

# Incremental encoders

End shaft  $\varnothing 10$  to  $\varnothing 16$  mm

Resolution 200...2048 pulses

## ITD 40 A 4



ITD 40 A 4 with end shaft

### Features

- Encoder with end shaft  $\varnothing 10$ -16 mm
- Resolution max. 2048 ppr
- Optical sensing
- Mounting by torque support
- TTL or HTL output signals
- Cable output radial or axial

### 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	$\leq 100$ mA
Resolution (steps/turn)	200...2048
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	$\leq 120$ kHz
Output signals	A, B, N + inverted
Output circuit	TTL linedriver (short-circuit proof) HTL push-pull (short-circuit proof)
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 55011

### Technical data - mechanical design

Dimensions (flange)	$\varnothing 80$ mm
Shaft	$\varnothing 10$ ...16 mm end shaft
Motor shaft tolerance	0.25 mm axial 0.1 mm radial
Mounting kit variant	050
Protection DIN EN 60529	IP 65
Operating speed	$\leq 8000$ rpm $\leq 5000$ rpm IP 65 ( $> 70$ °C)
Starting torque	$\leq 0.01$ Nm
Materials	Housing: aluminium, black, powder-coated 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, 11 ms
Connection	Cable 1 m
Weight approx.	550 g



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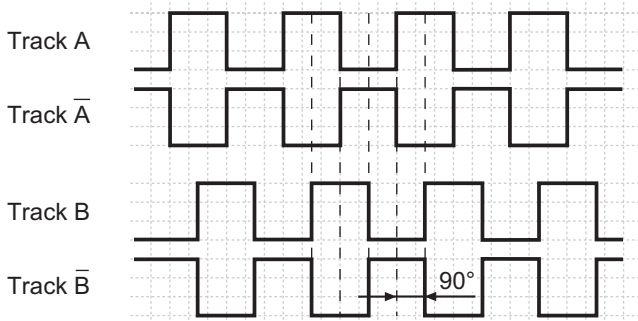
Resolution 200...2048 pulses

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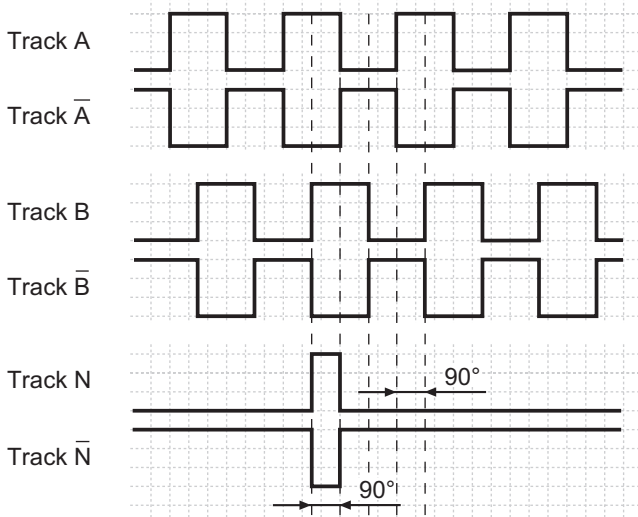
### Output signals

Clockwise rotation when looking at the mounting side.

#### BI-Output signals



#### NI-Output signals



### Terminal assignment

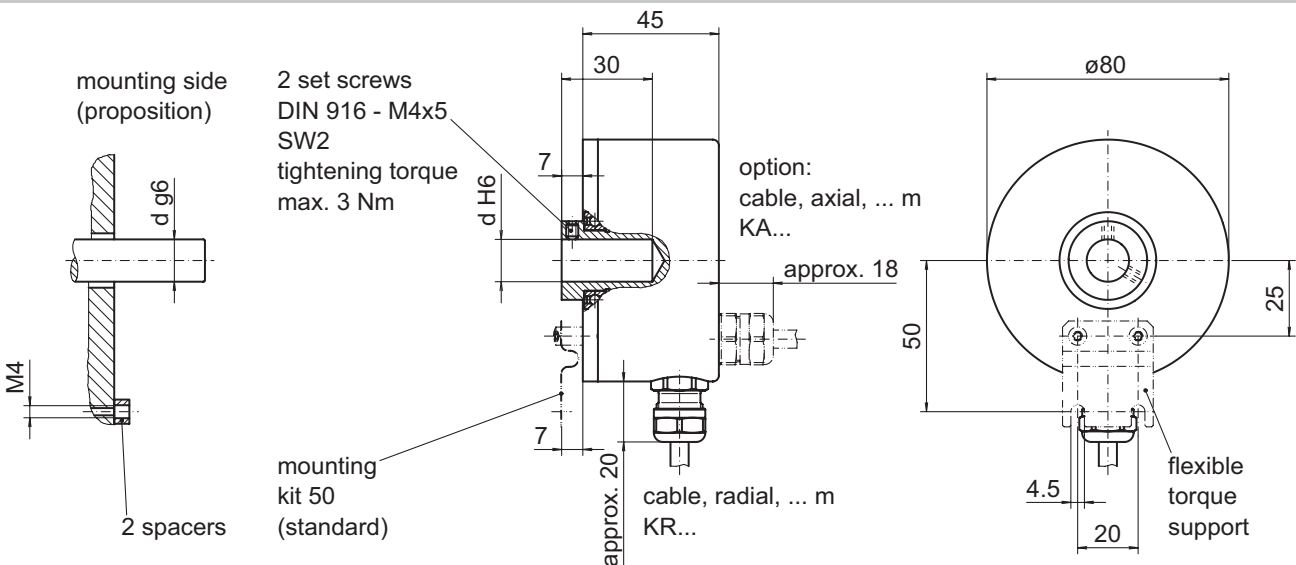
Core colour	Assignment
brown	Track A
green	Track A inv.
grey	Track B
pink	Track B inv.
red	Track N
black	Track N inv.
brown 0,5 mm <sup>2</sup>	UB
white 0,5 mm <sup>2</sup>	GND
blue	UB-Sense
white	GND-Sense
transparent	Shield/Housing

### Trigger level

Outputs	Linedriver
Output level High	$\geq 2.4$ V
Output level Low	$\leq 0.5$ V
Load	$\leq 70$ mA

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

### Dimensions



026-5

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