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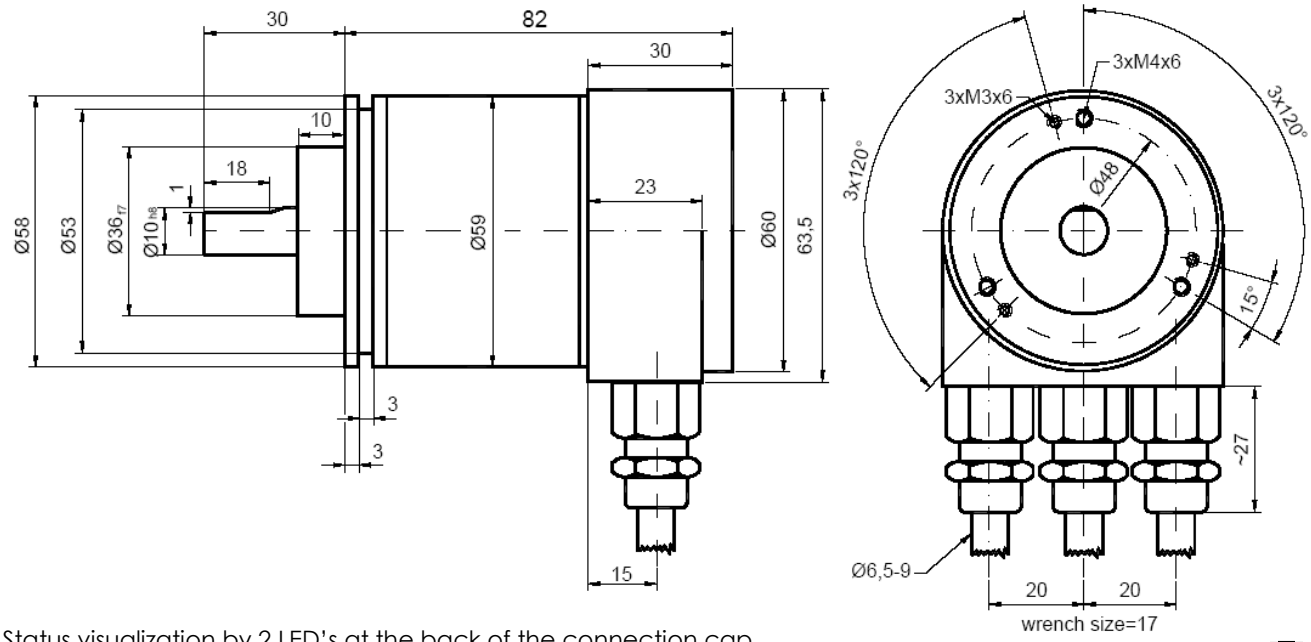
FHM5

CAN OPEN ABSOLUTE SINGLE-TURN ENCODER, SERIES FHM510-CANO

- FHM510-CANO, standard encoder Ø58mm with CAN open interface:
- Robust and compact design
- Solid shaft version Ø 10 mm (06 mm available upon request)
- Precision ball bearings with sealing flange
- High temperatures performances –40°C … +85°C
- Temperature insensitive opto-receiver-asic
- Code disc made of unbreakable and durable plastic
- Resolution : 13 bits = 8192 steps/turn (max 16 bits)
- Polarity inversion and over-voltage peak protection
- Highly integrated circuit in SMD-technology

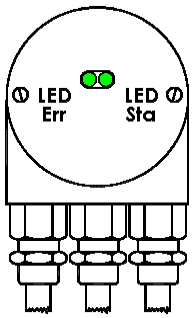
CANopen

FHM510-CANO (connection cap included)



Status visualization by 2 LED's at the back of the connection cap

Err - Green LED	*Sta - Green LED*	*Meaning*
off	off	No power supply
off	on	Encoder is ready, Boot Up message not sent (no further device on network, wrong baud rate) or encoder in prepared status
flashing	on	Boot Up message sent, device configuration is possible
on	on	Normal operation mode, Encoder in Operational Status



