

BERMAD Meters

Merging monitoring & control



Battery Operated Electromagnetic flowmeter

MUT2200
MC406



 Bluetooth™



The MUT2200 with MC406 is a battery powered electromagnetic water meter for use in district metering areas (DMA), water abstraction, and custody transfer measurement of potable water (MI-001, OIML R49), irrigation, and many other applications. Unlike other water meters, the MUT2200 is a maintenance-free meter, offering a much wider range of flow, in a compact or remote mounted version. Thanks to the optimized flow profile, the MUT2200 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 Vericator 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 (MID-001 OIML R49 certified), within Class 1 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 (\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 MUT2300 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 IRCOM port to any pc, lap top or windows tablet.

Certifications and compliance: OIML R49-MID Class 1 (on request) / EX - IEC IECEx (on request and only separate version) / NSF ANSI61 (On model MUT2300US)

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

Features



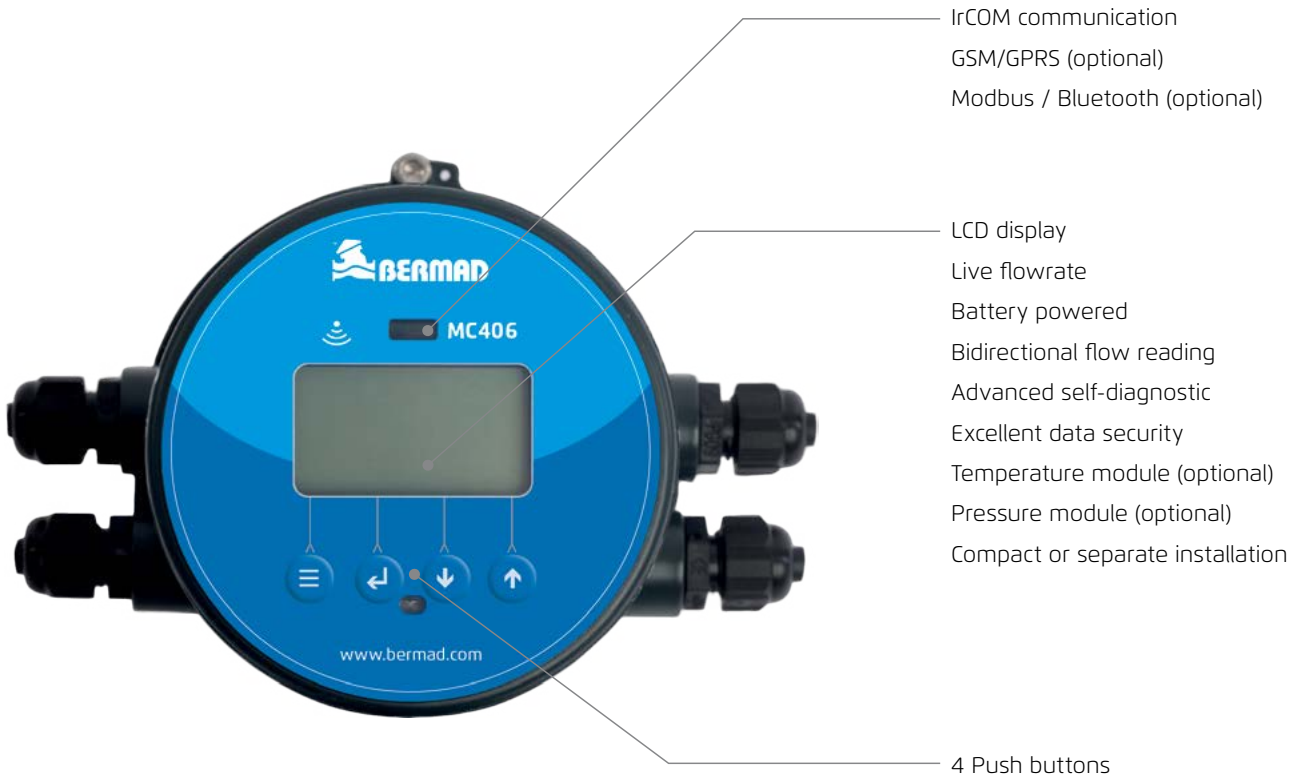
— The electromagnetic flowmeter designed for the toughest applications —



