

# Incremental encoders

Through hollow shaft  $\varnothing 38$  to  $\varnothing 65$  mm

1000...2500 pulses per revolution

## ITD 70 A 4 Y 2



ITD 70 A 4 Y 2 with through hollow shaft

### Features

- Encoder with through hollow shaft max.  $\varnothing 65$  mm
- Max. 2500 pulses per revolution
- Optical sensing method
- Mounting by torque support
- Mounting hole circle  $\varnothing 164$  mm
- TTL or HTL output signals
- Cable output radial

### Optional

- Cable with connector

### 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       | 1000...2500   |
| Reference signal            | Zero pulse, width $90^\circ$  |
| Sensing method              | Optical   |
| Output frequency            | $\leq 120$ kHz  |
| Output signals              | A, B, N + inverted  |
| Output stages               | 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  |

### Technical data - mechanical design

|                         |   |
|-------------------------|---|
| Size (flange)           | $\varnothing 150$ mm  |
| Shaft type              | $\varnothing 38$ ... $\varnothing 65$ mm (through hollow shaft)                           |
| Mounting kit            | 051   |
| Protection DIN EN 60529 | IP 54   |
| Operating speed         | $\leq 4000$ rpm   |
| Materials               | Aluminium, bare<br>Shaft: stainless steel   |
| Operating temperature   | $-20$ ... $+70$ °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 100 g, 11 ms |
| Connection              | Cable 1 m   |
| Weight approx.          | 2500 g  |

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## Part number

ITD 70 A 4 Y 2     **NI** **KR1** **S**   **IP54** **051**

Mounting kit  
051 Mounting kit 051

Protection  
IP54 IP 54

Through hollow shaft  
40  $\varnothing 40$  mm  
42  $\varnothing 42$  mm  
45  $\varnothing 45$  mm  
50  $\varnothing 50$  mm  
55  $\varnothing 55$  mm  
60  $\varnothing 60$  mm  
65  $\varnothing 65$  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

1000 | 1024 | 2048 | 2500

Other diameters on request.

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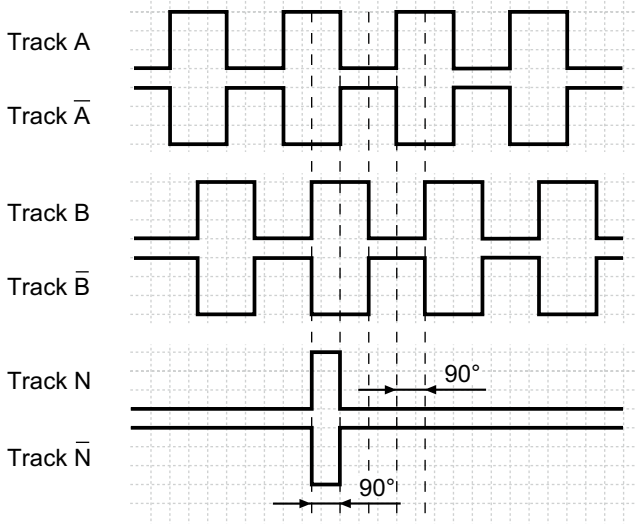
1000...2500 pulses per revolution

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### Output signals

Clockwise rotation when looking at the mounting side.

NI-Output signals



### Terminal assignment

| 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 |

### Trigger level

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

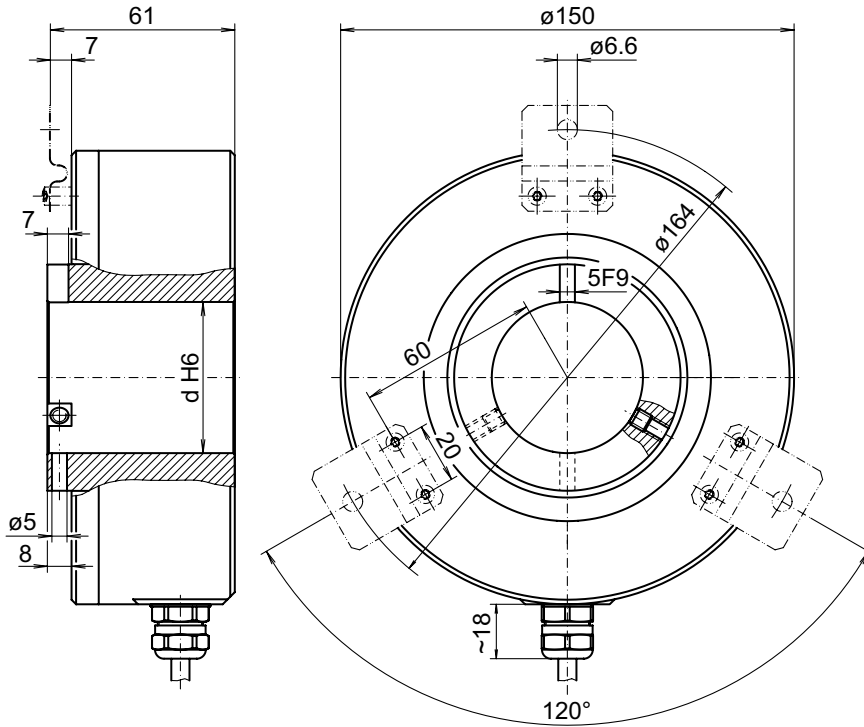
| Outputs           | Push-pull short-circuit proof |
|-------------------|-------------------------------|
| Output level High | $\geq UB - 3$ V               |
| Output level Low  | $\leq 1.5$ V                  |
| Load              | $\leq 70$ mA                  |

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## Dimensions



026-40 Y 2