

Incremental Encoders

Compact, optical	3610 / 3620 (Shaft / Hollow shaft)	Push-Pull / RS422
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The compact incremental encoders type 3610 / 3620 with optical sensor technology are available with a resolution of up to 2500 PPR.

The versions with hollow shaft are designed for diameters up to 8 mm.



High rotational speed	Temperature -20° +85°	Shock / vibration resistant	Short-circuit proof	Magnetic field proof	Optical sensor

Compact

- Only 36 mm outer diameter
- Through hollow shaft up to 8 mm
- Ideally suited for use where space is tight

Versatile

- Available with cable outlet or M12 connector
- Maximum resolution of 2500 pulses per revolution
- Supply voltage 5 ... 18 V DC or 8 ... 30 V DC

Incremental Encoders

Order code

Shaft version

8.3610	.	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	.	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
Type		a	b	c	d		e			

If for each parameter of an encoder the underlined preferred option is selected, then the delivery time will be 10 working days for a maximum of 10 pieces. Qts. up to 50 pcs. of these types generally have a delivery time of 15 working days.



- a** Flange
2 = synchro flange
3 = clamping flange
- b** Shaft (ø x L)
1 = ø 4 x 10 mm
2 = ø 5 x 10 mm
3 = ø 6 x 12,5 mm, with flat
5 = ø 6,35 (1/4") x 12,5 mm, with flat

- c** Output circuit / Power supply
2 = Push-Pull with inverted signal / 5 ... 18 V DC
3 = Push-Pull without inverted signal / 8 ... 30 V DC
4 = Push-Pull with inverted signal / 8 ... 30 V DC
5 = RS422 with inverted signal / 8 ... 30 V DC
6 = RS422 with inverted signal / 5 V DC

- d** Type of connection
1 = axial cable (2 m PVC cable)
2 = radial cable (2 m PVC cable)
3 = M12 connector, 8-pin, axial
4 = M12 connector, 8-pin, radial

- e** Pulse rate
25, 100, **200**, 360, **500**, 512
600, 1000, **1024**, 1500,
2000, **2048**, **2500**
(e.g. 500 pulses => 0500)
Other pulse rates on request

Order code

Hollow shaft

8.3620	.	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	.	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
Type		a	b	c	d		e			

If for each parameter of an encoder the underlined preferred option is selected, then the delivery time will be 10 working days for a maximum of 10 pieces. Qts. up to 50 pcs. of these types generally have a delivery time of 15 working days.



- a** Flange
1 = with short torque stop
2 = with long torque stop
5 = with stator coupling
- b** Through hollow shaft
2 = ø 6 mm
3 = ø 6.35 mm (1/4")
4 = ø 8 mm

- c** Output circuit / Power supply
2 = Push-Pull with inverted signal / 5 ... 18 V DC
3 = Push-Pull without inverted signal / 8 ... 30 V DC
4 = Push-Pull with inverted signal / 8 ... 30 V DC
5 = RS422 with inverted signal / 8 ... 30 V DC
6 = RS422 with inverted signal / 5 V DC

- d** Type of connection
E = radial cable (2 m PVC cable)
4 = M12 connector, 8-pin, radial

- e** Pulse rate
25, 100, **200**, 360, **500**, 512
600, 1000, **1024**, 1500,
2000, **2048**, **2500**
(e.g. 500 pulses => 0500)
Other pulse rates on request

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Mounting accessory for shaft encoders

Coupling	Bellows coupling ø 19 mm for shaft 6 mm	8.0000.1201.0606
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Connection Technology

Connector, self-assembly	M12	05.CMB-8181-0
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Cordset, pre-assembled with 2 m PVC cable	M12	05.WAKS8-2/P00
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Further accessories can be found in the Accessories section or in the Accessories area of our website at: www.kuebler.com/accessories.
Additional connectors can be found in the Connection Technology section or in the Connection Technology area of our website at: www.kuebler.com/connection_technology.

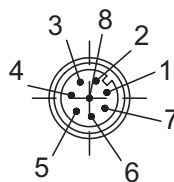
Mechanical characteristics		
Speed	shaft version	max. 12000 min ⁻¹
	hollow shaft version	max. 6000 min ⁻¹
Rotor moment of inertia		approx. 0.2 x 10 ⁻⁶ kgm ²
Starting torque		< 0.05 Nm
Shaft load capacity	radial	40 N
	axial	20 N
Weight		approx. 0.08 kg
Protection to EN 60529	housing side	IP65
	flange side	IP50 (IP64 on request)
Working temperature range		-20°C ... +85°C
Materials	shaft	stainless steel
	hollow shaft	brass
	housing	chromated Aluminium
	cable	PVC
Shock resistance acc. to EN 60068-2-27		1000 m/s ² , 6 ms
Vibration resistance acc. to EN 60068-2-6		100 m/s ² , 55 ... 2000 Hz

Electrical characteristics		
Output circuit	Push-Pull (7272) ¹⁾	Push-Pull (7272) ¹⁾
Supply voltage	5 ... 18 V DC	8 ... 30 V DC
Power consumption with inverted signal (no load)	max. 40 mA	max. 40 mA
Permissible load / channel	max. ±50 mA	max. ±50 mA
Pulse frequency	max. 200 kHz	max. 200 kHz
Signal level	high	min. U _B - 2.5 V
	low	max. 0.5 V
Rising edge time t_r	max. 1 µs	max. 1 µs
Falling edge time t_f	max. 1 µs	max. 1 µs
Short circuit proof outputs ²⁾	yes	yes
Reverse connection of the supply voltage	yes	yes
UL-certified	File 224618	
CE compliant acc. to	EN 61000-6-2, EN 55011 Class B	
RoHS compliant acc. to	EU guideline 2002/95/EG	

