

Absolute encoders - singleturn

Miniature magnetic

2450 / 2470 (shaft / hollow shaft)

SSI



The absolute singleturn encoders 2450 and 2470 with SSI interface and magnetic sensor technology are the specialists when space is tight.

Because of their high 12 bit resolution with 4096 different positions for 360° they offer exceptional repeat accuracy.



High rotational speed



Temperature range



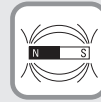
Shock / vibration resistant



Short-circuit proof



Reverse polarity protection



Magnetic sensor

Minimal space requirement

- The outer diameter measures 24 mm; the shaft diameter up to max. 6 mm.
- Flexible connection with radial or axial cable outlet.

Durable and accurate

- Long service life and freedom from wear due to non-contact measuring system.
- Wide temperature range from -20°C up to +85°C.
- High 12 bit resolution with 4096 different positions for 360°.

Order code Shaft version

8.2450 . XX1X . G121
Type a b c d e

a Flange

- 1 = \varnothing 24 mm [0.94"]
- 3 = \varnothing 28 mm [1.10"]
- 2 = \varnothing 30 mm [1.18"]

b Shaft ($\varnothing \times L$)

- 1 = \varnothing 4 x 10 mm [0.16 x 0.39"]
- 3 = \varnothing 5 x 10 mm [0.20 x 0.39"], with flat
- 2 = \varnothing 6 x 10 mm [0.24 x 0.39"]

c Interface / power supply

- 1 = SSI / 5 V DC

d Type of connection

- 1 = axial cable, 2 m [6.56'] PVC
- A = axial cable, special length PVC *)
- 2 = radial 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.: 8.2450.111A.G121.0030 (for cable length 3 m)

e Gray-code

12 bit resolution

Order code Hollow shaft

8.2470 . 1X1X . G121
Type a b c d e

a Flange

- 1 = \varnothing 24 mm [0.94"]

b Blind hollow shaft

- (insertion depth max. 14 mm [0.55"])
- 1 = \varnothing 4 mm [0.16"]
 - 2 = \varnothing 6 mm [0.24"]

c Interface / power supply

- 1 = SSI / 5 V DC

d Type of connection

- 1 = axial cable, 2 m [6.56'] PVC
- A = axial cable, special length PVC *)
- 2 = radial 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.: 8.2470.111A.G121.0030 (for cable length 3 m)

e Gray-code

12 bit resolution

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Mounting accessory for shaft encoders		Order no.
Coupling	bellows coupling ø 15 mm [0.59"] for shaft 4 mm [0.16"]	8.0000.1202.0404

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.

Technical data

Mechanical characteristics			Electrical characteristics	
Maximum speed		12000 min ⁻¹	Power supply	5 (+0.4) V DC ¹⁾
Mass moment of inertia		approx. 0.1 x 10 ⁻⁶ kgm ²	Power consumption (no load)	< 40 mA
Starting torque - at 20°C [68°F]		< 0.01 Nm	Reverse polarity protection of the power supply	yes
Shaft load capacity	radial	10 N	Short circuit proof output	yes ²⁾
	axial	20 N	Measuring range	360°
Weight		approx. 0.06 kg [2.11 oz]	Linearity, 25°C [77°F]	< 1.5°
Protection acc. to EN 60529	housing side	IP65 (IP67 on request)	Repeat accuracy	≤ 0.4°
	flange side	IP50 (IP67 on request)	CE compliant acc. to	EMC guideline 2014/30/EU RoHS guideline 2011/65/EU
Working temperature range		-20°C ... +85°C [-4°F ... +185°F]	SSI interface	
Material	shaft / hollow shaft	stainless steel	Output driver	RS485
	clamping ring	MS58	Permissible load / channel	typ. 60 Ohm (acc. to RS485)
Shock resistance acc. to EN 60068-2-27		1000 m/s ² , 6 ms	Resolution	12 bit
Vibration resistance acc. to EN 60068-2-6		100 m/s ² , 55 ... 2000 Hz	Code	gray
			SSI clock speed	100 kHz ... 750 kHz
			Monoflop time	typ. / max. 16 µs / 20 µs
			Data refresh rate	typ. 100 µs