DS401-1-ENG



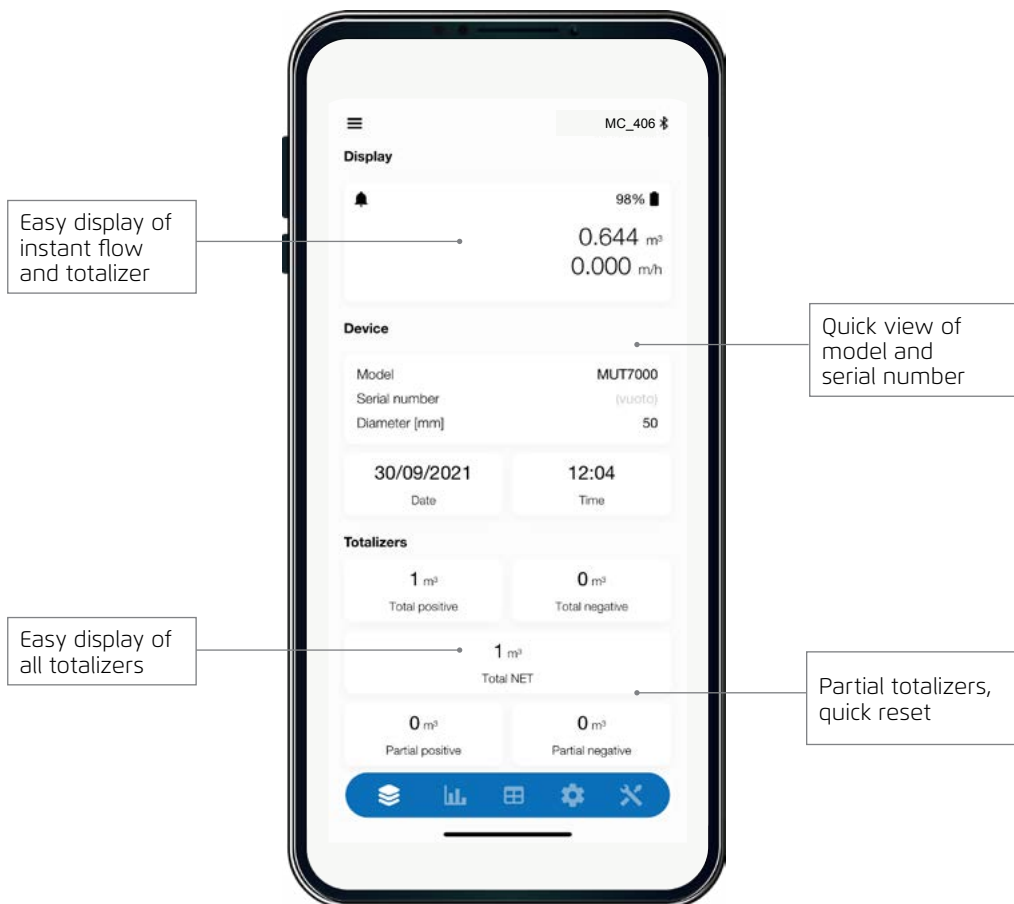
Features



Easy and intuitive interface

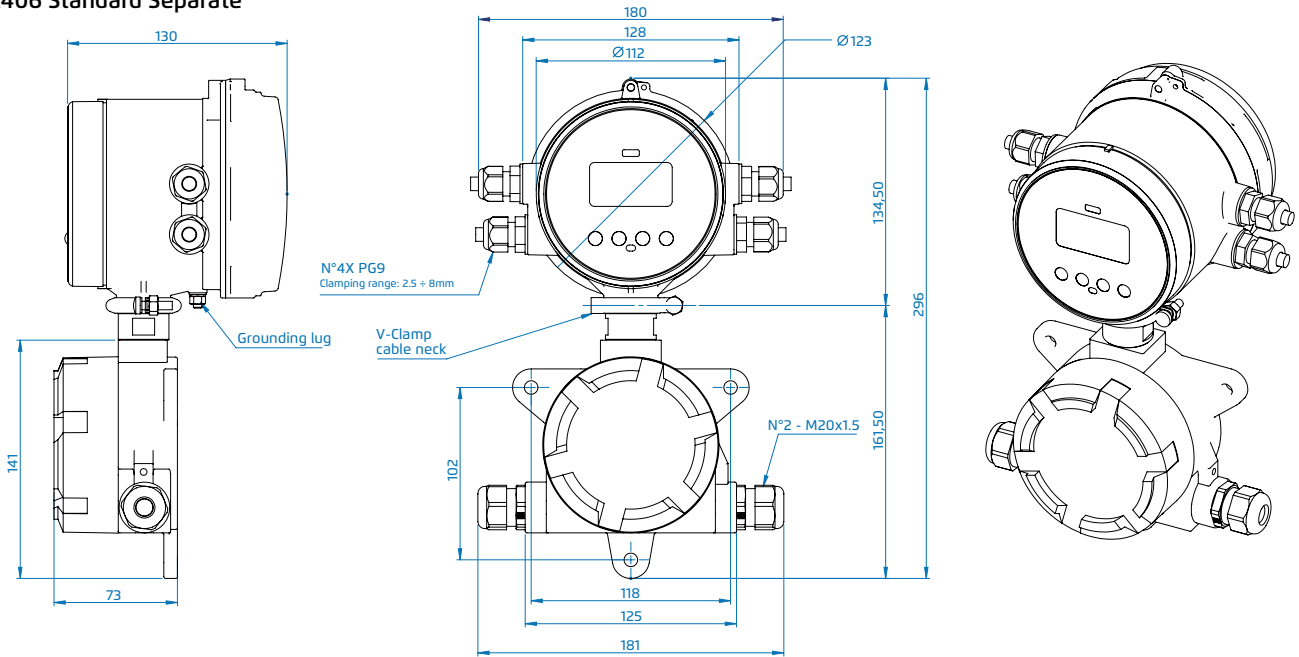
Everything you need from your flowmeter with a blink of an APP.

In a fast developing and interconnected world, data must be available and exchanged quick and easy. Mag-Net app is the Euromag solution.

