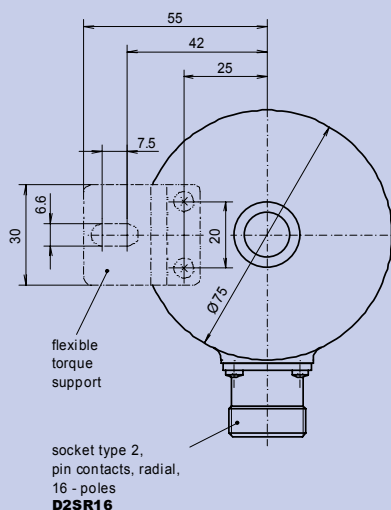
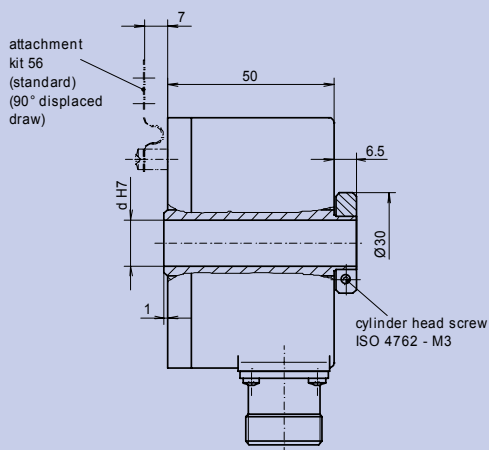
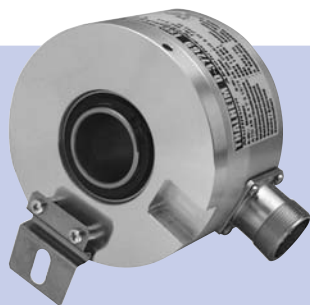


Features

- Hollow shaft absolute encoder in single- resp. multiturn version
- **Resolution:**
max. 8.192 steps/revolution
max. 4.096 shaft turns (only multiturn)
- Mounting at torque support
- Interface version SSI (synchronous serial interface)
- RS232 programmable interface
- Self-diagnosis
- Electronic preset setting
- Connector version



Drawing-no.: 034- 8 Y 1

SSI
programmable

Mechanical data

Desing style	A 4		A 4
Material	housing	steel, black	
	flange	light-alloy metal, unpainted	
Protective class	IP 54		according to DIN EN 60 529
Construction principle	LED with glas slotdisc electronical count with buffer (multiturn)		
max. speed	mechanical	$n_{max} \leq 6.000 \text{ rpm}$	
	electrical	$n_{max} \leq 6.000 \text{ rpm}$	
Permissible motor-shaft play	axial	$\leq 0.25 \text{ mm}$	(at shaft end)
	radial	$\leq 0.1 \text{ mm}$	
Starting torque	at 20° C $\leq 4 \text{ Ncm}$		
Vibration	16... 2.000 Hz	$\leq 100 \text{ m/s}^2$	according to DIN IEC 60 068, part 2-6
Shock	6 ms	$\leq 2.000 \text{ m/s}^2$	according to DIN IEC 60 068, part 2-27
Moment of inertia (rotor)	$2 \times 10^{-6} \text{ kgm}^2$		
Hollow shaft diameter	d	14 mm	(standard), 12 mm possible
Weight	approx. 700 g		

Electrical data

Steps per revolution	Single-/Multiturn	programmable up to max. 8.192 (13 Bit) steps /revolution	XX
Number of turns	Multiturn	programmable up to max. 4.096 (12 Bit) shaft turns	YY
Execution of electronic	seriell	output stage: SSI (synchronous serial interface) / programmable	PS
Output code (programmable)		Gray-Code (factory setting) Binär-Code	GR BI
Accuracy		± 0.025 Grad at 400 kHz ± 0.05 Grad at 800 kHz	
Supply voltage	U _B	10-30 VDC (poling error safe)	
Input current (without load)	I _{max}	≤ 50 mA (at 24 VDC)	
Inputs		control signals: V/R, Preset-IN level high > 0.7 U _B level low < 0.3 U _B connection: V/R-input with 10 kΩ to U _B ; zeroing input with 10 kΩ to GND SSI pulse: optocoupler inputs for electrical isolation	
Outputs		level high ≥ U _B - 3.5 V (at I = -20 mA) level low ≤ 0.5 V (at I = 20 mA) load high ≤ -20 mA load low ≤ 20 mA all special outputs with short-circuit-proof push-pull output stages	
Clock frequency	f _T	62.5 kHz to 1 MHz	
Monoflop time		16-26 μs	
Pulse pause		min. 50 μs	
Frequency limit	f _G	800 kHz	
Type of connection		socket type 2, pin contacts, radial, 16-poles	D2SR16
Operating temperature range		-20 °C to +85 °C	S
Permissible relativ humidity		≤ 90 % (condensation not permitted)	

Accessories

ProGeber programming software	article-no.: 316163
Programming cable ATD	connect the absolute encoder to the PC, article-no.: 316164

Connection table

PIN-no.	signals	PIN-no.	signals
PIN 1	Data +	PIN 9	Output 2
PIN 2	Data -	PIN 10	Output 3
PIN 3	NC	PIN 11	Output 4
PIN 4	TxD/T,R+	PIN 12	GND
PIN 5	RxD/T,R-	PIN 13	Preset-IN
PIN 6	Pulse+	PIN 14	V/R
PIN 7	Pulse-	PIN 15	U _B
PIN 8	Output 1	PIN 16	NC
PIN 9	Output 2		

Contact description

PIN	explanation
4 TxD / T,R+	Encoder transmission output for the RS232 programming interface.
5 RxD / T,R-	Encoder receiving input for the RS232 programming interface.
8 to 11	The special outputs 1 to 4 may be optionally assigned the special functions preselection 1, preselection 2, speed monitoring or diagnosis status.
Output 1-4	
13 Preset-IN	Preset input for setting a preset value at any desired point within the entire resolution. The presetting process is triggered by a high pulse (pulse duration ≥ 100 ms). For maximum interference immunity, the input must be connected to GND.
14 V/R	Up/down counting direction input. When not connected, this input is on High. V/R-High means increasing output data with a clockwise shaft rotating direction when looking at the flange. V/R-Low means increasing values with a counter-clockwise shaft rotating direction when looking at the flange.

Ordering example

ATD 4S	A 4	Y 1	13/12	PS	GR	D2SR16	S	14	IP54	56
Absolute encoder ATD 4S	Design style A 4	Mechanical variante Y 1 = look at the drawing	Steps / rev. / no. of turns 8.192 (13 Bit) steps/rev. 4.096 (12 Bit) rev.	Execution of electronic programmable / SSI	Output code Gray-Code	Type of connection socket type 2, pin contacts, radial, 16-poles	Operating temperature -20 °C to +85 °C	Shaft diameter 14 mm	Protective class IP54	Attachment kit variante 56