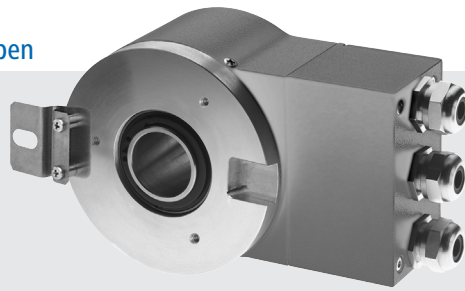
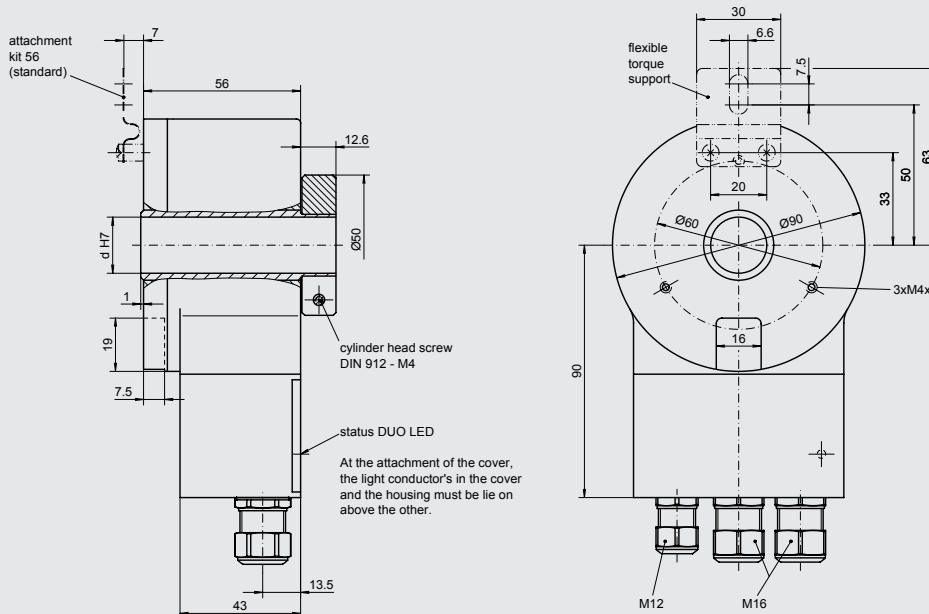


Absolute encoder with hollow shaft CANopen



Features

- Hollow shaft absolute encoder in single- resp. multiturn version
- Programmable resolution: max. 8192 steps/revolution max. 65 536 shaft turns (only multiturn)
- Mounting at torque support
- programmable operating value
- programmable preset value
- Bus cover detachable



drawing-no.: 034-13 Y 3

Mechanical data

Design	A 4	A 4
Material	housing aluminium, unpainted flange aluminium, unpainted	
Protection	IP 54	according to DIN EN 60 529 IP54
Construction principle	LED with glass slot disc electronical count with buffer (multiturn)	
max. revolution (mechanical) (electrical)	$n_{max} \leq 3800 \text{ min}^{-1}$ $n_{max} \leq 6000 \text{ min}^{-1}$	
Permissible motor-shaft play	axial $\leq 0.25 \text{ mm}$ radial $\leq 0.1 \text{ mm}$	(at shaft end)
Starting torque	at 20 °C $\leq 7 \text{ Ncm}$	
Vibration	16... 2000 Hz $\leq 200 \text{ m/s}^2$	according to DIN IEC 60 068, part 2 - 6
Shock	6 ms $\leq 2000 \text{ m/s}^2$	according to DIN IEC 60 068, part 2 - 27
Moment of inertia (rotor)	$200 \times 10^{-6} \text{ kgm}^2$	
Hollow shaft diameter	d 20 mm	(standard), 15 mm, 16 mm, 18 mm, 25 mm, 25.4 mm possible 20
Weight	approx. 890 g	

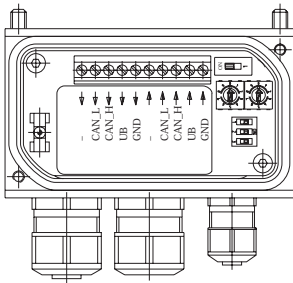
Electrical data

Steps per revolution		programmable to max. 8192 (13 Bit) steps per revolution	XX
Number of turns	only by multiturn	programmable to max. 65 536 (16 Bit) shaft turns	YY
Output code		Binary-code	
Accuracy		± 0.025 Degree at 400 kHz ± 0.05 Degree at 800 kHz	
Supply voltage	U _B	10 - 30 VDC (polarity protected)	
Current consumption (no-load)	I _{max}	≤ 100 mA (at 24 VDC)	
Baud rate		9.6 kBaud to 12 MBaud (depending on cable length)	
Type of connection		detachable bus cover with 2 x M16, 1 x M12	M16/12
Operating temperature range		-20 °C to +85 °C	S
Permissible relativ humidity		≤ 90 % (condensation not permitted)	
Address		adjustable with rotary switch (factory setting 00)	
Rotating direction		clockwise (cw) when the flange is viewed from the front (programmable)	
Electrical connection		The electrical connection and the bus cover may not be attached or removed under voltage.	

CANopen features

Bus protocol		CANopen	CB
Device profile		CANopen - CiA DSP 406	CO
CANopen features		Device Class 2	
Operating modes		polling mode (asynch, via SDO), cyclic mode (asynch-cyclic), synch mode (synch-cyclic), acyclic mode (synch-acyclic)	
Preset-value		The preset value changes the encoder output position value to a predefined position. The offset value between absolute encoder zero-point and mechanical zero-point will be saved in the absolute encoder.	
Parameter	Direction of rotating	With the operating parameter the rotating direction for which the output code is to increase or decrease can be parameterized.	
	Scaling:	The steps per revolution and the total revolution can be parameterized.	
Diagnostic messages		The encoder supports the following error messages: position error, parameter error, lithium cell voltage at lower limit (multiturn).	
Default setting		50 kBit/s, node number 1	

View inside bus cover

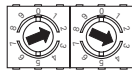


Settings of terminating resistors



ON = last user
OFF = user X

Settings of user address



Address can be set with rotary switch.
Example: User address 23

Connection table

CAN_L	Negative serial data line, pair 1 and 2
CAN_H	Positive serial data line, pair 1 and 2
U _B	Supply voltage 10 - 30 VDC
GND	Ground contact for U _B

Terminals with the same designation are internally interconnected and function-identically. These internal clamp-connections UB-UB / GND-GND may be loaded with max. 1 A.

Setting baud rate



Baud rate	Setting Dip-switch		
	1	2	3
10 kBit/s	OFF	OFF	OFF
20 kBit/s	OFF	OFF	ON
50 kBit/s	OFF	ON	OFF
125 kBit/s	OFF	ON	ON
250 kBit/s	ON	OFF	OFF
500 kBit/s	ON	OFF	ON
800 kBit/s	ON	ON	OFF
1 MBit/s	ON	ON	ON

Ordering example:

ATD 5B	A 4	Y 3	13/16	CB	CO	M16/12	S	20	IP54	56
Absolute encoder ATD 5B	Design A 4	Mechanical variant Y 3 = look at the drawing	Steps/rev./ no. of turns 8192 (13 Bit) steps/rev. 65 536 (16 Bit) rev.	Data transmission CAN-bus	Data protocol CANopen-profile	Type of connection bus cover with 2xM16, 1xM12	Operating temperature range -20 °C to +85 °C	Hollow shaft diameter 20 mm	Protection IP54	Attachment kit variant 56

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