



EUROMAG INTERNATIONAL

Measure > Sense > Innovate

MUT2300 MC406

Electromagnetic
Flowmeter



Bluetooth™



DS402-4-EN



The MUT2300 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 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

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

Up to 10 years of battery life

High-efficiency, technologically advanced battery powered converter

U0-D0

Zero upstream and downstream distances (MID-001 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 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



Features



IrCOM communication
GSM/GPRS Euromag (optional)
Modbus bluetooth (optional)

LCD display
Live flowrate
Battery powered
Bidirectional flow reading
Advanced self-diagnostic
Excellent data security
Temperature module (optional)
Pressure module (optional)
Compact or separate

4 Push buttons



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.



Easy display of instant flow and totalizer



Quick view of model and serial number

Easy display of all totalizers

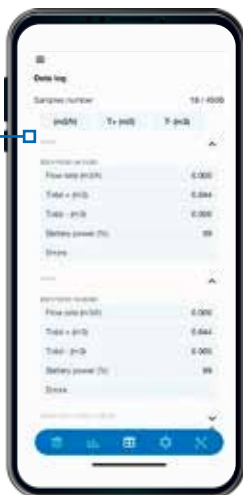
Partial totalizers, quick reset

View the instantaneous flow in the intuitive graph



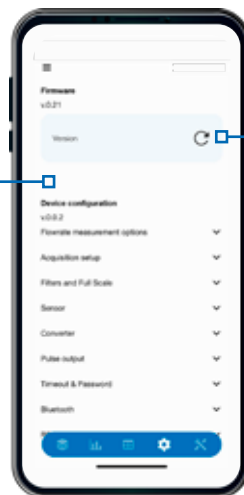
Immediate view of Max, Min flowrate of the system

Download the data log and display all the information



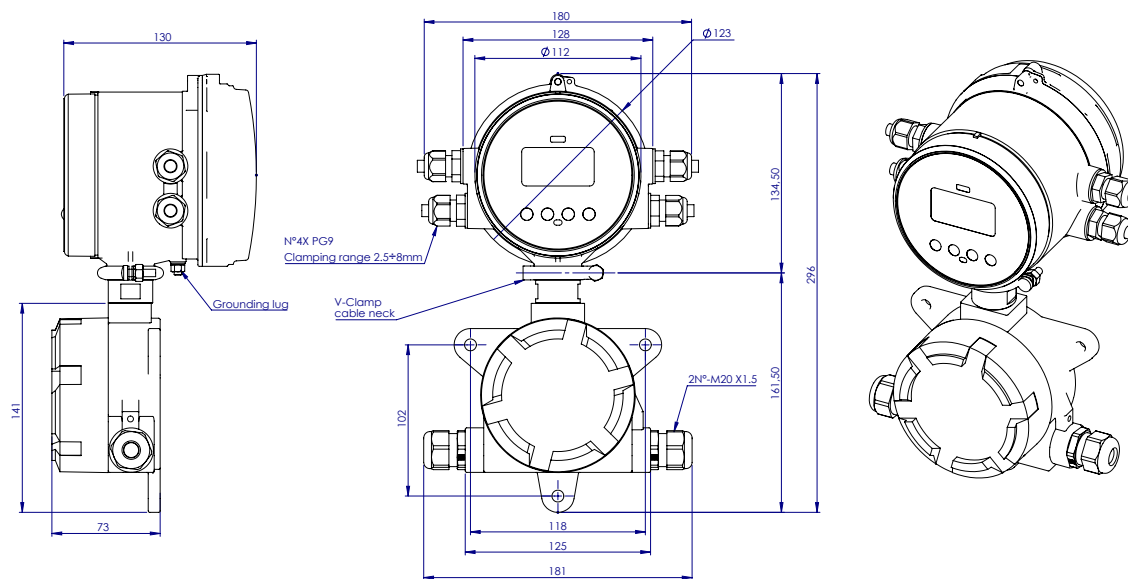
Modify or change settings with the intuitive menu

