

# Incremental encoders

## Blind hollow shaft $\varnothing 10$ to $\varnothing 14$ mm

### 50...1024 pulses per revolution

#### ITD 20 A 4 Y22



ITD 20 A 4 Y22 with blind hollow shaft

#### Features

- Encoder with blind hollow shaft  $\varnothing 10...14$  mm
- Max. 1024 pulses per revolution
- Optical sensing
- Mounting by torque support
- TTL or HTL output signals
- Flange socket radial
- High protection standard

#### 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       | 50...1024   |
| Reference signal            | Zero pulse, width $90^\circ$  |
| Sensing method              | Optical   |
| Output frequency            | $\leq 120$ kHz  |
| 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  |

#### Technical data - mechanical design

|                         |  |
|-------------------------|--|
| Size (flange)           | $\varnothing 58$ mm  |
| Shaft type              | $\varnothing 10$ mm (blind hollow shaft)<br>$\varnothing 12$ mm (blind hollow shaft)<br>$\varnothing 14$ mm (blind hollow shaft) |
| Motor shaft tolerance   | 0.25 mm axial<br>0.1 mm radial   |
| Mounting kit            | 002  |
| Protection DIN EN 60529 | IP 65  |
| Operating speed         | $\leq 8000$ rpm<br>$\leq 5000$ rpm IP 65 ( $>70^\circ\text{C}$ )   |
| Starting torque         | $\leq 0.01$ Nm ( $+20^\circ\text{C}$ )   |
| Materials               | Housing: aluminium, black, powder-coated<br>Shaft: stainless steel   |
| Operating temperature   | $-20...+70^\circ\text{C}$<br>$-20...+100^\circ\text{C}$  |
| 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 100 g, 11 ms  |
| Connection              | Connector M23 type 2, 12-pin   |
| Weight approx.          | 280 g  |

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#### Part number

ITD 20 A 4 Y22       **D2SR12**     **IP65** **002**

Mounting kit  
002 Mounting accessory kit 002

Protection  
IP65 IP 65

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

Operating temperature  
S -20...+70 °C  
E -20...+100 °C

Connection  
D2SR12 Flange socket type 2, pin contacts, radial, 12-pin

Output signals  
BI A, A inv, B, B inv  
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

|    |     |     |     |      |
|----|-----|-----|-----|------|
| 50 | 90  | 200 | 360 | 600  |
| 60 | 100 | 250 | 400 | 1000 |
| 64 | 120 | 254 | 500 | 1024 |
| 88 | 128 | 256 | 512 |      |

#### Accessories

##### Connectors and cables

11072792 Connector S2BG12, 1 m cable (ITD)

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## Blind hollow shaft $\varnothing 10$ to $\varnothing 14$ mm

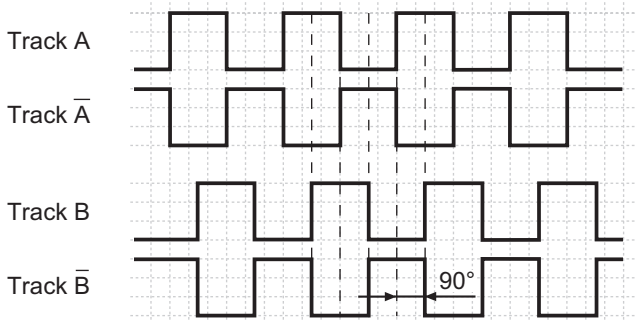
### 50...1024 pulses per revolution

#### ITD 20 A 4 Y22

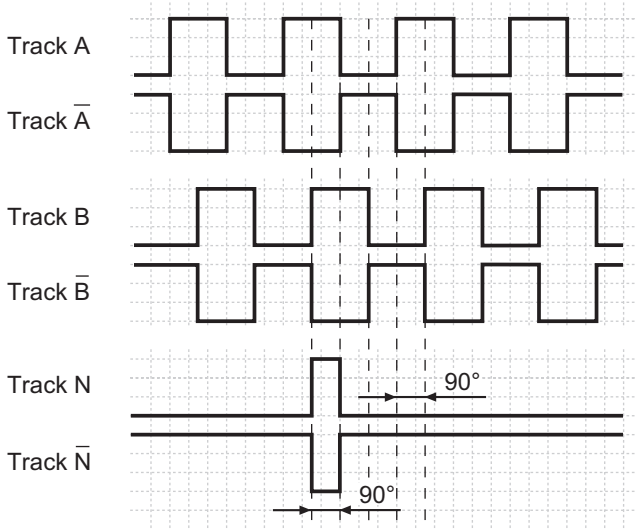
##### Output signals

Clockwise rotation when looking at the mounting side.

##### BI-Output signals

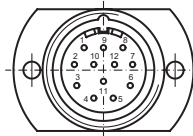


##### NI-Output signals



##### Terminal assignment

| Connector | Assignment   |
|-----------|--------------|
| Pin 5     | Track A      |
| Pin 6     | Track A inv. |
| Pin 8     | Track B      |
| Pin 1     | Track B inv. |
| Pin 3     | Track N      |
| Pin 4     | Track N inv. |
| Pin 12    | UB           |
| Pin 10    | GND          |
| Pin 2     | UB-Sense     |
| Pin 11    | GND-Sense    |
| Pin 9     | -            |
| Pin 7     | -            |



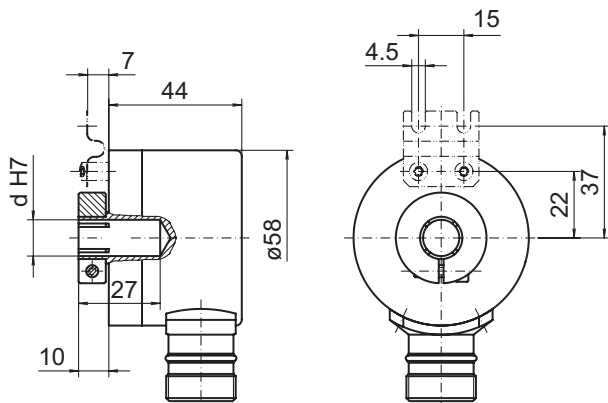
##### Trigger level

| 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



029- 1 Y22

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