

Rotary Measuring Technology

Incremental Encoder

Miniature series, magnetic

2430 / 2440 (Shaft / Hollow shaft)



Thanks to their non-contact magnetic scanning technology the miniature-format singleturn encoders 2430 and 2440 guarantee exceptional ruggedness.

As a result of their compact outer diameter, they are ideal for use where installation space is restricted.











resistant





Reverse polarity

Magnetically robust

- The non-contact magnetic technology prevents wear and guarantees a
- · Multiple clamping affords high strain relief to the cable outlet, ensuring longer life.
- Wide temperature range from -20°C up to +85°C

Compact Power

- · Wide range power supply, either 5 V DC or 8 ... 30 V DC
- Flexible connection options: can be supplied with radial or axial cable outlet

Order code **Shaft version**

• Flange

1 = Ø 24 mm $2 = \emptyset 30 \text{ mm}$

 $3 = \emptyset 28 \text{ mm}$

2 Shaft (D)

 $1 = \emptyset 4 \text{ mm}$

 $2 = \emptyset 6 \text{ mm}$

3 = Ø 5 mm x 10 mm with flattening





3 Interface / Power supply

 $\mathbf{5} = \mathsf{RS422}$ (with inverted signal) supply voltage 8 - 30 V 6 = RS422 (with inverted signal) supply voltage 5 V

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)

O Pulse rate

1 ... 128 (factory programmable)

(e.g. 128 pulses => 0128) Other pulse rates on request

Preferred types are underlined

Order code **Hollow shaft**





• Flange

 $1 = \emptyset 24 \text{ mm}$

1 Interface / Power supply

5 = RS422 (with inverted signal) supply voltage 8-30 V 6 = RS422 (with inverted signal) supply voltage 5 V

2 Blind hollow shaft

(insertion depth max. 14 mm)

 $1 = \emptyset 4 \text{ mm}$

$2 = \emptyset 6 \text{ mm}$

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)

Pulse rate

1 ... 128 (factory programmable)

(e.g. 128 pulses => 0128) Other pulse rates on request

Preferred types are underlined

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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.

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| Mechanical characteris | tics | |
|--|---------------------------------------|---|
| 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 axial. | 10 N 20 N |
| Weight | | ca. 0,06 kg |
| Protection acc. to EN 60529 | housing side flange side | IP 64 IP 50 (IP 69K on request) |
| Working temperature range | | -20° C +85 °C 1) |
| Materials | Shaft/Hollow shaft Clamping flange | stainless steel 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/s², 55 2000 Hz |

| Electrical characteristics | | | |
|--|--|----------------------------|--|
| Output circuit | RS 422 (TTL-compatible) | RS 422 (TTL-compatible) | |
| Supply voltage | 8 30 V DC | 5 V ±5% | |
| Current consumption no load with inversion | typ. 40 mA max. 90 mA | typ. 40 mA max. 90 mA | |
| Permissible load/channel | max. ±20 mA | max. ±20 mA | |
| Pulse frequency | max. 300 kHz | max. 300 kHz | |
| Signal level high low | min. 2,5 V max. 0,5 V | min. 2,5 V max. 0,5 V | |
| Rise time t _r | max. 200 ns | max. 200 ns | |
| Fall time t _f | max. 200 ns | max. 200 ns | |
| Min. flange distance | 0,5 μs ²⁾ | 0,5 μs ²⁾ | |
| Short circuit proof outputs 3) | yes 4) | yes 4) | |
| Reverse connection of the supply voltage | yes | no | |
| UL certified | File 224618 | | |
| CE compliant acc. to | compliant acc. to EN 61000-6-2, EN 61000-6-4 and EN 61000- | | |
| RoHS compliant acc. to | EG-guideline 2002/95/EG | | |

Terminal assignment

| Signal: | 0 V | +U _B | Ā | Α | B | В | 0 | 0 | |
|---------------|-----|-----------------|----|----|----|----|----|----|--|
| Cable colour: | WH | BN | GN | YE | GY | PK | BU | RD | |

Dimensions shaft version:

Flange Type 1 (ø 24 mm)

1 min. R50 [1,97]

2 3 x M3, 4 [0,16] deep

24 [0.94] 10 [0.39] 1 [0.04] 1,2 [0.05] 1 [0.04] 1,2 [0.05]

Flange Type 2 (ø 30 mm) Flange Type 3 (ø 28 mm)

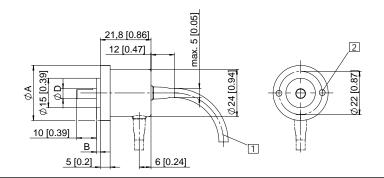
| Flange Type | 2 | 3 |
|-------------|---------|---------|
| Α | ø 30 mm | ø 28 mm |
| В | 3 mm | 2 mm |

1 min. R50 [1,97]

2 3 x M3, 4 [0,16] deep

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! Cylindrical pin (ISO 2338-A-3m6 x 10) for torque stop incl. in scope of delivery.

φ3 [0.12] 6 [0.24] 24 [0.95] 16,5 [0.65] 15,5 [0.22]

¹⁾ Non-condensing

For max. speed use a counter with input frequency of min. 500 kHz.

³⁾ If supply voltage correctly applied

⁴⁾ Only one channel allowed to be shorted-out:

at UB = 5 V short circuit to channel, 0 V, or +UB is permitted at UB = $5 \dots 30$ V short circuit to channel or 0 V is permitted.