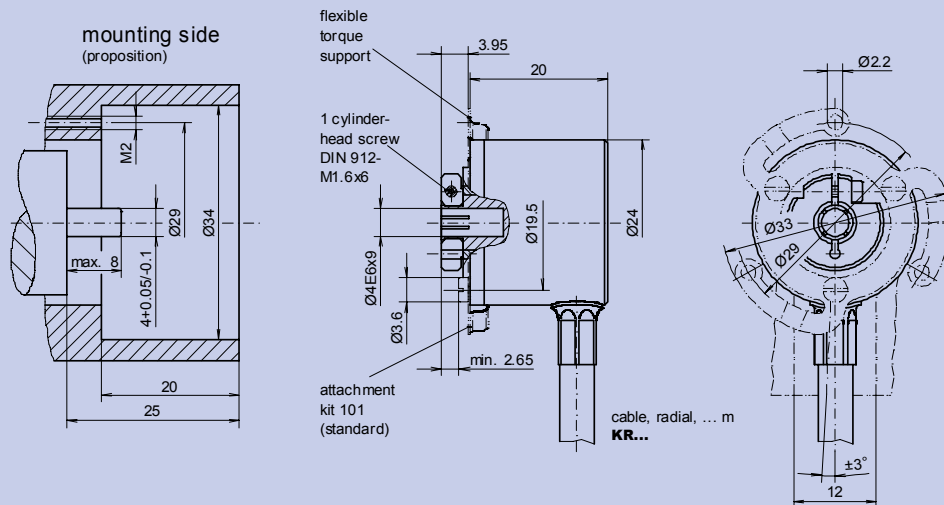
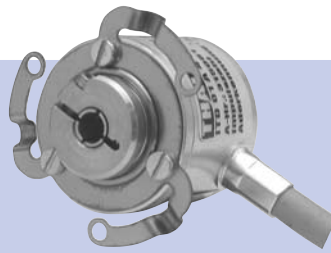


Incremental encoder *with hollow shaft*

ITD 01 A 4 Y 1

Features

- Mini-incremental encoder
- **Number of pulses**, up to **1024 pulses/rev.**
- Housing diameter \varnothing 24 mm
- TTL- or HTL- output signals
- Cable outlet radial
- clamping ring torsion-proof



Drawing-no.: 031-1 Y 1

Mechanical data

Design	A 4	A 4
Attachment kit	101	standard, (ref. datasheet »Attachment kit's ...«) 101
Housing	aluminium, unpainted	
Protection	IP 54	according to DIN EN 60 529 IP54
Construction principle	LED with slotdisc	
max. revolution (mechanical)	$n_{max} \leq 10000$ rpm	(observe limit frequency)
Permissible motor-shaft play	axial ≤ 0.25 mm radial ≤ 0.1 mm	
Starting torque	at 20 °C ≤ 0.7 Ncm	
Vibration	55... 2000 Hz ≤ 100 m/s ²	according to DIN IEC 60 068, part 2-6
Shock	11 ms ≤ 300 m/s ²	according to DIN IEC 60 068, part 2-27
Hollow shaft diameter	d 4 mm	4
Weight	approx. 50 g	

Electrical data

Number of pulses	Z	30, 60, 100, 300, 360, 600, 1000, 1024 pulses/revolution	XXXX
Electronic version (Output signals)	TTL	Line driver-output stage, supply voltage: $U_B = 5 \text{ VDC} \pm 5\%$ (polarity protected) output amplitude: $U_{\text{LOW}} \leq 0.5 \text{ V}$, $U_{\text{HIGH}} \geq 2.5 \text{ V}$	T
	HTL	Push pull-output stage (short-circuit proof), supply voltage: $U_B = 8\text{-}30 \text{ VDC}$ (polarity protected) output amplitude: $U_{\text{LOW}} \leq 1.5 \text{ V}$, $U_{\text{HIGH}} \geq U_B - 3 \text{ V}$	H
Output signals	A, B	2 square-wave pulse trains, electr. phase shifted $90^\circ \pm 10^\circ$ *	BX
Pulse ratio		pulse : pause = 1 : 1, $\pm 10\%$ at 30 kHz	
Edge steepness		$\geq 15 \text{ V}/\mu\text{s}$	
Limit frequency	f_G	100 kHz	
Output load current	I_{Load}	$\leq 30 \text{ mA}$	
Current consumption (no-load)	I_{max}	$\leq 25 \text{ mA}$	
Type of connection		cable, radial, 1.0 m (standard length)	KR1
Operating temperature range		-20°C to $+85^\circ\text{C}$	S
Permissible relative humidity		$\leq 90\%$ (condensation not permitted)	

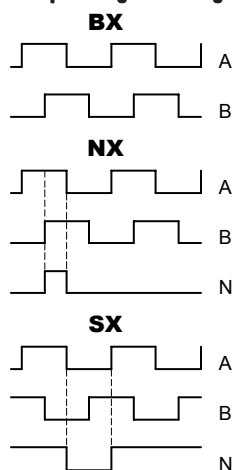
Options

Output signals	A, B, N	2 square-wave pulse trains + zero pulse, electr. length $90^\circ \pm 9^\circ$ *	NX
	A, B, N	2 square-wave pulse trains + zero pulse, electr. length $180^\circ \pm 9^\circ$ *	SX

Connection table

wire color	signals
green	A
yellow	B
grey	N
brown	+ U_B
white	0 V
transparent	shielding/housing

Output signal diagram



Pulse trains:
Clockwise rotation when
looking at the end of the
shaft (mounting side).

Ordering example:

ITD 01 Incremental encoder ITD 01	A 4 Design A 4	Y 1 Mechanical variant Y 1 = look at the drawing	360 Number of pulses 360 pulses/revolution	H Electronic version $U_B = 8\text{-}30 \text{ VDC HTL}$	BX Output signals A-, B-track	KR1 Type of connection cable, radial, 1 m	S Operating temperature -20°C to $+85^\circ\text{C}$	4 Hollow shaft diameter 4 mm	IP54 Protection IP54	101 Attachment kit variant 101
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* ref. output signal diagram