

# AC Powered Wafer EFM

## Model MUT1000-MC608

The MUT1000 with MC608 is a mains powered electromagnetic water meter for use in district metering areas (DMA), water abstraction, and custody transfer measurement of potable water (MI-001, OIML R49), and many other applications. Unlike other water meters, the MUT1000 is a maintenance-free meter, offering a flexible wafer installation in a compact or remote mounted version. Thanks to the optimized flow profile, the MUT1000 can be installed virtually anywhere with minimal straight inlet or outlet runs. With optional pressure and temperature sensors, the meter is the perfect solution for pressure management systems. The highly robust structure, allows burial installation or the use in flooded areas. A full on-site verification without process interruption can be carried out using the Field Vericator service tool.



### Features & Benefits

- No moving parts
- Neglectable pressure drop
- Long lasting stability and precision
- Zero maintenance
- Extremely sturdy structure
- High chemical resilience
- Wider range of measurement

### Typical Applications

- District metering of potable water
- Distribution, municipal water
- Industrial waste water
- Industrial process liquids, muds and concretes
- Fiscal measures, custody transfer
- Irrigation
- Booster pump stations
- Lift stations

#### High performances to a low cost of ownership:

Capability to read flow velocities of 0.015 m/s

#### Multiple outputs:

pulse, analog 4-20mA, Modbus, frequency, Hart protocol and programmable output

#### No data lost:

Data automatically stored in the internal EEPROM memory. Up to 100.000 lines of active datalogging

#### Empty pipe detection:

Empty pipe electrode supplied as standard ( $\geq$  DN65). Empty pipe detection on measuring electrodes standard for all sizes

#### Flow - pressure – temperature: all at the same time:

Add on modules of temperature and pressure readying make the MUT1000 with MC608 one of the most complete electromagnetic flowmeter available in the market

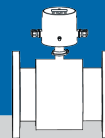
#### Easy management, easy programming:

A software is supplied with the unit to allow users to communicate with the MC608 via IRCOM port to any pc, lap top or windows tablet.

**Certifications and compliance:** OIML R49 (on request) / EX - IEC IECEx (on request and only separate version) / NSF ANSI61 (On model MUT1000US)

#### Always verified:

The FIELD VERIFICATOR is available for full on-site verification, without interruption of the process



## Converter Specifications

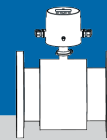
|                                            |                                                                                                                                                                                                                                                       |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature                                | Ambient: -20 ... +60 C° (-4 ... +140 F)<br>Media -25 ... 80 C° (-13 ... +176 F)<br>Storage -40 ... +70 C° (-22 ... +158 F)                                                                                                                            |
| Flow Units                                 | ml, cl, dl, l, dal, hl, m3, in3, ft3, gal, USgal, bbl, oz + Custom value                                                                                                                                                                              |
| Totalizers                                 | 5 (2 positive, 2 negative, 1 NET)                                                                                                                                                                                                                     |
| Alarms and status                          | Status icon displayed and alarm logged in the datalogger                                                                                                                                                                                              |
| Self diagnostic                            | Alarms available:<br>excitation failure pulse overlapped<br>empty pipe on the 4th electrode measurement error<br>high temperature                                                                                                                     |
| External verification                      | Field vericator available for calibration verification and electronic status                                                                                                                                                                          |
| Protection Degree                          | IP68 1.5 m continuous immersion (EN 60529)                                                                                                                                                                                                            |
| Software for communication and programming | Commissioning (equal settings of meters) - Data print for documentation - Data export (CSV file) - Firmware update - Read instant flowrate - Read and write all non-volatile parameters - Download internal datalogger - View instrument event logger |

## Sensor Specifications

|                                        |                                                                                                                                    |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Pipe sizes inches/mm                   | 1" - 12" Inch / DN25 - 300 mm                                                                                                      |
| Flanges Connections Available          | EN1092-1, ANSI 150, ANSI 300, ANSI 600, ANSI 900, DIN 2501, BS 4504, AS 2129 (TABLE D - E - F), AS 4087, ISO 7005-1, KS 10K        |
| Maximum pressure                       | 40 bar for diameters ≤ DN150      16 bar for diameters ≥ DN200                                                                     |
| Internal lining and liquid temperature | Internal lining:      Liquid temperature:<br>PTFE      Standard -40 /+130°C (up to +180° on request)<br>Ebonite      -40°C / +80°C |
| Protection Degree                      | IP68 (EN 60529) permanents submersion at 1.5m (4.92ft)                                                                             |
| Electrical connections                 | Cableglands M20 x 1.5 + terminal box + sealing resin                                                                               |

