

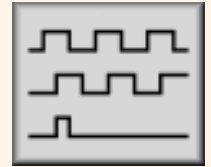
Incremental Encoder with hollow shaft

ITD 20 A 4

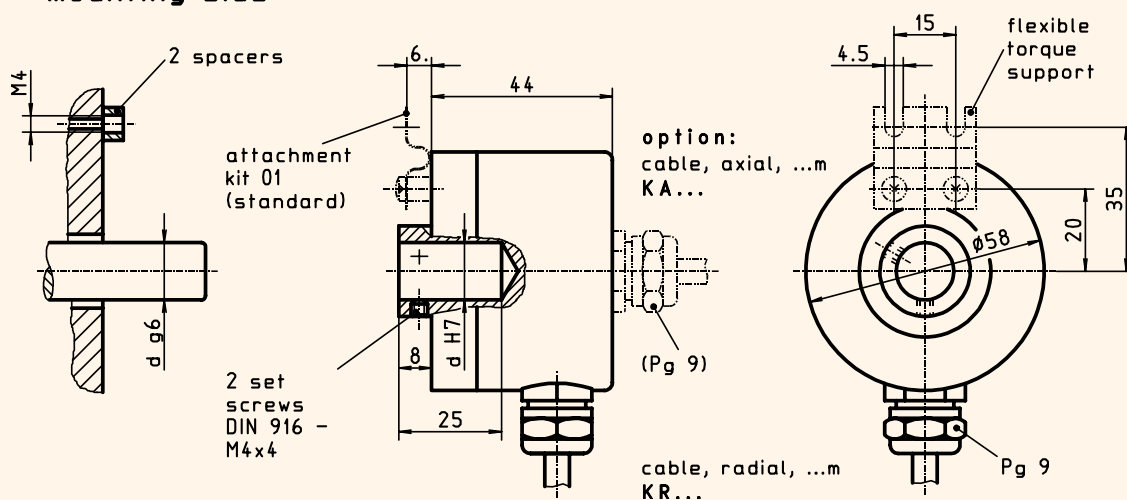


Qualities :

- Low cost hollow shaft incremental encoder
- **Number of pulses**, up to **512** pulses per revolution
- Mounting at torque support
- TTL- or HTL-output signals
- Cable outlet radial or axial
- Connector versions optional



mounting side



ITD 20 A 4

drawing-no.: 029 - 1

Mechanical data:

Housing		light-alloy metal, black, powder coated	
Design style	A 4	A 4	
Attachment kit	01	01 (standard)	(ref. datasheet "Attachment kit's ...")
Protective class	IP65	IP 65	according to DIN 40 050, IEC 529
Construction principle		OPSIC with 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 Ncm	
Vibration	55... 2000 Hz	≤ 100 m/s ²	according to DIN IEC 68, part 2-6
Shock	11 ms	≤ 1000 m/s ²	according to DIN IEC 68, part 2-27
Hollow shaft diameter	d	14 mm (standard)	(8 to 14 mm possible)
Weight		approx. 370 g	

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Electrical data:

• Number of pulses	Z	XXXX	50, 60, 90, 100, 200, 250, 256, 360, 400, 500, 512 pulses/rev.
• Execution of electronic	TTL	T	TTL-output signals supply voltage: $U_B = 5 \text{ VDC} \pm 5\%$ (poling error safe) output amplitude: $U_{\text{LOW}} \leq 0.5 \text{ V}$ $U_{\text{HIGH}} \geq 2.5 \text{ V}$
	HTL	H	HTL-output signals supply voltage: $U_B = 8 - 30 \text{ VDC}$ (poling error safe) output amplitude: $U_{\text{LOW}} \leq 1.5 \text{ V}$ $U_{\text{HIGH}} \geq U_B - 3 \text{ V}$
• Output signals	A, B + Inv.	BI	2 square-wave pulse trains phase shifted by $90^\circ (\pm 10^\circ)$ electr. + inverting pulse : pause = 1 : 1 $\pm 10\%$ at 30 kHz
Pulse ratio			$\geq 15 \text{ V}/\square\text{s}$
Flank steepness			120 kHz
Frequency limit	f_G		$\leq 70 \text{ mA}$
Output load current	I_{Load}		$\leq 100 \text{ mA}$ (without load)
Input current	I_{max}		$\leq 100 \text{ m}$ (Thalheim-cable)
Permissible cable length			$\leq 100 \text{ m}$ (standard length)
• Type of connection		KR1	cable, radial, 1.0 m
• Operating temperature range		S	- 20 °C to + 70 °C

Options:

• Execution of electronic		R	TTL-output signals supply voltage: $U_B = 8 - 30 \text{ VDC}$ (poling error safe)
• Output signals	A, B, N + Inv.	NI	2 square-wave pulse trains + zero pulse, 90° electr. + inverting
• 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	- 20 °C to + 100 °C

Accessories:

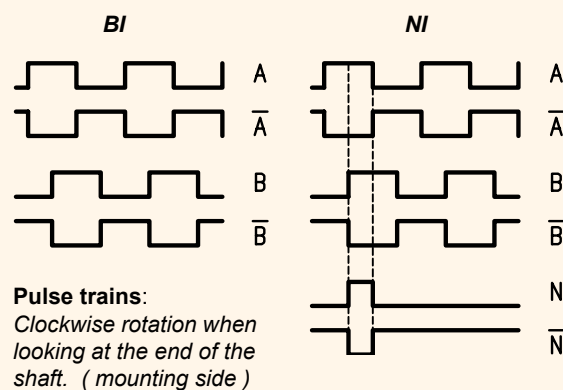
Connector, for version **D2S..12**

S2BG12 connector type 2, bush contacts, straight, 12-poles

Connection table:

wire color	PIN-no.	signals
brown	PIN 5	= A
green	PIN 6	= A 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}
	PIN 7	= NC
transparent	PIN 9	= shilding/housing

Output signal diagram:



Ordering example:

ITD 20	A 4		256	H	BI	KR1	S	14	IP65	01
Incremental encoder ITD 20	Design style A 4	Mechanical variante Y... = look at the drawing	Number of pulses 256 pulses / revolution	Execution of electronic $U_B = 8-30 \text{ VDC HTL-output}$	Output signals A-, B-track + inverting	Type of connection cable, radial, 1 m	Operating temperature 20 °C to +70 °C	Hollow shaft diameter 14 mm	Protective class IP 65	Attachment kit variante 01