Terminal assignment

Signal	0V	+UB	A	\bar{A}	B	\bar{B}	0	$\bar{0}$
Cable colour with inverted signal	WH	BN	GN	YE	GY	PK	BU	RD
Cable colour without inverted signal	WH	BN	GN		YE		GY	
M12 connector, eurofast, 8-pin, with inverted signal	1	2	3	4	5	6	7	8
M12 connector, eurofast, 8-pin, without inverted signal	1	2	3		5		7	

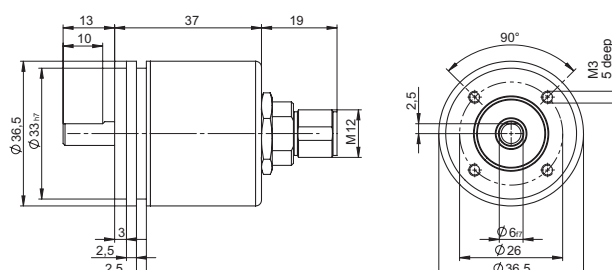
Top view of mating side, male contact base



M12 connector, 8-pin

Dimensions shaft version

Synchro flange



1) Max. recommended cable length 30 m
2) If supply voltage correctly applied

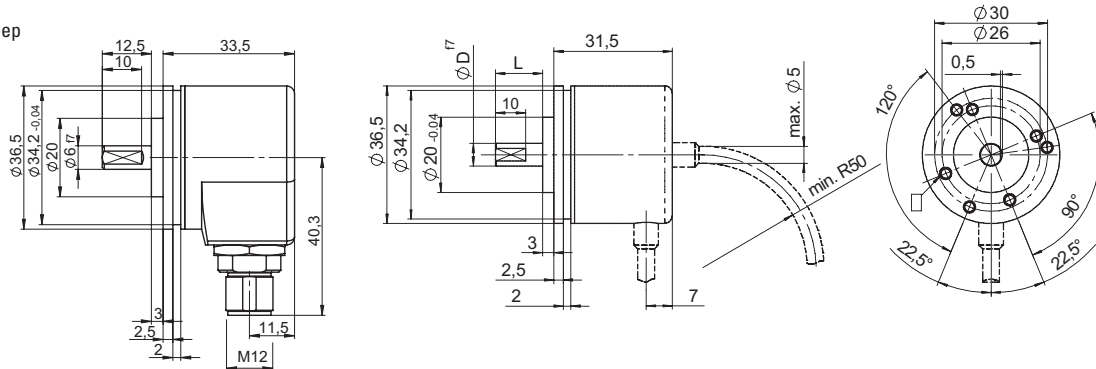
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Dimensions shaft version

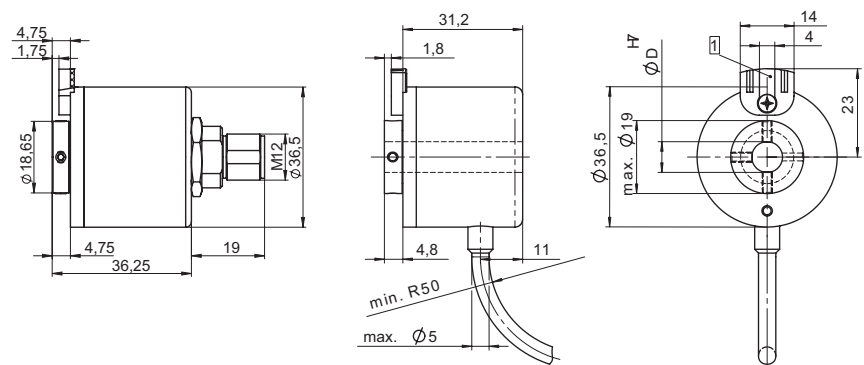
Clamping flange

1 M3, 5 mm deep



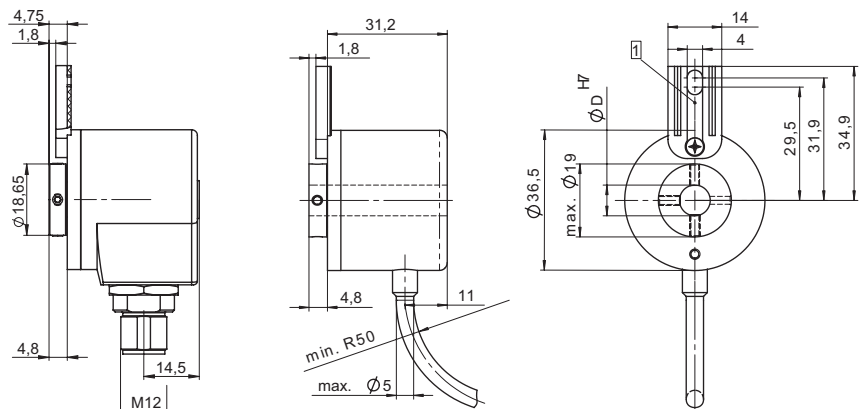
Dimensions hollow shaft version

Flange with torque stop short



Flange with torque stop long

1 Torque stop slot,
Recommendation: Cylindrical pin DIN7, \varnothing 4 mm



Flange with stator coupling double-winged

Shaft: Minimum insertion depth 1.5 x D

