

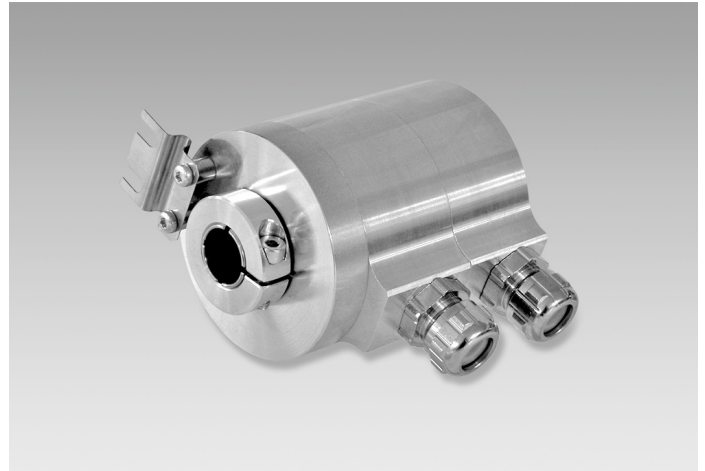
## ITD 28 A 4

Blind hollow shaft  $\varnothing 10$  to  $\varnothing 14$  mm

50...1024 pulses per revolution

### Overview

- Encoder with blind hollow shaft up to  $\varnothing 14$  mm
- Max. 1024 pulses per revolution
- Redundant version
- Mounting by torque support
- TTL or HTL output signals
- Cable output radial



### Technical data

#### 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	50 ... 1024
Reference signal	Zero pulse, width 90°
Sensing method	Optical
Output frequency	$\leq 120$ kHz
Output signals	A, B, N + inverted
Output stages	TTL linedriver (short-circuit proof) HTL push-pull (short-circuit proof)
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3

#### Technical data - mechanical design

Size (flange)	$\varnothing 58$ mm
Shaft type	$\varnothing 10$ ...14 mm (blind hollow shaft)

#### Technical data - mechanical design

Mounting kit	002
Protection EN 60529	IP 65
Operating speed	$\leq 8000$ rpm $\leq 5000$ rpm IP 65 ( $> 70$ °C)
Starting torque	$\leq 0.01$ Nm ( $+20$ °C)
Material	Housing: aluminium Shaft: stainless steel
Operating temperature	$-20$ ... $+70$ °C $-20$ ... $+100$ °C
Relative humidity	90 % non-condensing
Resistance	EN 60068-2-6 Vibration 10 g, 55-2000 Hz EN 60068-2-27 Shock 100 g, 6 ms
Connection	Cable 1 m
Weight approx.	400 g

### Optional

- Cable with connector
- Extended operating temperature range

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### Terminal assignment

Core colour	Assignment
brown	Track A
green	Track A inv.
grey	Track B
pink	Track B inv.
red	Track N
black	Track N inv.
brown 0,5 mm <sup>2</sup>	UB
white 0,5 mm <sup>2</sup>	GND
blue	UB-Sense
white	GND-Sense
transparent	Shield/Housing

### Trigger level

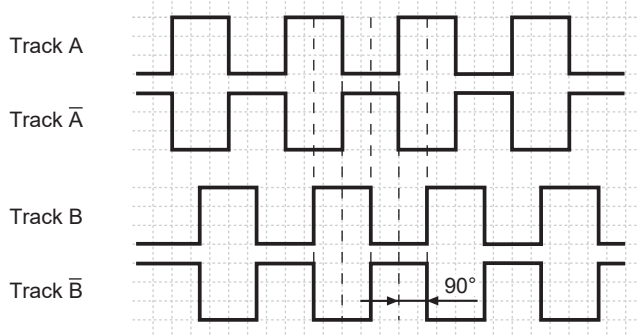
Outputs	Linedriver
Output level High	$\geq 2.4$ V
Output level Low	$\leq 0.5$ V
Load	$\leq 70$ mA

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

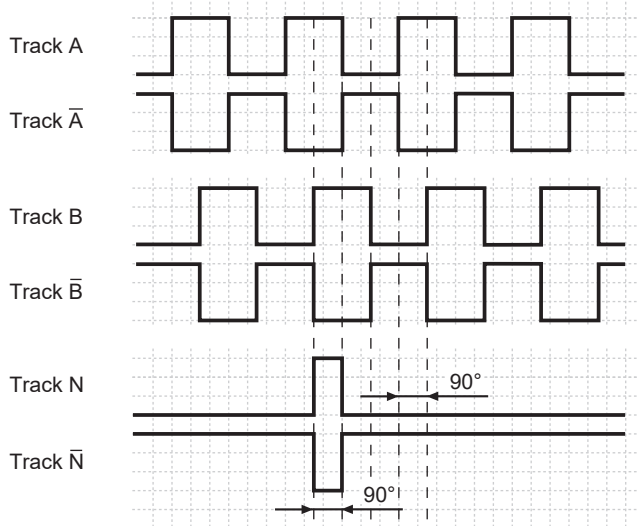
### Output signals

Clockwise rotation when looking at the mounting side.

