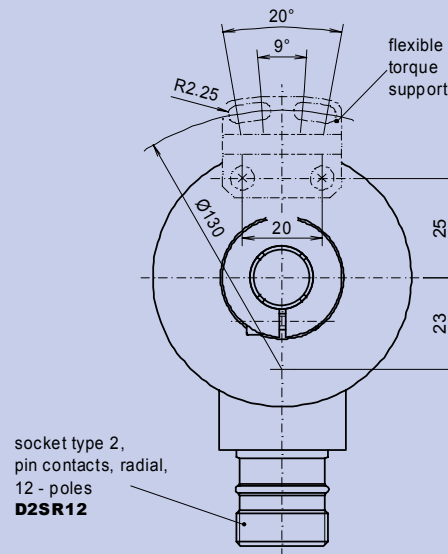
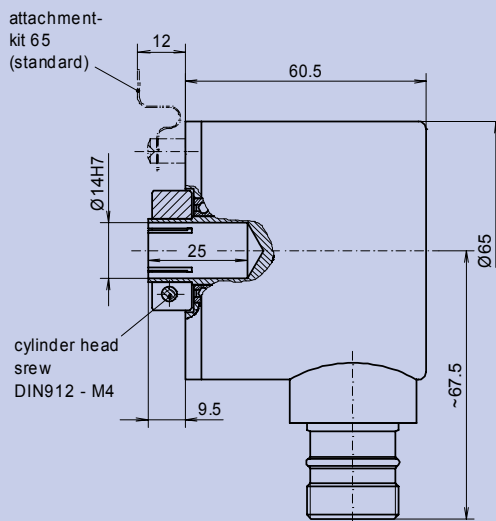




**Features**

- Hollow shaft absolute encoder in single- resp. multi-turn-version
- **Resolution:**  
max. 8.192 steps/revolution  
max. 4.096 shaft turns (only multi-turn)
- Mounting at torque support
- Execution of interface SSI (synchronous serial interface)
- Connector version



Drawing-no.: 027- 1 Y 7



**Mechanical data**

Design style	A 4		A 4
Housing	light-alloy metal, black		
Protective class	IP 65	according to DIN EN 60 529	IP65
Construction principle	LED with glas slotdisc mechanical reduction gear (multi-turn)		
max. revolution (mechanical)	$n_{max} \leq 8.000 \text{ rpm}$		
Permissible motor-shaft play	axial $\leq 0.25 \text{ mm}$ radial $\leq 0.1 \text{ mm}$		(at shaft end)
Starting torque	at 20° C $\leq 2 \text{ Ncm}$		
Vibration	55... 2.000 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
Hollow shaft diameter	d 14 mm	(further on request)	14
Weight	approx. 380 g		

## Electrical data

Steps per revolution	Single-/Multiturn	4.096 (12 Bit), 8.192 (13 Bit), ... steps per revolution	<b>XX</b>
Number of turns	Multiturn	4.096 (12 Bit) hollow shaft turns	<b>YY</b>
Execution of electronic	seriell	output stage: <b>SSI</b> (synchronous serial interface)	<b>SS</b>
Output code		Gray-Code Binär-Code	<b>GR</b> <b>BI</b>
Accuracy	G	± 20 % according to 1 step	
Supply voltage	U <sub>B</sub>	11-27 VDC	
Loss efficiency (without load)	P <sub>max</sub>	≤ 3 Watt	
Clock input		opto couplers	
Clock frequency	f <sub>T</sub>	95 kHz to 1 MHz	
Output driver		RS-422 (2-wire) (over loading proofed)	
Frequency limit (LSB)	f <sub>G</sub>	cycle time internal max. 1 ms	
Type of connection		socket type 2, pin contacts, radial, 12-poles	<b>D2SR12</b>
Operating temperature range		-20 °C to +70 °C	<b>S</b>
Permissible relativ humidity		≤ 90 % (condensation not permitted)	

## Options

Operating temperature range		-20 °C to +100 °C	<b>E</b>
Further options on request			

## Accessories

Connector, for version D2SR12		connector type 2, bush contacts, straight, 12-poles	<b>S2BG12</b>
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## Connection table

PIN-no.	signals	Explanation
PIN 1	clock -	
PIN 2	clock +	
PIN 3	data +	
PIN 4	data -	
PIN 5	NC	
PIN 6	NC	
PIN 7	NC	
PIN 8	V/R	<> <b>Data sequence switchover</b>
PIN 9	NC	LOW = Data sequence going up
PIN 10	NC	HIGH = Data sequence cascading
PIN 11	+ U <sub>B</sub>	Clockwise rotation when looking at
PIN 12	0 V	the end of the shaft (mounting side).

## Ordering example

<b>ATD 3S</b> Absolute encoder ATD 3S	<b>A 4</b> Design style A 4	<b>Y 7</b> Mechanical variante Y 7 = look at the drawing	<b>12/12</b> Steps / rev. / no. of turns 4.096 (12 Bit) steps/rev. 4.096 (12 Bit) rev.	<b>SS</b> Execution of electronic SSI (synchronous serial)	<b>GR</b> Output code Gray-Code	<b>D2SR12</b> Type of connection socket type 2, pin contacts, radial, 12-poles	<b>S</b> Operating temperature -20 °C to +70 °C	<b>14</b> Hollow shaft diameter 14 mm	<b>IP65</b> Protective class IP65	<b>65</b> Attachment kit variante 65
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