MECHANICAL DATA

Material Optional stainless steel	Cover : aluminum
	Body : aluminum
	Shaft: stainless steel
Max. shaft loading	Axial : 40 N
	Radial : 110 N
Shaft Inertia	≤ 30 g.cm²
Friction torque	≤ 3 N.cm
RPM (continuous operation)	12 000 rpm
Shock (EN 60068-2-27)	≤ 100 g (half-sine, 6 ms)
Shock (EN 60028-2-29)	≤ 10 g (half-sine, 16ms)

Vibrations (EN 60068-2-6)	≤ 10 g (10Hz… 1 000Hz)
Weight	550 g
Operating temperature	- 40 … + 85°C
Storage temperature	- 40 ... + 85°C
Humidity	98 % without liquid state
Protection class (EN 60529) Optional with shaft sealing:IP66	IP 65: casing side
	IP 64: shaft side

Lifetime in 10^8 revolutions with F_a / F_r (axial / radial)		
40 N / 60 N	40 N / 80 N	40 N / 110 N
25	10	4

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CE

ELECTRICAL DATA

Interface	Line driver RS485
Transmission rate	Max 1MBauds
Device addressing	By rotary switches
Power Supply	10 – 30Vdc (absolute limits)
Current consumption	max. 100mA (24Vdc)

Power consumption	max 2,5W
Step frequency LSB	800 kHz
Accuracy of division	+ ½ LSB (12 bits)
EMC	EN 61000-6-4 EN 61000-6-2
Electrical lifetime	> 10^5 h

TRANSMISSION MODE

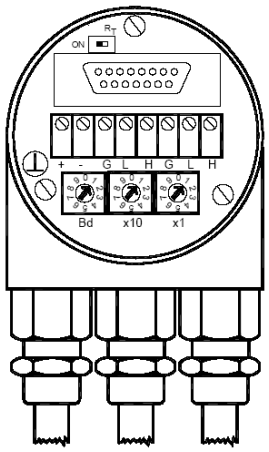
POLLED Mode	By a remote-transmission-request telegram the connected host calls for the current process value. The absolute rotary encoder reads the current position value, calculates eventually set-parameters and sends back the obtained process value by the same identifier
SYNC Mode	After receiving a sync telegram by the host, the absolute rotary encoder answers with the current process value
CYCLIC Mode	The absolute rotary encoder transmits cyclically - without being called by the host - the current process value. The cycle time can be programmed in milliseconds for values between 1 ms and 65536 ms

PROGRAMMABLE PARAMETERS

Operating Parameters	This parameter determines the counting direction, in which the output code increases or decreases. As an important operating parameter the code sequence (complement) can be programmed
Resolution (pos./turn)	Each value between 1 and 8192 can be programmed
Field bus parameter	Baud rate and CAN-identifier
Preset Value	The preset value is the desired position value, which should be reached at a certain physical position of the axis. The position value is set to the desired process value by the parameter pre-set
Limit Switch, Min. and Max.	Two software limit switches can be set. If the position value falls below the lower or exceeds the higher limit switch, a status bit in the process value is set.
Cam	One free programmable cam can be set in the total measuring range. The same functionality is realized like a mechanical cam unit

INSTALLATION

The rotary encoder is connected with two or three cables depending on whether the power supply is integrated into the bus cable or connected separately. If the power supply is integrated into the bus cable, one of the cable glands can be fitted with a plug. The cable glands are suitable for cable diameters from 5.5 up to 9 mm



CONFIGURATION

The setting of the node number is achieved by 2 rotary switches in the connection cap. Possible addresses lie between 0 and 89 whereby every address can only be used once. **Inside the encoder the defined address is increased by one.** The connection cap can easily be opened for installation by removing the two cap screws

A termination resistor is integrated in the connection cap. The resistor must be switched on if the encoder is connected at the end or at the beginning of the bus. Separation of Bus In and Bus Out signals if termination resistor is activated

ORDERING REFERENCE (Contact the factory for special versions ex:electronics, special flanges, connections…)

FHM5	C2	B1	B	00	13	C	10	0	0CC
Absolute single-turn encoder	CANopen	Version	Code : Binary	Single turn encoder	Resolution : 2^{13} (8 192)	Clamp flange	Shaft diameter : 10mm	Without mechanical option	Connection Cap

Ordering code example: FHM510-CANO-001 = FHM5-C2-B1B-0013-C100-0CC

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