| MHK5 SERIES

DEVICENET ABSOLUTE MULTI-TURN ENCODER

Features

MHK515, standard encoder Ø58mm with DeviceNet interface:

- Robust and compact conception
- Blind shaft version Ø 15 mm (reduction ring available)
- Precision ball bearings with sealing flange
- High temperatures performances –40°C … +85°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

Material (Stainless Steel Option)	**Cover:** Aluminum **Body:** Aluminum **Shaft:** Stainless Steel
Max. Shaft Loading	**Axial:** 40 N **Radial:** 110 N
Shaft Inertia	≤ 30 g.cm²
Torque	≤ 3 N.cm
Speed (Continuous)	6,000 RPM
Shock (EN 60068-2-27)	≤ 100 g (half sine, 6 ms)
Shock (EN 60028-2-29)	≤ 10 g (half sine, 16ms)
Vibration (EN 60068-2-6)	≤ 10 g (10Hz… 1 000Hz)
Weight (Aluminum Version)	600 g
Operating Temperature	- 40 … + 85°C
Storage Temperature	- 40 ... + 85°C
Humidity	98 % without condensation
Protection (EN 60529)	IP65

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	+ ½ LSB
EMC	EN 61000-6-4 EN 61000-6-2
Electrical Lifetime	> 10^5 h

TRANSMISSION MODES

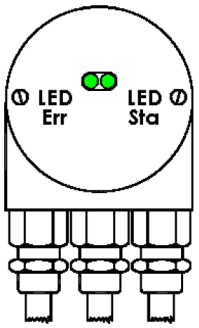
Polled Mode	By a telegram the connected host calls for the current process value. The absolute rotary encoder reads the current position value, calculates eventually set-parameters and sends back the obtained process value by the same identifier
Change of State	The absolute rotary encoder transmits the 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

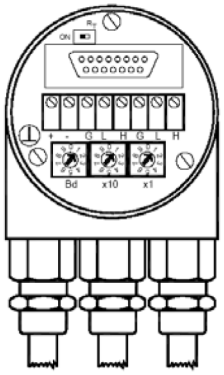
STATIC INDICATION WITH 2 LED'S IN THE CONNECTION CAMP

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
off	on	Normal operation mode, Encoder in Operational Status



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

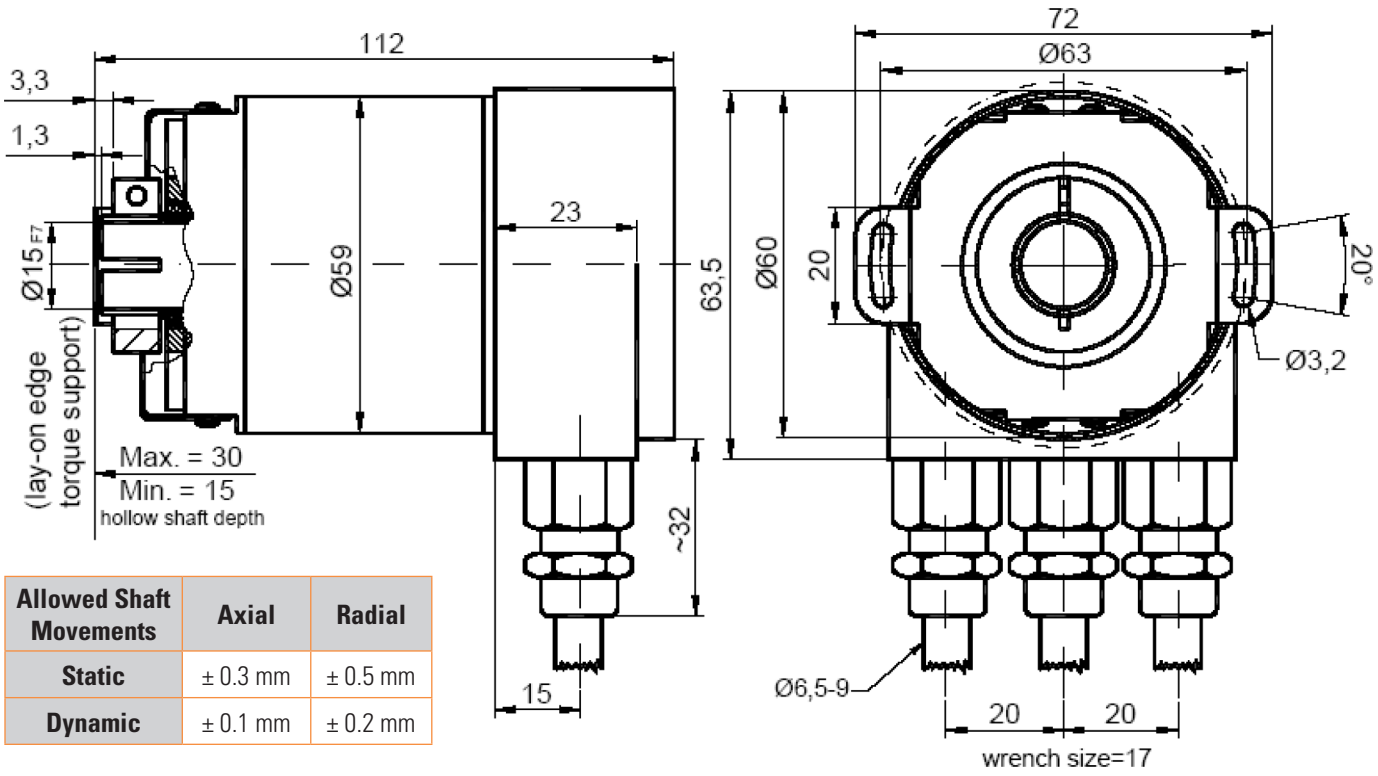
The setting of the node number is achieved by 2 turn-switches in the connection cap. Possible addresses lie between 0 and 63 whereby every address can only be used once. 2 LEDs on the backside of the connection cap show the operating status of the encoder

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

DIMENSIONS

Dimensions in mm

MHK515-DNET (Connection Cap included)



Allowed Shaft Movements	Axial	Radial
Static	± 0.3 mm	± 0.5 mm
Dynamic	± 0.1 mm	± 0.2 mm

Shaft diameter can be reduced at 12mm, 10mm or 8mm by reduction ring (by slipping them into the hollow shaft)

ORDERING OPTIONS

Example: MHK5-D2B1B-1213-B150-H3P

Contact the factory for special versions, ex: special flanges, electronics, connections…

MHK5 – D2 B1 B – 12 13 – B 15 0 – H3P

Family

MHK5
Absolute multi turn encoder

Device Net

D2

Version

B1

Code

B: Binary

Number of Turns

12: 2^{12} (4096)

Resolution (steps/turn)

13: 2^{13} (8192)

Shaft

B: Blind Shaft

Shaft Diameter

15 (reduction ring available upon request)

Mechanical Options

0: Without mechanical options

Connection

H3P: Cap output

AGENCY APPROVALS & CERTIFICATIONS

CE

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