

Incremental encoders

Through hollow shaft $\varnothing 10$ to $\varnothing 14$ mm
200...6000 pulses per revolution

ITD 21 A 4 Y65



ITD 21 A 4 Y65 with through hollow shaft

Features

- Encoder with through hollow shaft $\varnothing 10...14$ mm
- Max. 6000 pulses per revolution
- Optical sensing method
- Stainless steel design (1.4305)
- Mounting by torque support
- TTL or HTL output signals
- Cable output radial
- High protection standard

Optional

- Cable with connector

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	200...6000
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	≤ 300 kHz (TTL) ≤ 160 kHz (HTL)
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)	$\varnothing 68$ mm
Shaft type	$\varnothing 10$ mm (through hollow shaft) $\varnothing 12$ mm (through hollow shaft) $\varnothing 14$ mm (through hollow shaft)
Motor shaft tolerance	0.25 mm axial 0.1 mm radial
Mounting kit	038
Protection DIN EN 60529	IP 66
Operating speed	≤ 3000 rpm
Starting torque	≤ 0.05 Nm (+20 °C)
Materials	Housing: stainless steel Shaft: stainless steel
Operating temperature	-20...+70 °C
Relative humidity	90 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 10 g, 55-2000 Hz DIN EN 60068-2-27 Shock 30 g, 11 ms
Connection	Cable 1 m
Weight approx.	1300 g

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Part number

ITD 21 A 4 Y65 NI KR1 S IP66 038

Mounting kit
038 Mounting kit 038

Protection
IP66 IP 66

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

Operating temperature
S -20...+70 °C

Connection
KR1 Cable 1 m, radial

Output signals
NI A, A inv, B, B inv, 0, 0 inv

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

Pulse number - see table

Pulse number

200	500	1000	1800	4000
250	512	1024	2000	4096
256	600	1200	2048	5000
300	720	1250	2500	6000
360	800	1440	3000	
400	900	1500	3600	

Incremental encoders

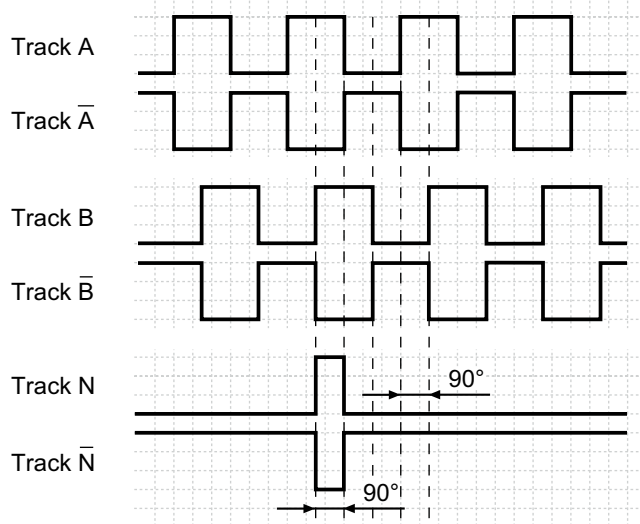
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Output signals

Clockwise rotation when looking at the mounting side.

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

Cable with 2 brown and 2 white wires:
PUR, [5x2x0.14 mm² + 2x0.5 mm²], bending radius > 60 mm,
outer diameter 7.5 mm \pm 0.2 mm

Encoder with connector on cable end after 1 January 2016

Core colour	Assignment
green	Track A
brown	Track A inv.
grey	Track B
black	Track B inv.
pink	Track N
white	Track N inv.
red	UB
blue	GND
yellow	UB-Sense
violet	GND-Sense
transparent	Shield/Housing

Cable with violet wire:
PUR, [5x2x0.14 mm²], bending radius > 60 mm,
outer diameter 7 mm \pm 0.2 mm

Trigger level

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

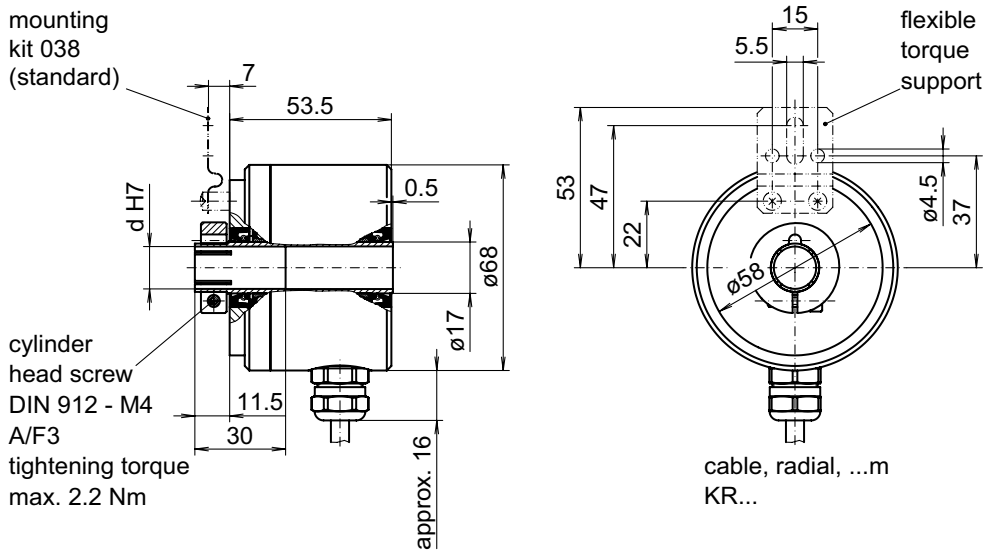
Outputs	Push-pull short-circuit proof
Output level High	$\geq UB - 3$ V
Output level Low	≤ 1.5 V
Load	≤ 70 mA

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Dimensions



029- 1 Y65