

## 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

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

## Electrical

<b>Interface</b>	Transceiver according ISO/DIS 11898
<b>Transmission Rate</b>	Max 500KBauds
<b>Device Addressing</b>	By rotary switches
<b>Power Supply</b>	10 – 30Vdc
<b>Current Consumption</b>	Max 100mA (24Vdc)
<b>Power Consumption</b>	max 2,5W
<b>Step Frequency LSB</b>	800 kHz
<b>Accuracy</b>	+ ½ LSB
<b>EMC</b>	EN 61000-6-4 EN 61000-6-2
<b>Electrical Lifetime</b>	> 10 <sup>5</sup> h



## TRANSMISSION MODES

<b>Polled Mode</b>	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
<b>Change of State</b>	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
<b>CYCLIC Mode</b>	The absolute rotary encoder transmits the actual process value event controlled by an internal timer. This is also useful to reduce the bus activity



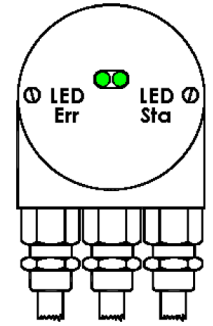
## PROGRAMMABLE PARAMETERS

<b>Operating Parameters</b>	As operating parameters the code sequence (complement) can be programmed. This parameter determines the counting direction, in which the output code increases or decreases
<b>Resolution (pos./turn)</b>	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
<b>Total Resolution “Max Range”</b>	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
<b>Preset Value</b>	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

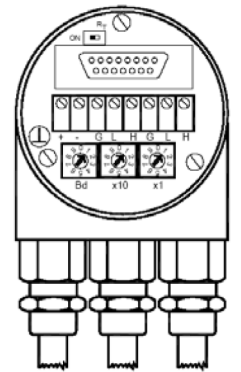
The rotary encoder is connected by three cables. The power supply is achieved with a two-wire connection cable through one PG 9. Each one of the twisted-pair and shielded bus lines are guided in and out through two PG 9 on the right side (as seen on clamps)



## 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

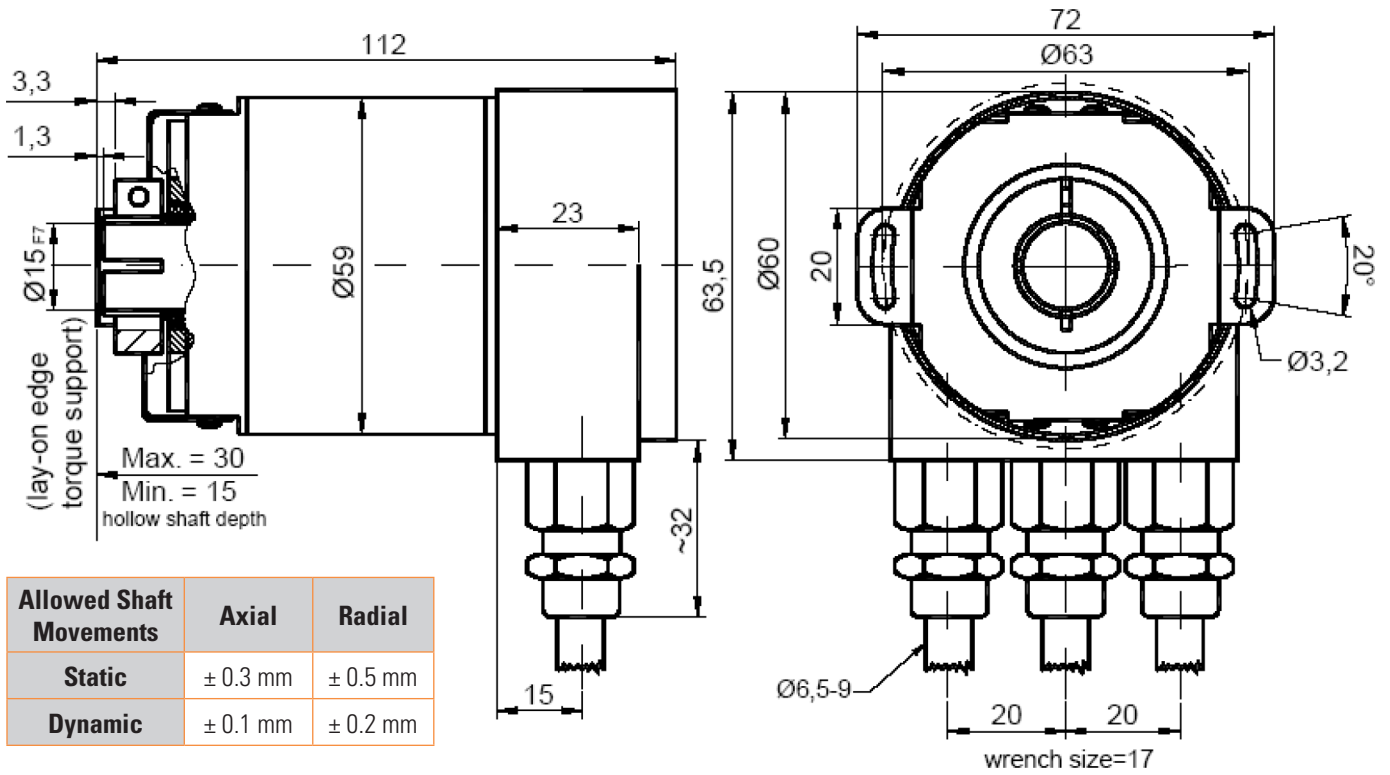




# DIMENSIONS

Dimensions in mm

## MHK515-DNET (Connection Cap included)



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...

<b>Family</b>	MHK5	D2	B1	B	12	13	B	15	0	H3P
<b>MHK5</b> Absolute multi turn encoder										
<b>Device Net</b>										
<b>D2</b>										
<b>Version</b>										
<b>B1</b>										
<b>Code</b>										
<b>B:</b> Binary										
<b>Number of Turns</b>										
<b>12:</b> 2 <sup>12</sup> (4096)										
<b>Resolution (steps/turn)</b>										
<b>13:</b> 2 <sup>13</sup> (8192)										
<b>Shaft</b>										
<b>B:</b> Blind Shaft										
<b>Shaft Diameter</b>										
<b>15</b> (reduction ring available upon request)										
<b>Mechanical Options</b>										
<b>0:</b> Without mechanical options										
<b>Connection</b>										
<b>H3P:</b> Cap output										



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