#### BI-Output signals



#### NI-Output signals



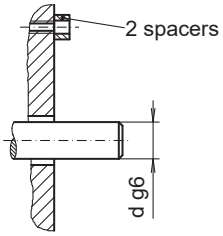
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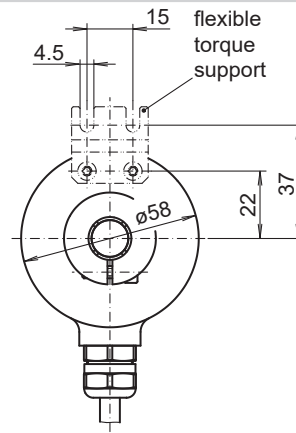
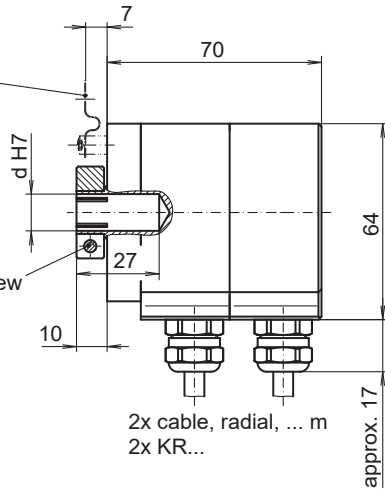
## Dimensions

mounting side  
(proposition)



mounting kit 002  
(standard)

cylinder head screw  
DIN 912 - M4  
A/F3  
tightening torque  
max. 2.2 Nm



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**Ordering reference**

Product	ITD 28 A 4	##	##	#	####	2xKR1	#	##	IP65	002
	ITD 28 A 4									
<b>Pulse number 1</b>										
50		50								
60		60								
64		64								
88		88								
90		90								
100		100								
120		120								
128		128								
200		200								
250		250								
254		254								
256		256								
360		360								
400		400								
500		500								
512		512								
600		600								
1000		1000								
1024		1024								
<b>Pulse number 2</b>										
50		50								
60		60								
64		64								
88		88								
90		90								
100		100								
120		120								
128		128								
200		200								
250		250								
254		254								
256		256								
360		360								
400		400								
500		500								
512		512								
600		600								
1000		1000								
1024		1024								

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**Ordering reference**

	ITD 28 A 4	##	##	#	####	2xKR1	#	##	IP65	002
<b>Voltage supply / signals</b>										
2x 8...30 VDC / HTL level, push-pull										
2x 5 VDC / TTL level, linedriver										
2x 8...30 VDC / TTL level, linedriver										
1x 8...30 VDC / HTL level, push-pull; 1x 5 VDC / TTL level, linedriver										
1x 8...30 VDC / HTL level, push-pull; 1x 8...30 VDC / TTL level, linedriver										
1x 5 VDC / TTL level, linedriver; 1x 8...30 VDC / HTL level, push-pull										
1x 5 VDC / TTL level, linedriver; 1x 8...30 VDC / TTL level, linedriver										
1x 8...30 VDC / TTL level, linedriver; 1x 8...30 VDC / HTL level, push-pull										
1x 8...30 VDC / TTL level, linedriver; 1x 5 VDC / TTL level, linedriver										
<b>Output signals</b>										
2x A, A inv, B, B inv										
2x A, A inv, B, B inv, N, N inv										
1x A, A inv, B, B inv; 1x A, A inv, B, B inv, N, N inv										
1x A, A inv, B, B inv, N, N inv; 1x A, A inv, B, B inv										
<b>Connection</b>										
Cable 1 m, radial, cable 1 m, radial						2xKR1				
<b>Operating temperature</b>										
-20...+70 °C										S
-20...+100 °C										E
<b>Blind hollow shaft</b>										
$\varnothing 10$ mm										10
$\varnothing 12$ mm										12
$\varnothing 14$ mm										14
<b>Protection</b>										
IP 65										IP65
<b>Mounting kit</b>										
Mounting kit 002										002