

SENSOR MUT2200EL Electromagnetic Flowmeter



TECHNICAL GUIDE: **FM1.2**

Application

Suitable for any on-line application.

Typically used in the measure of potable or not potable water, industrial wastewater, industrial process liquids, muds and concretes.

Approvals/Standards

MID approved

OIML approved

GSM ready

WRAS approved

ICE approved

Sensor MUT2200EL

MUT2200EL sensors represent the state of the art of Euromag International production for water cycle and process applications. The new structure for the generation of the magnetic field and the innovative route of the signal generated by the electrodes, provide a sensor with an extremely wide measurement range:

EL= Extended Linearity

This new sensors series follows the successful tradition of the MUT2200EL, introducing a measurement range of more than 1:1000 without linearisation software. These kinds of performances allow very accurate measurements over a wide flowrate range and to count lower flow rates that, before, would have been reset because of the effect of the converters cut off.

This flanged sensors series bases its operation on the Faraday Principle, by which a conductor crossing a magnetic field generates a potential perpendicularly orientated to the same field.

In this case the flow tube made in stainless steel AISI 304 is equipped with carbon steel or stainless steel flanges, two coils are installed on the top and inferior part; the magnetic field generated by the electric current crossing the coil induces in the electrodes a difference in the potential proportional to the flow rate.

With the aim of measuring such potential of very low values, the interior of the flow tube is electrically insulated, thus the process liquid is no longer in contact either the material of the flow tube or with that of the flange.

The converter used generates the current supplying the coil, acquires the electrodes difference of potential, process the signal to calculate the flowrate and administers the communication with the exterior.

The entire sensor, when installed in the separate version, has a degree of protection IP68 suitable for a permanent immersion in water up to a depth of 1.5m thanks to a welded plate structure containing the coil and the electrodes.



Body and flanges

The flange and the sensor external surface are acrylic painted. This treatment gives the sensor an excellent resistance to water, even in permanent immersion. When special ambient conditions require it, the MUT2200EL may be supplied in stainless steel, flange included or special painting for C4 class environments.

Internal lining

The standard internal insulating lining is in PTFE for diameters from DN15 to DN100, in hard rubber (Ebonite) for diameters equal or bigger than DN125. On request, sensors may be supplied coated with PTFE with diameters bigger than DN100. The suitable temperature is limited by the type of internal lining used.

Electrodes

Standard electrodes in Hastelloy C guarantee a wide compatibility with different kind of liquids; if required, they may be supplied in Hastelloy B, Titanium, Tantalum or Platinum.

Coupling and sensor connection

MUT2200EL sensors may be coupled with any Euromag converters. In the separate version the sensor is connected to the converter by means of cables whose length depends on the liquid conductivity; the maximum length shall not exceed 100 metres (30 meters in combination with battery operated electronics).

When installed in plastic or coated pipe lines, sensors may require the use of two grounding rings, which are inserted between the flange and the counter flange. On sensors greater or equal than DN50 an empty pipe electrode is supplied as a standard (empty pipe alarm).

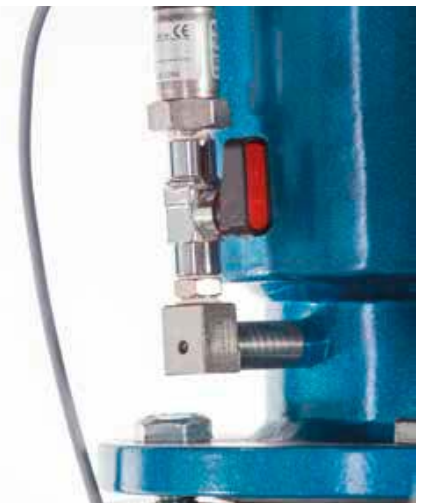
Reference standards

The Euromag magnetic meters are marked CE and are manufactured according to the following standards:

- 2014/35/EU - EN 61010-1:2013 (LVD)
- 2014/30/EU - EN 61326-1:2013 (EMC)
- OIML R49-1:2013
- European directive 2014/32/EU (MID)
- 2014/34/UE - IEC 60079 - 0, IEC 60079 - 18 (ATEX - IECEx) Separate version
- EN ISO 15609-1 and EN ISO 15614-1
- UNI EN ISO 12944-2, painting for C4 class environments (on request)
- PTFE conform to the norms WRAS, FDA, DPR 777/82 e DM 21/09/773
- Ebonite conform to the norms WRAS, FDA e DM174



