Baumer
Passion for Sensors

Incremental encoders

ExEIL580-SY

Solid shaft with synchro flange

100…5000 pulses per revolution

Overview

- Size ø58 mm
- Precise optical sensing
- Output signal level TTL or HTL
- Synchro flange
- Connection axial, radial or tangential
- Pulses per revolution up to 5000
- High resistance to shock and vibrations
- Option 0122, Explosion protection zone 22



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

Technical data - mechanical design	
Shaft type	ø6 x 10 mm, solid shaft with flat
Admitted shaft load	≤40 N axial ≤80 N radial
Flange	Synchro flange
Protection DIN EN 60529	IP 65
Operating speed	≤12000 rpm (+20 °C) ≤11000 rpm (+40 °C) ≤8000 rpm (+60 °C)
Starting torque	≤0,015 Nm (+20 °C)
Material	Housing: aluminium die-cast Flange: aluminium Solid shaft: stainless steel
Ambient temperature	-20...+60 °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
Explosion protection	II 3 D Ex tc IIIC T135°C Dc X (dust): see special conditions “X”
Connection	Flange connector M12, 8-pin Flange connector M23, 12-pin Cable
Weight approx.	300 g

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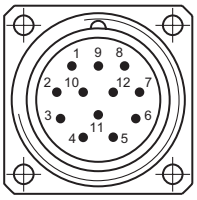
Terminal assignment

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 6.5 mm



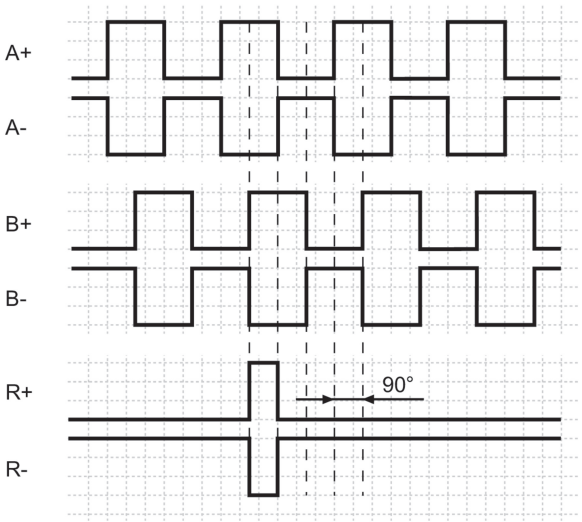
Flange connector M12, 8-pin

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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Explosion protection

II 3 D Ex tc IIIC T135°C Dc X (dust)

General- and Special conditions „X“:

Only put the device into operation if ...

- all necessary precautions have been taken by the operator to make sure device and connector are fully protected against mechanical impacts or shocks in compliance with EN 60079-0,section 26.4.2 (Special conditions „X”).
- the connection is mechanically or electrically secured to prevent any interrupt while the contact is live (Special conditions „X”).
- it has been ensured the electrical connection of product variants with cable outlet or cable couplings is outside zone 22 (Special conditions „X”).
- it has been ensured the maximum operating speed in relation to the ambient temperature is within the specifications on the table „Maximum rotation speed below“ (Special conditions “X”).
- the specifications on the product label match the on-site conditions for use in hazardous areas (EX) (device group, category, zone, temperature class resp. maximum surface temperature).
- the specifications on the product label comply with the prevailing grid conditions.
- the device shows no visible trace of damage (resulting from transport or storage), and
- it has been ensured no explosive atmosphere, oils, acids, gases, vapors, radiation etc. are present during installation.

Observe standard EN 60079-14 for installation and commissioning.

Device operation must observe the installation and operating instructions. The intended use and application of the device comes under the relevant legislation as well as applicable directives and standards.

Maximum rotation speed

	ambient temperature	rotation speed
solid shaft	20 °C	≤ 12000 rpm
	40 °C	≤ 11000 rpm
	60 °C	≤ 8000 rpm
through hollow shaft	20 °C	≤ 6000 rpm
	40 °C	≤ 4500 rpm
	60 °C	≤ 2500 rpm
blind hollow shaft	20 °C	≤ 8000 rpm
	40 °C	≤ 8000 rpm
	60 °C	≤ 5000 rpm

