

Incremental encoder with shaft



Features

- High-class incremental encoder for industrial use
- Number of pulses up to 10 000 pulses/rev.
- Centering seat Ø50 mm, mounting punch circle Ø68 mm
- TTL- or HTL- output signals
- Cable outlet radial or axial
- Connector version optional



Mechanical data

Design	B14	B14
Housing	aluminium, black, powder coated	
Protection	IP 65	according to DIN EN 60 529 IP65
Construction principle	LED with glass slotdisc	
max. revolution (mechanical)	$n_{max} \leq 12\,000 \text{ min}^{-1}$	(observe limit frequency)
Permissible shaft load	axial $\leq 20 \text{ N}$ radial $\leq 40 \text{ N}$	(at shaft end)
Starting torque	at 20 °C $\leq 1 \text{ Ncm}$	
Vibration	55... 2000 Hz $\leq 100 \text{ m/s}^2$	according to DIN IEC 60 068, part 2 - 6
Shock	11 ms $\leq 300 \text{ m/s}^2$	according to DIN IEC 60 068, part 2 - 27
Shaft diameter	d 6 mm	6
Weight	approx. 310 g	

Electrical data

Number of pulses	Z	1000 to 10 000 pulses/rev.	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: $U_B = 8 - 30 \text{ VDC}$ (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, N + Inv.	2 square wave pulse trains, electr. phase shifted 90° + zero pulse, electr. length 90° + signal inverting	NI
Limit frequency	f_G	TTL 300 kHz HTL 160 kHz	
Output load current	I_{Load}	TTL $\leq 70 \text{ mA}$ HTL $\leq 70 \text{ mA}$	
Current consumption (no-load)	I_{max}	$\leq 100 \text{ mA}$	
Permissible cable length		$\leq 100 \text{ m}$ (Baumer Thalheim cable)	
Type of connection		cable, radial, 1.0 m (standard length)	KR1
Operating temperature range		0°C to $+70^\circ \text{C}$	S
Permissible relative humidity		$\leq 90\%$ (condensation not permitted)	

Options

Electronic version		TTL-output signals, Line driver-output stage, supply voltage: $U_B = 8 - 30 \text{ VDC}$ (polarity protected)	R
Type of connection	cable	cable, axial, ... m	KA...
	connector	performed at cable, (ref. data sheet »Type of performed cables«)	...
Operating temperature range		0°C to $+100^\circ \text{C}$	E

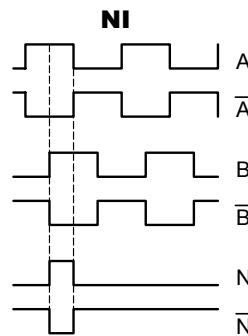
Accessories

Eccentric disc-set type A (3 pcs.)	article-no.: 40701-3
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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	$+U_{\text{sensor}}$
white	0 V _{sensor}
transparent	shielding/housing

Output signal diagram



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

Ordering example:

ITD 21 Incremental encoder ITD 21	B14 Design B14	2048 Number of pulses 2048 pulses/revolution	H Electronic version $U_B = 8 - 30 \text{ VDC HTL}$	NI Output signals A-, B-, N- track + inv.	KR1 Type of connection cable, radial 1 m	S Operating temperature range -20°C to $+70^\circ \text{C}$	6 Shaft diameter 6 mm	IP65 Protection IP65	Attachment kit variant
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