Keep your flowmeter updated easily

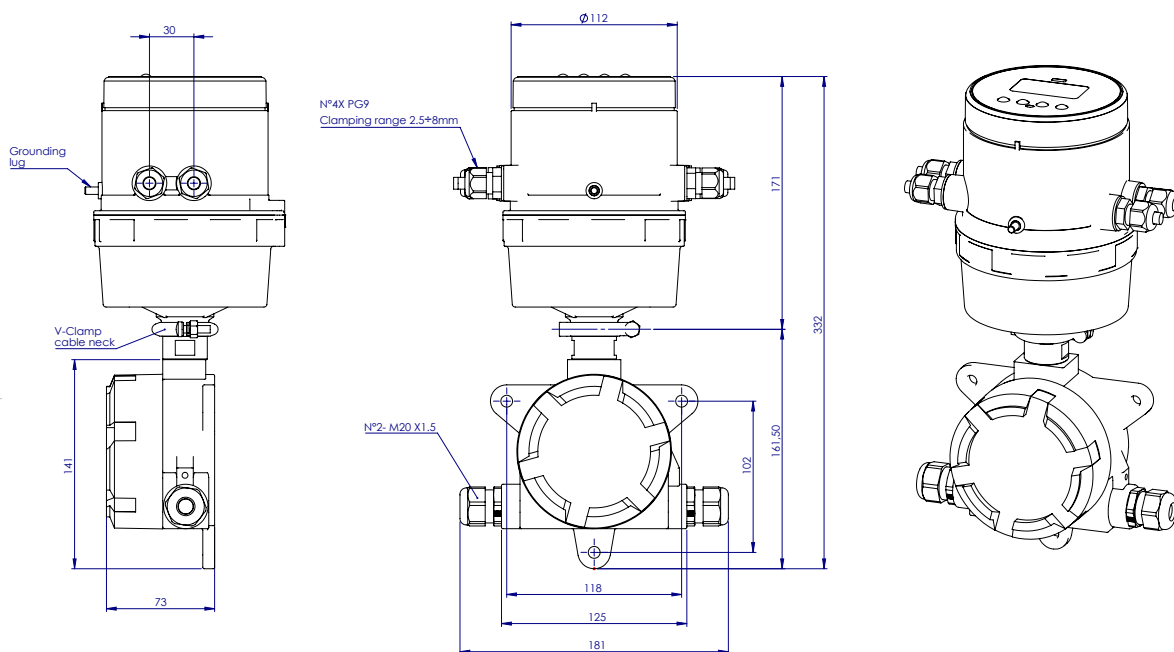


Overview Separate Converter

MC406 Standard Separate



MC406 Separate with GSM/GPRS



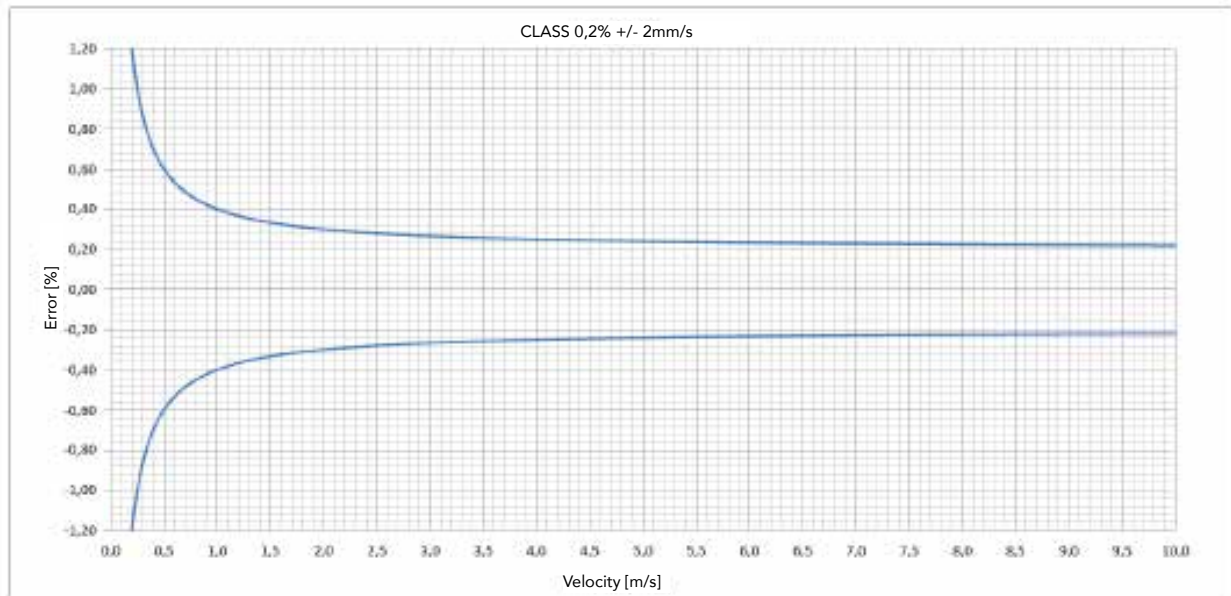
Specifications

| | |
|--|---|
| Pipe sizes inches/mm | 2", 2.1/2", 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) / 0DN upstream - 0DN 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

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 | 2" ½ 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

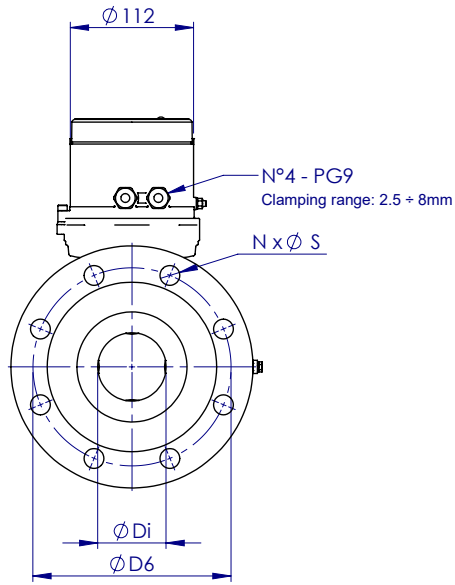
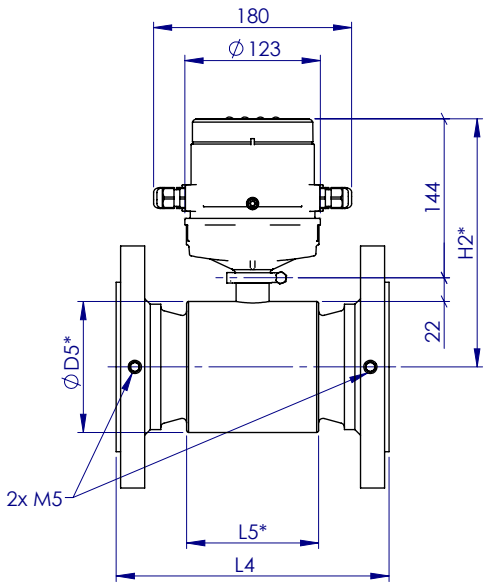
Legal Metrology

MID and OIML R49 requirement.

