin (with sense) Flylead connector M23, 12-pin, tangential, length 300 mm (with sense)
Weight approx.	300 g

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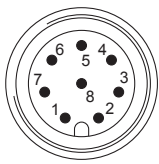
General information

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-

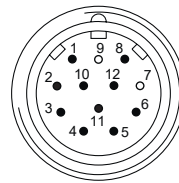


Terminal assignment

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

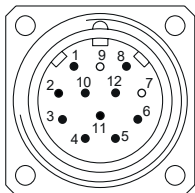
Pin	Assignment
1	B-
2	+Vs Sense
3	R+
4	R-
5	A+
6	A-
7	-
8	B+
9	-
10	0 V
11	0 V Sense
12	+Vs

Screen: connected to housing



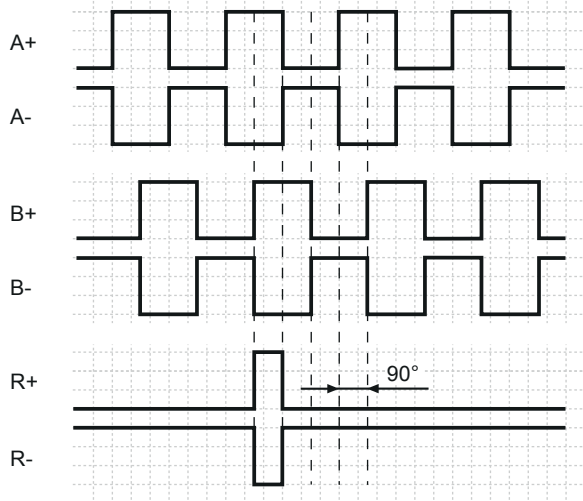
Flange socket M23, 12-pin, male contact, CCW

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



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	$\leq 20 \text{ mA}$

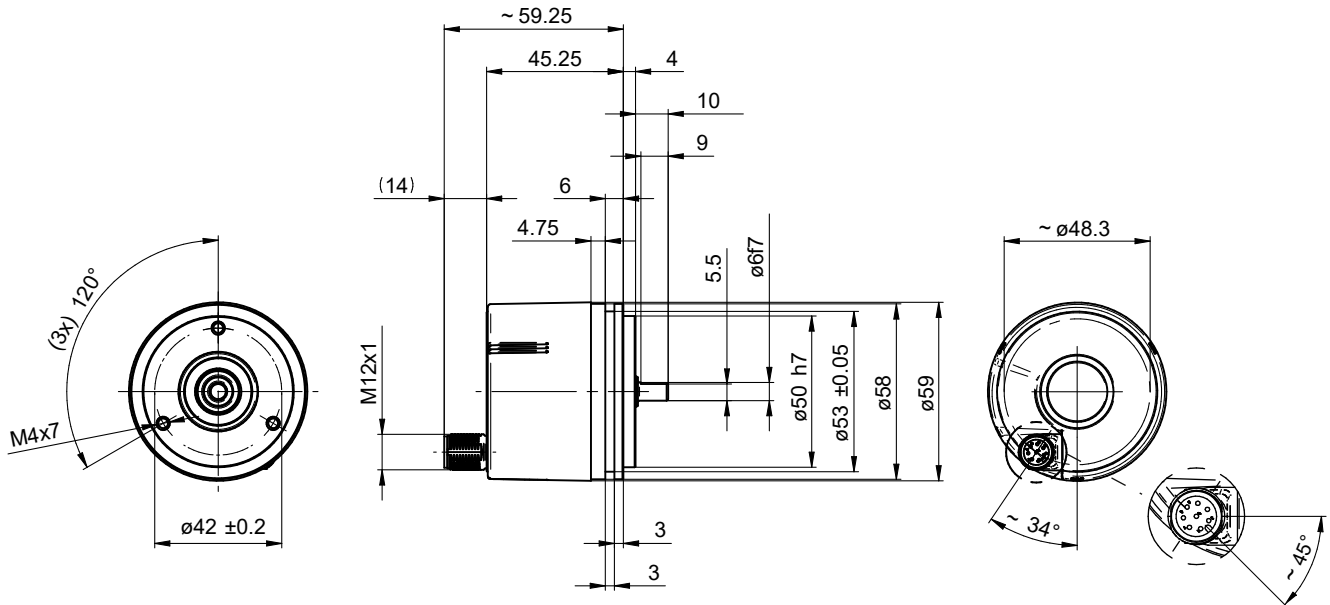
Outputs	HTL/Push-pull
Output level High	$\geq U_B - 3 \text{ V}$
Output level Low	$\leq 1.5 \text{ V}$
Load	$\leq 20 \text{ mA}$