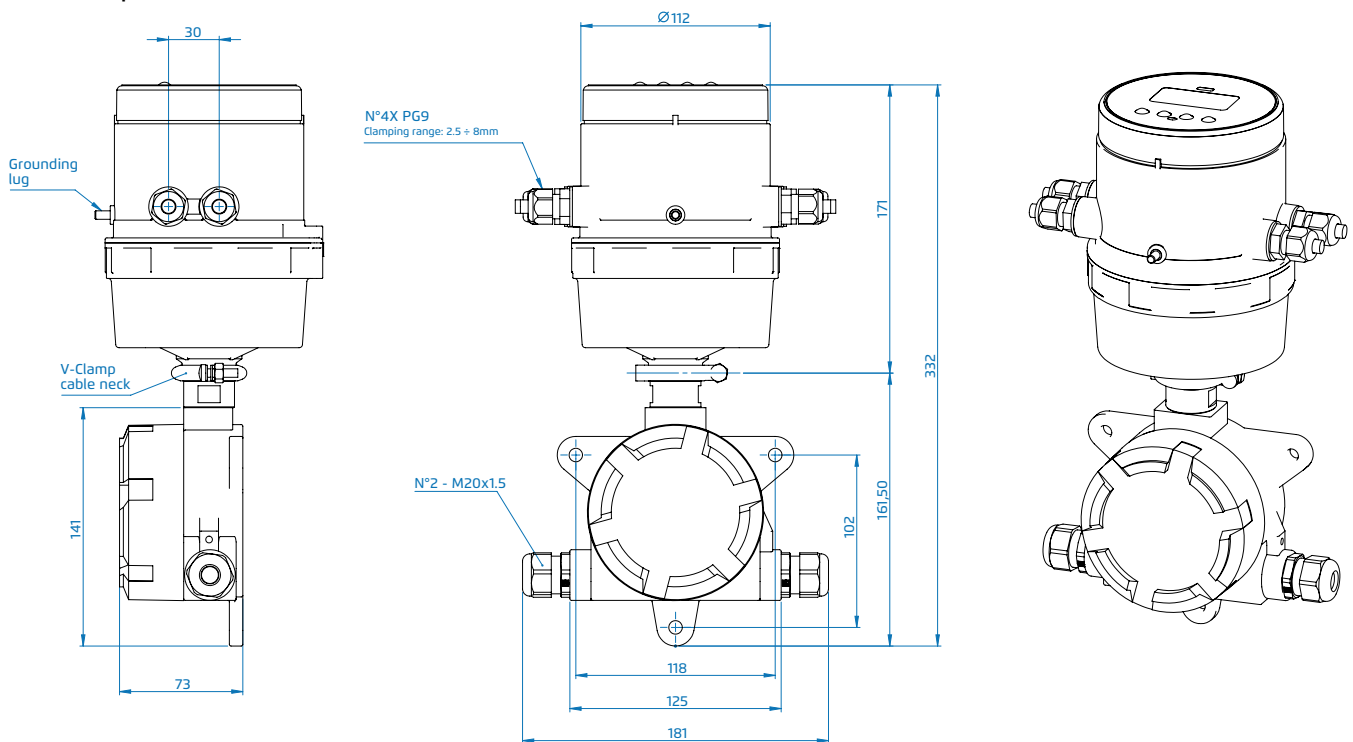


Overview Separate Converter

MC406 Standard Separate



MC406 Separate with GSM/GPRS



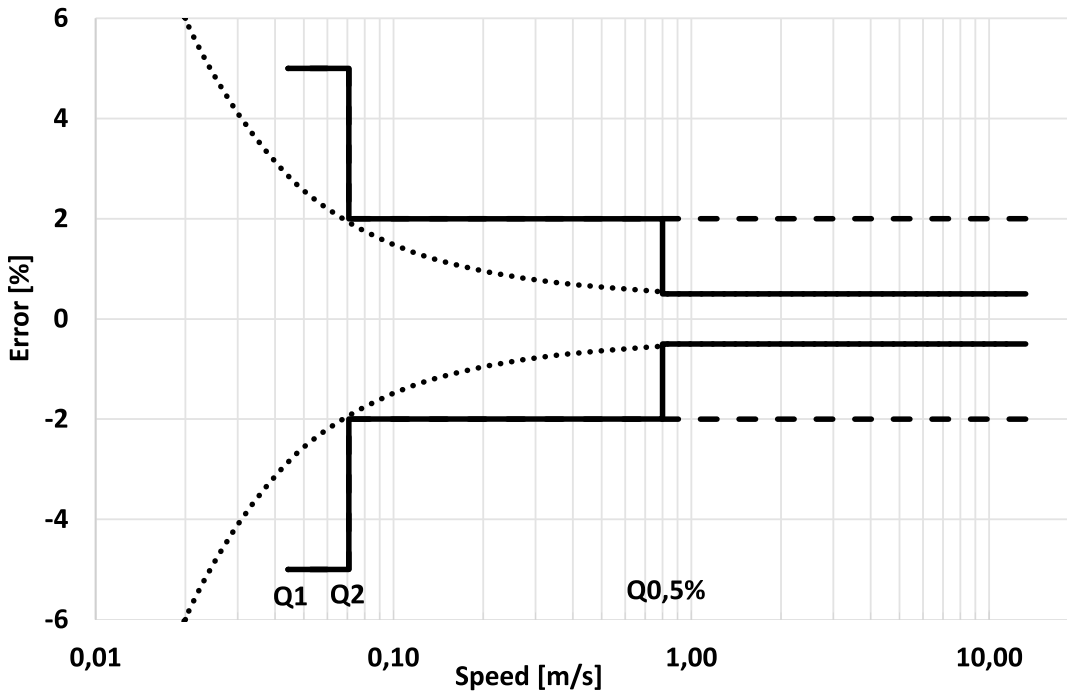
Transmitter type	Battery powered - 2 x D Cell 3.6 V * / 12-24VDC
Battery life	Lithium battery pack up to 10 years
Accuracy	0.2 % +/- 2 mm/s - insertion sensors 2% of rate +/- 2mm/s
Temperature	Ambient: -20 ... +60 C° (-4 ... +140 F) Media -25 ... 80 C° (-13 ... +176 F) Storage -40 ... +70 C° (-22 ... +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	Full bore up to DN 600 - Insertion meters
Flow velocity range	0.015 m/s up to 10 m/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
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)
Date and time	Yes
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: <ul style="list-style-type: none"> • 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