The MUT2300 combined with MC406M can be supplied on request with a certificate of conformity with the international recommendation OIML R49 MID which concerns water meters intended to be used for legal purposes. The certificate has been issued by NMI laboratories in The Netherlands.

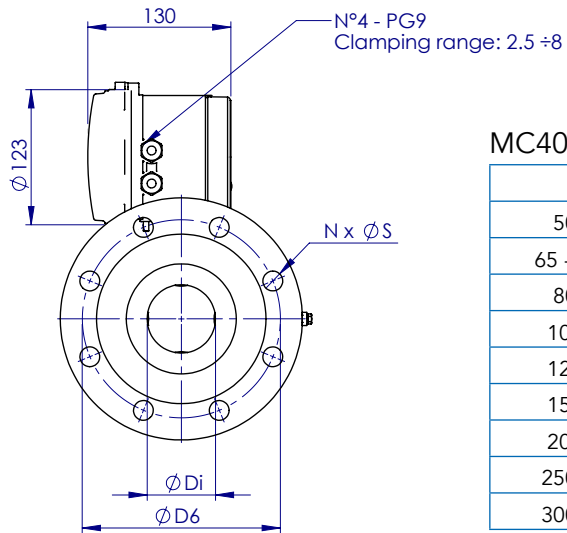
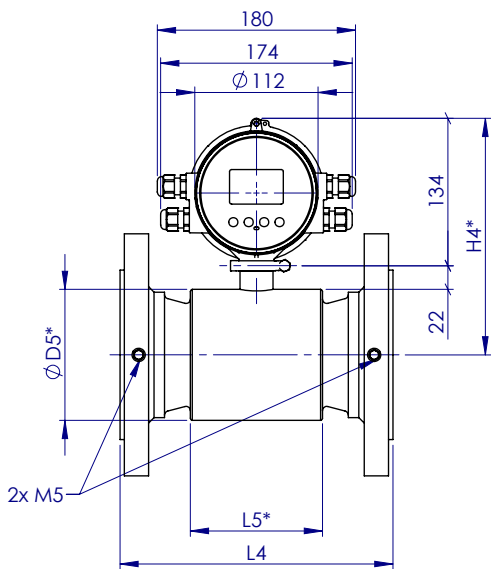
The MUT2300 with MC406M meets the requirements for water meters of accuracy Class 1 where the maximum permissible error is $\pm 3\%$ between Q1 and Q2 and $\pm 1\%$ between Q2 and Q4. For more details on flowrates and accuracy curve, please refer to the MUT2300 datasheet DS401

