

BERMAD Meters

Merging monitoring & control



AC powered, zero D requirement Electromagnetic Flowmeter

MUT2300
MC608



The MUT2300 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 (OIML R49), irrigation, and many other applications. Unlike other water meters, the MUT2300 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 MUT2300 can be installed virtually anywhere without straight inlet or outlet runs, behind pipe bends, slide valves or a reduction in the pipe. Its measuring tube is in fact specifically designed to enable a stable measurement even at the lowest flow rates, maintaining a neglectable pressure loss in all its range. With optional pressure and temperature sensors, GSM/GPRS integrated modem and 12...24Vdc power source, the meter is the perfect solution for leak detection, and 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
- Overnight applications with very low flow rate
- Industrial process liquids, muds and concretes
- Installation in small places without straight distances
- Leak detection and monitoring
- 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 1 accuracy

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

U0-D0: Zero upstream and downstream distances (OIML R49 certified)

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:

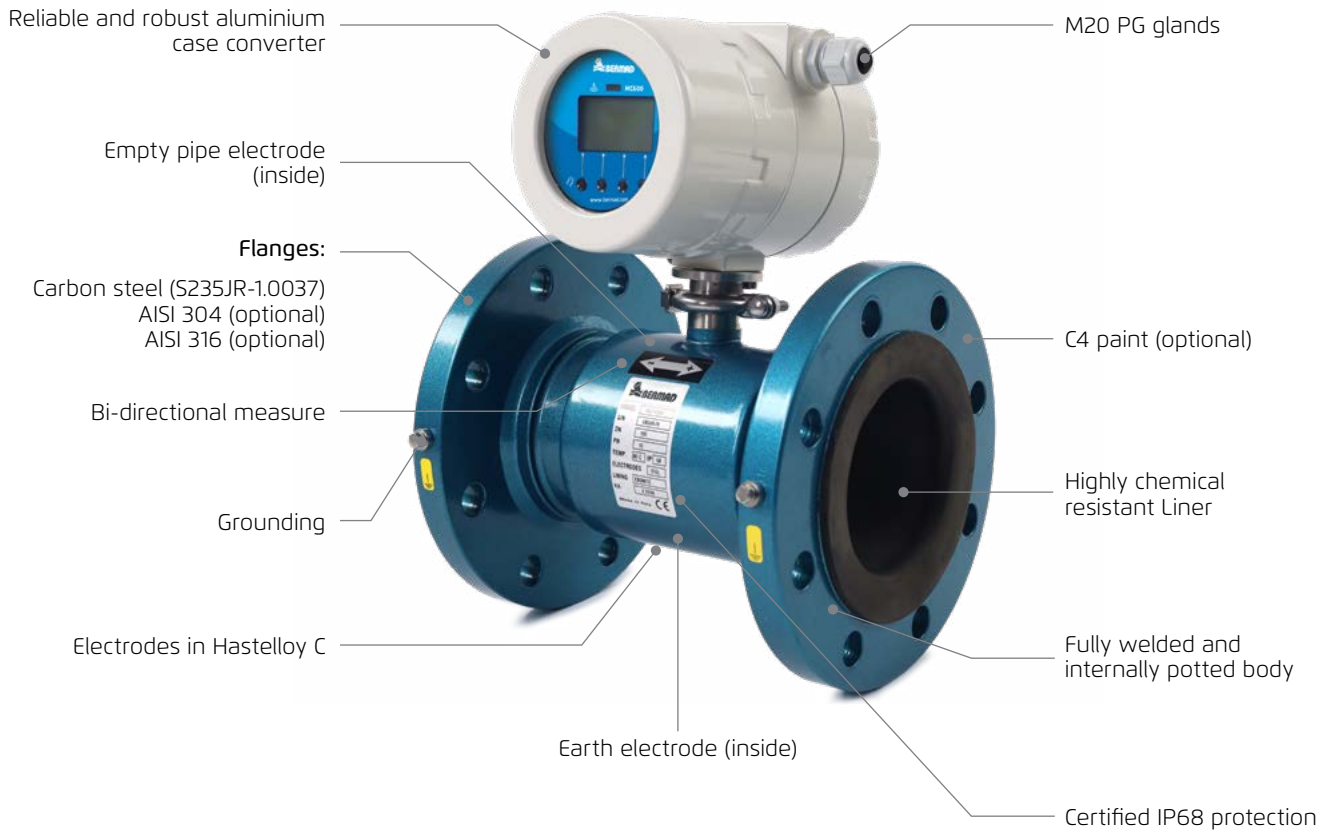
Add on modules of temperature and pressure readying make the MUT2300 with MC608 one of the most complete electromagnetic flowmeter available in the market

