

# Incremental encoders

Through hollow shaft  $\varnothing 30$  to  $\varnothing 50$  mm

1024...4096 pulses per revolution

## ITD 61 A 4



ITD 61 A 4 with through hollow shaft

### Technical data - electrical ratings

|                             |                                                                             |
|-----------------------------|-----------------------------------------------------------------------------|
| Voltage supply              | 5 VDC $\pm 5$ %<br>8...30 VDC                                               |
| Reverse polarity protection | Yes                                                                         |
| Consumption w/o load        | $\leq 100$ mA                                                               |
| Pulses per revolution       | 1024...4096                                                                 |
| Reference signal            | Zero pulse, width $90^\circ$                                                |
| Sensing method              | Optical                                                                     |
| Output frequency            | $\leq 300$ kHz (TTL)<br>$\leq 160$ kHz (HTL)                                |
| Output signals              | A, B, N + inverted                                                          |
| Output stage                | TTL linedriver (short-circuit proof)<br>HTL push-pull (short-circuit proof) |
| Interference immunity       | DIN EN 61000-6-2                                                            |
| Emitted interference        | DIN EN 61000-6-3                                                            |

### Features

- Encoder with through hollow shaft  $\varnothing 30$ ... $50$  mm
- Max. 4096 pulses per revolution
- Optical sensing
- Flat design
- Mounting by torque support
- Mounting hole circle  $\varnothing 134$  mm
- TTL or HTL output signals
- Cable output radial

### Optional

- Cable with connector

### Technical data - mechanical design

|                         |                                                                                          |
|-------------------------|------------------------------------------------------------------------------------------|
| Size (flange)           | $\varnothing 120$ mm                                                                     |
| Shaft type              | $\varnothing 30$ ... $50$ mm (through hollow shaft)                                      |
| Motor shaft tolerance   | 0.5 mm axial<br>0.1 mm radial                                                            |
| Mounting kit            | 051                                                                                      |
| Protection DIN EN 60529 | IP 54                                                                                    |
| Operating speed         | $\leq 4000$ rpm                                                                          |
| Starting torque         | $\leq 0.15$ Nm ( $+20^\circ\text{C}$ , IP 30)                                            |
| Materials               | Aluminium, bare<br>Shaft: stainless steel                                                |
| Operating temperature   | $-20$ ... $+70^\circ\text{C}$                                                            |
| Relative humidity       | 90 % non-condensing                                                                      |
| Resistance              | DIN EN 60068-2-6<br>Vibration 10 g, 55-2000 Hz<br>DIN EN 60068-2-27<br>Shock 30 g, 11 ms |
| Connection              | Cable 1 m                                                                                |
| Weight approx.          | 1830 g                                                                                   |

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1024...4096 pulses per revolution

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## Part number

ITD 61 A 4 

|  |  |    |     |   |  |      |     |
|--|--|----|-----|---|--|------|-----|
|  |  | NI | KR1 | S |  | IP54 | 051 |
|--|--|----|-----|---|--|------|-----|

Mounting kit

051 Mounting accessory kit 051

Protection

IP54 IP 54

Through hollow shaft

30 ø30 mm  
32 ø32 mm  
35 ø35 mm  
38 ø38 mm  
40 ø40 mm  
42 ø42 mm  
44 ø44 mm  
45 ø45 mm  
48 ø48 mm  
50 ø50 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

|      |      |      |      |
|------|------|------|------|
| 1024 | 2048 | 2500 | 4096 |
|------|------|------|------|

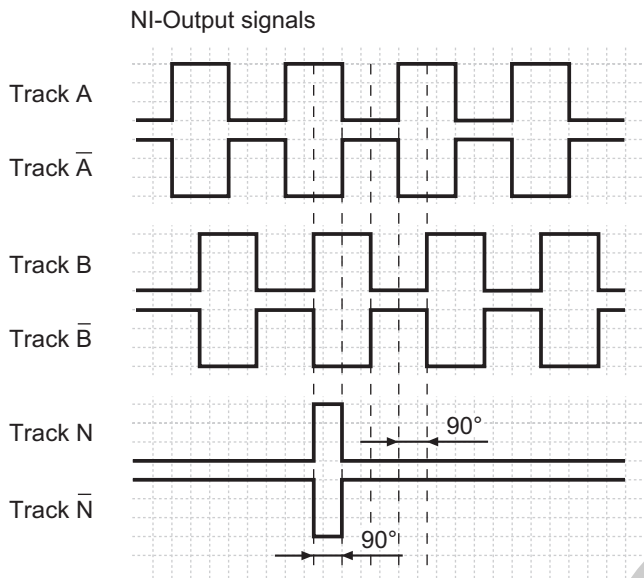
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### Output signals

Clockwise rotation when looking at the mounting side.



### Terminal assignment

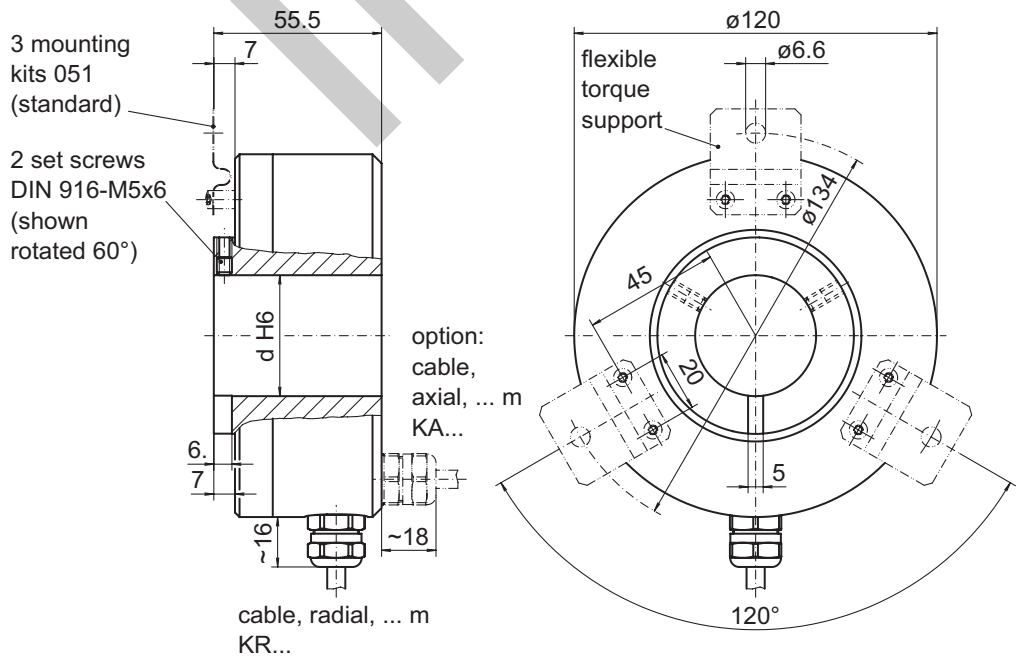
| Core colour               | Assignment     |
|---------------------------|----------------|
| brown                     | Track A        |
| green                     | Track A inv.   |
| grey                      | Track B        |
| pink                      | Track B inv.   |
| red                       | 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



026-30

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invalid