MUT2200EL - MC608A



Integrated pressure sensor



MUT2200EL - MC608B - GSM - Pressure

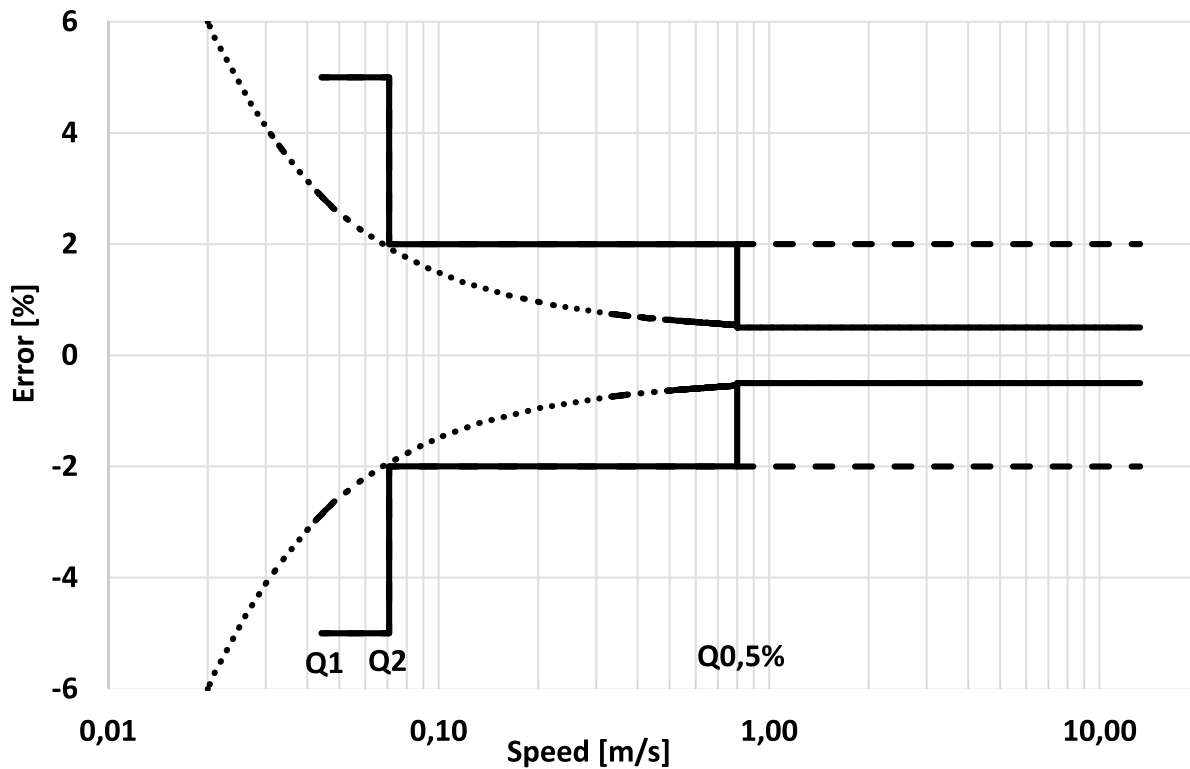


MUT2200EL - PTFE liner

Calibration and maximum error

Each sensor is calibrated on an hydraulic test rig equipped with a ISO17025 traceable weighing system. The accuracy is equal to 0,2% ffl 2mm/s. The repeatability of the measure is about 0,1%. Bi-directional measure. On request the sensors can be supplied certified MID OIML R49 (if coupled to MC406M converters) for custody transfer or OIML R49 with MC608A.

Maximum Permissible Error is within the limits indicated in the following graph:



Flow rates chart

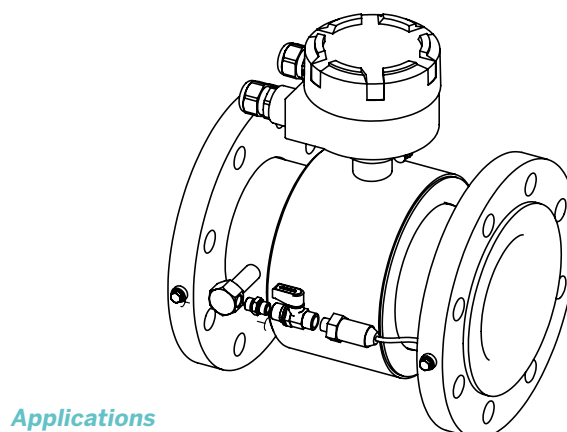
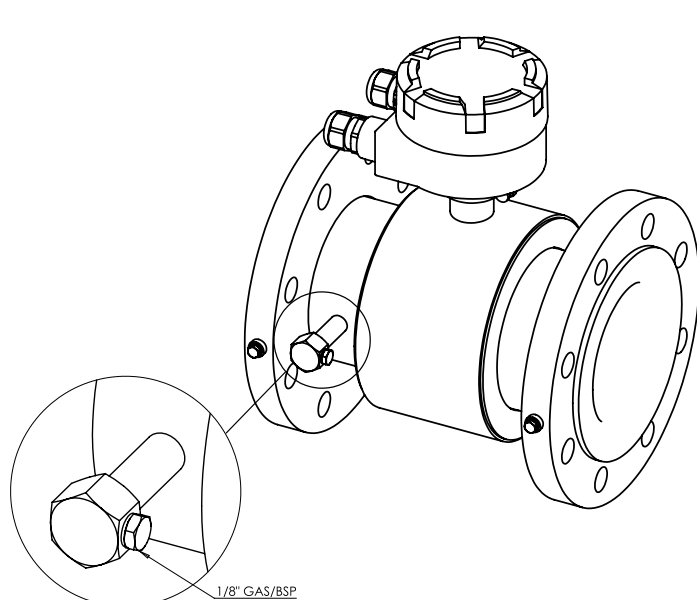
| Sensor diameter | Flow rate [m ³ /h] | | | | | Ratio Q3/ Q1 |
|-----------------|-------------------------------|-----------|--------|----------|-----------|--------------|
| | Min. Q1 | Trans. Q2 | Q0,5% | Perm. Q3 | Overl. Q4 | |
| DN25 - 1" | 0,080 | 0,128 | 1,40 | 10,00 | 12,50 | 125 |
| DN32 - 1 1/4" | 0,080 | 0,128 | 2,30 | 10,00 | 12,50 | 125 |
| DN40 - 1 1/2" | 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 - 2 1/2" | 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 |
| DN 350 - 14" | 12,800 | 20,480 | 280,00 | 1.600,00 | 2.000,00 | 125 |
| DN 400 - 16" | 12,800 | 20,480 | 360,00 | 1.600,00 | 2.000,00 | 125 |

| | | | | | | |
|--------------|-------|-------|-------|---------|---------|-----|
| DN450 - 18" | 25 | 40 | 460 | 2.500 | 3.125 | 100 |
| DN500 - 20" | 25 | 40 | 570 | 2.500 | 3.125 | 100 |
| DN600 - 24" | 50 | 80 | 820 | 4.000 | 5.000 | 80 |
| DN700 - 28" | 50 | 80 | 1.100 | 4.000 | 5.000 | 80 |
| DN800 - 32" | 100 | 160 | 1.450 | 6.300 | 7.875 | 63 |
| DN900 - 36" | 100 | 160 | 1.840 | 6.300 | 7.875 | 63 |
| DN1000 - 40" | 200 | 320 | 2.270 | 10.000 | 12.500 | 50 |
| DN1200 - 48" | 320 | 512 | 3.270 | 16.000 | 20.000 | 50 |
| DN1400 - 56" | 500 | 800 | 4.440 | 25.000 | 31.250 | 50 |
| DN1500 - 60" | 800 | 1.280 | 5.100 | 40.000 | 50.000 | 50 |
| DN1600 - 64" | 1.260 | 2.016 | 5.800 | 63.000 | 78.750 | 50 |
| DN1800 - 72" | 2.000 | 3.200 | 7.350 | 100.000 | 125.000 | 50 |
| DN2000 - 80" | 3.200 | 5.120 | 9.100 | 160.000 | 200.000 | 50 |

