

# DC Powered Insertion EFM

## Model MUT1222-MC406

The MUT1222 with MC406 is a battery powered insertion electromagnetic flow meter for use in water network management systems, leakage control, district metering, flow surveys, profiling and many other applications. The MUT1222 alternative comes in three different sizes (small, medium, and large) suitable to use in pipe size from DN50 to DN2600 (2"-102" respectfully). Delivering highly accuracy bi-directional measurement for water distribution and raw water pipelines, the insertion meter is robust and has no moving parts therefore, reliable and suitable to measure a wide range of flows. The MUT1222 can be used as a portable or a dedicated / permanent instrument; with its "hot tapping" application it is very easy and quick to install without the need to stop the flow under full working pressure conditions. With optional pressure and temperature sensors, GSM/GPRS integrated modem and 12...24Vdc power source, the insertion meter is a cost-effective alternative to full-bore meters.



### Features & Benefits

- No moving parts
- Neglectable pressure drop
- Long lasting stability and precision
- Zero maintenance
- Extremely sturdy structure
- Bi-directional measure

### Typical Applications

- Water network management
- Leakage control
- District metering
- Flow surveys
- Flow profiling
- Checking on-site flowmeters
- Data capture reporting and analysis

#### 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

#### Information always available:

Add-on communication module GSM/GPRS automatically sends the information via SMS, e-mail or on a website portal [www.euromagdata.com](http://www.euromagdata.com) with personal ID and password. Accessible also from smart phones and tablets. Configurable FTP communication

#### Flow - pressure - temperature:

all at the same time: Add on modules of temperature and pressure readying make the MUT1222 with MC406 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 MC406 via ICOM port to any pc, lap top or windows tablet.

#### Certifications and compliance:

- 2014/35/EU - EN 61010-1:2013 (LVD)
  - 2014/30/EU - EN 61326-1:2013 (EMC)
  - 2014/34/UE - IEC 60079 - 0, IEC 60079 - 18 (ATEX - IECEx)
- Separate version

#### Always verified:




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

## Converter Specifications

Transmitter type	Battery powered - 2 x D Cell 3.6 V * / 12-24VDC	
Battery life	Lithium battery pack up to 10 years	
Accuracy	0.2% +/- 2mm/s (0.08 inch/s), insertion sensors 2% of rate +/- 2mm/s (0.08 inch/s)	
Temperature	Ambient: -20 ... +60 C° (-4 ... +140 F) Media -25 ... 80 C° (-13 ... +176 F) Storage -40 ... +70 C° (-22 ... +158 F)	
Enclosure	Technopolymer case with aluminum bottom on compact vertical version. IP 68. Remote wall mount bracket in carbon steel zinc plated	
Cable entries	4X PG9 Glands I/O - 2X M20 x 1.5. Glands junction box in remote version	
Custody transfer	Type approved OIML R49-1 2013 / EN 14154 MID EN-ISO 4064 - Certificate n. T10713	
Conformity	EMC: EN 61010 - LVD: EN 61326 ; EN/IEC 60529 IP68	
Sensor type	Up to DN300	
Flow velocity range	0.015 m/s up to 10 m/s (0.05 ft/s up to 33 ft/s)	
Sampling rate	Standard mode 1 / 5 Hz up to 1 / 60 Hz (default 1 / 15 Hz) max 3.125 Hz	
Installation	Integral (compact) or remote with factory mounted sensor cable in 5 m (16.4 ft) up to 30 m (98.4 ft)	
Digital filters	Damping - cutt-off (0.05 m/s default) - bypass - peak cut	
Display and keys	LCD display - Index, menu, and symbols icons for dedicated information 4 Push buttons to access all functions Totalizer informations can be displayed with 5 decimal digits	
Displayed informations	Live flowrate Total positive totalizer (T+), Total negative totalizer (T-) Partial positive totalizer (P+), Partial negative totalizer (P-) Time & date, Converter temperature. Process pressure and temperature (if available). Parameters corresponding code and value	
Flow Units	m, m3, l, ML, ft3, GAL, AC FT, AC IN	
Outputs	2 pulses passive outputs (MOS), individual galvanically isolated - clean contact Maximum load +/- 35V DC, 100 mA short circuit protected	
Communication	Integrated BERMAD IrComm interface	
Datalogging	100,000 lines of data with a frequency of log between 1 minute and 120 minutes (default 15 minutes)	
Add on modules	GSM/GPRS BERMAD Module Pressure (1) and temperature (2) Energy metering ready	
Totalizers	4 (2 positive and 2 negative)	
Data protection	Password available, automatic firmware check and recover during the update	
Alarms and status	Status icon displayed and alarm logged in the datalogger	
Self diagnostic	Alarms available: excitation failure empty pipe on the 4th electrode empty pipe on the measuring electrodes	high temperature high voltage supply pulse overlapped wet electronic board
External verification	Field verifcator available for calibration verification and electronic status	
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	