MUT2300 - MC406 COMPACT



MC406 VERTICAL

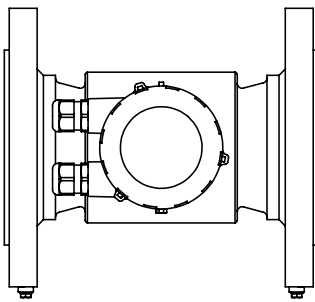
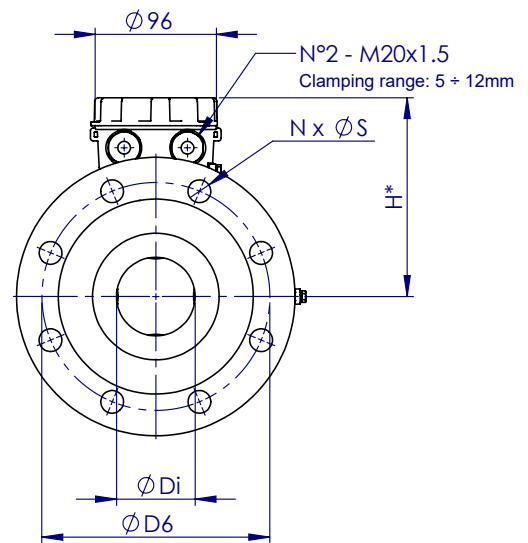
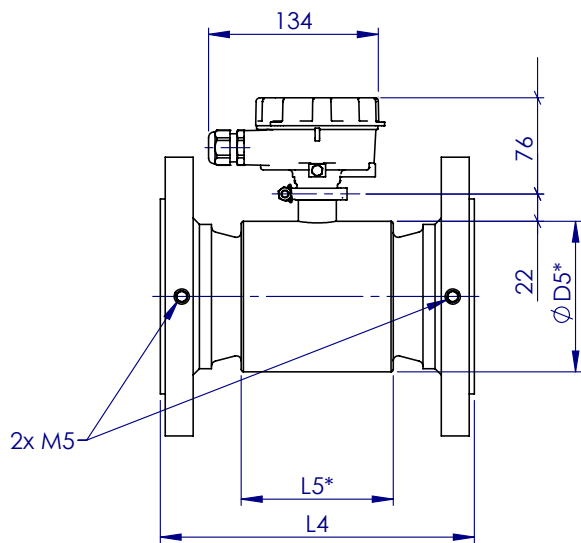
| DN | H2 |
|---------------|-----|
| 50 - (2") | 209 |
| 65 - (2" 1/2) | 211 |
| 80 - (3") | 218 |
| 100 - (4") | 226 |
| 125 - (5") | 236 |
| 150 - (6") | 248 |
| 200 - (8") | 276 |
| 250 - (10") | 308 |
| 300 - (12") | 336 |



MC406 HORIZONTAL

| DN | H4 |
|---------------|-----|
| 50 - (2") | 199 |
| 65 - (2" 1/2) | 201 |
| 80 - (3") | 208 |
| 100 - (4") | 216 |
| 125 - (5") | 226 |
| 150 - (6") | 238 |
| 200 - (8") | 266 |
| 250 - (10") | 298 |
| 300 - (12") | 326 |

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 |
| 2" 1/2 - (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 |



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