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 MUT2200US)

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

Features



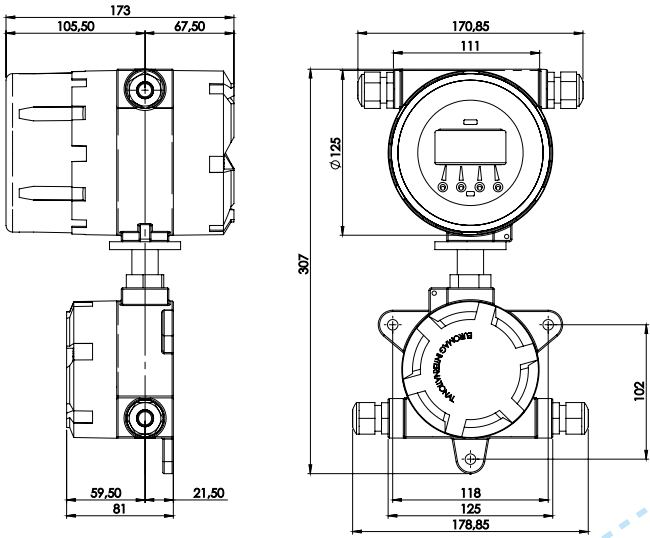
— The electromagnetic flowmeter designed for the toughest applications —



