

# Incremental encoders

Blind hollow shaft  $\varnothing 6$  to  $\varnothing 16$  mm

1000...10000 pulses per revolution

## ITD 21 A 4 Y10



ITD 21 A 4 Y10 with coupling CPS37

### Features

- Encoder with coupling max.  $\varnothing 16$  mm
- Max. 10000 pulses per revolution
- Optical sensing method
- Centering alignment  $\varnothing 70$  mm, mounting screw hole circle  $\varnothing 77$  mm
- TTL or HTL output signals
- Flange connector radial or axial

### 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	1000...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 stages	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	$\varnothing 6...16$ mm (blind hollow shaft)
Protection DIN EN 60529	IP 65
Operating speed	$\leq 8000$ rpm
Starting torque	$\leq 0.01$ Nm ( $+20$ °C)
Materials	Housing: aluminium, black, powder-coated Shaft: stainless steel
Operating temperature	$-20...+70$ °C $-30...+70$ °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	Connector M23 type 2, 12-pin
Weight approx.	430 g

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## Part number

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		NI			IP65
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Protection  
IP65 IP 65

Blind hollow shaft

6  $\varnothing 6$  mm  
10  $\varnothing 10$  mm  
11  $\varnothing 11$  mm  
12  $\varnothing 12$  mm  
14  $\varnothing 14$  mm  
15  $\varnothing 15$  mm  
16  $\varnothing 16$  mm

Operating temperature

S -20...+70 °C  
W -30...+70 °C

Connection

D2SR12 Flange connector type 2, pin contacts, radial, 12-pin  
D2SA12 Flange connector type 2, pin contacts, axial, 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

1000	1440	2048	4000	7200
1024	1500	2500	4096	8192
1200	1800	3000	5000	9000
1250	2000	3600	6000	10000

## Accessories

### Connectors and cables

11072792	Connector M23 - S2BG12, 1 m cable (incremental)
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# Incremental encoders

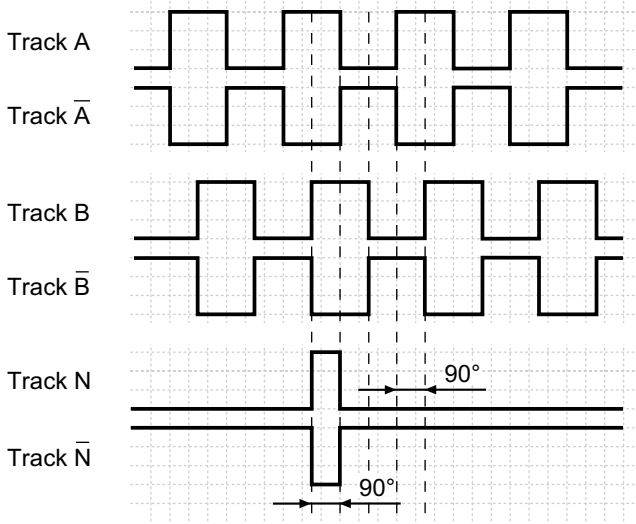
Blind hollow shaft  $\varnothing 6$  to  $\varnothing 16$  mm  
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### Output signals

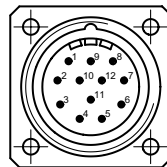
Clockwise rotation when looking at the mounting side.

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	–



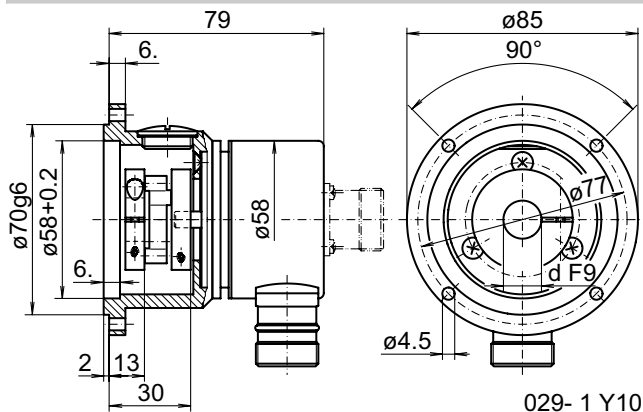
### Trigger level

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



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