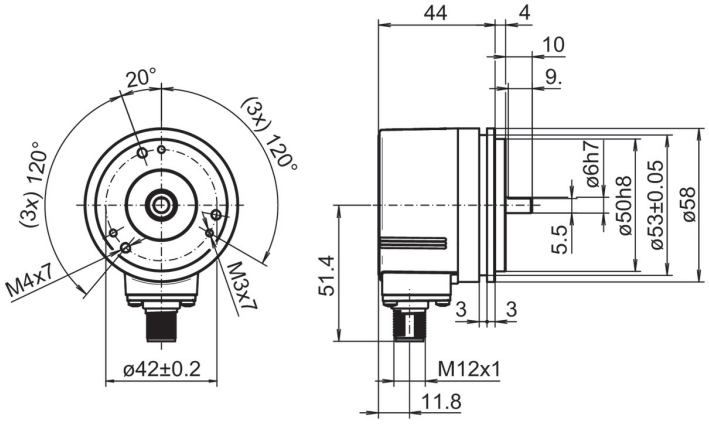
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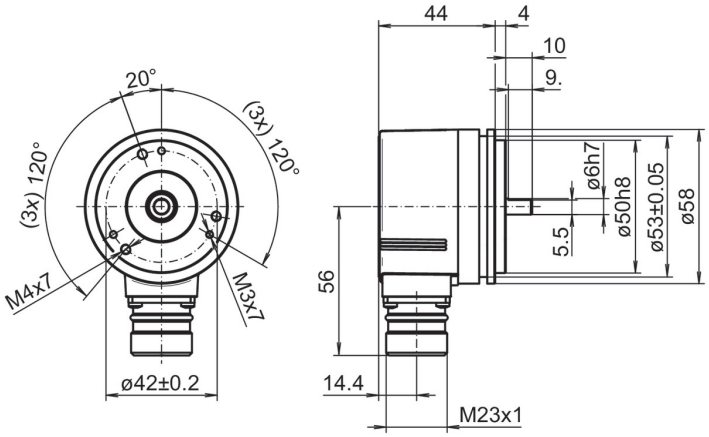
Solid shaft with synchro flange

