

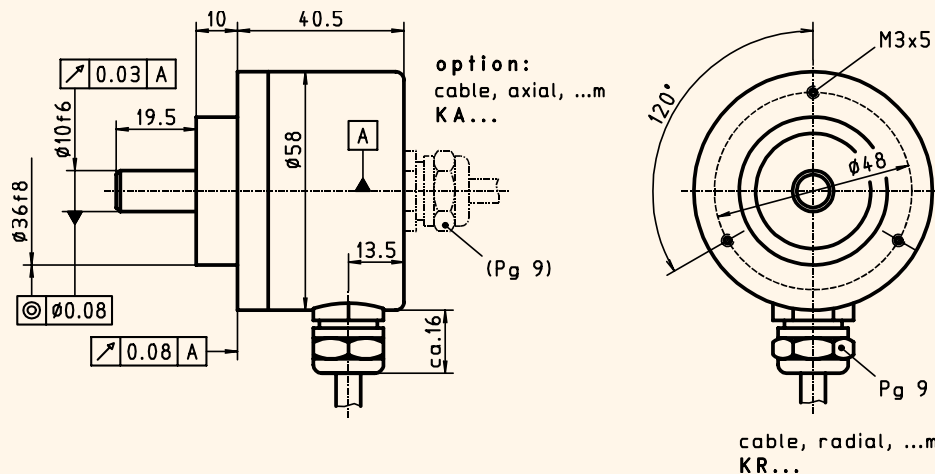
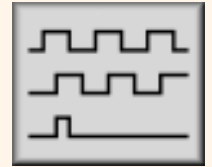
Incremental Encoder with shaft

ITD 21 B14 Y 9



Qualities :

- Robust incremental encoder for industrial use
- **Number of pulses**, up to **6000** pulses per revolution
- Centering seat $\varnothing 36$, mounting punch circle $\varnothing 48$
- TTL- or HTL-output signals
- Cable outlet radial or axial
- Connector versions optional



ITD 21 B14 Y 9

drawing-no.: 027 - 4 Y 9

Mechanical data:

Housing		light-alloy metal, black, powder coated
Design style	B14	B14
Protective class	IP65	IP 65
Construction principle		LED with glas slotdisc
max. revolution (mechanical)	n_{max}	≤ 12000 rpm
Admissible shaft load	axial	≤ 40 N
	radial	≤ 60 N
	at 20 ° C	≤ 1 Ncm
Starting torque		≤ 100 m/s ²
Vibration	55... 2000 Hz	≤ 300 m/s ²
Shock	11 ms	approx. 70 gcm ²
Moment of inertia (rotor)		10 mm
Shaft diameter	d	approx. 480 g
Weight		

according to DIN 40 050, IEC 529
(observe frequency limit)
(at shaft end)
according to DIN IEC 68, part 2-6
according to DIN IEC 68, part 2-27

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Electrical data:

• Number of pulses	Z	XXXX	1000 to 6000 pulses per revolution
• Execution of electronic	TTL	T	TTL-output signals supply voltage: $U_B = 5 \text{ VDC} \pm 5\%$ (poling error safe) output amplitude: $U_{\text{LOW}} \leq 0.5 \text{ V}$ $U_{\text{HIGH}} \geq 2.5 \text{ V}$ <i>line driver-output stage</i>
	HTL	H	HTL-output signals supply voltage: $U_B = 8 - 30 \text{ VDC}$ (poling error safe) output amplitude: $U_{\text{LOW}} \leq 1.5 \text{ V}$ $U_{\text{HIGH}} \geq U_B - 3 \text{ V}$ <i>push pull-output stage</i> (shortening proof)
• Output signals	A, B, N + Inv.	NI	2 square-wave pulse trains phase shifted by $90^\circ (\pm 10^\circ)$ electr. + zero pulse, 90° electr. length + inverting (<i>refere to output signals-diagram</i>) pulse : pause = 1 : 1 $\pm 10\%$ at 30 kHz $\geq 15 \text{ V}/\square\text{s}$
Pulse ratio			
Flank steepness			
Frequency limit	f_G		TTL 300 kHz HTL 160 kHz
Output load current	I_{Load}		TTL $\leq 70 \text{ mA}$ HTL $\leq 70 \text{ mA}$
Input current	I_{max}		$\leq 100 \text{ mA}$ (without load)
Permissible cable length			$\leq 100 \text{ m}$ (Thalheim-cable)
• Type of connection		KR1	cable, radial, 1.0 m (standard length)
• Operating temperature range		S	0°C to $+70^\circ \text{C}$

Options:

• Execution of electronic		R	TTL-output signals supply voltage: $U_B = 8 - 30 \text{ VDC}$ (poling error safe) <i>line driver-output stage</i>
• Type of connection	cable	KA...	cable, axial, ... m
	connector	D2SA12	socket type 2, pin contacts, axial, 12-poles
	connector	D2SR12	socket type 2, pin contacts, radial, 12-poles
	connector	...	performed at cable (ref. data sheet Type of performed cables)
• Operating temperature range		E	0°C to $+100^\circ \text{C}$

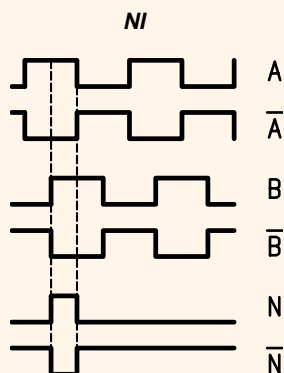
Accessories:

Connector, for version **D2S..12** **S2BG12** connector type 2, bush contacts, straight, 12-poles

Connection table:

wire color	PIN-no.	signals
brown	PIN 5	= A
green	PIN 6	= A inverted
grey	PIN 8	= B
pink	PIN 1	= B inverted
red	PIN 3	= N
black	PIN 4	= N inverted
brown 0.5 mm ²	PIN 12	= + U_B
white 0.5 mm ²	PIN 10	= 0 V
blue	PIN 2	= + U_{sensor}
white	PIN 11	= 0 V _{sensor}
transparent	PIN 7	= NC
	PIN 9	= shilding/housing

Output signal diagram:



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

Ordering example:

ITD 21	B14	Y 9	2048	H	NI	KR1	S	10	IP65	
Incremental encoder ITD 21	Design style B14	Mechanical variante Y 9 = look at the drawing	Number of pulses 2048 pulses / revolution	Execution of electronic $U_B = 8-30 \text{ VDC HTL-output}$	Output signals A-, B-, N-track + inverting	Type of connection cable, radial, 1 m	Operating temperature 0°C to $+70^\circ \text{C}$	Shaft diameter 10 mm	Protective class IP 65	Attachment kit variante