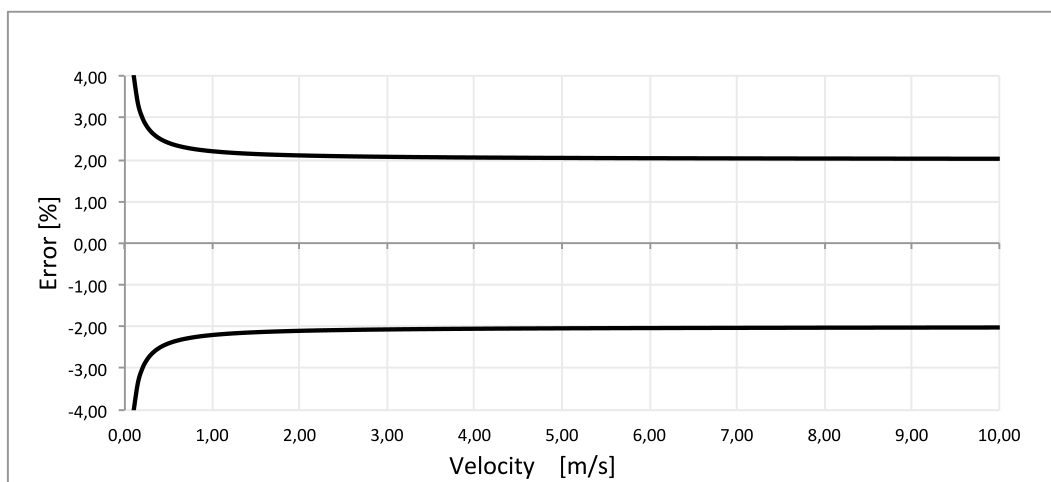
## Sensor Specifications

Pipe sizes inches/mm	Size Small (S)	Size Medium (M)	Size Large (L)
	2" - 24" Inch / DN50 - 600mm,	8" - 60" Inch / DN200 - 1500mm,	18" - 104" Inch / DN450 - 2600mm
Electrodes material	AISI 316L		
Body material	AISI 304 Stainless Steel		
Standard operating pressure	20 bar (300 psi)		
liquid Temperature	-40 °C , +80 °C		
Protection Degree	IP68 for immersion at 1,5m (IEC 529)		
Parts in contact with liquid	Head of sensor Electrodes Pipe end POM      AISI 316L    AISI 304		
Electrical connections	Cableglands M20 x 1.5 + terminal box + sealing resin		

Equipment	1" ball valve zinc plated brass	Input connection for pressure gauge
	"Hot tap" installation	Handle grips with flow directions
	Head of the unit in POM 22mm (0.86 Inch)	Body in AISI304
	Valve connection (female-female)	2 Electrodes in AISI316L
	Probe 12mm (0.5 Inch)	ATEX on request (only separate version)
	Pressure up to 20 bar	
		
		

## Measuring Accuracy

Each sensor is calibrated on an hydraulic test rig equipped with a ISO17025 traceable weighing system. The accuracy is equal to 2% +/- 2 mm/s. Bi-directional measure.



## Installation Recommendations

- The probe must be installed at the point of average axial speed, which is located at 1/8 of the internal diameter of the pipe (Fig. 58)
- The meter axis must intercept the pipe axis (Fig. 59)
- The pipe must always be full of liquid

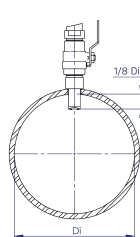


Fig. 58

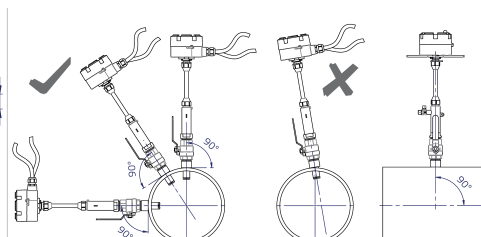


Fig. 59

