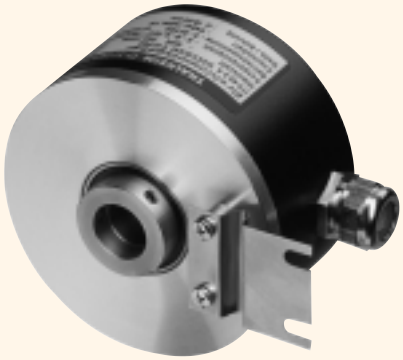
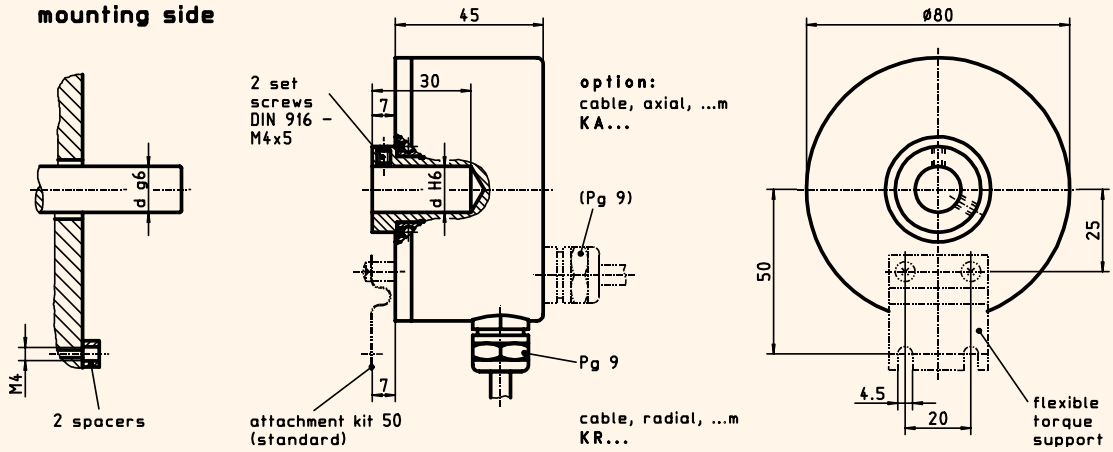
Sinusoidal-Incremental Encoder
ITD 42 A 4

Qualities :

- Hollow shaft incremental encoder with **sinusoidal**-output singals
- **Number of pulses**, up to **5000** pulses per revolution
- Mounting at torque support
- sinusoidal-output signals 1 V_{SS}
- Cable outlet radial or axial
- Connector versions optional
- Hollow shaft going through optional
- Hollow shaft diameter up to 27 mm optional





ITD 42 A 4 **drawing-no.: 026 - 5**

Mechanical data:

Housing		light-alloy metal, black, powder coated	
Design style	***A 4***	A 4	
Attachment kit	***50***	50 (standard)	(ref. datasheet *"Attachment kit's ..."*)
Protective class	***IP65***	IP 65	*according to DIN 40 050, IEC 529*
Construction principle		LED with glas slotdisc	
max. revolution (mechanical)	n_{max}	≤ 8000 rpm	(observe frequency limit)
Admissible motor-shaft play	axial	≤ 0.25 mm	
	radial	≤ 0.1 mm	
Starting torque	at 20 ° C	≤ 1.5 Ncm	
Vibration	55... 2000 Hz	≤ 100 m/s²	*according to DIN IEC 68, part 2-6*
Shock	11 ms	≤ 1000 m/s²	*according to DIN IEC 68, part 2-27*
Hollow shaft diameter	d	15 mm (standard)	(10 to 16 mm possible)
Weight		approx. 550 g	

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Electrical data:

• Number of pulses	*Z*	***XXXX***	1000 to 5000 pulses per revolution
• Execution of electronic		***M***	sinusoidal-output signals *with amplifier stage*
			supply voltage: U_B = 5 VDC ± 10 % (poling error safe)
			output amplitude ***A+B:*** appr. 1 V_{ss} at Z_o = 120 Ω
			output amplitude ***N:*** appr. 0.4 V (useable part) at Z_o = 120 Ω
• Output signals	*A, B, N + Inv.*	***NI***	2 sinusiodal-wave signal trains phase shifted by 90° electr. + zero pulse + signal inverting *(refere to* output signals-*diagram)*
Frequency limit	f_G		180 kHz (- 3 dB)
Input current	I_{max}		≤ 90 mA (without load)
Permissible cable length			≤ 150 m (Thalheim-cable)
• Type of connection		***KR1***	cable, radial, 1.0 m (standard length)
• Operating temperature range		***S***	- 20 °C to + 85 °C

Options:

• Type of connection	cable	***KA...***	cable; axial; ... m
	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 °C

Accessories:

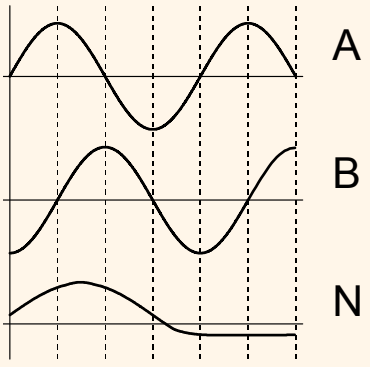
Connector, for version ***D2S..12***	***S2BG12***	connector type 2, bush contacts, straight, 12-poles

Connection table:

wire color	***PIN-no.***		***signals***
brown	PIN 5	=	A +
green	PIN 6	=	A -
grey	PIN 8	=	B +
pink	PIN 1	=	B -
red	PIN 3	=	N +
black	PIN 4	=	N -
brown 0.5 mm²	PIN 12	=	+ U_B
white 0.5 mm²	PIN 10	=	0 V
blue	PIN 2	=	+ U_{sensor}
white	PIN 11	=	0 V_{sensor}
	PIN 7	=	NC
transparent	PIN 9	=	shilding/housing

Output signal diagram:

NI



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

Ordering example:

ITD 42	A 4		1024	M	NI	KR1	S	15	IP65	50
Incremental encoder *ITD 42*	**Design style** *A 4*	**Mechanical variante** *Y... = look at the drawing*	**Number of pulses** *1024 pulses / revolution*	**Execution of electronic** *signal amplitude = 1 V_{ss}*	**Output signals** *A-, B-, N-track*	**Type of connection** *cable, radial, 1 m*	**Operating temperature** *20 °C to +85 °C*	**Hollow shaft diameter** *15 mm*	**Protective class** *IP 65*	**Attachment kit variante** *50*