BERMAD Meters

Merging monitoring & control

OIML approved

GSM ready

Waffer installation

MUT1000
MC608

BERMAD

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 waffer 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, GSM/GPRS integrated modem and 12...24Vdc power source, 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 Verificator service tool.

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

Key advantages

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

Product's benefit

High performances to a low cost of ownership: Capability to read flow velocities of 0.015 m/s (OIML R49 certified), within Class 2 accuracy

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 with personal ID and password. Accessible also from smart phones and tablets. Configurable FTP communication.

Empty pipe detection: Empty pipe electrode supplied as standard (≥ DN65). Empty pipe detection on measuring electrodes standard for all sizes

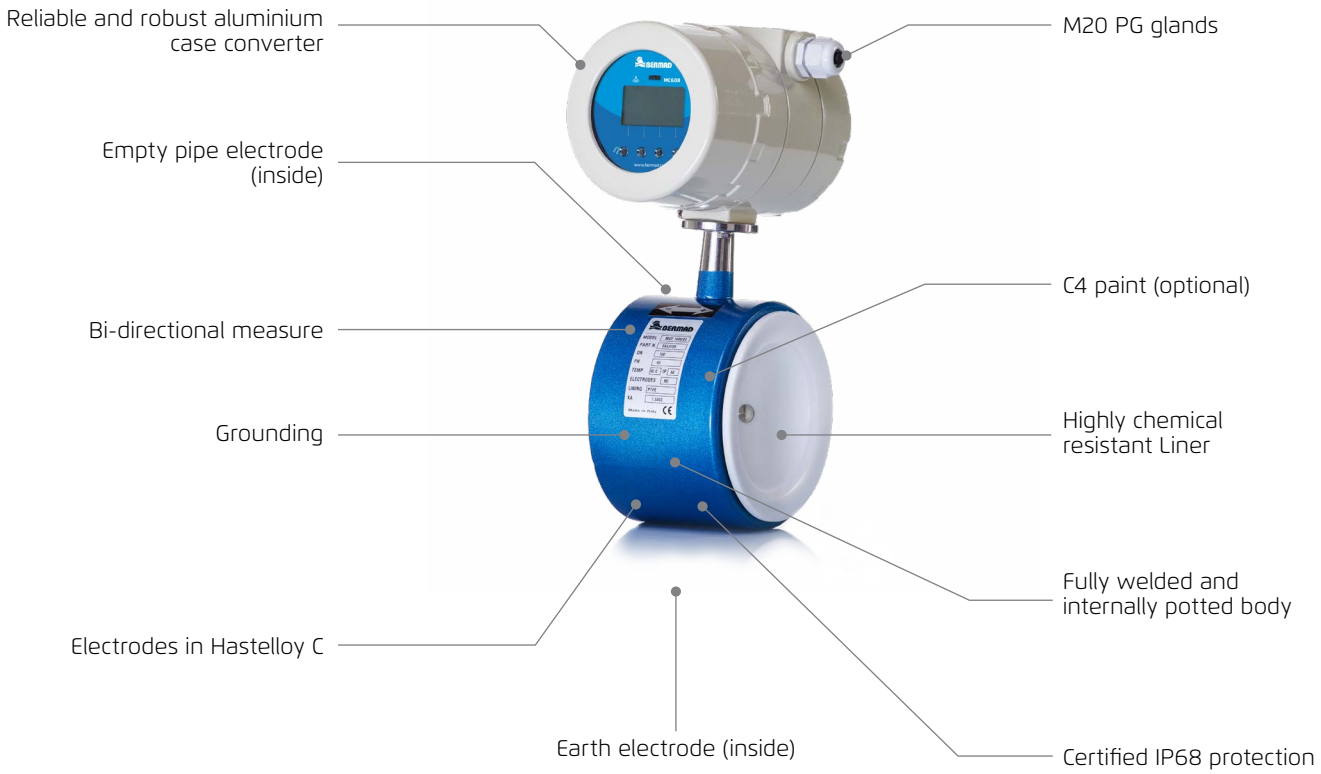
Flow - pressure – temperature: all at the same time: Add on modules of temperature and pressure readying make the MUT1000 with MC608 one of the most complete electromagnetic flowmeter available in the market

