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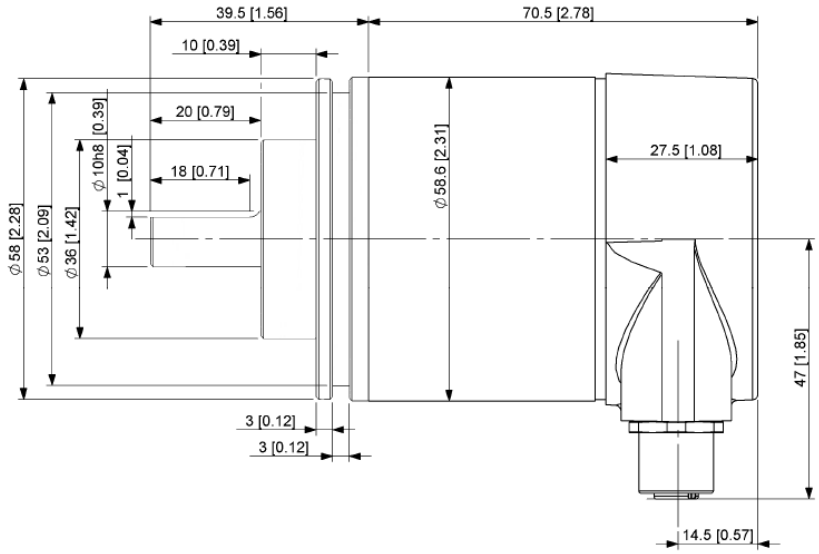
# MHM5

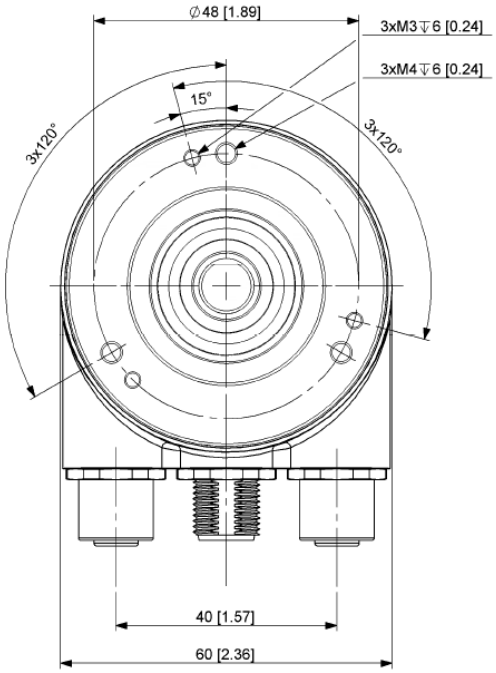
## ETHERCAT ABSOLUTE MULTI-TURN ENCODER, MHM5 RANGE

- MHM5, standard encoder Ø58mm with Ethercat interface:
- Robust and compact conception.
- Solid shaft version Ø 10 mm (06 mm available upon request).
- 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.

EtherCAT®

### MHM510 Ethercat dimensions




### MECHANICAL DATA

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

| | |
|---|---|
| Vibrations (EN 60068-2-6) | ≤ 10 g (10Hz… 1 000Hz) |
| Weight | 400 g |
| Operating temperature | - 40 … + 85°C |
| Storage temperature | - 40 ... + 85°C |
| Humidity | 98 % without condensation |
| Protection class (EN 60529) | IP65 |

Lifetime in $10^9$ revolutions with $F_a$ / $F_r$ (axial/radial)

| 20 N / 40 N | 40 N / 60 N | 40 N / 110 N |
|---|---|---|
| 43 | 15 | 5 |

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# MHM5

# ETHERCAT ABSOLUTE MULTI-TURN ENCODER, MHM5 RANGE

CE

## SENSOR

| | |
|---|---|
| Technology | Optical |
| Resolution Singleturn | 13 bit |
| Resolution multiturn | 12 bit |
| Multiturn technology | Mechanical gearing |
| Accuracy (INL) | ± 0.0220° (14-16bit), ± 0.0439 (≤13bit) |
| Code | Binary |

## INTERFACE

| | |
|---|---|
| Interface | Ethercat – Ethernet output driver |
| Profile | CoE (CANopen over EtherCAT, DS-301+DS406) |
| Diagnostics | Optoasic, Memory, LED |
| Programming functions | Resolution, preset, counting direction |
| Transmission rate | 10 / 100 Mbits |
| Interface cycle time | ≥62.5ms |

## ELECTRICAL DATA

| | |
|---|---|
| Supply voltage | 10-30Vdc (on power supplies comply with EN50178) |
| Current consumption | ≤ 230mA @ 10Vdc, ≤100mA @ 24Vdc |
| Power consumption | ≤ 2.5 W |
| Start-up time | < 250 ms |
| Reverse polarity protection | Yes |
| Short circuit protection | Yes |
| EMC: Emitted Interference | DIN EN 61000-6-4 |
| EMC: Noise immunity | DIN EN 61000-6-2 |
| MTTF | 65 years @ 40°C |
| Electrical lifetime | > $10^5$ h |

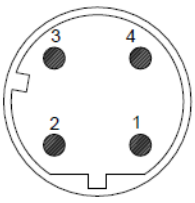
## CONNECTION

**Ethernet**

4 pinouts, female, D coded

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

Encoder view

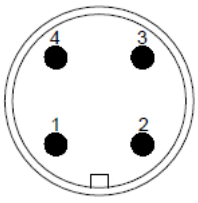



**Power supply**

4 pinouts male, A coded

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

Encoder view




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

| MHM5 | EC00 | B | 12 | 13 | C | 10 | 0 | PRM |
|---|---|---|---|---|---|---|---|---|
| Absolute multiturn encoder | Ethercat | Code : Binary | Number of turns $2^{12}$ (4 096) | Resolution (pos./turn) $2^{13}$ (8 192) | Clamp Flange | Shat diameter : 10mm | Without mechanical option | M12 connection |

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