

Incremental encoders

Blind hollow shaft $\varnothing 10$ to $\varnothing 14$ mm

50...1024 pulses per revolution

ITD 28 A 4



ITD 28 A 4 with blind hollow shaft

Features

- Encoder with blind hollow shaft up to $\varnothing 14$ mm
- Max. 1024 pulses per revolution
- Redundant version
- Mounting by torque support
- TTL or HTL output signals
- Cable output radial

Optional

- Cable with connector
- Extended operating temperature range

Technical data - electrical ratings

| | |
|-----------------------------|---|
| Voltage supply | 5 VDC $\pm 5\%$ 8...30 VDC |
| Reverse polarity protection | Yes |
| Consumption w/o load | ≤ 100 mA |
| Pulses per revolution | 50...1024 |
| Reference signal | Zero pulse, width 90° |
| Sensing method | Optical |
| Output frequency | ≤ 120 kHz |
| Output signals | A, B, N + inverted |
| Output stages | TTL linedriver (short-circuit proof) HTL push-pull (short-circuit proof) |
| Interference immunity | DIN EN 61000-6-2 |
| Emitted interference | DIN EN 61000-6-3 |

Technical data - mechanical design

| | |
|-------------------------|--|
| Size (flange) | $\varnothing 58$ mm |
| Shaft type | $\varnothing 10...14$ mm (blind hollow shaft) |
| Mounting kit | 002 |
| Protection DIN EN 60529 | IP 65 |
| Operating speed | ≤ 8000 rpm ≤ 5000 rpm IP 65 ($>70^\circ\text{C}$) |
| Starting torque | ≤ 0.01 Nm ($+20^\circ\text{C}$) |
| Materials | Housing: aluminium Shaft: stainless steel |
| Operating temperature | $-20...+70^\circ\text{C}$ $-20...+100^\circ\text{C}$ |
| Relative humidity | 90 % non-condensing |
| Resistance | DIN EN 60068-2-6 Vibration 10 g, 55-2000 Hz DIN EN 60068-2-27 Shock 100 g, 6 ms |
| Connection | Cable 1 m |
| Weight approx. | 400 g |

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Part number

ITD 28 A 4

| | | | | | | | | |
|--|--|--|--|-------|--|--|------|-----|
| | | | | 2xKR1 | | | IP65 | 002 |
|--|--|--|--|-------|--|--|------|-----|

Mounting kit
002 Mounting kit 002

Protection
IP65 IP 65

Blind hollow shaft
10 $\varnothing 10$ mm
12 $\varnothing 12$ mm
14 $\varnothing 14$ mm

Operating temperature
S -20...+70 °C
E -20...+100 °C

Connection
2xKR1 Cable 1 m, radial, cable 1 m, radial

Output signals
BI/BI 2x A, A inv, B, B inv
NI/NI 2x A, A inv, B, B inv, N, N inv
BI/NI 1x A, A inv, B, B inv; 1x A, A inv, B, B inv, N, N inv
NI/BI 1x A, A inv, B, B inv, N, N inv; 1x A, A inv, B, B inv

Voltage supply / signals
H/H 2x 8...30 VDC / HTL level, push-pull
T/T 2x 5 VDC / TTL level, linedriver
R/R 2x 8...30 VDC / TTL level, linedriver
H/T 1x 8...30 VDC / HTL level, push-pull; 1x 5 VDC / TTL level, linedriver
H/R 1x 8...30 VDC / HTL level, push-pull; 1x 8...30 VDC / TTL level, linedriver
T/H 1x 5 VDC / TTL level, linedriver; 1x 8...30 VDC / HTL level, push-pull
T/R 1x 5 VDC / TTL level, linedriver; 1x 8...30 VDC / TTL level, linedriver
R/H 1x 8...30 VDC / TTL level, linedriver; 1x 8...30 VDC / HTL level, push-pull
R/T 1x 8...30 VDC / TTL level, linedriver; 1x 5 VDC / TTL level, linedriver

Pulse number - see table

Pulse number - see table

Pulse number

| | | | | |
|----|-----|-----|-----|------|
| 50 | 90 | 200 | 360 | 600 |
| 60 | 100 | 250 | 400 | 1000 |
| 64 | 120 | 254 | 500 | 1024 |
| 88 | 128 | 256 | 512 | |