100…5000 pulses per revolution

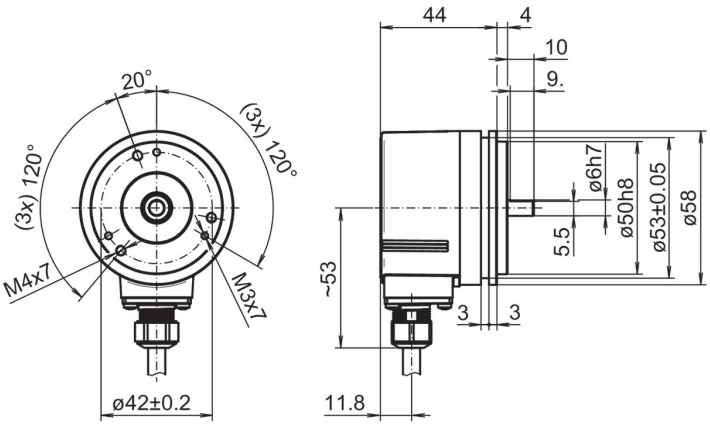
Dimensions



Synchro flange, flange connector M12, radial



Synchro flange, flange connector M23, radial



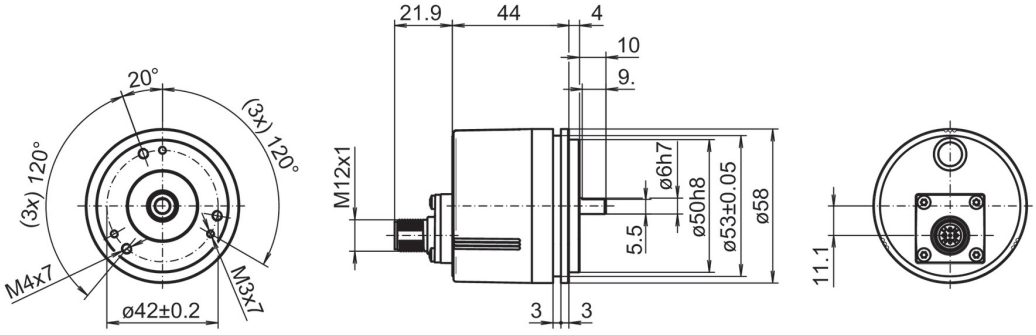
Synchro flange, cable, radial

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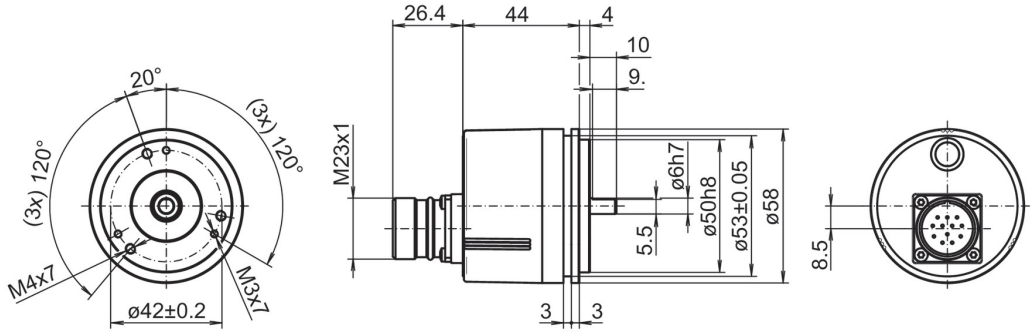
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Solid shaft with synchro flange
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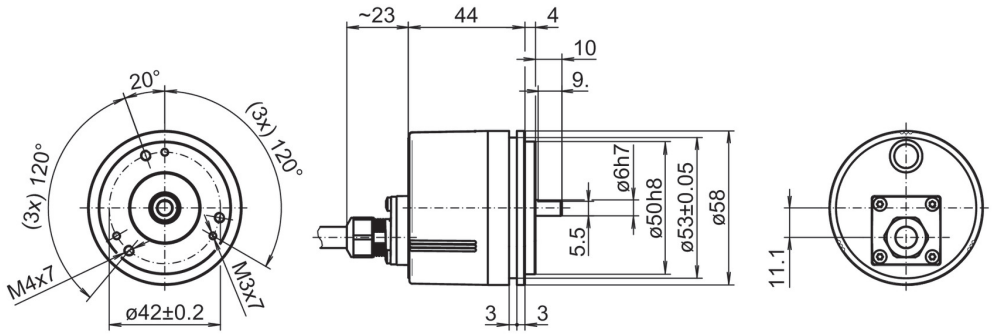
Dimensions



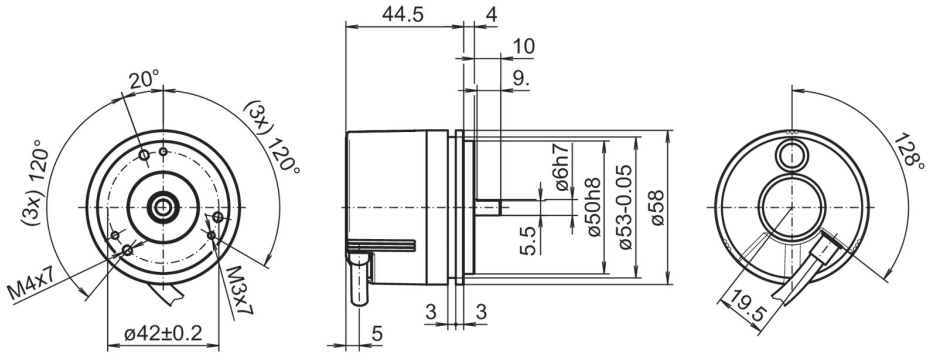
Synchro flange, flange connector M12, axial



Synchro flange, flange connector M23, axial



Synchro flange, cable, axial



Synchro flange, cable, tangential

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Ordering reference

	ExEIL580	-	S	Y	##	.	5	##	#	.	####	.	F	/	0122
Product															
	ExEIL580														
Shaft type															
Solid shaft			S												
Flange (shaft)															
Synchro flange, centering collar Ø50 x 4 mm, flute Ø53 mm, pitch circle diameter Ø42 - 3xM3/3xM4				Y											
Shaft															
ø6 x 10 mm, with flat					06										
ø3/8" x 4/5" (Ø9.525 x 20.32 mm), with flat					U3										
Protection class															
IP 65							5								
Connection															
Cable radial, 1 m								R							
Cable radial, 2 m								L							
Flange socket radial, M23, 12-pin, male contacts, CCW								F							
Flange socket radial, M12, 8-pin, male contacts, CCW								B							
Cable axial, 1 m								T							
Cable axial, 2 m								U							
Flange socket axial, M23, 12-pin, male contacts, CCW								D							
Flange socket axial, M12, 8-pin, male contacts, CCW								A							
Cable tangential, 1 m								P							
Cable tangential, 2 m								Q							
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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	ExEIL580	-	S	Y	##	.	5	##	#	.	####	.	F	/	0122
Pulse number															
100											100				
120											120				
150											150				
200											200				
250											250				
256											256				
300											300				
360											360				
400											400				
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															
-20...+60°C													F		
Optionen BT															
ATEX Zone 22															0122

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Accessories

Mounting accessories	
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=6 / D2=6 (Z 121.C02)
10141132	Spring washer coupling D1=6 / D2=10 (Z 121.C01)
11034139	Spring washer coupling D1=6 / D2=16 (Z 121.C05)
11050507	Bellows coupling aluminium/stainless steel D1=06 / D2=10
10117667	Mounting adaptor for encoders with synchro flange (Z 119.015)
10117668	Set of eccentric fixings for mounting clamp (10117667): 3x eccentric fixings, screws and nuts
11065545	Set of eccentric fixings type A
10158124	Bearing flange for encoders with synchro flange (Z 119.035)
Connectors and cables	
10164705	Female connector M23, 12-pin, CW

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