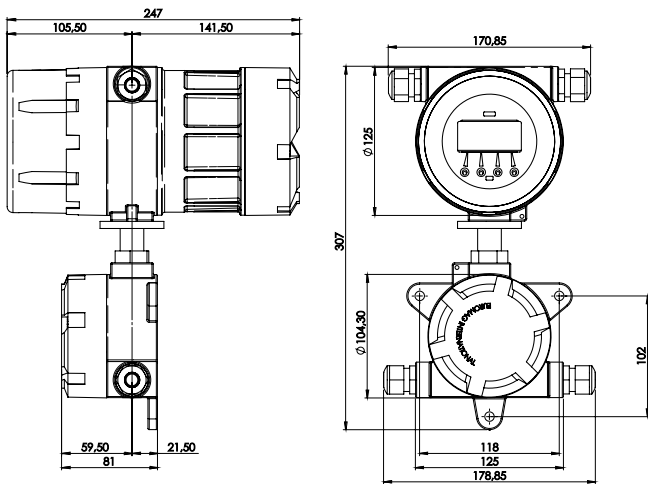
DS401-1-ENG



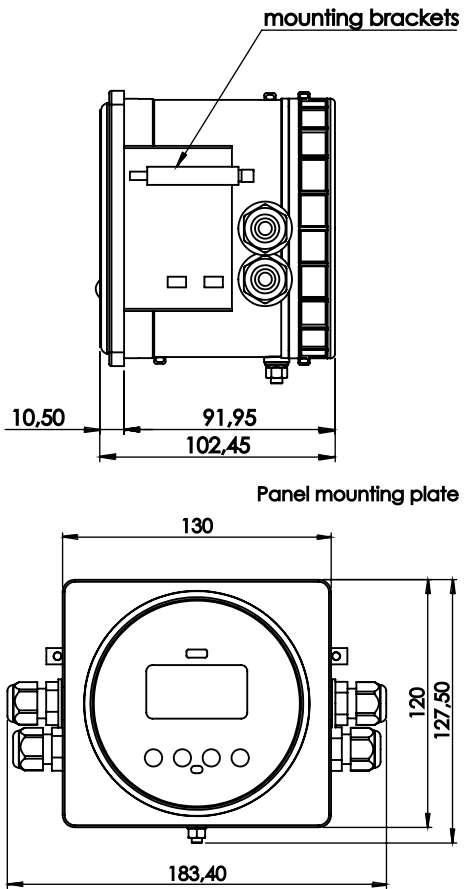
MC608A



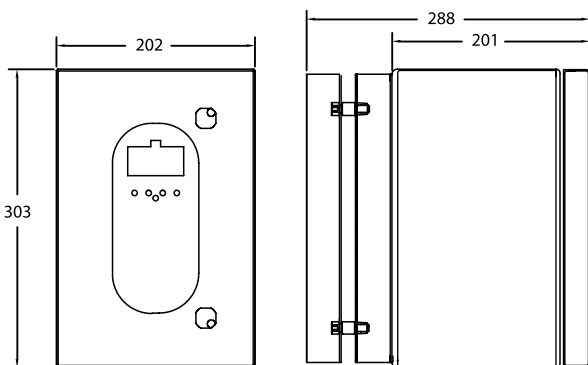
MC608B/R



MC608P



MC608I

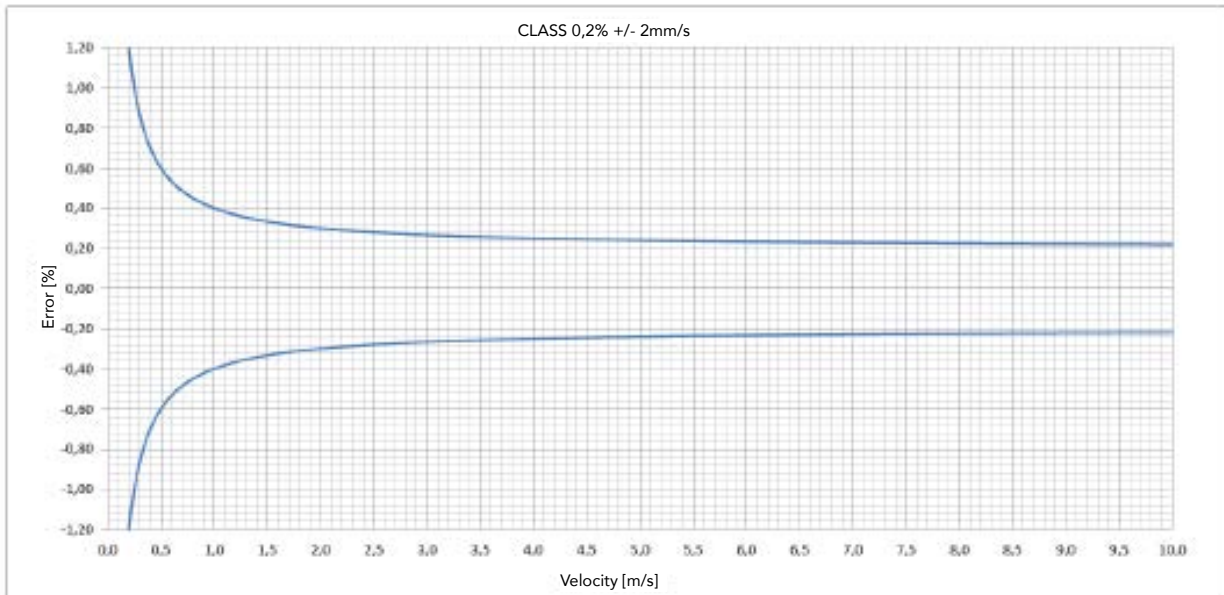


Specifications

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 0-10kHz	√	√	**	***	√
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: <ul style="list-style-type: none"> ■ excitation failure ■ empty pipe on the 4th electrode ■ high temperature ■ pulse overlapped ■ measurement error 					
External verification	Field verifier 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

