Incremental encoders





Incremental encoders



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	(a) (b) (c) (c) <th>days for a maximum of 10 pieces. have a delivery time of 15 working days.</th>	days for a maximum of 10 pieces. have a delivery time of 15 working days.
 Flange = ø 24 mm [0.94"] Blind hollow shaft (insertion depth max. 14 mm [0.55"]) = ø 4 mm [0.16"] = ø 6 mm [0.24"] 4 = ø 1/4" 1) 	 Output circuit / power supply push-pull (without inverted signal) / 5 24 V DC push-pull (with inverted signal) / 5 24 V DC push-pull (with inverted signal) / 8 30 V DC push-pull (with inverted signal) / 8 30 V DC RS422 (with inverted signal) / 8 30 V DC RS422 (with inverted signal) / 5 V DC Type of connection axial cable, 2 m [6.56'] PVC A = axial cable, 2 m [6.56'] PVC B = radial cable, special length PVC *) Available special lengths (connection types A, B): 3, 5, 8, 10, 15 m [9.84, 16.40, 26.25, 32.80, 49.21'] order code expansion .XXXX = length in dm ex.: 05.2420.122A.1024.0030 (for cable length 3 m) 	Pulse rate 4, 6, 8, 10, 16, 20, 25, 36, 40, 50, 60, 80, 100, 120, 125, 180, 200, 250, 300, 360, 400, 500, 512, 1000, 1024 (e.g. 360 pulses => 0360) Optional on request - other pulse rates

bellows coupling ø 15 mm [0.59"] for shaft 4 mm [0.16"]

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.

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Coupling

Mechanical characteristics		
Maximum speed		12000 min ⁻¹
Mass moment of inertia		approx. 0.1 x 10 ⁻⁶ kgm ²
Starting torque – at 20°C [68°F]		< 0.01 Nm ⁴⁾
Shaft load capacity	radial	10 N
	axial	20 N
Weight		approx. 0.06 kg [2.12 oz]

Protection acc. to EN 60529	
housing side	IP65
flange side	IP50 (IP64 on request)
Working temperature range	-20°C +85°C [-4°F +185°F]
Materials shaft	stainless steel
blind hollow shaft	brass
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 Push-pull²⁾ Push-pull ²⁾ RS422 **Output circuit** (7272 compatible) (7272 compatible) (TTL compatible) 5 ... 24 V DC ³⁾ 8 ... 30 V DC 5 V DC (±5 %) **Power supply** Power consumption (no load) max. 50 mA max. 50 mA max. 90 mA Permissible load / channel max. +/- 50 mA max. +/- 50 mA max. +/- 20 mA **Pulse frequency** max. 160 kHz max. 160 kHz max. 300 kHz Signal level HIGH min. +V - 2.5 V min. +V - 3.0 V min. 2.5 V LOW max. 0.5 V max. 0.5 V max. 0.5 V Rising edge time t_r max. 1 µs max. 200 ns max. 1 µs Falling edge time t_f max. 1 µs max. 1 µs max. 200 ns Short circuit proof outputs yes yes yes UL approval file no. E224618 CE compliant acc. to EMC guideline 2014/30/EU RoHS guideline 2011/65/EU

1) US version.

- Max. recommended cable length 30 m [98.4'].
 With 24 V DC there is no tolerance above 24 V DC. Please use output circuit 8 ... 30 V DC.
- 4) Also for protection level IP64 on the shaft.

Incremental encoders



Miniature opt<u>ical</u>

2400 / 2420 (shaft / hollow shaft)

Push-pull, RS422

Terminal assignment

Output circuit	Type of connection	Cable (isolate unused cores individually before initial start-up)								
1, 3	1240	Signal:	0 V	+V	А	В	0			
without inv. signal	1, 2, A, B	Core color:	WH	BN	GN	YE	GY			
Output circuit	Type of connection	Cable (isolate unused cores individually before initial start-up)								
2, 4, 6	1, 2, A, B	Signal:	0 V	+V	Α	Ā	В	B	0	Ō
with inv. signal	Т, Z, A, D	Core color:	WH	BN	GN	YE	GY	РК	BU	RD

+V: Encoder power supply +V DC

0 V: Encoder power supply ground GND (0 V)

A, Ā: Incremental output channel A

B, B: Incremental output channel B

0, 0: Reference signal

Dimensions shaft version

Dimensions in mm [inch]

Flange type 1, ø 24 [0.94]

1 min R50 [1.97] 2 3 x M3, 4 [0.16] deep

D	Fit	L
4 [0.16]	f7	10 [0.39]
5 [0.20]	f7	10 [0.39]
6 [0.24]	f7	10 [0.39]
1/4"	f7	10 [0.39]

Flange type 2, ø 30 [1.18] Flange type 3, ø 28 [1.10]

1 min R50 [1.97] 2 2 x M3, 4 [0.16] deep

D	Fit	L
4 [0.16]	f7	10 [0.39]
5 [0.20]	f7	10 [0.39]
6 [0.24]	f7	10 [0.39]
1/4"	f7	10 [0.39]

Flange type	А	В
2	ø 30 [1.18]	3 [0.12]
3	ø 28 [1.10]	2 [0.08]

Dimensions hollow shaft version Dimensions in mm [inch]

Flange type 1, ø 24 [0.94]

1 4 x M3 DIN 915 - SW1.5

Recommended torque for the set screw in the clamping ring 0.1 Nm. To ensure optimal clamping by the clamping ring, the customer shaft should be without flat surface.

D	Fit	L	
4 [0.16]	H7	14 [0.55]	
6 [0.24]	H7	14 [0.55]	
1/4" H7 14 [0.55]			
L = insertion depth max. blind hollow shaft			









