

MHM5

DEVICE NET ABSOLUTE MULTI-TURN ENCODER



Features

MHM510, standard encoder Ø58mm with DeviceNet interface:

- Robust and compact design
- Solid shaft version Ø 10 mm (Ø6 mm available upon request)
- Precision ball bearings with sealing flange
- High temperatures performances $-40^{\circ}\text{C} \dots +85^{\circ}\text{C}$
- Code disc made of unbreakable and durable plastic
- Mechanical memorisation of the number of turns by gears
- Resolution: 13 bits = 8192 steps/turn (max 16 bits)
- Number of Turns : 12 bits = 4096 turns (max 14 bits)
- Polarity inversion and short circuit protection
- Highly integrated circuit in SMD-technology

SPECIFICATIONS

Mechanical

Material	Cover: Aluminum
	Body: Aluminum
	Shaft: Stainless Steel
Max. Shaft Loading	Axial: 40 N
	Radial: 110 N
Shaft Inertia	$\leq 30 \text{ g.cm}^2$
Torque	$\leq 3 \text{ N.cm}$
RPM (Continuous Operation)	6 000 tr/min
Shock (EN 60068-2-27)	$\leq 100 \text{ g}$ (half-sinus, 6 ms)
Shock (EN 60028-2-29)	$\leq 10 \text{ g}$ (half-sinus, 16ms)
Vibrations (EN 60068-2-6)	$\leq 10 \text{ g}$ (10Hz... 1 000Hz)
Weight	600 g
Operating Temperature	$-40 \dots +85^{\circ}\text{C}$
Storage Temperature	$-40 \dots +85^{\circ}\text{C}$
Humidity	98 % without Condensation
Protection Class (EN 60529)	IP65: cover