Pipe size	2" 50mm	2½" 65mm	3" 80mm	4" 100mm	5" 125mm	6" 150mm	8" 200mm	10" 250mm	12" 300mm
Max flow rate (gallons/minute)	137,59	220,14	346,76	550,36	880,57	1376	3467	5503	5503
min Flow Rate (gallons/minute)	0,55	0,88	1,39	2,2	3,52	5,5	13,87	22	35,22
Max Flow Rate (Liters/Second)	8,68	13,88	21,8	34,7	55,51	86,81	218,73	347	347
min Flow Rate (Liters/Second)	0,034	0,055	0,087	0,13	0,22	0,34	0,87	1,38	2,22

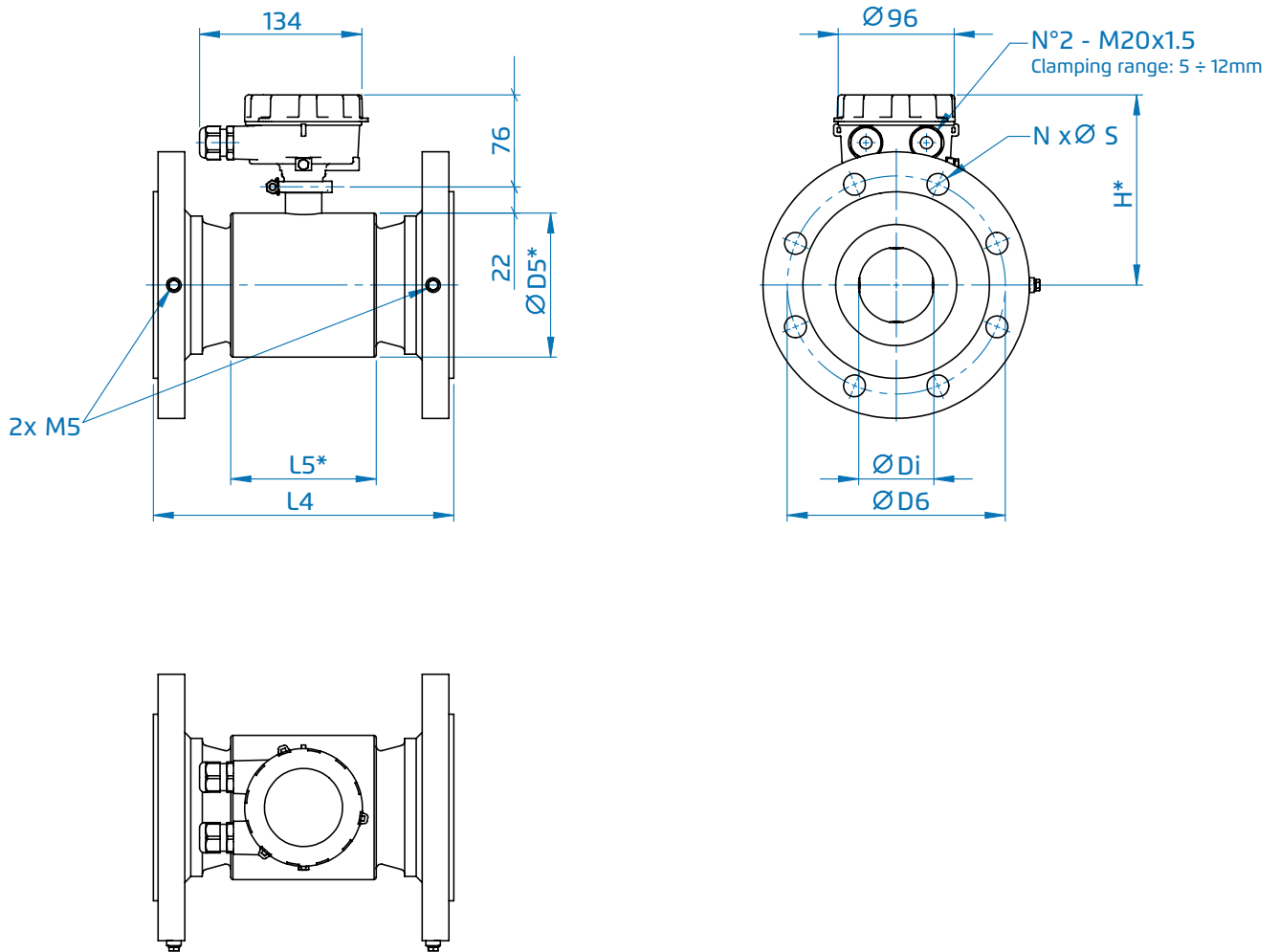
*NOTE: The indicated low flowrate is at factory settings. Lower flowrates can be achieved modifying the cut off filter

