

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
-20°...+85°C



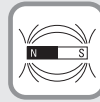
Shock / vibration resistant



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 = ø 24 mm [0.94"]
- 3 = ø 28 mm [1.10"]
- 2 = ø 30 mm [1.18"]

b Shaft (ø x L)

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

c Interface / Power supply

- 1 = SSI / 5 V DC

e Gray-Code

12 bit resolution

d Type of connection

- 1 = axial cable, 2 m [6.56'] PVC
- 2 = radial cable, 2 m [6.56'] PVC

Order code Hollow shaft

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

a Flange

- 1 = ø 24 mm [0.94"]

b Blind hollow shaft

- insertion depth max. 14 mm [0.55"]
- 1 = ø 4 mm [0.16"]
- 2 = ø 6 mm [0.24"]

c Interface / Power supply

- 1 = SSI / 5 V DC

e Gray-Code

12 bit resolution

d Type of connection

- 1 = axial cable, 2 m [6.56'] PVC
- 2 = radial cable, 2 m [6.56'] PVC

Mounting accessory for shaft encoders

Order No.

Coupling

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

8.0000.1201.0404

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

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Technical data

Mechanical characteristics		
Speed		max. 12.000 min ⁻¹
Moment of inertia		approx. 0.1 x 10 ⁻⁶ kgm ²
Starting torque - at 20°C [68°F]		< 0.01 Nm
Shaft load capacity	radial	10 N
	axial	20 N
Weight		approx. 0.06 kg [2.11 oz]
Protection acc. to EN 60529	housing side	IP65 (IP67 on request)
	flange side	IP50 (IP67 on request)
Working temperature range		-20°C ... +85°C [-4°F ... +185°F]
Material	shaft / hollow shaft	stainless steel
	clamping ring	MS58
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 SSI Interface	
Sensor	
Power supply	5 (+0.4) V DC ¹⁾
Power consumption (no load)	< 40 mA
Reverse polarity protection of the power supply	yes
Measuring range	360°
Resolution / Code	12 bit / Gray
Linearity, 25°C [77°F]	< 1.5°
Repeat accuracy	≤ 0.4°
Data refresh rate	typ 100 µs
CE compliant acc. to	EMC guideline 2004/108/EC
RoHS compliant acc. to	guideline 2002/95/EC
SSI interface	
SSI clock speed	100 kHz ... 750 kHz
Output driver	RS485
Monoflop time typ / max.	16 µs / 20 µs
Short circuit proof output	yes ²⁾
Permissible load / channel	typ. 60 Ohm (acc. to RS485)

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Terminal assignment

Interface	Type of connection	Cable (Isolate unused wires individually before initial start-up)						
		Signal:	0 V	+V	C+	C-	D+	D-
1	1, 2	Cable colour:	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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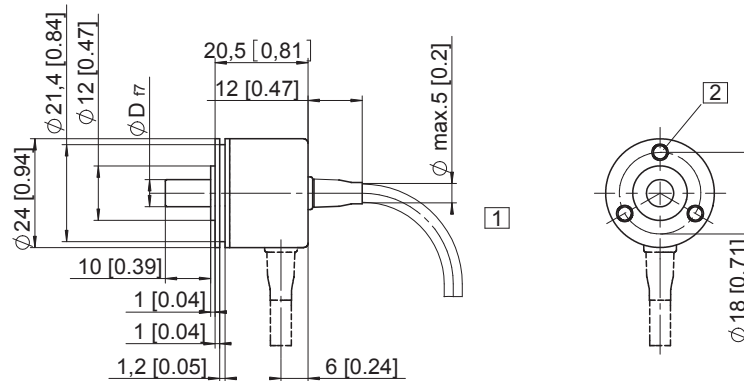
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Dimensions shaft version

Dimensions in mm [inch]

Flange type 1, ø 24 [0.94]

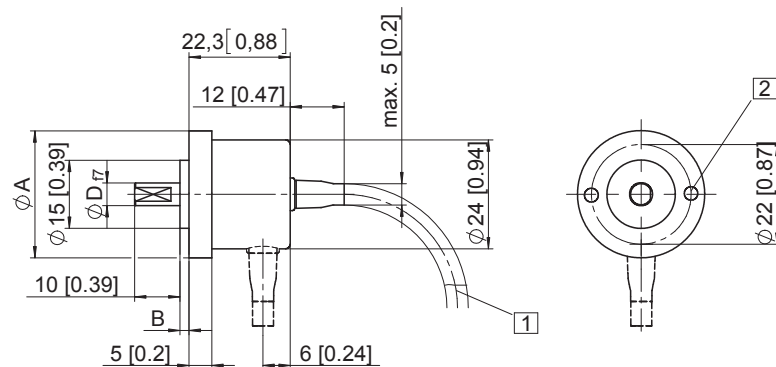
- 1 min R50 [1.97]
- 2 3 x M3, 4 [0.16] deep



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



Flange type	A	B
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

