

Incremental encoders

Blind hollow shaft $\varnothing 10$ to $\varnothing 16$ mm

200...2048 pulses per revolution

ITD 40 A 4 Y109



ITD 40 A 4 Y109 with blind hollow shaft

Features

- Encoder with blind hollow shaft $\varnothing 10...16$ mm
- Max. 2048 pulses per revolution
- Optical sensing method
- Mounting by torque support
- TTL or HTL output signals
- Flange socket radial or axial

Optional

- Cable with connector
- Extended operating temperature range

Technical data - electrical ratings

Voltage supply	5 VDC $\pm 5\%$ 8...30 VDC
Reverse polarity protection	Yes
Consumption w/o load	≤ 100 mA
Pulses per revolution	200...2048
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	≤ 120 kHz
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)	$\varnothing 80$ mm
Shaft type	$\varnothing 10...16$ mm (blind hollow shaft)
Motor shaft tolerance	0.25 mm axial 0.1 mm radial
Mounting kit	068
Protection DIN EN 60529	IP 65
Operating speed	≤ 8000 rpm ≤ 5000 rpm IP 65 ($> 70^\circ\text{C}$)
Starting torque	≤ 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.	580 g

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Part number

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		NI				068
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Mounting kit
068 Mounting kit 068

Protection
IP54 IP 54
IP65 IP 65

Blind hollow shaft
10 $\varnothing 10$ mm
15 $\varnothing 15$ mm

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

Connection
D2SR12 Flange socket type 2, pin contacts, radial, 12-pin
D2SA12 Flange socket 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

200	500	720	1024
360	512	1000	2048

Other diameters on request.

Accessories

Connectors and cables

11072792	Connector S2BG12, 1 m cable (incremental)
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Subject to modification in technic and design. Errors and omissions excepted.

Incremental encoders

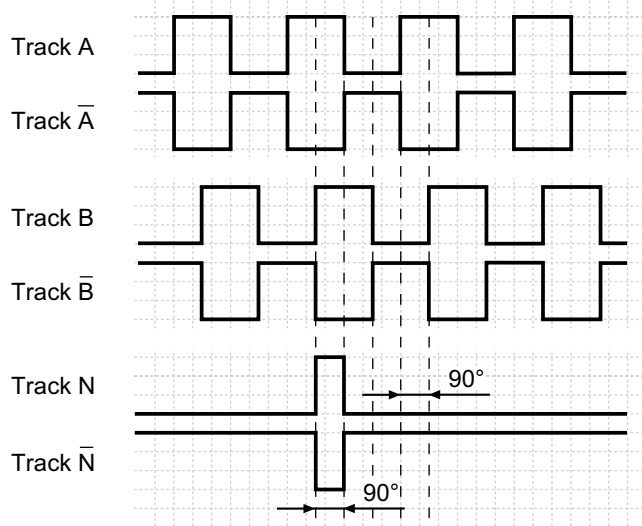
Blind hollow shaft $\varnothing 10$ to $\varnothing 16$ mm
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Output signals

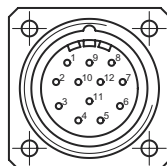
Clockwise rotation when looking at the mounting side.

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	≥ 2.4 V
Output level Low	≤ 0.5 V
Load	≤ 70 mA

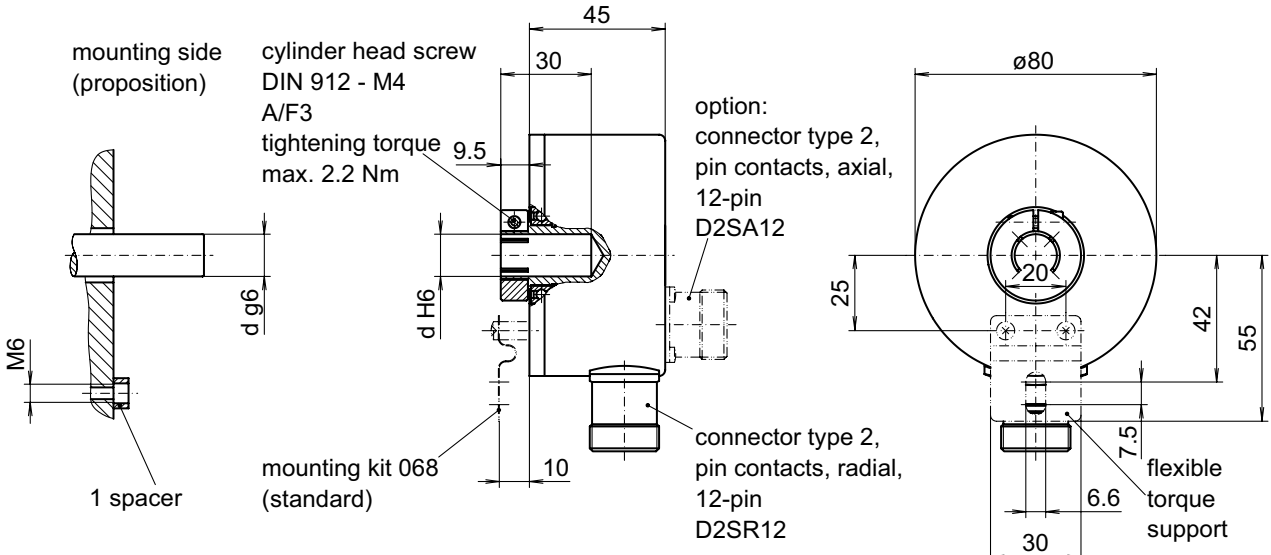
Outputs	Push-pull short-circuit proof
Output level High	$\geq UB - 3$ V
Output level Low	≤ 1.5 V
Load	≤ 70 mA

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Dimensions



026- 5 Y109