Incremental encoders

Blind hollow shaft $\varnothing 10$ to $\varnothing 14$ mm

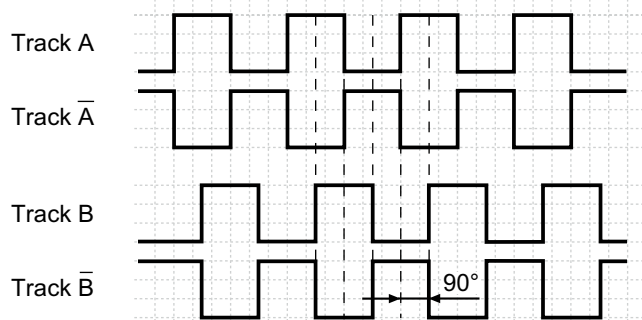
50...1024 pulses per revolution

ITD 28 A 4

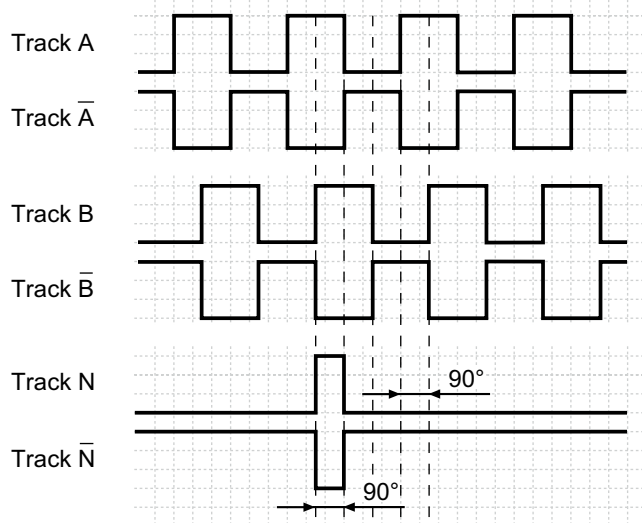
Output signals

Clockwise rotation when looking at the mounting side.

BI-Output signals



NI-Output signals



Terminal assignment

| Core colour | Assignment |
|---------------------------|----------------|
| brown | Track A |
| green | Track A inv. |
| grey | Track B |
| pink | Track B inv. |
| red | Track N |
| black | Track N inv. |
| brown 0,5 mm ² | UB |
| white 0,5 mm ² | GND |
| blue | UB-Sense |
| white | GND-Sense |
| transparent | Shield/Housing |

Trigger level

| Outputs | Linedriver |
|-------------------|--------------|
| Output level High | ≥ 2.4 V |
| Output level Low | ≤ 0.5 V |
| Load | ≤ 70 mA |

| Outputs | Push-pull short-circuit proof |
|-------------------|-------------------------------|
| Output level High | $\geq UB - 3$ V |
| Output level Low | ≤ 1.5 V |
| Load | ≤ 70 mA |

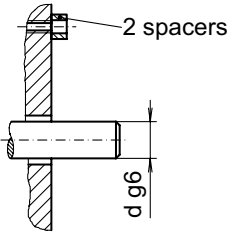
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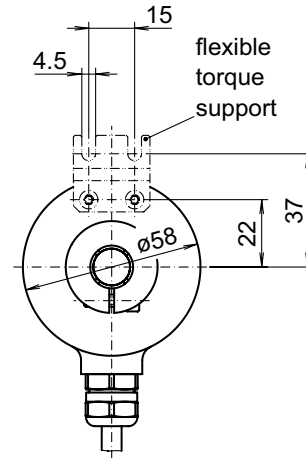
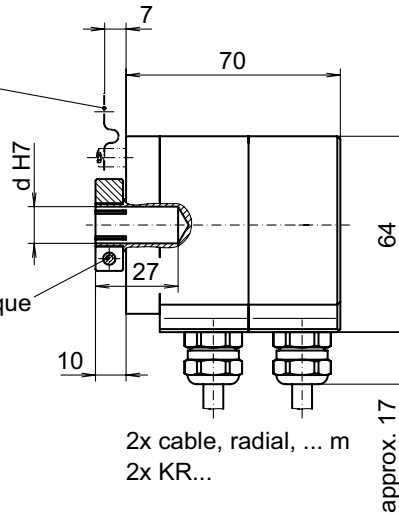
Dimensions

mounting side
(proposition)



mounting
kit 002
(standard)

cylinder
head screw
DIN 912 - M4
A/F3
tightening torque
max. 2.2 Nm



036-8