

Rotary Measuring Technology

Absolute Singleturn Encoders

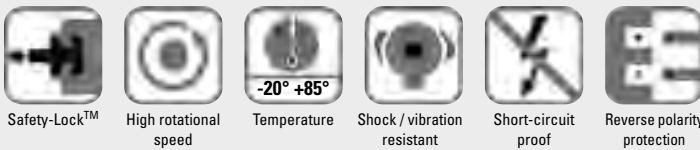
Miniature series, magnetic

2450 / 2470 (Shaft / Hollow shaft)



The absolute singleturn encoders 2450 and 2470 are the specialists when space is tight. Thanks to a new magnetic measuring principle, they require installation space of just 24 mm.

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



Minimal space requirement

- The outer diameter measures 24 mm; the shaft diameter at least 4 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 . XXXX . G121
Type ① ② ③ ④ ⑤



- ① Flange**
1 = ø 24 mm
 2 = ø 30 mm
 3 = ø 28 mm

- ③ Output circuit / Power supply**
 1 = SSI / 5 V DC
2 = SSI / 8 ... 30 V DC

- ⑤ Gray-Code**
 12 Bit resolution

- ② Shaft**
 1 = ø 4 mm
2 = ø 6 mm
 3 = ø 5 mm x 10 mm
 with flattening

- ④ Type of connection**
 1 = cable axial (2 m PVC cable ø 4,5 mm)
2 = cable radial (2 m PVC cable ø 4,5 mm)

Preferred types are underlined

Order code hollow shaft

8.2470 . XXXX . G121
Type ① ② ③ ④ ⑤



- ① Flange**
1 = ø 24 mm

- ③ Output circuit / Power supply**
 1 = SSI / 5 V DC
2 = SSI / 8 ... 30 V DC

- ⑤ Gray-Code**
 12 Bit resolution

- ② Blind hollow shaft**
 (insertion depth max. 14 mm)
 1 = ø 4 mm
2 = ø 6 mm

- ④ Type of connection**
 1 = cable axial (2 m PVC cable ø 4,5 mm)
2 = cable radial (2 m PVC cable ø 4,5 mm)

Preferred types are underlined

Suitable accessories: – further cables and connectors, also pre-assembled, can be found in the Connection Technology section.
 – further mounting attachments and stator couplings can be found in the Accessories section.

Absolute Singleturn Encoders Miniature series, magnetic 2450 / 2470 (Shaft / Hollow shaft)

Mechanical characteristics		
Speed		max. 12.000 min ⁻¹
Rotor moment of inertia		approx. 0,1 x 10 ⁻⁶ kgm ²
Starting torque		< 0,001 Nm
Shaft load capacity	radial	10 N
	axial.	20 N
Weight		ca. 0,06 kg
Protection to EN 60529	housing side	IP 64
	flange side	IP 50 (IP 69K on request)
Working temperature range		-20° C ... +85 °C ¹⁾
Materials	Shaft/Hollow shaft	stainless steel
	Clamping ring	MS58
Shock resistance acc. to DIN-IEC 68-2-27		1000 m/s ² , 6 ms
Vibration resistance acc. to DIN-IEC 68-2-27		100 m/s ² , 55 ... 2000 Hz

Electrical characteristics SSI Interface	
Sensor	
Supply voltage	5 (+0,4) V DC or 8 ... 30 V DC ²⁾
Current consumption (no load)	< 40 mA
Reverse connection of the supply voltage	yes
Measuring range	360°
Resolution/Code	12 Bit/Gray
Linearity (25 °C)	< 1,5 °
Repeat accuracy	< 0,1 °
Data refresh rate	typ 100 µs
RoHS compliant acc. to	EG-guideline 2002/95/EG
CE compliant acc. to	EN 61000-6-2, EN 61000-6-4, EN 61000-6-3 and EN 61000-4-8 (behaviour under magnetic influence)

Terminal assignment

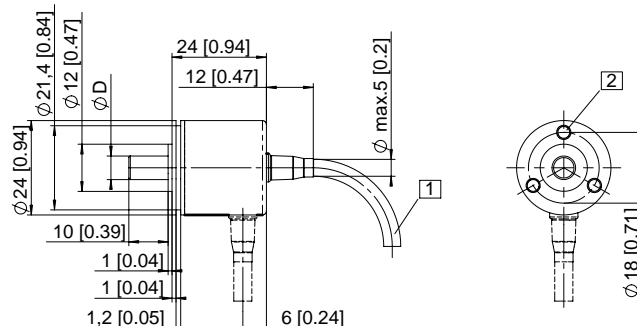
Signal:	0V	+Ub	+T	-T	+D	-D
cable colour:	WH	BN	GN	YE	GY	PK

SSI interface

Clock speed:	100 kHz ... 750 kHz
Output driver	RS 485
Monoflop time typ./max.	16 µs / 20 µs
Short circuit proof outputs	yes ³⁾
Permissible load/channel	typ. 60 Ohm (acc. to RS 485)

Dimensions shaft version:

Flange Type 1 (ø 24 mm)

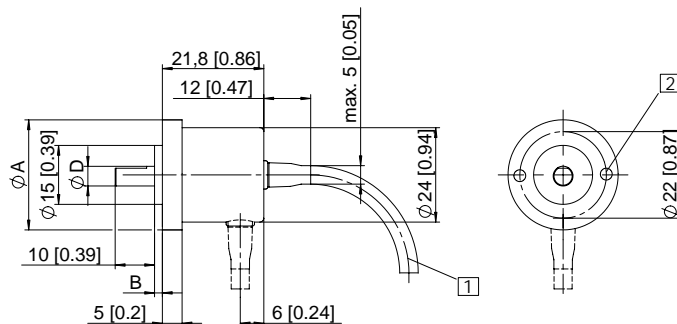


- 1 min. R50 [1,97]
- 2 3 x M3, 4 [0,16] deep

Flange Type 2 (ø 30 mm)

Flange Type 3 (ø 28 mm)

Flange Type	2	3
A	ø 30 mm	ø 28 mm
B	3 mm	2 mm

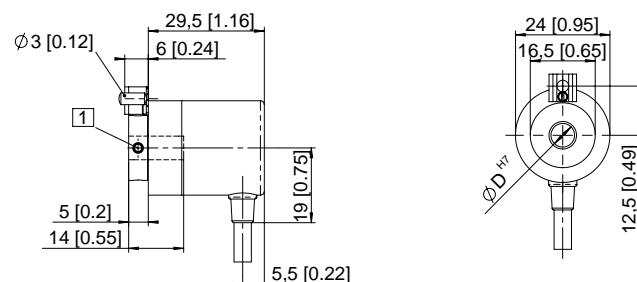


- 1 min. R50 [1,97]
- 2 3 x M3, 4 [0,16] tief

Mounting advice:

The flanges and shafts of the encoder and drive should not both be rigidly coupled together at the same time! We recommend the use of suitable couplings (see Accessories section).

Dimensions hollow shaft version



- 1 4 x M3 DIN 915 - SW15

Mounting advice:

The flanges and shafts of the encoder and drive should not both be rigidly coupled together at the same time! Mounting attachments and couplings can be found in the chapter Accessories

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