

Incremental encoders

Through hollow shaft $\varnothing 14$ mm

100...10000 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. 10000 pulses per revolution
- Operating temperature $-30...+100$ °C
- Detachable cable – tangential outlet

Technical data - electrical ratings

Voltage supply	5 VDC ± 5 % 8...30 VDC
Reverse polarity protection	Yes
Consumption w/o load	≤ 100 mA
Pulses per revolution	100...10000
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	≤ 300 kHz (TTL) ≤ 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)
Protection DIN EN 60529	IP 65
Operating speed	≤ 6000 rpm
Starting torque	≤ 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

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Part number

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

Protection
IP65 IP 65

Through hollow shaft
14 $\varnothing 14$ 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	360	900	1800	4096
120	400	1000	2000	5000
150	500	1024	2048	6000
200	512	1200	2500	8192*
250	600	1250	3000	10000*
256	720	1440	3600	
300	800	1500	4000	

* 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 $\varnothing 76$ mm, mounting M3 (mounting kit 019)
11073115	Cone spreader shaft $\varnothing 10$ mm
11073116	Cone spreader shaft $\varnothing 10$ mm V1
11073117	Cone spreader shaft $\varnothing 14$ mm

Further connection cable lengths see accessories.

Incremental encoders

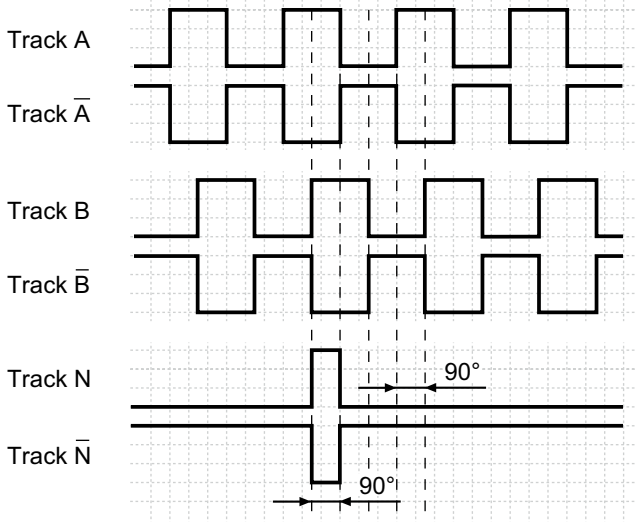
Through hollow shaft $\varnothing 14$ mm
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Output signals

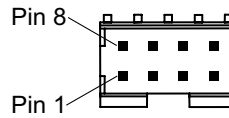
Clockwise rotation when looking at the mounting side.

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.



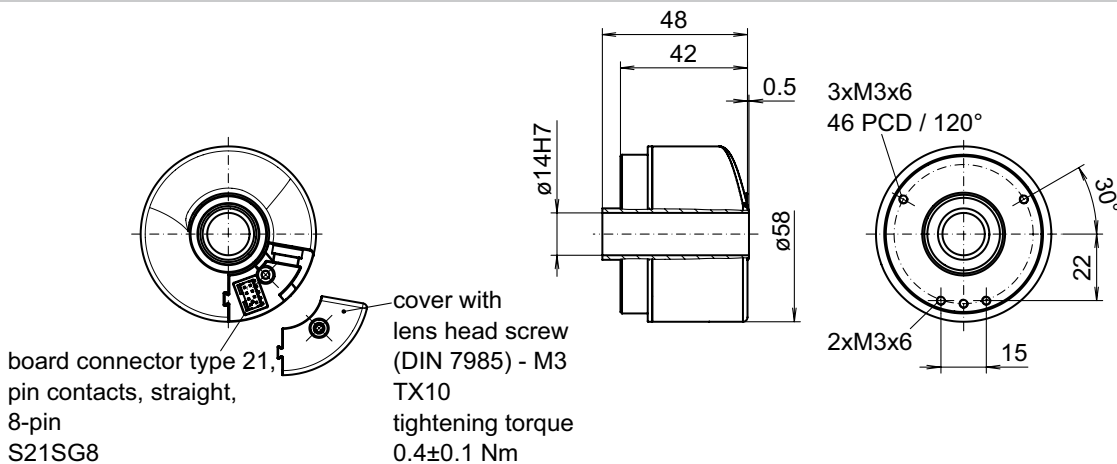
Trigger level

Outputs	Linedriver
Output level High	≥ 2.4 V
Output level Low	≤ 0.5 V
Load	≤ 70 mA

Outputs

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

Dimensions



038- 9 H01

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