

# Incremental encoders

## Through hollow shaft $\varnothing 14$ mm

### 100...80000 pulses per revolution

#### ITD21H01



ITD21H01 with through hollow shaft

#### Features

- Size  $\varnothing 58$  mm
- Precise optical sensing
- Output signal level TTL or HTL
- Through hollow shaft,  $\varnothing 14$  mm
- For cone clamping installation
- Max. 80000 pulses per revolution
- Operating temperature  $-30...+100$  °C
- Detachable cable – tangential outlet

#### 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	100...80000
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	$\varnothing 14$ mm (through hollow shaft)
Motor shaft tolerance	0.25 mm axial 0.1 mm radial
Protection DIN EN 60529	IP 65
Operating speed	$\leq 6000$ rpm
Starting torque	$\leq 0.015$ Nm ( $+20$ °C)
Materials	Housing: aluminium Shaft: stainless steel
Operating temperature	$-30...+100$ °C
Relative humidity	90 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 20 g, 60-2000 Hz DIN EN 60068-2-27 Shock 100 g, 6 ms
Connection	Board connector, 8-pin
Weight approx.	150 g

# Incremental encoders

## Through hollow shaft ø14 mm

### 100...80000 pulses per revolution

ITD21H01

#### Part number

ITD21H01     **NI** **S21SG8** **E** **14** **IP65**

Protection  
IP65 IP 65

Through hollow shaft  
14 ø14 mm

Operating temperature  
E -30...+100 °C

Connection  
S21SG8 Board connector type 21, pin contacts, straight, 8-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

100	400	1024	2500	10000*
120	500	1200	3000	15000*
150	512	1250	3600	16384*
200	600	1440	4000	20000*
250	720	1500	4096	25000*
256	800	1800	5000	40000*
300	900	2000	6000	80000*
360	1000	2048	8192	

\* Pulse numbers are interpolated.

#### Accessories

##### Connectors and cables

11072169	Connection cable with FCI, 8-pin / wire end sleeves (UL/CSA), 1 m
11079112	Connection cable with crimp contacts (UL/CSA), 0.2 m

##### Mounting accessories

11073114	Torque arm, 3-armed, bolt circle ø76 mm, mounting M3 (mounting kit 019)
11073115	Cone spreader shaft ø10 mm
11073116	Cone spreader shaft ø10 mm V1
11073117	Cone spreader shaft ø14 mm

Further connection cable lengths see accessories.

# Incremental encoders

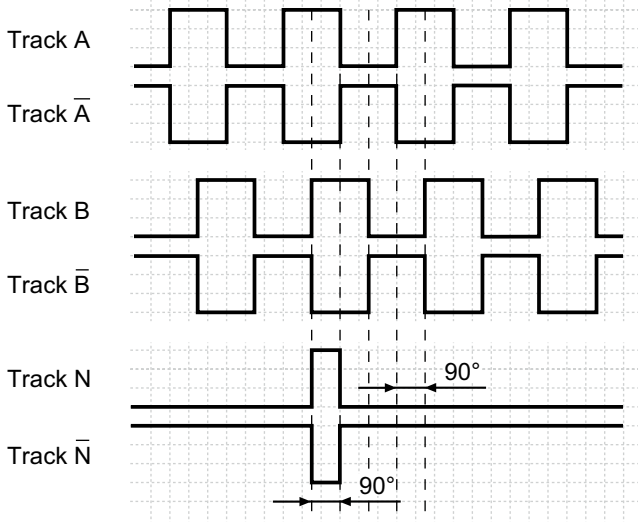
Through hollow shaft  $\varnothing 14$  mm  
100...80000 pulses per revolution

## ITD21H01

### Output signals

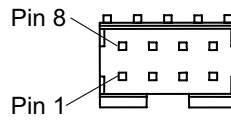
Clockwise rotation when looking at the mounting side.

NI-Output signals



### Terminal assignment

Connector	Assignment
Pin 1	UB
Pin 2	GND
Pin 3	Track A
Pin 4	Track A inv.
Pin 5	Track B
Pin 6	Track B inv.
Pin 7	Track N
Pin 8	Track N inv.



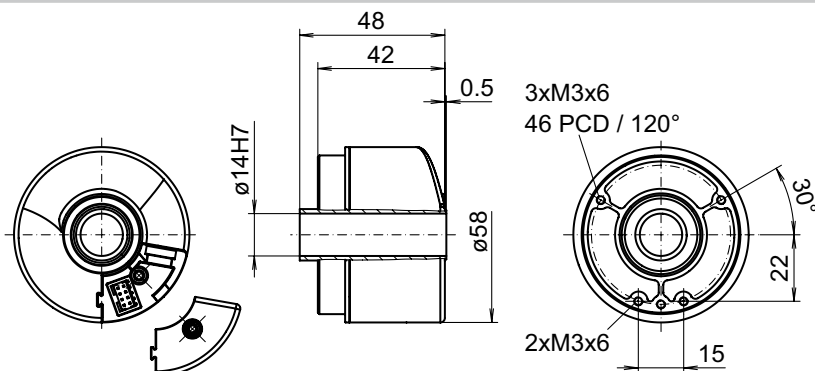
### Trigger level

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



038- 9 H01

**Incremental encoders**  
Through hollow shaft  $\varnothing 14$  mm  
100...80000 pulses per revolution

ITD21H01

---