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

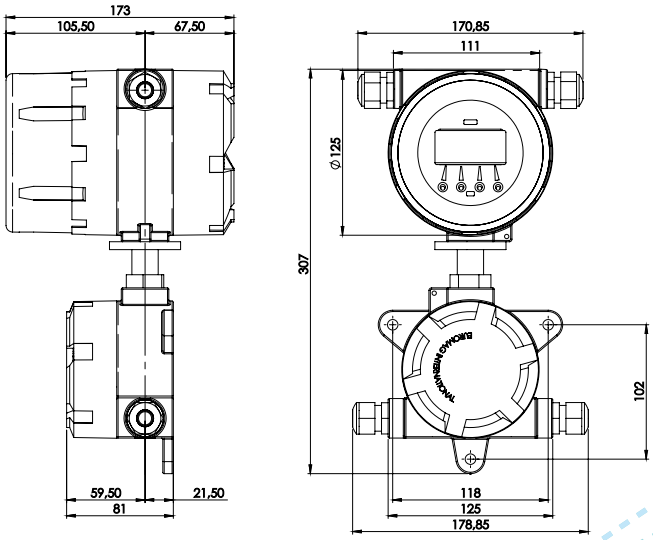
Features



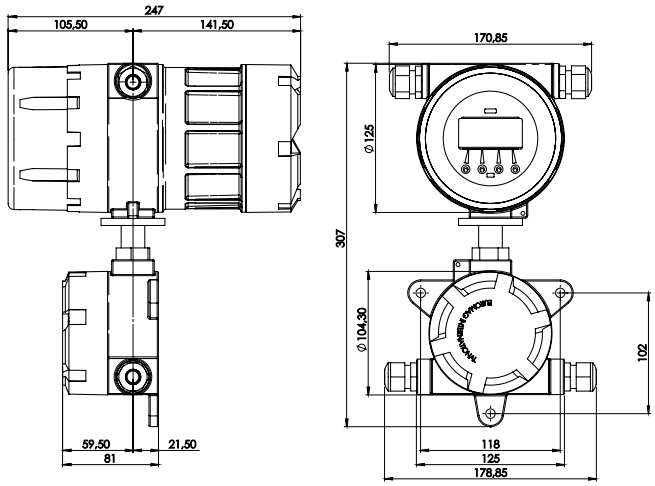
The electromagnetic flowmeter designed for the toughest applications

