



MHM5 SERIES

ETHERNET/IP ABSOLUTE MULTI-TURN ENCODER



Features

- Robust and compact design
- Solid shaft version Ø 10mm standard, with Ø 6mm optional
- Precision ball bearings with sealing flange
- High temperature performance -40° to +85°C
- Code disc made of unbreakable and durable plastic
- Precision, robust, gear train for turns counting - immune to stray magnetics or electrical interference
- Resolution: 13 bits = 8192 steps/turn (Optional 16 bits)
- Number of turns: 12 bits = 4096 turns (Optional 14 bits)
- Polarity inversion and short circuit protection
- Highly integrated circuit in SMD-technology



SPECIFICATIONS

Mechanical

Housing Diameter	Housing Diameter: 58mm
	Shaft Diameter: 10mm standard, 6mm optional
	Flat on shaft: 18mm long
Max. Shaft Loading	Axial: 40 N
	Radial: 110 N
Starting Torque	≤ 3 N•cm
Material	Shaft Material: Stainless Steel
	Bearing Housing: Aluminum (stainless steel option, consult factory)
	Cover: Coated Steel (stainless steel option)
Bearing Life @ Load (Axial/Radial)	40 N / 60 N = 150 X 10 ⁸
	40 N / 80 N = 100 X 10 ⁸
	40 N / 110 N = 55 X 10 ⁸
Maximum RPM (Continuous)	12,000 RPM
Moment of Inertia	< 30 g•cm ²
Weight	370 g

Electrical

Code	Binary
Output Format	Ethernet IP, CIP (Common Industrial Protocol)
Counts per Revolution	13 Bits Standard, 16 Bits Optional
Revolution Counter	12 Bits Standard, 14 Bits Optional
Accuracy	$\pm 0.0220^\circ$ (14-16bit), ± 0.0439 (≤ 13 bit)
Supply Voltage	10 – 30 Vdc (for power supplies that comply with EN 50178)
Current consumption	$\leq 230\text{mA}$ @ 10Vdc, $\leq 100\text{mA}$ @ 24 Vdc
Power Consumption	$\leq 2.5\text{ W}$
Protection Level	Reverse Polarity and Short Circuit Protection
Transmission Rate	10 / 100 Mbits
EMC: Emitted Interference	DIN EN61000-6-4
EMC: Noise Immunity	DIN EN 61000-6-2

Environmental

Protection Class	IP65 (EN 60529)
Temperature Range (Operation and Storage)	-40 to +85°C
Mechanical Resistance	Shock: $\leq 100\text{ g}$ half-sine, 6ms (EN 60068-2-27); $\leq 10\text{ g}$ half-sine, 16ms (EN 60068-2-29) Vibration: $\leq 10\text{ g}$ (10 Hz to 1 kHz) (EN 60068-2-6)
Humidity	98% Non-Condensing

Technology and Interface

Sensor	Optical
Turns Counting	Mechanical gearing
Diagnostics	Memory
Programming Functions	Resolution, time base, velocity filter, preset, count direction, IP address
Features	Boot loader, Round axis, LED Indicator lights
Interface Cycle Time	$\geq 1\text{ ms}$
Start-up time	$< 250\text{ ms}$
MTTF	65 years @ 40°C

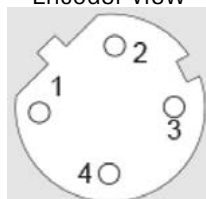
CONNECTION

Ethernet Connector

4 pinouts, female, D coded

Pinout	Signal
1	Tx+
2	Rx+
3	Tx-
4	Rx-

Encoder view

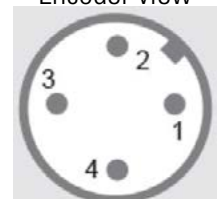


Power Supply Connector

4 pinouts male, A coded

Pinout	Signal
1	VS (10-30Vdc)
2	N.C.
3	GND (0V)
4	N.C.

Encoder view





DIMENSIONS

All dimensions are in millimeters

MHM5 - 10 mm Shaft and facemount



MHM5 - 06 mm Shaft and servomount



MHM5 - 9.58 mm (3/8") Shaft and square flange mount





ORDERING OPTIONS

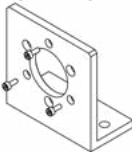

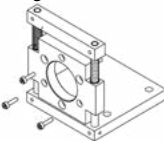


Example : MHM5-EEA1B-1213-C100-PRM

	MHM5	EEA1B	1213	C100	PRM
Family	58 mm diameter, Absolute Geared Multi-Turn. MHM5 = Aluminum, Shafted Encoder MXM5 = Stainless steel Shafted some specifications may change, consult factory				
Electronics	EEA1B = Ethernet IP				
Resolution	12 13 12 16 14 13 14 16 First number is the turns counter Second number is the single turn resolution				
Mechanics	MHM5 C100 = Aluminum version & 10mm shaft & clamping flange & IP65 S060 = Aluminum version & 6 mm shaft & servo flange & IP65 C10S = Aluminum version & 10mm shaft & clamping flange & IP67 9A70 = Aluminum version & 9.52 mm (3/8") shaft & 2.5" (63.5mm) square flange & IP65 MXM5 C10V = Stainless steel version & 10mm shaft & clamping flange & IP67				
Connection	PRM = Radial M12				



AGENCY APPROVALS & CERTIFICATIONS



<p>Mounting Bracket Right Angle</p> 	<p>M9202 Note: for mounting aluminum version</p>
<p>Bellows Type Coupling</p> 	<p>9403/6-6 = 6mm x 6mm 9403/6-10 = 6mm x 10mm 9403/10-9 = 10mm x 10mm</p>
<p>Mounting Bracket Spring Loaded For Use with Measuring Wheel</p> 	<p>M9212</p>
<p>Measuring Wheel 200mm Circumference</p> 	<p>9108/10 = Smooth, Polyurethane 9109/10 = Studded, Rubber 9110/10 = Knurled, Aluminum Uses 10mm shaft diameter</p>
<p>Measuring Wheel 500mm Circumference</p> 	<p>9101/10 = Smooth, Polyurethane 9102/10 = Studded, Rubber 9103/10 = Knurled, Aluminum Uses 10mm shaft diameter</p>

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