Specifications

Pipe sizes inches/mm	2", 2½", 3", 4", 5", 6", 8", 10", 12" / 50, 65, 80, 100, 125, 150, 200, 250, 300
Flanges Connections Available	EN1092-1 PN 10/16, ANSI 150, AS 2129 (table D, E, F), AS 4087, KS10K, Others on request
Pressure	21 bar - 305 psi
Temperature	Operating: -104°F/+176°F (-40°C/+80°C) Storage: -22°F/+158°F (-30...+70°C)
Accuracy	0,2% +/- 2mm/s • 0,2% +/- 0.08inch/s
Linear Material	Hard rubber (Ebonite)
Electrodes Materials	AISI316L (standard), Hastelloy C, Hastelloy B, Titanium, Tantalum, Platinum
Protection Degree	IP68 (EN 60529) permanents submersion at 1,5m (4,92ft)
Pressure Drop Class and Installation Conditions	DN≤80 ΔP10 (<0,10 bar) • DN≥100 ΔP16 (<0,16 bar) / ODN upstream - ODN downstream
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
Conformity	EMC: EN 61010 - LVD: EN 61326 ; EN/IEC 60529 IP68
Flow Units	m, m³, l, ML, ft3, GAL, Aft, Ain, BBL
Outputs	2 pulses passive outputs (1 programmable as alarm), individual galvanically isolated - clean contact Maximum load +/- 35V DC, 100 mA short circuit protected. 4...20mA loop powered optional. RS485 Modbus output optional
Communication	Integrated Euromag IrCOM interface. Bluetooth module optional
Datalogging	100,000 lines of data with a frequency of log between 1 minute and 120 minutes (default 15 minutes)
Transmitter Type	Battery powered - 2 x D Cell 3,6 V * - 12/24Vdc optional
Battery life	Lithium battery pack up to 10 years / GSM battery life up to 10 years
Add on modules	GSM/GPRS Euromag Module Pressure (up to 1 sensor) and temperature (up to 2 sensors) Energy metering ready
Custody transfer	Type approved OIML R49-1 2013 / EN14154 MID EN-ISO 4064 - Certificate n. T10713 - Class 1 & 2
Totalizers	5 (2 positive, 2 negative and 1 net)
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 ■ high temperature ■ pulse overlapped ■ empty pipe on the measuring electrodes ■ empty pipe on the 4th electrode ■ high voltage supply ■ wet electronic board ■ low battery
External verification	Field vericator 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 - Live data recording

