

# Incremental encoders

Hollow shaft  $\varnothing 14$  mm

Resolution 2000...10000 pulses

## ITD 41 A 4 Y117



ITD 41 A 4 Y117 with hollow shaft

### Features

- Encoder with electric isolated hollow shaft  $\varnothing 14$  mm
- Resolution max. 10000 ppr
- Optical sensing
- Mounting by electrically isolated 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	$\leq 100$ mA
Resolution (steps/turn)	2000...10000
Reference signal	Zero pulse, width $90^\circ$
Sensing method	Optical
Output frequency	$\leq 300$ kHz (TTL) $\leq 160$ kHz (HTL)
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	$\varnothing 14$ mm hollow shaft
Motor shaft tolerance	0.25 mm axial 0.1 mm radial
Mounting kit variant	033
Protection DIN EN 60529	IP 65
Operating speed	$\leq 8000$ rpm $\leq 5000$ rpm IP 65 ( $> 70^\circ\text{C}$ )
Starting torque	$\leq 0.015$ Nm
Materials	Housing: aluminium, black, powder-coated Shaft: stainless steel
Operating temperature	$-20 \dots +70^\circ\text{C}$ $-20 \dots +100^\circ\text{C}$
Relative humidity	90 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 10 g, 55-2000 Hz DIN EN 60068-2-27 Shock 30 g, 11 ms
Connection	Cable 1 m
Weight approx.	600 g

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## Part number

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		NI	KR1		14		033
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Mounting kit  
033 Mounting accessory kit 033

### Protection

IP54 IP 54  
IP65 IP 65

Hollow shaft  
14 Hollow shaft ø14 mm

### Operating temperature

S -20...+70 °C  
E -20...+100 °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

See part number (pulses)

## Part number (pulses)

2000	2500	3600	5000
2048	3072	4096	10000

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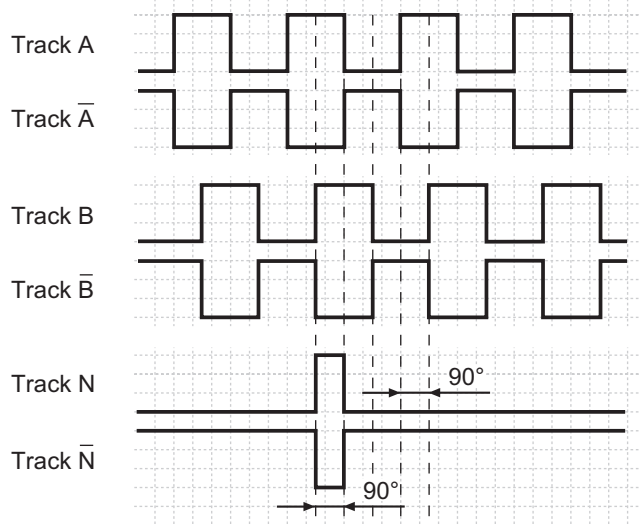
Resolution 2000...10000 pulses

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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 <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

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## Dimensions