DS401-1-ENG

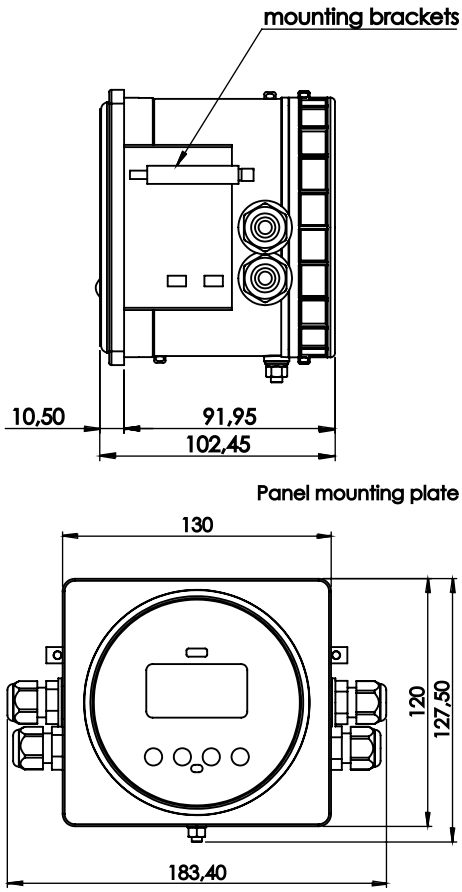
MC608A



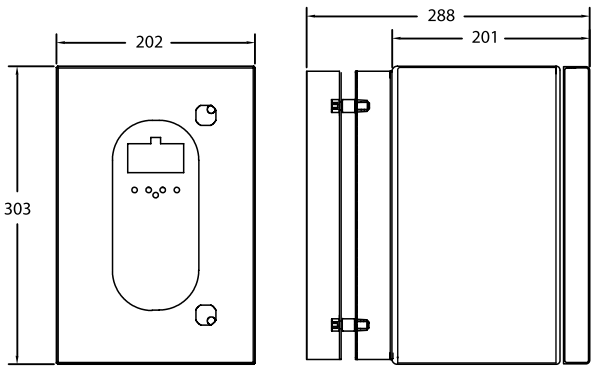
MC608B/R



MC608P



MC608I

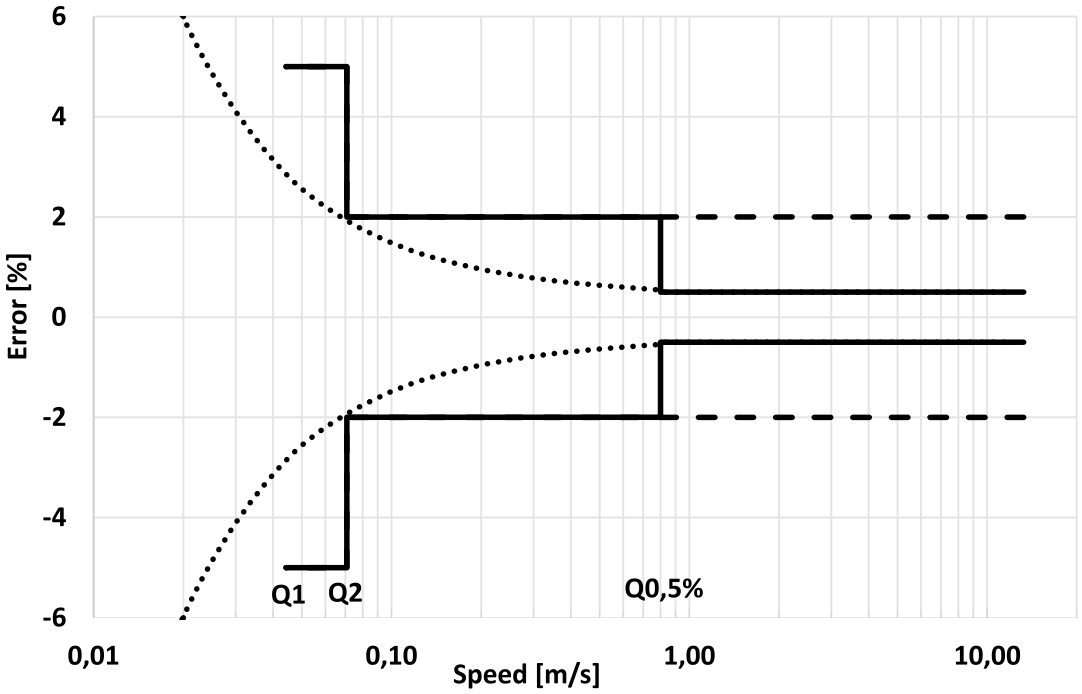


Specifications

Features		MC608A	MC608P	MC608B	MC608R	MC608I
Case		Aluminium IP68	Polyc. IP54	Aluminium IP68	Aluminium IP68	SS IP54
Power supply	90...264 Vac	√	√		√	√
	12/24 Vac/dc	√	√		√	√
	Battery powered supply		√	√		√
	Rechargeable battery + solar panel			√	√	√
Installation	Compact	√	√	√		
	Separate	max 100m	max 100m	max 30m	max 30m	max 100m
Signals I/O	Analogue output 4-20mA	√	√	√ loop pow.	**	√
	Pulse output	√	√	√	√	√
	Hart protocol*	√	√			
	Programmable digital output	√	√	**	***	√
	Active frequency digital output 0-10 kHz	√	√	**	***	√
Serial Communication	IrCOM interface	√	√	√	√	√
	RS 485 - MODBUS RTU	√	√	**	***	√
Display	Graphic LCD display 128x64 pixels, 50x25mm visual area, backlit white colour	√	√	√	√	√
Programming	With push buttons on board of converter, by Ir-COM interface or via RS485 and MODBUS RTU	√	√	√	√	√
Process Data logger	4 MB flash memory, 200.000 lines of data	√	√	√	√	√
Standards	Type approved OIML R49-1: 2013 - Class 2	√				
Temperature	Ambient: -20 ... +60 C° (-4 ... +140 F) Media -25 ... 80 C° (-13 ... +176 F) Storage -40 ... +70 C° (-22 ... +158 F)					
Flow units	ml, cl, dl, l, dal, hl, m3, in3, ft3, gal, USgal, bbl, oz + Custom value					
Add on modules	GSM/GPRS BERMAD Module Pressure (1) and temperature (2)					
Totalizers	5 (2 positive, 2 negative, 1 NET)					
Alarms and status	Status icon displayed and alarm logged in the datalogger					
Self-diagnostic	Alarms available: ▪ excitation failure ▪ empty pipe on the 4th electrode ▪ high temperature ▪ pulse overlapped ▪ measurement error					
External verification	Field verificator 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					

