

Incremental encoders

Redundant encoders

200...2048 pulses per revolution

ITD 48 A 4 Y 2



ITD 48 A 4 Y 2 with blind hollow shaft

Features

- Redundant design
- 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 connector radial

Optional

- Extended operating temperature range

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	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)	$\varnothing 83$ mm
Shaft type	$\varnothing 10...16$ mm (blind hollow shaft)
Mounting kit	050
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 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.	1000 g

Incremental encoders

Redundant encoders

200...2048 pulses per revolution

ITD 48 A 4 Y 2

Part number

ITD 48 A 4 Y 2 D2SR12 IP65 050

Mounting kit
050 Mounting kit 050

Protection
IP65 IP 65

Blind hollow shaft
10 ø10 mm
11 ø11 mm
12 ø12 mm
12.7 ø12.7 mm
14 ø14 mm
15 ø15 mm
16 ø16 mm

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

Connection
D2SR12 2x flange connector type 2, pin contacts, radial, 12-pin

Output signals
BI/BI 2x A, A inv, B, B inv
NI/NI 2x A, A inv, B, B inv, N, N inv
BI/NI 1x A, A inv, B, B inv; 1x A, A inv, B, B inv, N, N inv
NI/BI 1x A, A inv, B, B inv, N, N inv; 1x A, A inv, B, B inv

Voltage supply / signals
H/H 2x 8...30 VDC / HTL level, push-pull
T/T 2x 5 VDC / TTL level, linedriver
R/R 2x 8...30 VDC / TTL level, linedriver
H/T 1x 8...30 VDC / HTL level, push-pull; 1x 5 VDC / TTL level, linedriver
H/R 1x 8...30 VDC / HTL level, push-pull; 1x 8...30 VDC / TTL level, linedriver
T/H 1x 5 VDC / TTL level, linedriver; 1x 8...30 VDC / HTL level, push-pull
T/R 1x 5 VDC / TTL level, linedriver; 1x 8...30 VDC / TTL level, linedriver
R/H 1x 8...30 VDC / TTL level, linedriver; 1x 8...30 VDC / HTL level, push-pull
R/T 1x 8...30 VDC / TTL level, linedriver; 1x 5 VDC / TTL level, linedriver

Pulse number - see table

Pulse number - see table

Pulse number

200	500	720	1024	2048
360	512	1000	2000	

Accessories

Connectors and cables

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

· Subject to modification in technic and design. Errors and omissions excepted.

Incremental encoders

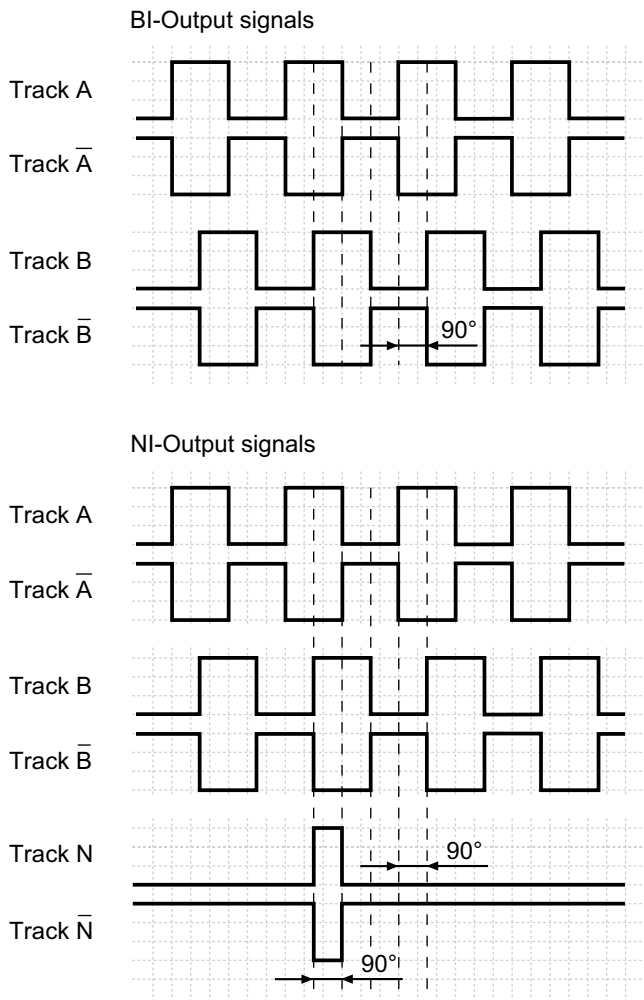
Redundant encoders

200...2048 pulses per revolution

ITD 48 A 4 Y 2

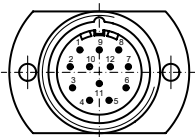
Output signals

Clockwise rotation when looking at the mounting side.



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	≥UB -3 V
Output level Low	≤1.5 V
Load	≤70 mA

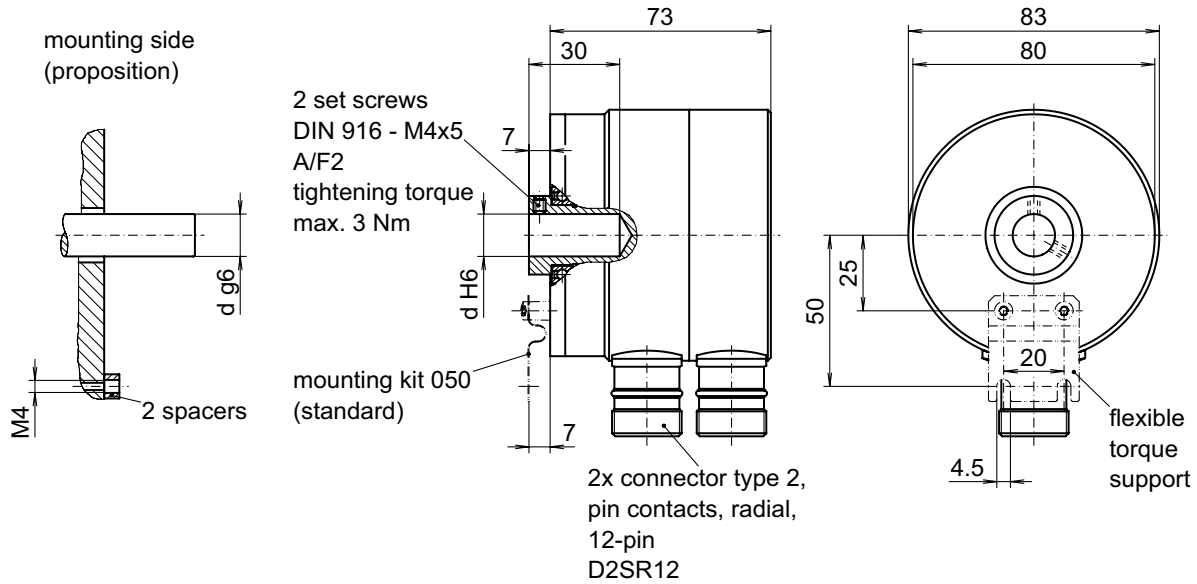
Incremental encoders

Redundant encoders

200...2048 pulses per revolution

ITD 48 A 4 Y 2

Dimensions



030- 5 Y 2