Incremental encoders

Blind hollow shaft ø10 to ø14 mm

50…1024 pulses per revolution

ITD 28 A 4

ITD 28 A 4 with blind hollow shaft

Features

- **Encoder with blind hollow shaft max. ø14 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 ±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 stage	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)	ø58 mm
Shaft type	ø10...14 mm (blind hollow shaft)
Motor shaft tolerance	0.25 mm axial 0.1 mm radial
Mounting kit	002
Protection DIN EN 60529	IP 65
Operating speed	≤8000 rpm ≤5000 rpm IP 65 (>70 °C)
Starting torque	≤0.01 Nm (+20 °C)
Materials	Housing: aluminium Shaft: stainless steel
Operating temperature	-20...+70 °C -20...+100 °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 accessory kit 002

Protection
IP65 IP 65

Blind hollow shaft
10 ø10 mm
12 ø12 mm
14 ø14 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	

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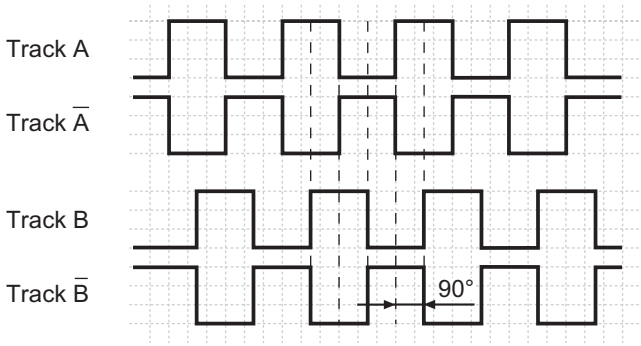
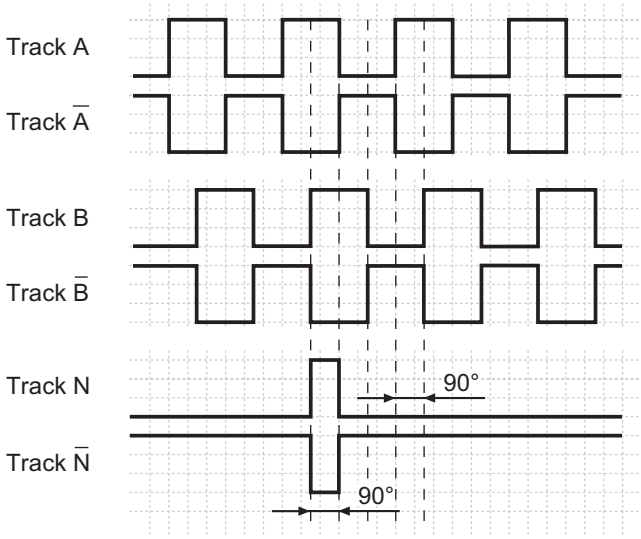
Output signals

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 mm²	UB
white 0,5 mm²	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	≥UB -3 V
Output level Low	≤1.5 V
Load	≤70 mA

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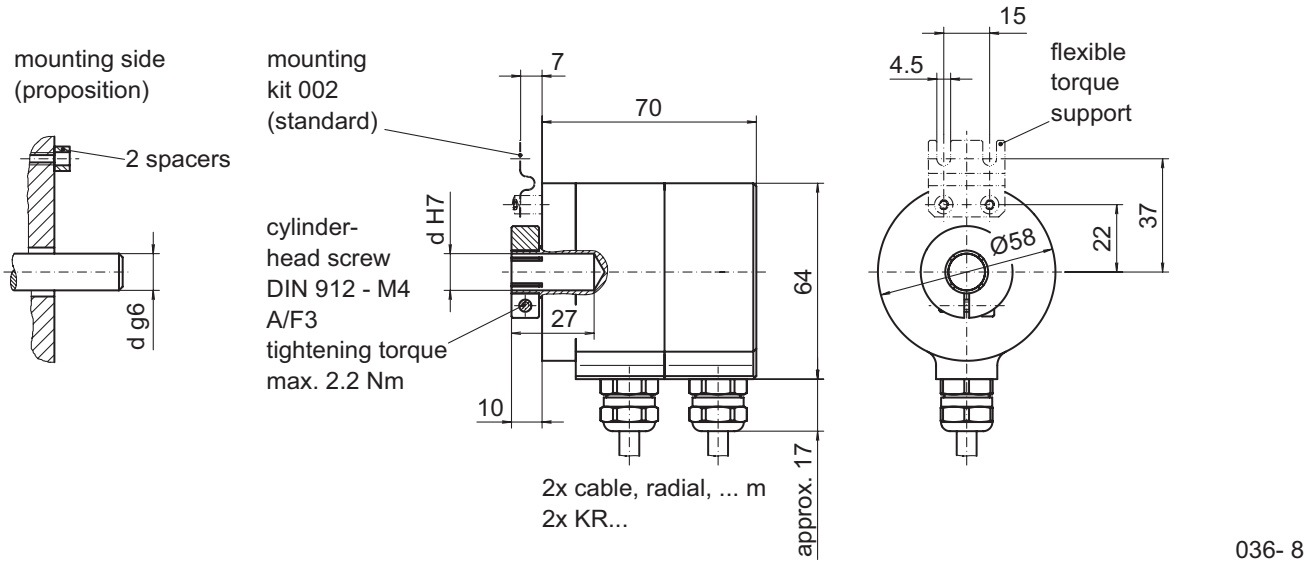
Dimensions



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