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

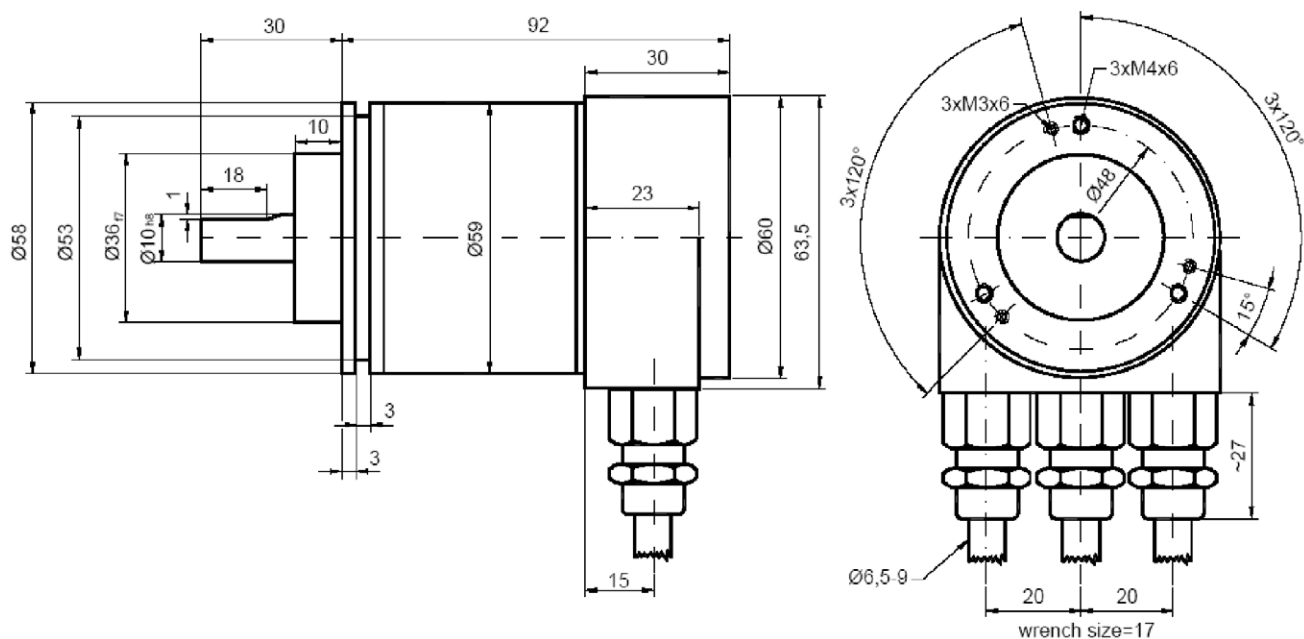
Electrical

Interface	Transceiver According ISO/DIS 11898
Transmission Rate	Max 500KBauds
Device Addressing	By Rotary Switches
Power Supply	10 – 30Vdc
Current Consumption	Max. 100mA (24Vdc)
Power Consumption	Max 2,5W
Step Frequency LSB	800 kHz
Accuracy of Division	+ ½ LSB
EMC	EN 61000-6-4 EN 61000-6-2
Electrical Lifetime	> 10 ⁵ h

DIMENSIONS

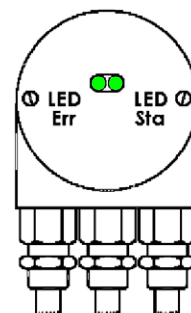
All dimensions are in millimeters.

MHM510-DNET (Connection Cap Included)



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

Sta - Green LED	Meaning
Off	No Power Supply
On	Encoder is ready, Boot Up message not sent (no further device on network, wrong baud rate) or encoder in prepared status
On	Boot Up message sent, device configuration is possible
On	Normal operation mode, Encoder in Operational Status



Transmission Mode

Polled Mode	By a 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
Change of State	The absolute rotary encoder transmits the actual process value. The process value is transmitted when the position changes. This is useful to reduce the bus activity
CYCLIC Mode	The absolute rotary encoder transmits the actual process value event controlled by an internal timer. This is also useful to reduce the bus activity

Programmable Parameters

Operating Parameters	As operating parameters the code sequence (complement) can be programmed. This parameter determines the counting direction, in which the output code increases or decreases
Resolution (pos./turn)	The parameter resolution per revolution is used to program the desired number of steps per revolution. Value between 1 and 8 192 can be programmed
Total Resolution "Max-RANGE"	This parameter is used to program the desired number of measuring units over the total measuring range. This value may not exceed the total resolution of the absolute rotary encoder. If the encoder is used in a continuous measuring application, certain rules for the setting of this parameter must be followed. These rules are outlined in the manual
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

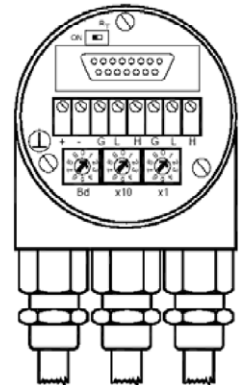
Installation

The rotary encoder is connected by three cables. The power supply is achieved with a two-wire connection cable through one PG 9. Each one of the twisted-pair and shielded bus lines are guided in and out through two PG 9 on the right side (as seen on clamps).

Configuration

The setting of the node number is achieved by 2 turn-switches in the connection cap. Possible addresses lie between 0 and 63 whereby every address can only be used once. 2 LEDs on the backside of the connection cap show the operating status of the encoder.

There is a resistor provided in the connection cap, which must be used as a line termination on the last device.



ORDERING REFERENCE

Example : MHM5 - D2 B1 B – 12 13 - C10 0 - H3P

	MHM5	D2	B1	B	12	13	C	10	0	H3P
Family										
MHM5										
Device Net										
D2										
Version										
B1										
Code										
B: Binary										
Number of Turns										
12: 2¹² (4 096)										
Resolution										
13: 2¹³ (8 192)										
Clamp Flange										
C										
Shaft Diameter										
10: 10mm										
Mechanical Option										
0: Without Option										
Connection Cap										
H3P										

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