* Lithium batteries are subject to special transportation regulations according to United Nations "Regulation of Dangerous Good", UN 3090 and UN 3091. Special transport documentation is required to observe these regulations. This may influence both transport time and cost

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)



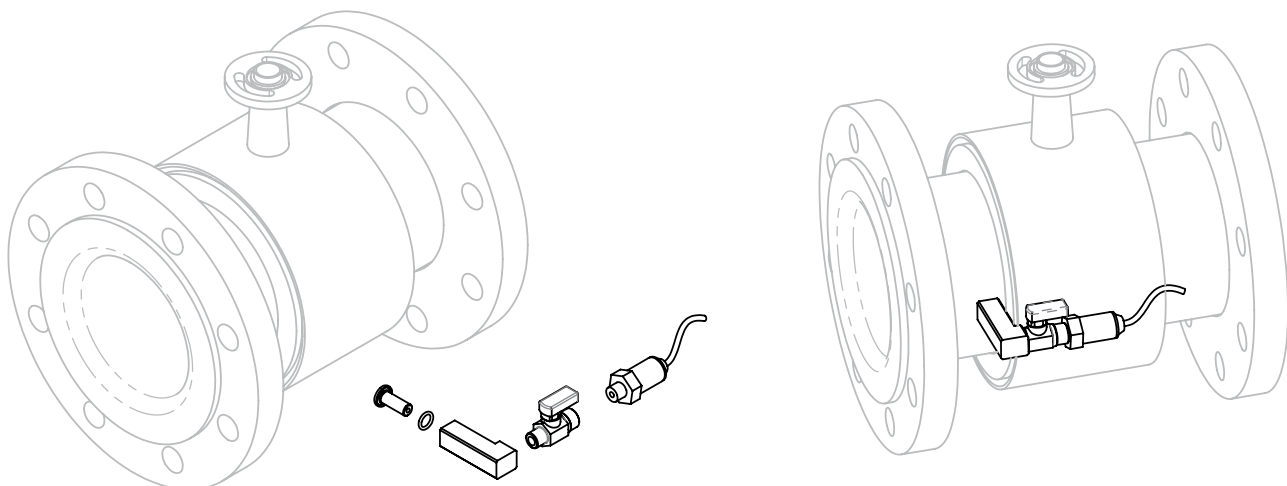
Flow rate

Sensor diameter	Flow rate [m³/h]					Ratio Q3/ Q1	Sensor diameter	Flow rate [m³/h]					Ratio Q3/ Q1
	DN							DN					
	Min. Q1	Trans. Q2	Q0.5%	Perm. Q3	Overl. Q4		Min. Q1	Trans. Q2	Q0.5%	Perm. Q3	Overl. Q4		
DN25 - 1"	0.080	0.128	1.40	10.00	12.50	125	DN450 - 18"	25	40	460	2.500	3.125	100
DN32 - 1¼"	0.080	0.128	2.30	10.00	12.50	125	DN500 - 20"	25	40	570	2.500	3.125	100
DN40 - 1½"	0.128	0.205	3.60	16.00	20.00	125	DN600 - 24"	50	80	820	4.000	5.000	80
DN 50 - 2"	0.200	0.320	5.65	25.00	31.25	125	DN700 - 28"	50	80	1.100	4.000	5.000	80
DN 65 - 2½"	0.320	0.512	9.55	40.00	50.00	125	DN800 - 32"	100	160	1.450	6.300	7.875	63
DN 80 - 3"	0.504	0.806	14.50	63.00	78.75	125	DN900 - 36"	100	160	1.840	6.300	7.875	63
DN 100 - 4"	0.800	1.280	22.60	100.00	125.00	125	DN1000 - 40"	200	320	2.270	10.000	12.500	50
DN 125 - 5"	1.280	2.048	35.30	160.00	200.00	125	DN1200 - 48"	320	512	3.270	16.000	20.000	50
DN 150 - 6"	2.000	3.200	51.00	250.00	312.50	125	DN1400 - 56"	500	800	4.440	25.000	31.250	50
DN 200 - 8"	3.200	5.120	90.50	400.00	500.00	125	DN1500 - 60"	800	1.280	5.100	40.000	50.000	50
DN 250 - 10"	5.040	8.064	140.00	630.00	787.50	125	DN1600 - 64"	1.260	2.016	5.800	63.000	78.750	50
DN 300 - 12"	8.000	12.800	200.00	1.000.00	1.250.00	125	DN1800 - 72"	2.000	3.200	7.350	100.000	125.000	50
DN 350 - 14"	12.800	20.480	280.00	1.600.00	2.000.00	125	DN2000 - 80"	3.200	5.120	9.100	160.000	200.000	50
DN 400 - 16"	12.800	20.480	360.00	1.600.00	2.000.00	125							

