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	.	X	X	1	X	.	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 / supply voltage*
1 = SSI / 5 V DC

d *Type of connection*
1 = axial cable, 2 m [6.56‘] PUR
A = axial cable, special length PUR *)
2 = radial cable, 2 m [6.56‘] PUR
B = radial cable, special length PUR *)
*) 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	.	1	X	1	X	.	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 / supply voltage*
1 = SSI / 5 V DC

d *Type of connection*
1 = axial cable, 2 m [6.56‘] PUR
A = axial cable, special length PUR *)
2 = radial cable, 2 m [6.56‘] PUR
B = radial cable, special length PUR *)
*) 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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Miniature magnetic	2450 / 2470 (shaft / hollow shaft)	SSI

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: kuebler.com/accessories.
Additional connectors can be found in the connection technology section or in the connection technology area of our website at: kuebler.com/connection_technology.

Technical data

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
Shaft load capacity	radial	20 N
	axial	10 N
Weight		approx. 0.06 kg [2.11 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]
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

Supply voltage	5 (+0.4) V DC [1]
Power consumption (no load)	< 40 mA
Reverse polarity protection of the supply voltage	yes
Short circuit proof output	yes [2]
Measuring range	360°
Linearity, 25 °C [77 °F]	< 1.5°
Repeat accuracy	≤ 0.4°

SSI interface

Output driver		RS422
Permissible load / channel		typ. 60 Ohm (acc. to RS422)
Resolution		12 bit
Code		gray
SSI clock speed		100 kHz ... 750 kHz
Monoflop time	typ. / max.	16 µs / 20 µs
Data refresh rate		typ. 100 µs

Approvals

CE compliant in accordance with	
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU
UKCA compliant in accordance with	
EMC Regulations	S.I. 2016/1091
RoHS Regulations	S.I. 2012/3032

Terminal assignment

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

+V : Supply voltage encoder +V DC
0 V : Supply voltage encoder ground GND (0 V)
C+, C- : Clock signal
D+, D- : Data signal

1) The supply voltage 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, supply voltage correctly applied.

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Miniature magnetic	2450 / 2470 (shaft / hollow shaft)	SSI

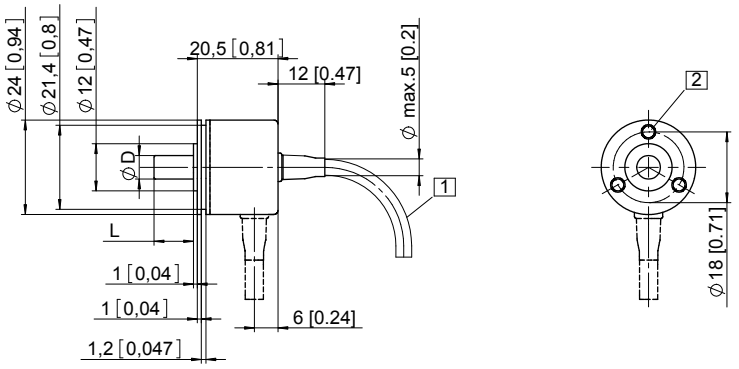
Dimensions shaft version

Dimensions in mm [inch]

Flange type 1, ø 24 [0.94]

1 min. R50 [1.97]

2 3 x M3, 4 [0.16] deep

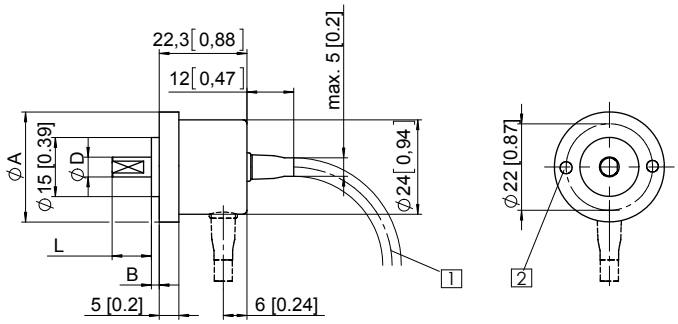


D	Fit	L
4 [0.16]	f7	10 [0.39]
5 [0.20]	f7	10 [0.39]
6 [0.24]	f7	10 [0.39]
1/4"	f7	10 [0.39]

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	A	B
2	ø 30 [1.18]	3 [0.12]
3	ø 28 [1.10]	2 [0.08]

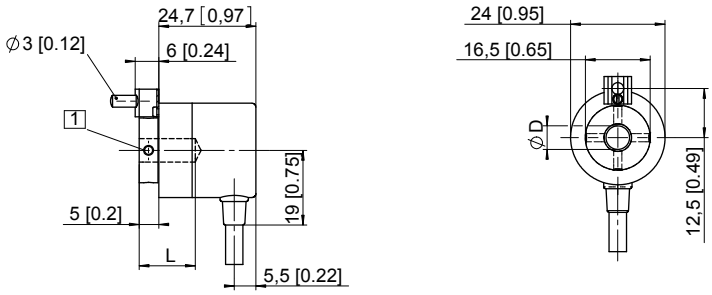
Dimensions hollow shaft version

Dimensions in mm [inch]

Flange type 1, ø 24 [0.94]

1 4 x M3 DIN 915 - SW1.5

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		

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