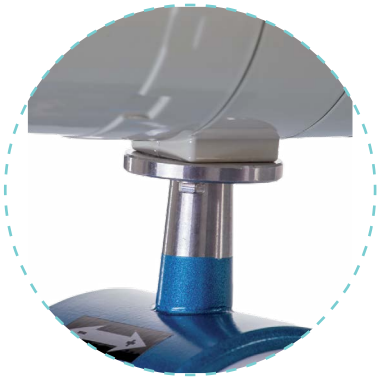
Measuring accuracy

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

Sensor diameter	Flow rate [m³/h]					Ratio Q3/ Q1
	DN					
	Min. Q1	Trans. Q2	Q0.5%	Perm. Q3	Overl. Q4	
DN25 - 1"	0.080	0.128	1.40	10.00	12.50	125
DN32 - 1¼"	0.080	0.128	2.30	10.00	12.50	125
DN40 - 1½"	0.128	0.205	3.60	16.00	20.00	125
DN 50 - 2"	0.200	0.320	5.65	25.00	31.25	125
DN 65 - 2½"	0.320	0.512	9.55	40.00	50.00	125
DN 80 - 3"	0.504	0.806	14.50	63.00	78.75	125
DN 100 - 4"	0.800	1.280	22.60	100.00	125.00	125
DN 125 - 5"	1.280	2.048	35.30	160.00	200.00	125
DN 150 - 6"	2.000	3.200	51.00	250.00	312.50	125
DN 200 - 8"	3.200	5.120	90.50	400.00	500.00	125
DN 250 - 10"	5.040	8.064	140.00	630.00	787.50	125
DN 300 - 12"	8.000	12.800	200.00	1.000.00	1.250.00	125



MUT1000EL general features

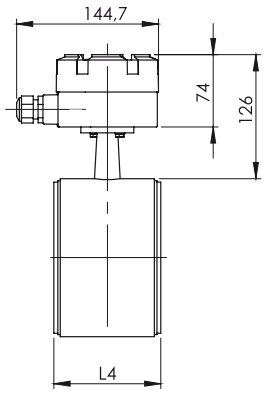
Available diameters	[mm]	25	40	50	65	80	100	125	150	200	250	300
	["]	1"	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"
Joints: coupling flanges		EN1092-1, ANSI 150, ANSI 300, ANSI 600, ANSI 900, DIN 2501, BS 4504, AS 2129 (TABLE D - E - F), AS 4087, ISO 7005-1, KS 10K										
Maximum pressure		40 bar for diameters < DN150						16 bar for diameters > DN200				
Internal lining and liquid temperature [1]		Internal lining						Liquid temperature				
		PTFE						Standard -40 /+130°C (up to +180° on request)				
		Ebonite						-40°C / +80°C				
Degree of protection		IP68 continuous immersion at a 1.5 m (EN 60529)										
Compatible converters		MC608 A/B/R/P/I										
Electric connections		Cable glands M20 x 1.5 + terminal block + sealing resin										

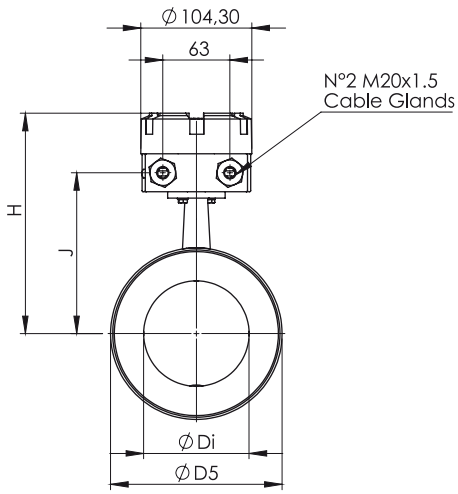
Weight of MUT1000EL sensors in the separate version without package

DN	[mm]	25	40	50	65	80	100	125	150	200	250	300
DN	["]	1"	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"
WEIGHT	[kg]	2.1	2.5	3.0	4.5	6.5	7.5	9.5	11.5	17	21	26

