

Incremental encoders

Through hollow shaft $\varnothing 10$ to $\varnothing 16$ mm
200...2048 pulses per revolution

ITD 20 A 4 Y120



ITD 20 A 4 Y120 with through hollow shaft

Features

- Encoder with hollow shaft $\varnothing 10$... $\varnothing 16$ mm
- Max. 2048 pulses per revolution
- Optical sensing
- Mounting by torque support
- TTL or HTL output signals
- Extended operating temperature range
- Tangential cable output

Technical data - electrical ratings

Voltage supply	5 VDC ± 5 % 8...26 VDC
Reverse polarity protection	Yes
Consumption w/o load	≤ 85 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 stage	Linedriver/RS422 Push-pull short-circuit proof

Technical data - mechanical design

Size (flange)	60 x 72 mm
Shaft type	$\varnothing 10$ mm (through hollow shaft) $\varnothing 12$ mm (through hollow shaft) $\varnothing 14$ mm (through hollow shaft) $\varnothing 16$ mm (through hollow shaft)
Motor shaft tolerance	0.25 mm axial 0.1 mm radial
Mounting kit	019
Protection DIN EN 60529	IP 65
Operating speed	≤ 6000 rpm ≤ 3000 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 ... $+100^\circ\text{C}$
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	Cable 1 m
Weight approx.	300 g

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Part number

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			KT1	E			019
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Mounting kit
019 Mounting accessory kit 019

Protection
IP54 IP 54
IP65 IP 65

Through hollow shaft
10 $\varnothing 10$ mm
12 $\varnothing 12$ mm
14 $\varnothing 14$ mm
16 $\varnothing 16$ mm

Operating temperature
E -20...+100 °C

Connection
KT1 Cable 1 m, tangential, open cable end

Output signals
BI A, A inv, B, B inv
NI A, A inv, B, B inv, 0, 0 inv

Voltage supply / signals
T 5 VDC / TTL level, linedriver
H 8...26 VDC / HTL level, push pull

Pulse number - see table

Pulse number

200	500	720	1024	2048
360	512	1000	2000	

Other pulse numbers on request.

Incremental encoders

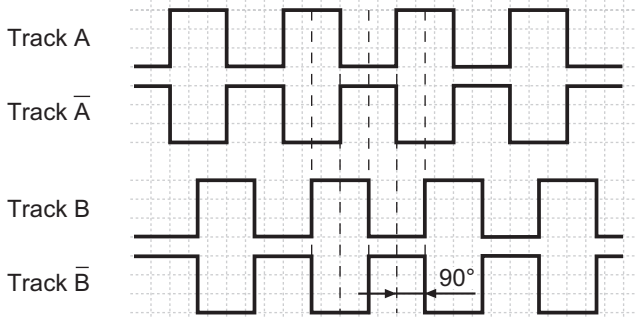
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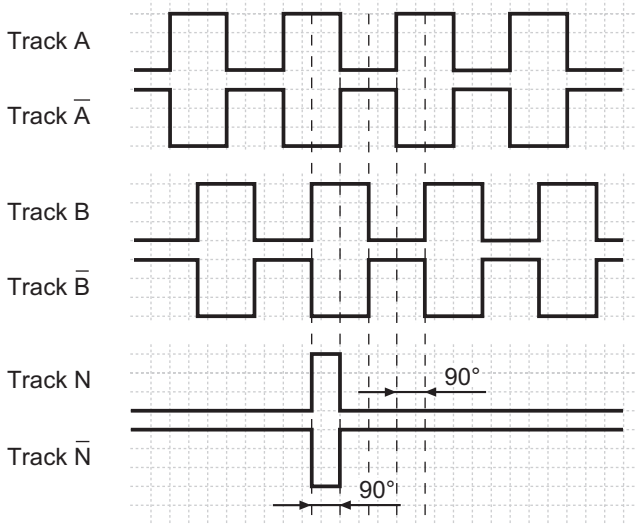
Output signals

Clockwise rotation when looking at the mounting side.

BI-Output signals



NI-Output signals



Terminal assignment

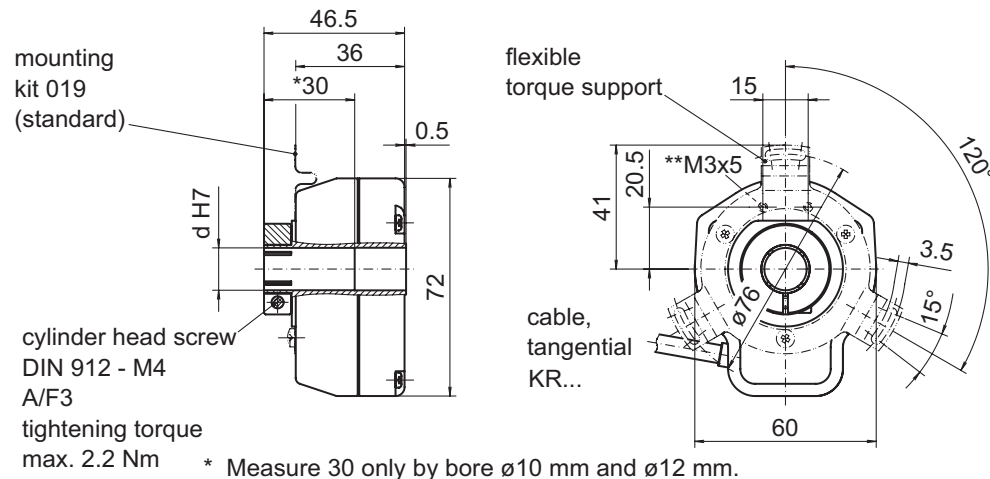
Core colour	Assignment
green	Track A
brown	Track A inv.
grey	Track B
black	Track B inv.
pink	Track N
white	Track N inv.
red	UB
blue	GND
transparent	Shield/Housing

Trigger level

Outputs	Linedriver
Output level High	≥ 2.4 V
Output level Low	≤ 0.5 V
Load	≤ 20 mA

Outputs	Push-pull short-circuit proof
Output level High	$\geq UB - 3$ V
Output level Low	≤ 1.5 V
Load	≤ 20 mA

Dimensions



** Mounting also for mounting kits of the ITD 2.-series possible.
With $\varnothing 16$ mm hollow shaft the assembly of the mounting kit is possible only without spacers.

029- 1 Y120

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