

Incremental encoders

Through hollow shaft up to $\varnothing 12$ mm
6000...80000 pulses per revolution

G0333



G0333 with through hollow shaft

Features

- Encoder with through hollow shaft $\varnothing 12$ mm
- Optical sensing method
- Max. 80000 pulses per revolution
- Clamping ring on housing

Technical data - electrical ratings

| | |
|-----------------------------|---|
| Voltage supply | 5 VDC ± 10 % 4.75...30 VDC 10...30 VDC |
| Reverse polarity protection | Yes (4.75...30 VDC) |
| Consumption w/o load | ≤ 30 mA (24 VDC) ≤ 60 mA (5 VDC) |
| Pulses per revolution | 6000...80000 |
| Reference signal | Zero pulse, width 90° |
| Sensing method | Optical |
| Output frequency | ≤ 300 kHz |
| Output signals | A 90° B, N + inverted |
| Output stages | Linedriver/RS422 Push-pull short-circuit proof |
| Interference immunity | DIN EN 61000-6-2 |
| Emitted interference | DIN EN 61000-6-4 |
| Approval | UL approval / E63076 |

Technical data - mechanical design

| | |
|-------------------------|--|
| Size (flange) | $\varnothing 58$ mm |
| Shaft type | $\varnothing 12$ mm (through hollow shaft) |
| Protection DIN EN 60529 | IP 54 |
| Operating speed | ≤ 6000 rpm |
| Starting torque | ≤ 0.03 Nm (+25 °C, IP 54) |
| Rotor moment of inertia | 14.5 gcm ² |
| Materials | Housing: aluminium Flange: aluminium |
| Operating temperature | -25...+85 °C -40...+85 °C (optional) |
| Relative humidity | 95 % non-condensing |
| Resistance | DIN EN 60068-2-6 Vibration 10 g, 16-2000 Hz DIN EN 60068-2-27 Shock 200 g, 6 ms |
| Connection | Connector M23, 12-pin |
| Weight approx. | 250 g |

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Part number

Hollow shaft with clamping ring

G0333. **C3**

Pulse number - see table

Connection

C3 Connector M23, 12-pin, radial

Voltage supply / signals

25 5 VDC / linedriver RS422

75 4.75...30 VDC / push-pull

77 10...30 VDC / linedriver
RS422 (5 VDC)

Through hollow shaft / torque pin

0 $\varnothing 12$ mm, clamping ring on housing, pin
15 mm, IP 54

1 $\varnothing 12$ mm, clamping ring on housing, pin
9.5 mm, IP 54

A $\varnothing 12$ mm, clamping ring on housing, without
pin, IP 54

Part number (pulse number)

| | | | |
|-----------|------------|------------|------------|
| 70 (8192) | 73 (10000) | 72 (20000) | 75 (48000) |
| 74 (9000) | 71 (16384) | 77 (36000) | 76 (80000) |

Other pulse numbers on request.

Example: part number 70 = 8192 pulses.

Accessories

Connectors and cables

Z 141.001 Female connector M23, 12-pin, without cable

Z 141.003 Female connector M23, 12-pin, 2 m cable

Z 141.005 Female connector M23, 12-pin, 5 m cable

Z 141.007 Female connector M23, 12-pin, 10 m cable

Mounting accessories

Z 119.023 Spring coupling for encoders with $\varnothing 58$ mm
housing

Z 119.024 Torque support and spring washer for
encoders with 9.5 mm pin

Z 119.041 Torque support by rubber buffer for encoders
with 15 mm pin

Incremental encoders

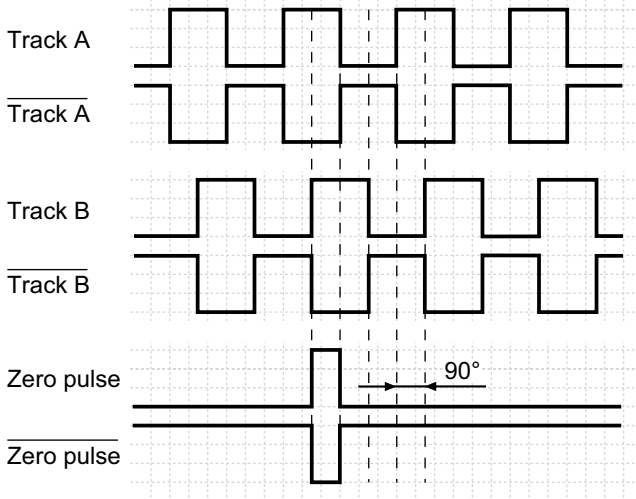
Through hollow shaft up to $\varnothing 12$ mm

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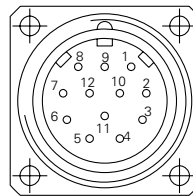
Output signals

Clockwise rotating direction when looking at flange.



Terminal assignment

| Connector | Core colour | Assignment |
|-----------|-------------|--------------------------------|
| Pin 1 | pink | Track B inv. |
| Pin 2 | blue | UB-Sense |
| Pin 3 | red | Track N (zero pulse) |
| Pin 4 | black | Track N inv. (zero pulse inv.) |
| Pin 5 | brown | Track A |
| Pin 6 | green | Track A inv. |
| Pin 7 | – | – |
| Pin 8 | grey | Track B |
| Pin 9 | – | – |
| Pin 10 | white/green | GND |
| Pin 11 | white | GND-Sense |
| Pin 12 | brown/green | UB |



UB-Sense and GND-Sense are directly connected to UB resp. GND. Please use cores twisted in pairs (for example track A / track A inv.) for extension cables of more than 10 m length.

Trigger level

| Outputs | Linedriver RS422 |
|-------------------|---------------------|
| Output level High | >2.5 V (I = -20 mA) |
| Output level Low | <0.5 V (I = 20 mA) |
| Load High | <20 mA |
| Load Low | <20 mA |

| Outputs | Push-pull short-circuit proof |
|-------------------|-------------------------------|
| Output level High | >UB -3 V (I = -20 mA) |
| Output level Low | <0.5 V (I = 20 mA) |
| Load High | <20 mA |
| Load Low | <20 mA |

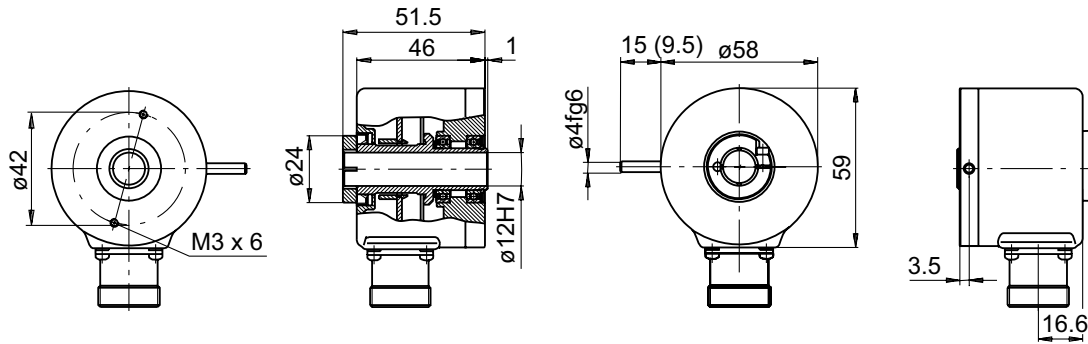
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Dimensions

G0333 - through hollow shaft and clamping ring



Connector dimensions