Applications

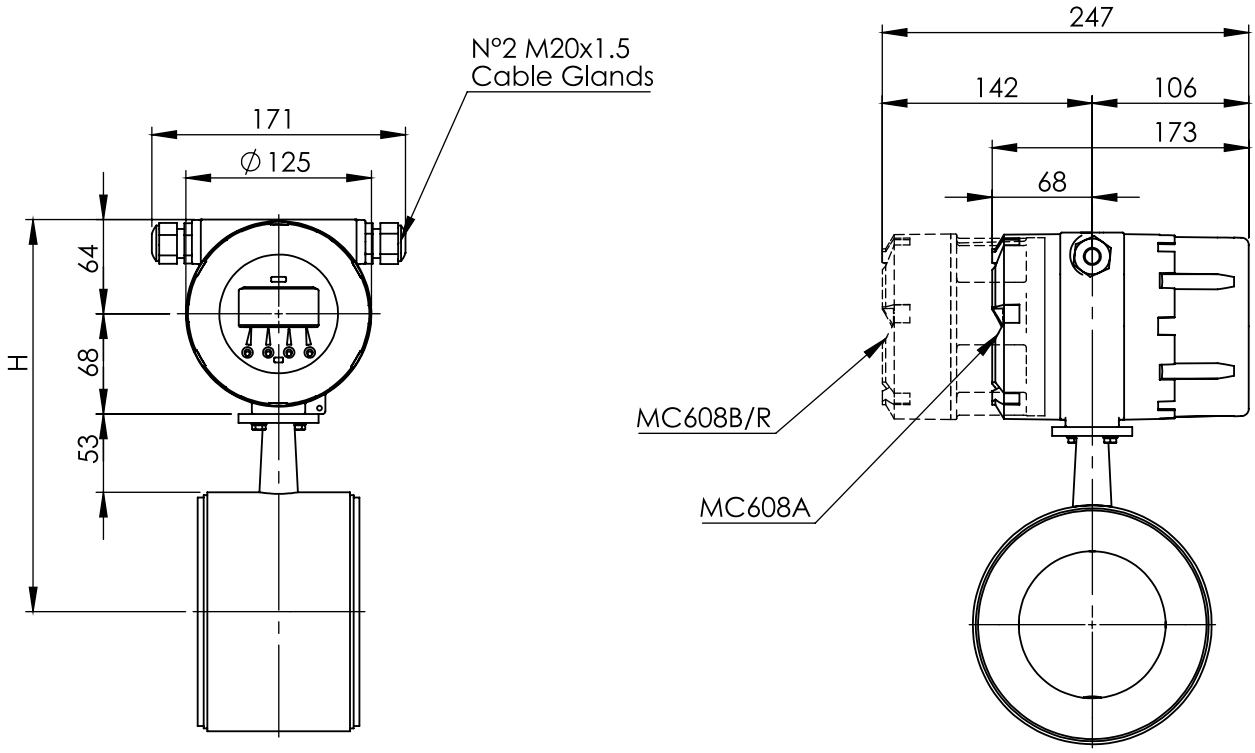
DN	L4	Di	D5	H	J
25	86	24	74	163	108
32	87	32	83	168	112
40	87	35	88	170	115
50	87	47	102	177	122
65	96	63	114	183	128
80	90	75	127	190	134
100	109	99	161	207	151
125	110	124	186	219	164
150	130	152	216	234	179
200	169	201	267	260	204
250	169	255	319	286	230
300	195	308	371	312	256





MUT1000EL - MC608A/B/R

DN	H
25	222
32	227
40	229
50	236
65	242
80	249
100	266
125	278
150	293
200	319
250	345
300	371



Applications

MUT1000 sensors are suitable for any on-line application. These sensors are typically used in the measure of potable or not potable water, industrial waste water, industrial process liquids, muds and concretes.

Flow rates chart

Sensor diameter	Flow rate [m^3/h]					Ratio Q3/ Q1
	DN					
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About BERMAD

BERMAD is a leading, privately-owned global company that designs, develops and manufactures tailor-made water & flow management solutions that include state-of-the-art hydraulic control valves, air valves and advanced metering solutions.

Founded in 1965, we have spent over 50 years interacting with the world's major end users, and accumulating knowledge and experience in multiple markets and industries. Today, we are recognized as a pioneer and established world-leading provider of water & flow management solutions that give our customers the unprecedented operational efficiency, and superior quality, durability and performance they need to meet the demanding challenges of the 21st century.

www.bermad.com

PCUAWE22-MUT1000-608 | October 2022