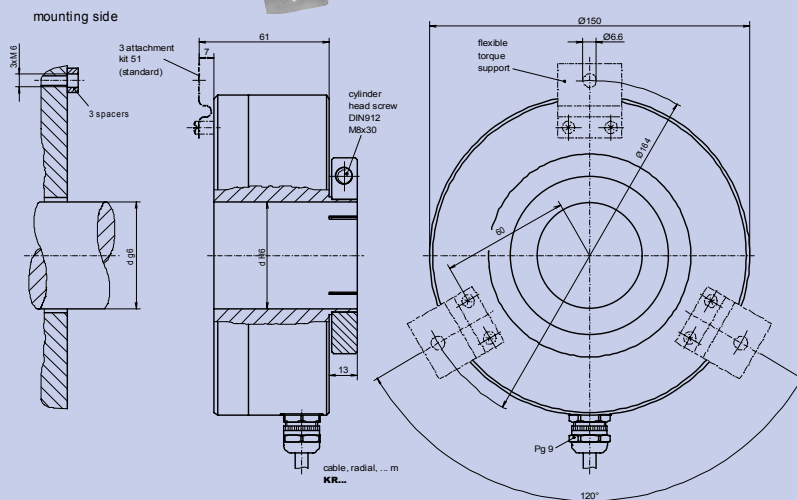
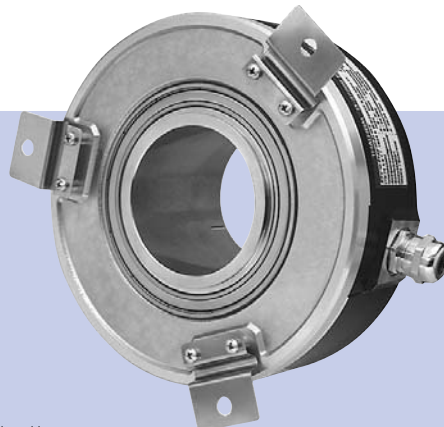


Incremental encoder *with hollow shaft*

ITD 70 A 4 Y 7

Features

- Incremental encoder with hollow shaft going through
- **Number of pulses** up to **2.500** pulses/rev.
- Hollow shaft diameter up to 65 mm
- Mounting at torque support, mounting punch circle Ø164 mm
- TTL- or HTL- output signals
- Cable outlet radial



Drawing-no.: 026-40 Y 7

Mechanical data

Design style	A 4	A 4
Attachment kit	51	standard, (ref. datasheet »Attachment kit's ...«) 51
Housing	light-alloy metal, black, powder coated	
Protective class	IP 54	according to DIN EN 60 529 IP54
Construction principle	OPSIC with slotdisc	
max. revolution (mechanical)	$n_{max} \leq 3.000$ rpm	(observe frequency limit)
Permissible motor-shaft play	axial ≤ 0.5 mm radial ≤ 0.1 mm	
Vibration	55... 2.000 Hz ≤ 100 m/s ²	according to DIN IEC 60 068, part 2-6
Shock	11 ms ≤ 1.000 m/s ²	according to DIN IEC 60 068, part 2-27
Hollow shaft diameter	d 40 mm, 45 mm, 50 mm, 55 mm, 60 mm, 65 mm	50
Weight	approx. 2.900 g	

Electrical data

Number of pulses	Z	1.000, 1.024, 2.048, 2.500 pulses/revolution	XXXX
Execution of electronic (output signals)	TTL	Line driver-output stage, supply voltage: $U_B = 5 \text{ VDC} \pm 5\%$ (poling error safe) output amplitude: $U_{\text{LOW}} \leq 0.5 \text{ V}$, $U_{\text{HIGH}} \geq 2.5 \text{ V}$	T
	HTL	Push pull-output stage (shortening proof), supply voltage: $U_B = 8\text{-}30 \text{ VDC}$ (poling error safe) output amplitude: $U_{\text{LOW}} \leq 1.5 \text{ V}$, $U_{\text{HIGH}} \geq U_B - 3 \text{ V}$	H
Output signals	A, B + Inv.	2 square wave pulse trains, electr. phase shifted $90^\circ \pm 10^\circ$ + signal inverting *	BI
Pulse ratio		pulse : pause = 1 : 1, $\pm 10\%$ at 30 kHz	
Flank steepness		$\geq 15 \text{ V}/\mu\text{s}$	
Frequency limit	f_G	120 kHz	
Output load current	I_{Load}	$\leq 70 \text{ mA}$	
Input current (without load)	I_{max}	$\leq 100 \text{ mA}$	
Permissible cable length		$\leq 100 \text{ m}$ (Thalheim-cable)	
Type of connection		cable, radial, 1.0 m (standard length)	KR1
Operating temperature range		-20°C to $+70^\circ \text{C}$	S
Permissible relative humidity		$\leq 90\%$ (condensation not permitted)	

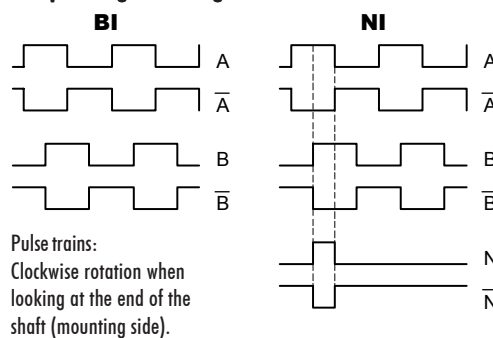
Options

Execution of electronic		TTL-output signals, Line driver-output stage supply voltage: $U_B = 8\text{-}30 \text{ VDC}$ (poling error safe)	R
Output signals	A, B, N + Inv.	2 square wave pulse trains + zero pulse, electr. length $90^\circ \pm 9^\circ$ + signal inverting *	NI
Type of connection	connector	performed at cable, (ref. datasheet »Type of performed cable«)	...

Connection table

wire color	signals
brown	A
green	A inv.
grey	B
pink	B inv.
red	N
black	N inv.
brown 0.5 mm ²	+ U_B
white 0.5 mm ²	0 V
blue	+ U_{Sensor}
white	0 V _{Sensor}
transparent	shielding/housing

Output signal diagram



Ordering example:

ITD 70 Incremental encoder ITD 70	A 4 Design style A 4	Y 7 Mechanical variante Y 7 = look at the drawing	1024 Number of pulses 1.024 pulses/revolution	H Execution of electronic $U_B = 8\text{-}30 \text{ VDC HTL}$	BI Output signals A-, B-track + inv.	KR1 Type of connection cable, radial, 1 m	S Operating temperature -20°C to $+70^\circ \text{C}$	50 Hollow shaft diameter 50 mm	IP54 Protective class IP54	51 Attachment kit variante 51
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* ref. output signal diagram