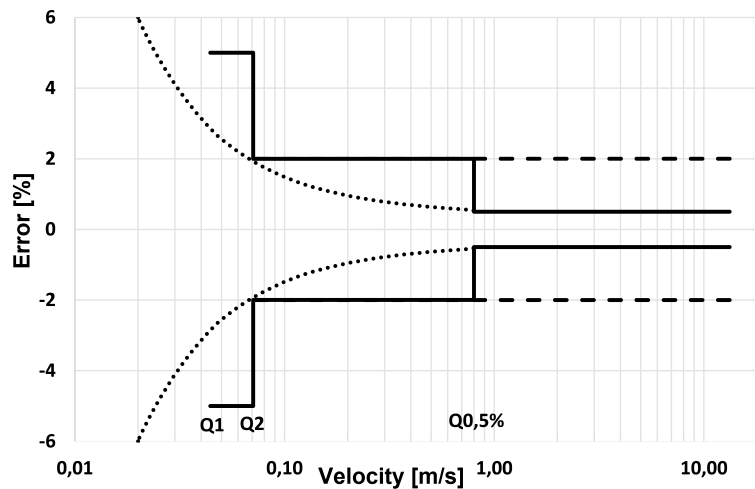
The electromagnetic flowmeter designed for the toughest applications





## Measuring Accuracy

Each flowmeter is standard wet calibrated under reference conditions by direct volume comparison. The performance of the flowmeter is defined and documented in an individual calibration certificate. Accuracy 0.2% +/- 2mm/s (0.2% +/- 1mm/s on request)

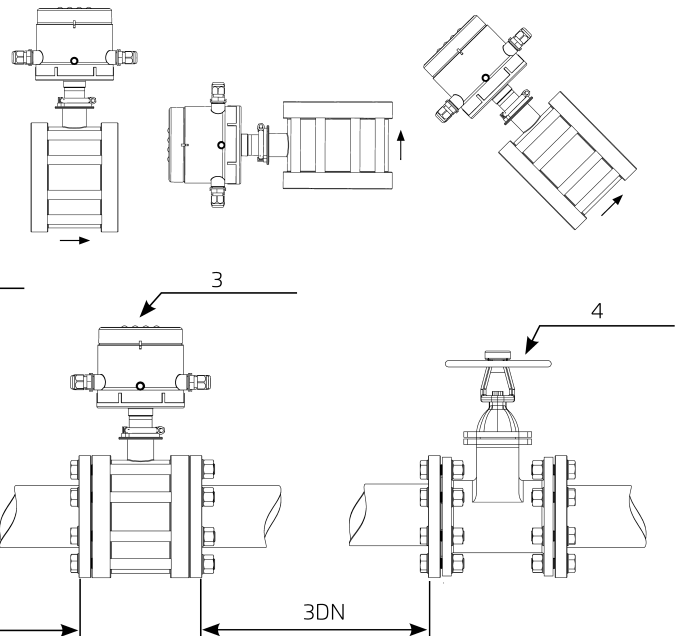


## Flow Rate

| Size<br>Q @ (m³/h)              | DN25<br>1" | DN32<br>1¼" | DN40<br>1½" | DN50<br>2" | DN65<br>2½" | DN80<br>3" | DN100<br>4" | DN125<br>5" | DN150<br>6" | DN200<br>8" | DN250<br>10" | DN300<br>12" |
|---------------------------------|------------|-------------|-------------|------------|-------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|
| Q1 Minimum Flow                 | 0.08       | 0.08        | 0.13        | 0.2        | 0.32        | 0.5        | 0.8         | 1.28        | 2           | 3.2         | 5.04         | 8            |
| Q2 Transitional Flow            | 0.13       | 0.13        | 0.2         | 0.32       | 0.51        | 0.8        | 1.28        | 2.05        | 3.2         | 5.12        | 8.06         | 12.8         |
| Q3 Permanent Flow               | 10         | 10          | 16          | 25         | 40          | 63         | 100         | 160         | 250         | 400         | 630          | 1000         |
| Q4 Maximum Flow<br>(Short Time) | 12.5       | 12.5        | 20          | 31         | 50          | 78         | 125         | 200         | 312         | 500         | 787          | 1250         |

## Installation Recommendations

- The water meter can be installed in any orientation without interfering with metrological performance.
- The arrow on water meter body must be in the same direction with the flow.
- Prior to installation, flush the line to remove debris.
- The water meter must be filled with water to operate.



[1] Isolation Valve

[2] Air Valve

[5DN] Unrestricted pipe,  
minimum 5XDN

[3] MUT1000

[4] Isolation Valve

[3DN] Unrestricted pipe,  
minimum 3XDN