Terminal assignment

Interface	Type of connection	Cable (isolate unused cores individually before initial start-up)						
2	1, 2, A, B	Signal:	0 V	+V	C+	C-	D+	D-
		Core color:	WH	BN	GN	YE	GY	PK

+V: Encoder power supply +V DC
0 V: Encoder power supply ground GND (0 V)
C+, C-: Clock signal
D+, D-: Data signal

1) The power supply at the encoder input must not be less than 4.75 V DC (5 V DC - 5 %).
2) Short circuit to 0 V or to output, only one channel at a time, power supply correctly applied.

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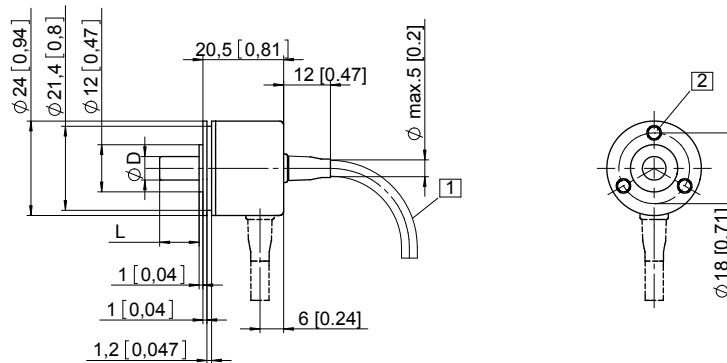
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Dimensions shaft version

Dimensions in mm [inch]

Flange type 1, \varnothing 24 [0.94]

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

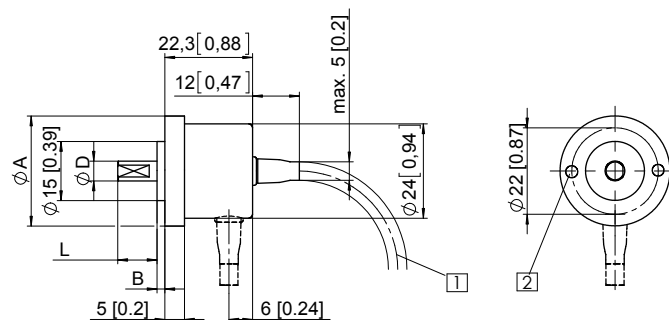


D	Fit	L
4 [0.16]	f7	10 [0.39]
5 [0.20]	f7	10 [0.39]
6 [0.24]	f7	10 [0.39]
1/4"	f7	10 [0.39]

Flange type 2, \varnothing 30 [1.18]

Flange type 3, \varnothing 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]

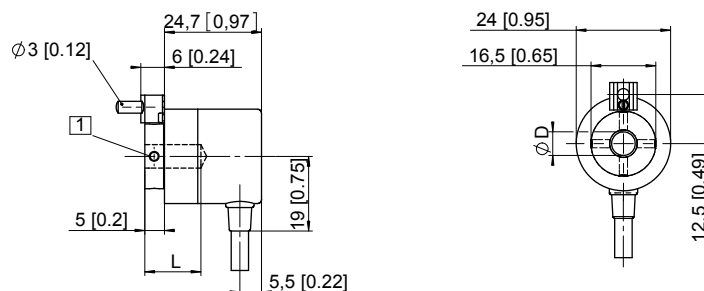
Flange type	A	B
2	\varnothing 30 [1.18]	3 [0.12]
3	\varnothing 28 [1.10]	2 [0.08]

Dimensions hollow shaft version

Dimensions in mm [inch]

Flange type 1, \varnothing 24 [0.94]

- 1 4 x M3 DIN 915 - SW1.5



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