

# Incremental encoders

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

### 200...6000 pulses per revolution

#### ITD 21 A 4 Y22



ITD 21 A 4 Y22 with blind hollow shaft

#### Features

- Encoder with blind hollow shaft  $\varnothing 10...14$  mm
- Max. 6000 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 $\pm 5$ % 8...30 VDC
Reverse polarity protection	Yes
Consumption w/o load	$\leq 100$ mA
Pulses per revolution	200...6000
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 stage	TTL linedriver (short-circuit proof) 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) $\varnothing 12$ mm (blind hollow shaft) $\varnothing 14$ mm (blind hollow shaft)
Motor shaft tolerance	0.25 mm axial 0.1 mm radial
Mounting kit	002
Protection DIN EN 60529	IP 65
Operating speed	$\leq 8000$ rpm $\leq 5000$ rpm IP 65 ( $>70^\circ\text{C}$ )
Starting torque	$\leq 0.01$ Nm ( $+20^\circ\text{C}$ )
Materials	Housing: aluminium, black, powder-coated Shaft: stainless steel
Operating temperature	$-20...+70^\circ\text{C}$ $-20...+100^\circ\text{C}$
Relative humidity	90 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 10 g, 55-2000 Hz DIN EN 60068-2-27 Shock 100 g, 11 ms
Connection	Connector M23 type 2, 12-pin
Weight approx.	280 g

# Incremental encoders

## Blind hollow shaft ø10 to ø14 mm

### 200...6000 pulses per revolution

ITD 21 A 4 Y22

#### Part number

ITD 21 A 4 Y22     NI D2SR12     IP65 002

Mounting kit  
002 Mounting accessory kit 002

Protection  
IP65 IP 65

Blind hollow shaft  
10 ø10 mm  
12 ø12 mm  
14 ø14 mm

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

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

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

200	500	1000	1800	4000
250	512	1024	2000	4096
256	600	1200	2048	5000
300	720	1250	2500	6000
360	800	1440	3000	
400	900	1500	3600	

#### Accessories

##### Connectors and cables

11072792 Connector S2BG12, 1 m cable (ITD)

# Incremental encoders

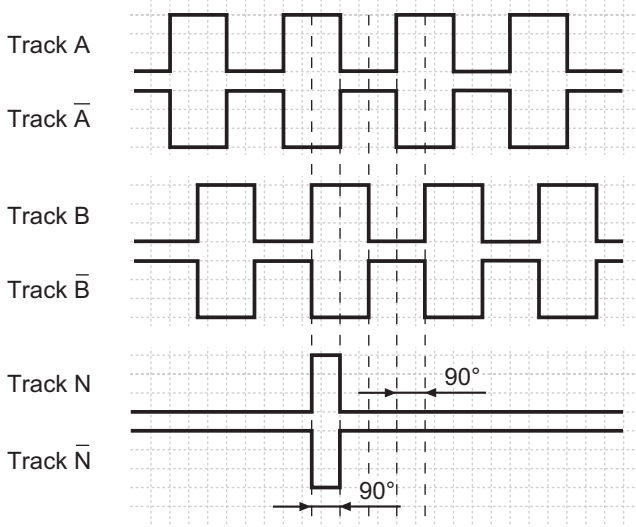
Blind hollow shaft  $\varnothing 10$  to  $\varnothing 14$  mm  
200...6000 pulses per revolution

## ITD 21 A 4 Y22

### Output signals

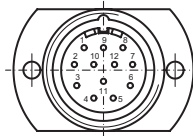
Clockwise rotation when looking at the mounting side.

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	-

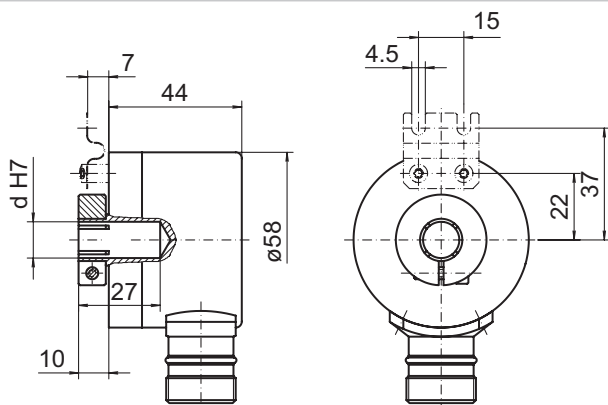


### Trigger level

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

**Incremental encoders**  
Blind hollow shaft  $\varnothing 10$  to  $\varnothing 14$  mm  
200...6000 pulses per revolution

**ITD 21 A 4 Y22**

---