MUT2200EL general features

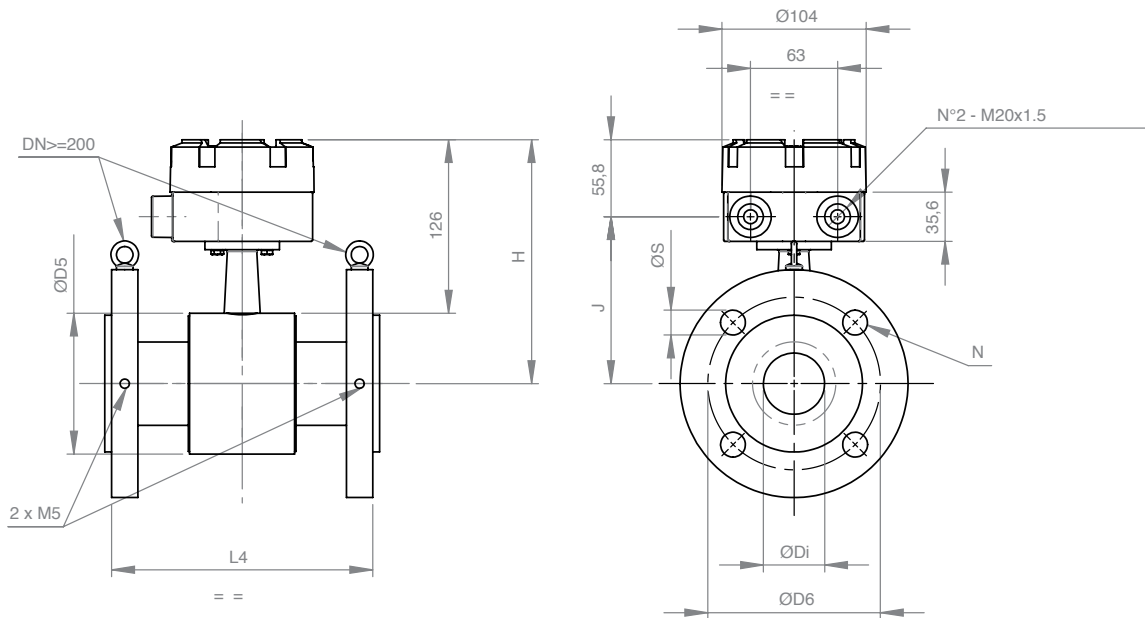
Flow tube material		AISI 304 (std), AISI 316																
Flanges material		Carbon steel painted (std), AISI 304, AISI 316																
Electrodes material		Electrodes material Hastelloy C (std), Hastelloy B, Titanium, Tantalio, Platinum																
Internal lining and liquid temperature		Internal lining								Liquid temperature								
		PTFE								Standard -40 /+130°C (up to +180° on request)								
		Ebonite								-40°C / +80°C								
Available Sizes		mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400
		Inches	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"
		mm	450	500	600	700	800	900	1000	1200	1300	1400	1500	1600	1700	1800	2000	
		Inches	18"	20"	24"	28"	32"	36"	40"	48"	52"	56"	60"	64"	68"	72"	80"	
Flange standards 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																
Protection Degree		IP68 1.5 m continuous immersion (EN 60529)																
Electrical connections		Cable glands M20 x 1.5 + terminal block + sealing resin																

Pressure port integrated



Applications

MUT2200EL 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.