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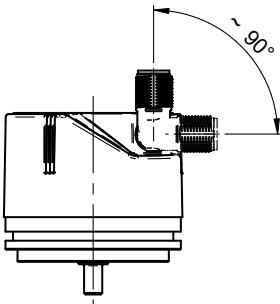
Solid shaft with synchro flange

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Dimensions



Synchro flange, connector M12



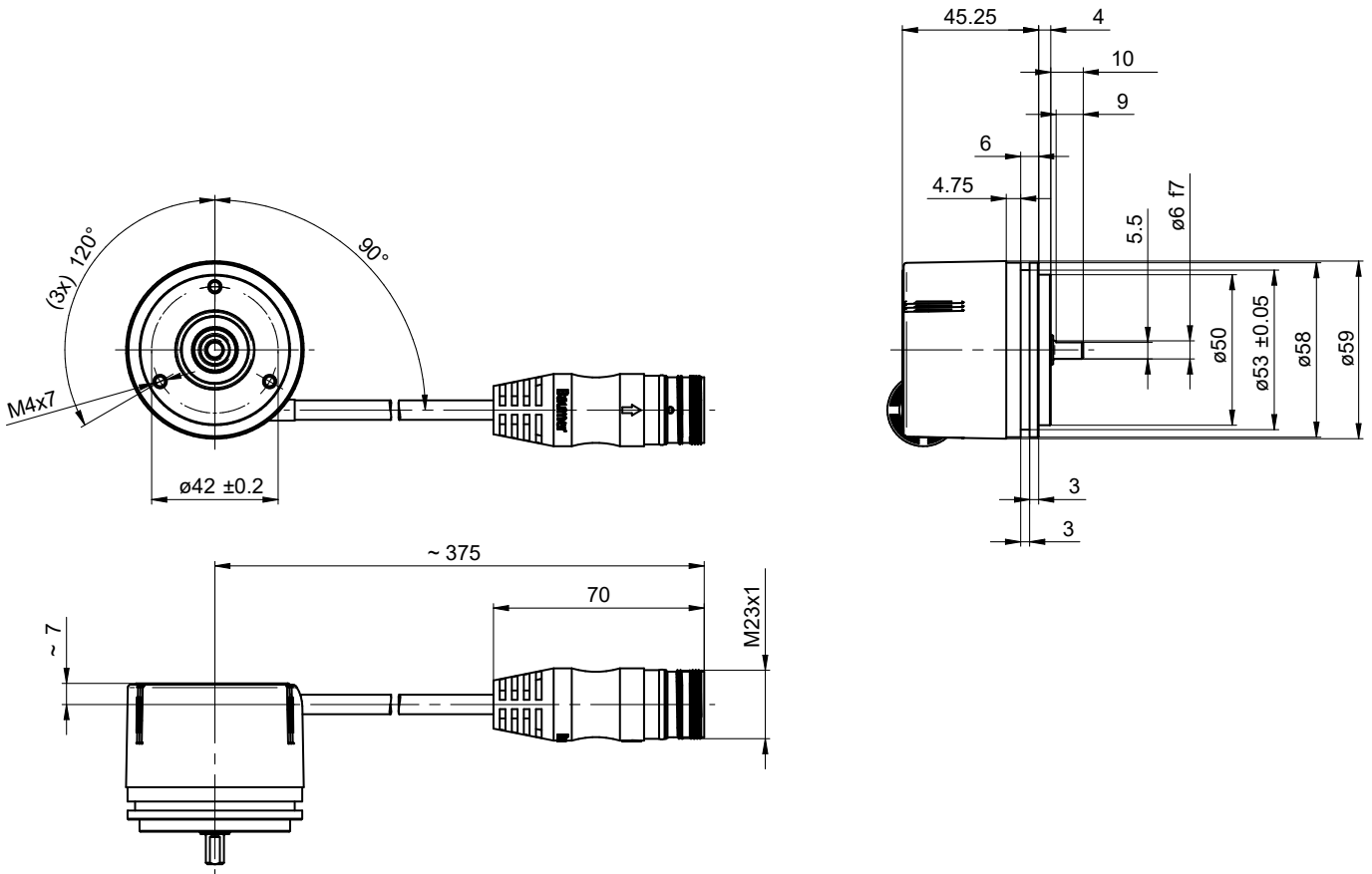
Synchro flange, flexible connector M12

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Dimensions



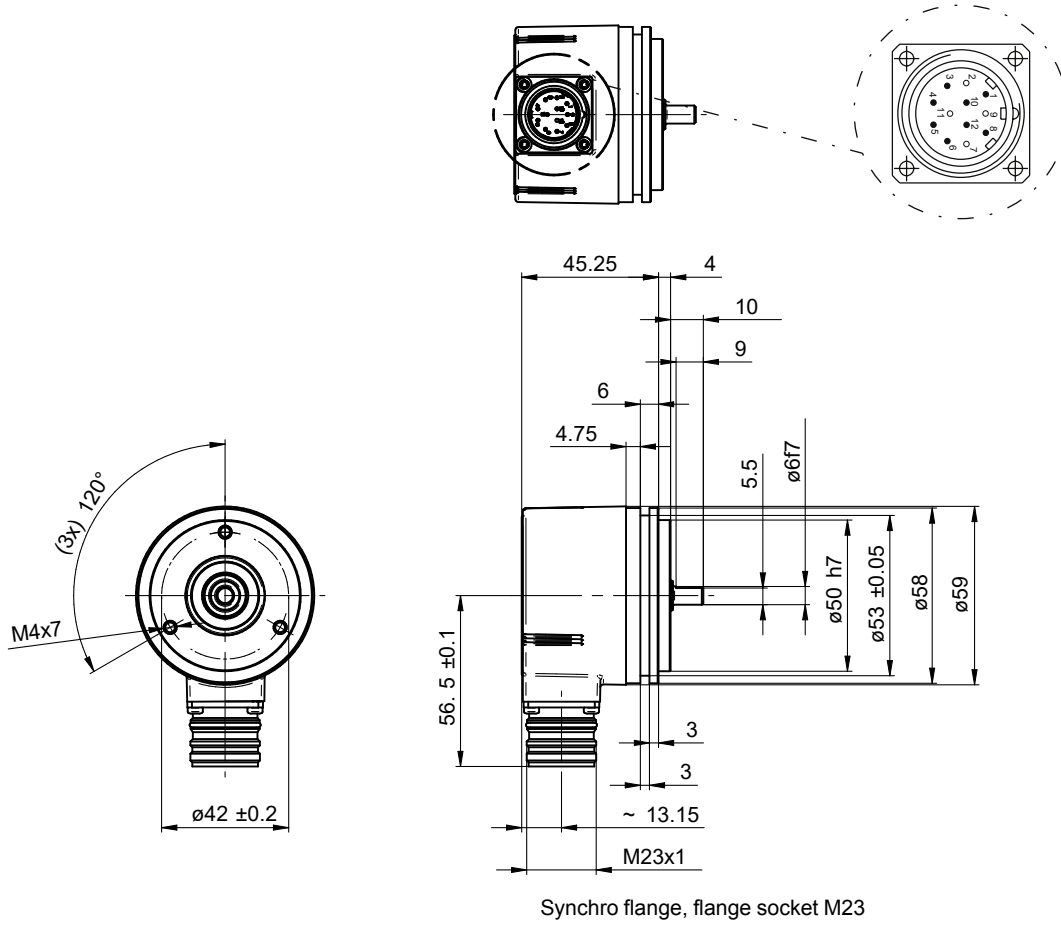
Synchro flange, flylead connector M23

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Dimensions



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Ordering reference

	EN	580	E	.	I	L	-	S	U	06	.	G	##	##	.	#####	.	K
Product	Encoder	EN																
Series	580	580																
Focus	Essential		E															
Function	Incremental				I													
Sensing	Optical					L												
Shaft type	Solid shaft							S										
Flange (shaft)	Synchro flange, centering collar ø50 x 4 mm, groove ø53 mm, pitch circle diameter ø42 - 3xM4								U									
Shaft	ø6 x 10 mm, with flat									06								
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																	

Accessories

Mounting accessories

11050507	Bellows coupling (D1=06 / D2=10)
11065922	Coupling CPS25 (L=19, D1=10 / D2=06)
11065916	Coupling CPS25 (L=19, D1=06 / D2=06)
10141132	Spring washer coupling (D1=6 / D2=10)
10141131	Spring washer coupling (D1=6 / D2=6)
11069333	Coupling CPS37 (L=24, D1=06 / D2=06)
11069337	Coupling CPS37 (L=24, D1=10 / D2=06)
11065545	Set of eccentric fixings type A
10117667	Mounting adaptor
10117668	Set of eccentric fixings for mounting clamp (10117667)