

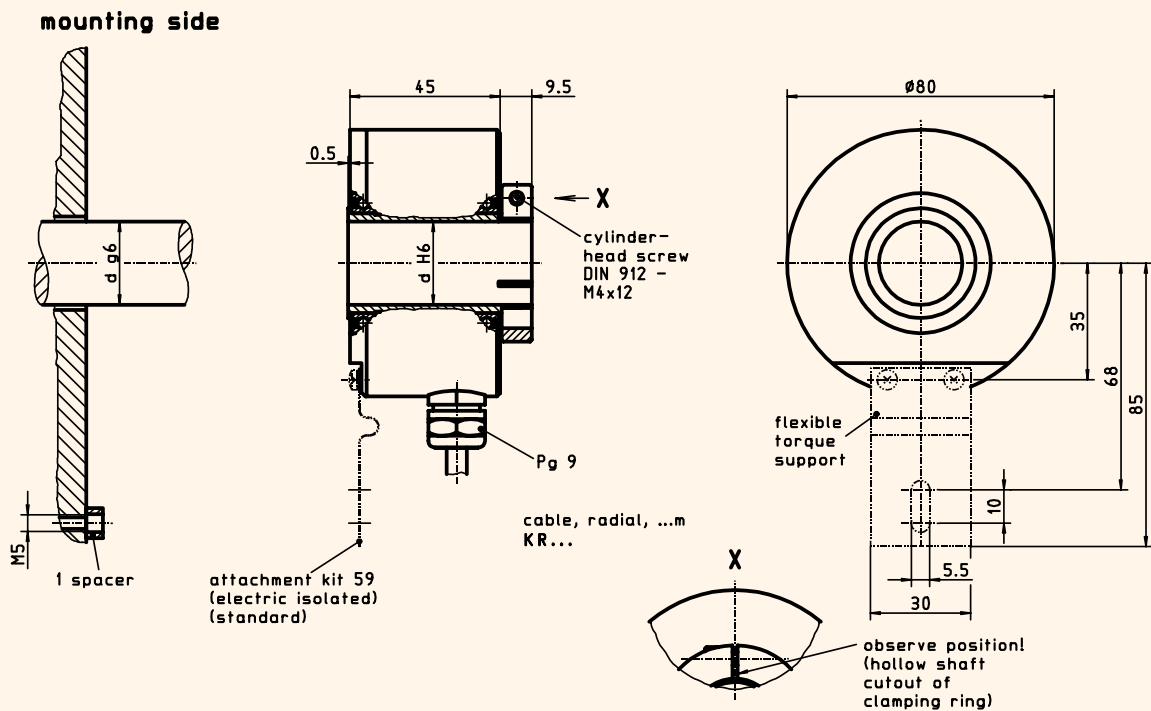
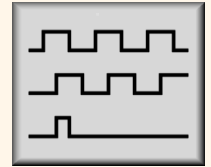
# Incremental Encoder with hollow shaft

## ITD 41 A 4 Y80



### Qualities :

- High-class hollow shaft incremental encoder
- **Number of pulses**, up to **10000** pulses per revolution
- Mounting at torque support (electric isolated)
- TTL- or HTL-output signals
- Cable outlet radial
- Connector versions optional



ITD 41 A 4 Y80

drawing-no.: 026 - 5 Y80

### Mechanical data :

Housing		light-alloy metal, unpainted	
Design style	<b>A 4</b>	A 4	
Attachment kit	<b>59</b>	59 ( standard )	( ref. datasheet "Attachment kit's ..." )
Protective class	<b>IP65</b>	IP 65	according to DIN 40 050, IEC 529
Construction principle		LED with glas slotdisc	
max. revolution ( mechanical )	$n_{max}$	$\leq 8000$ rpm	( observe frequency limit )
Admissible motor-shaft play	axial	$\leq 1.5$ mm	
	radial	$\leq 0.1$ mm	
Starting torque	at 20 ° C	$\leq 1.5$ Ncm	
Vibration	55... 2000 Hz	$\leq 100$ m/s <sup>2</sup>	according to DIN IEC 68, part 2-6
Shock	11 ms	$\leq 300$ m/s <sup>2</sup>	according to DIN IEC 68, part 2-27
Hollow shaft diameter	$d$	25 mm ( standard )	( 20 mm, 22 mm, 27 mm possible )
Weight		approx. 600 g	

# Incremental Encoder with hollow shaft

## ITD 41 A4 Y80



### Electrical data:

• Number of pulses	Z	<b>XXXX</b>	2000 to 10000 pulses per revolution
• Execution of electronic	TTL	<b>T</b>	TTL-output signals supply voltage: $U_B = 5 \text{ VDC} \pm 5\%$ (poling error safe) output amplitude: $U_{LOW} \leq 0.5 \text{ V}$ $U_{HIGH} \geq 2.5 \text{ V}$ <i>line driver-output stage</i>
	HTL	<b>H</b>	HTL-output signals supply voltage: $U_B = 8 - 30 \text{ VDC}$ (poling error safe) output amplitude: $U_{LOW} \leq 1.5 \text{ V}$ $U_{HIGH} \geq U_B - 3 \text{ V}$ <i>push pull-output stage</i> (shortening proof)
• Output signals	A, B, N + Inv.	<b>NI</b>	2 square-wave pulse trains phase shifted by $90^\circ (\pm 10^\circ)$ electr. + zero pulse, $90^\circ$ 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	$f_G$	<b>TTL</b>	300 kHz
Output load current	$I_{Load}$	<b>TTL</b>	$\leq 70 \text{ mA}$
Input current	$I_{max}$		$\leq 100 \text{ mA}$
Permissible cable length			$\leq 100 \text{ m}$
• Type of connection		<b>KR1</b>	cable, radial, 1.0 m
• Operating temperature range		<b>S</b>	$0^\circ \text{C}$ to $+70^\circ \text{C}$
			<b>HTL</b> 160 kHz <b>HTL</b> $\leq 70 \text{ mA}$ (without load) (Thalheim-cable) (standard length)

### Options:

• Execution of electronic		<b>R</b>	TTL-output signals supply voltage: $U_B = 8 - 30 \text{ VDC}$ (poling error safe) <i>line driver-output stage</i>
• Type of connection	connector	<b>D2SR12</b>	socket type 2, pin contacts, radial, 12-poles
•	connector	...	performed at cable (ref. data sheet <b>Type of performed cables</b> )

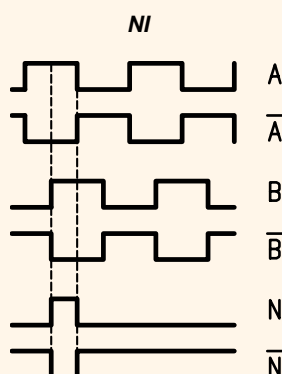
### Accessories:

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 <sup>2</sup>	PIN 12	= + $U_B$
white 0.5 mm <sup>2</sup>	PIN 10	= 0 V
blue	PIN 2	= + $U_{sensor}$
white	PIN 11	= 0 V <sub>sensor</sub>
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:

<b>ITD 41</b>	<b>A 4</b>	<b>Y80</b>	<b>2048</b>	<b>H</b>	<b>NI</b>	<b>KR1</b>	<b>S</b>	<b>25</b>	<b>IP65</b>	<b>59</b>
Incremental encoder ITD 41	Design style A 4	Mechanical variante Y80 = 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 $0^\circ \text{C}$ to $+70^\circ \text{C}$	Hollow shaft diameter 25 mm	Protective class IP 65	Attachment kit variante 59