MUT 2200 EL PN10								
DN	D5	L4	J	Di	D6	N	S	H
15	84	200(+0/-3)	112.2	11.3	65	4	14	168
20	84	200(+0/-3)	112.2	16.9	75	4	14	168
25	74	200(+0/-3)	107.2	23.7	85	4	14	163
32	83	200(+0/-3)	111.7	31.8	100	4	18	167.5
40	88	200(+0/-3)	114.2	37.3	110	4	18	170
50	102	200(+0/-3)	121.2	47.3	125	4	18	177
65	114	200(+0/-3)	127.2	63.1	145	4	18	183
80	127	200(+0/-3)	133.7	74.9	160	4	18	189.5
100	161	250(+0/-3)	150.7	97	180	8	18	206.5
125	187	250(+0/-3)	163.7	122	210	8	18	219.5
150	210	300(+0/-3)	175.2	148	240	8	22	231
200	261	350(+0/-3)	200.7	195	295	8	22	256.5
250	319	450(+0/-5)	229.7	245	350	12	22	285.5
300	371	500(+0/-5)	255.7	296	400	12	22	311.5
350	404	550(+0/-5)	272.2	325.6	460	16	22	328
400	455	600(+0/-5)	297.7	374.4	515	16	25	353.5

MUT 2200 EL PN16								
DN	D5	L4	J	Di	D6	N	S	H
15	84	200(+0/-3)	112.2	11.3	65	4	14	168
20	84	200(+0/-3)	112.2	16.9	75	4	14	168
25	74	200(+0/-3)	107.2	23.7	85	4	14	163
32	83	200(+0/-3)	111.7	31.8	100	4	18	167.5
40	88	200(+0/-3)	114.2	37.3	110	4	18	170
50	102	200(+0/-3)	121.2	47.3	125	4	18	177
65	114	200(+0/-3)	127.2	63.1	145	4	18	183
80	127	200(+0/-3)	133.7	74.9	160	8	18	189.5
100	161	250(+0/-3)	150.7	97	180	8	18	206.5
125	187	250(+0/-3)	163.7	122	210	8	18	219.5
150	210	300(+0/-3)	175.2	148	240	8	22	231
200	261	350(+0/-3)	200.7	195	295	12	22	256.5
250	319	450(+0/-5)	229.7	245	350	12	25	285.5
300	371	500(+0/-5)	255.7	308	400	12	25	311.5
350	404	550(+0/-5)	272.2	339.6	470	16	25	328
400	455	600(+0/-5)	297.7	390.4	525	16	30	353.5

MUT 2200 EL PN25								
DN	D5	L4	J	Di	D6	N	S	H
15	84	200(+0/-3)	112.2	11.3	65	4	14	168
20	84	200(+0/-3)	112.2	16.9	75	4	14	168
25	74	200(+0/-3)	107.2	23.7	85	4	14	163
32	83	200(+0/-3)	111.7	31.8	100	4	18	167.5
40	88	200(+0/-3)	114.2	37.3	110	4	18	170
50	102	200(+0/-3)	121.2	47.3	125	4	18	177
65	114	200(+0/-3)	127.2	63.1	145	8	18	183
80	127	200(+0/-3)	133.7	74.9	160	8	18	189.5
100	161	250(+0/-3)	150.7	97	190	8	22	206.5
125	187	250(+0/-3)	163.7	122	220	8	25	219.5
150	210	300(+0/-3)	175.2	148	250	8	25	231
200	261	350(+0/-3)	200.7	201	310	12	25	256.5
250	319	450(+0/-5)	229.7	255	370	12	30	285.5
300	371	500(+0/-5)	255.7	306	430	16	30	311.5
350	404	550(+0/-5)	272.2	337.6	490	16	33	328
400	455	600(+0/-5)	297.7	386.4	550	16	36	353.5