* 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

MUT2300 - Separate



MUT2300 - EN 1092 / PN 16

DN	D5	L4	J	Di	D6	N	S	H
50	85	200 (+0/-3)	87,35	30,4	125	4	18	114,5
65	85	200 (+0/-3)	87,35	34,3	145	8	18	114,5
80	103	200 (+0/-3)	96,35	46,3	160	8	18	123,5
100	118	250 (+0/-3)	103,85	62,1	180	8	18	131
125	172	250 (+0/-3)	130,85	74,9	210	8	18	158
150	163	300 (+0/-3)	126,35	100	240	8	22	153,5
200	255	350 (+0/-3)	172,35	154,3	295	12	22	199,5
250	312	450 (+0/-5)	200,85	205	355	12	26	228
300	375	500 (+0/-5)	232,35	259	410	12	26	259,5

MUT2300 - ANSI 150

DN	D5	L4	J	Di	D6	N	S	H
2" - (DN 50)	85	200 (+0/-3)	87,35	30,4	120,6	4	19,0	114,5
2½" - (DN 65)	85	200 (+0/-3)	87,35	34,3	139,7	4	19,0	114,5
3" - (DN 80)	103	200 (+0/-3)	96,35	46,3	152,4	4	19,0	123,5
4" - (DN 100)	118	250 (+0/-3)	103,85	62,1	190,5	8	19,0	131
5" - (DN 125)	172	250 (+0/-3)	130,85	74,9	215,9	8	22,2	158
6" - (DN 150)	163	300 (+0/-3)	126,35	100	241,3	8	22,2	153,5
8" - (DN 200)	255	350 (+0/-3)	172,35	154,3	298,4	8	22,2	199,5
10" - (DN 250)	312	450 (+0/-5)	200,85	205	361,9	12	25,4	228
12" - (DN 300)	375	500 (+0/-5)	232,35	259	431,8	12	25,5	259,5

MUT2300 - AS 2129 / Table D

DN	D5	L4	J	Di	D6	N	S	H
50	85	200 (+0/-3)	87,35	30,4	114	4	18	114,5
65	85	200 (+0/-3)	87,35	34,3	127	4	18	114,5
80	103	200 (+0/-3)	96,35	46,3	146	4	18	123,5
100	118	250 (+0/-3)	103,85	62,1	178	4	18	131
125	172	250 (+0/-3)	130,85	74,9	210	8	18	158
150	163	300 (+0/-3)	126,35	100	235	8	18	153,5
200	255	350 (+0/-3)	172,35	154,3	292	8	18	199,5
250	312	450 (+0/-5)	200,85	205	356	8	22	228
300	375	500 (+0/-5)	232,35	259	406	12	22	259,5

MUT2300 - AS 2129 / Table E

DN	D5	L4	J	Di	D6	N	S	H
50	85	200 (+0/-3)	87,35	30,4	114	4	18	114,5
65	85	200 (+0/-3)	87,35	34,3	127	4	18	114,5
80	103	200 (+0/-3)	96,35	46,3	146	8	18	123,5
100	118	250 (+0/-3)	103,85	62,1	178	8	18	131
125	172	250 (+0/-3)	130,85	74,9	210	8	18	158
150	163	300 (+0/-3)	126,35	100	235	8	22	153,5
200	255	350 (+0/-3)	172,35	154,3	292	8	22	199,5
250	312	450 (+0/-5)	200,85	205	356	12	22	228
300	375	500 (+0/-5)	232,35	259	406	12	26	259,5

MUT2300 - AS 4087 / PN 16

DN	D5	L4	J	Di	D6	N	S	H
50	85	200 (+0/-3)	87,35	30,4	114	4	18	114,5
65	85	200 (+0/-3)	87,35	34,3	127	4	18	114,5
80	103	200 (+0/-3)	96,35	46,3	146	8	18	123,5
100	118	250 (+0/-3)	103,85	62,1	178	4	18	131
125	172	250 (+0/-3)	130,85	74,9	210	8	18	158
150	163	300 (+0/-3)	126,35	100	235	8	18	153,5
200	255	350 (+0/-3)	172,35	154,3	292	8	18	199,5
250	312	450 (+0/-5)	200,85	205	356	8	22	228
300	375	500 (+0/-5)	232,35	259	406	12	22	259,5

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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