MUT 2200 EL PN 40								
DN	D5	L4	J	Di	D6	N	S	H
15	84	200(+0/-3)	112.2	11.3	65	4	14	168
20	84	200(+0/-3)	112.2	16.9	75	4	14	168
25	74	200(+0/-3)	107.2	23.7	85	4	14	163
32	83	200(+0/-3)	111.7	31.8	100	4	18	167.5
40	88	200(+0/-3)	114.2	37.3	110	4	18	170
50	102	200(+0/-3)	121.2	47.3	125	4	18	177
65	114	200(+0/-3)	127.2	63.1	145	8	18	183
80	127	200(+0/-3)	133.7	74.9	160	8	18	189.5
100	161	250(+0/-3)	150.7	99	190	8	22	206.5
125	187	250(+0/-3)	163.7	124	220	8	25	219.5
150	210	300(+0/-3)	175.2	152	250	8	25	231
200	261	350(+0/-3)	200.7	199	320	12	30	256.5
250	319	450(+0/-5)	229.7	251	385	12	33	285.5
300	371	500(+0/-5)	255.7	302	450	16	33	311.5
350	404	550(+0/-5)	272.2	333.6	510	16	36	328
400	455	600(+0/-5)	297.7	382.4	585	16	39	353.5

MUT 2200 EL ANSI 150								
DN	D5	L4	J	Di	D6	N	S	H
15	84	200(+0/-3)	112.2	11.3	60.3	4	16	168
20	84	200(+0/-3)	112.2	16.9	69.8	4	16	168
25	74	200(+0/-3)	107.2	23.7	79.4	4	15.9	163
32	83	200(+0/-3)	111.7	31.8	88.9	4	15.9	167.5
40	88	200(+0/-3)	114.2	37.3	98.4	4	15.9	170
50	102	200(+0/-3)	121.2	47.3	120.6	4	19	177
65	114	200(+0/-3)	127.2	63.1	139.7	4	19	183
80	127	200(+0/-3)	133.7	74.9	152.4	4	19	189.5
100	161	250(+0/-3)	150.7	97	190.5	8	19	206.5
125	187	250(+0/-3)	163.7	122	215.9	8	22.2	219.5
150	210	300(+0/-3)	175.2	148	241.3	8	22.2	231
200	261	350(+0/-3)	200.7	195	298.4	8	22.2	256.5
250	319	450(+0/-5)	229.7	245	361.9	12	25.4	285.5
300	371	500(+0/-5)	255.7	308	431.8	12	25.5	311.5
350	404	550(+0/-5)	272.2	337.6	476.2	12	28.6	328
400	455	600(+0/-5)	297.7	388.4	539.7	16	28.6	353.5

MUT 2200 EL ANSI 300								
DN	D5	L4	J	Di	D6	N	S	H
15	84	200(+0/-3)	112.2	11.3	66.7	4	16	168
20	84	200(+0/-3)	112.2	16.9	82.5	4	19	168
25	74	200(+0/-3)	107.2	23.7	88.9	4	19	163
32	83	200(+0/-3)	111.7	31.8	98.4	4	19	167.5
40	88	200(+0/-3)	114.2	37.3	114.3	4	22.2	170
50	102	200(+0/-3)	121.2	47.3	127	8	19	177
65	114	200(+0/-3)	127.2	63.1	149.2	8	22.2	183
80	127	200(+0/-3)	133.7	74.9	168.3	8	22.2	189.5
100	161	250(+0/-3)	150.7	105	200	8	22.2	206.5
125	187	250(+0/-3)	163.7	122	234.9	8	22.2	219.5
150	210	300(+0/-3)	175.2	150	269.9	12	22.2	231
200	261	350(+0/-3)	200.7	197	330.2	12	25.4	256.5
250	319	450(+0/-5)	229.7	249	387.3	16	28.6	285.5
300	371	500(+0/-5)	255.7	300	450.8	16	31.7	311.5
350	404	550(+0/-5)	272.2	329.6	514.3	20	31.7	328
400	455	600(+0/-5)	297.7	378.4	571.5	20	34.9	353.5

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.



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