MUT2200EL general features

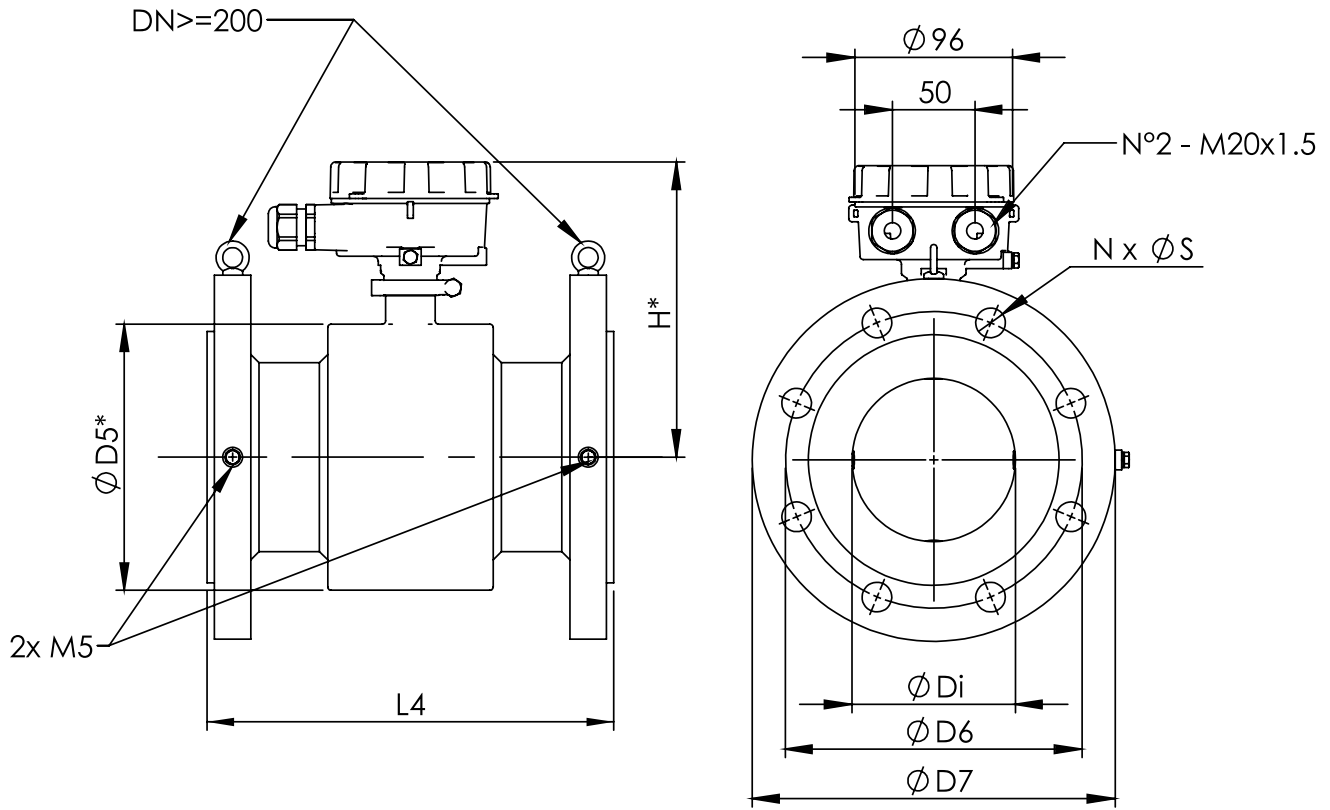
| | | | | | | | | | | | | | | | | | |
|---|---|------|------|-----|--------|--------|-----|--------|---|------|------|------|------|------|------|------|-----|
| Flow tube material | AISI 304 (std), AISI 316 | | | | | | | | | | | | | | | | |
| Flanges material | Carbon steel painted (std), AISI 304, AISI 316 | | | | | | | | | | | | | | | | |
| 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 |
| | inch | 1/2" | 3/4" | 1" | 1.1/4" | 1.1/2" | 2" | 2.1/2" | 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 | |
| | inch | 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) | | | | | | | | | | | | | | | | |
| Compatible converters | MC608 A/B/R/P/I, MC406 | | | | | | | | | | | | | | | | |
| 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 wastewater, industrial process liquids, muds and concretes.



MUT2200EL PN 16 AS4087-B5

| DN | L4 | D5 | Di | D6 | D7 | N | S | H | H1 | H2 | H3 |
|------|--------------|------|------|------|------|----|----|-----|-----|-----|-----|
| 50 | 200(+0/-3) | 102 | 47 | 114 | 150 | 4 | 18 | 165 | 204 | 199 | 245 |
| 65 | 200(+0/-3) | 114 | 63 | 127 | 165 | 4 | 18 | 171 | 210 | 205 | 251 |
| 80 | 200(+0/-3) | 127 | 75 | 146 | 185 | 4 | 18 | 177 | 217 | 212 | 258 |
| 100 | 250(+0/-3) | 161 | 99 | 178 | 215 | 4 | 18 | 194 | 234 | 229 | 275 |
| 150 | 300(+0/-3) | 210 | 152 | 235 | 280 | 8 | 18 | 219 | 258 | 253 | 299 |
| 200 | 350(+0/-3) | 261 | 201 | 292 | 335 | 8 | 18 | 244 | 284 | 279 | 325 |
| 250 | 450(+0/-5) | 319 | 255 | 356 | 405 | 8 | 22 | 273 | 313 | 308 | 354 |
| 300 | 500(+0/-5) | 371 | 308 | 406 | 455 | 12 | 22 | 299 | 339 | 334 | 380 |
| 350 | 550(+0/-5) | 404 | 340 | 470 | 525 | 12 | 26 | 316 | 355 | 350 | 396 |
| 400 | 600(+0/-5) | 455 | 390 | 521 | 580 | 12 | 26 | 341 | 381 | 376 | 422 |
| 450 | 450(+0/-7) | 519 | 439 | 584 | 640 | 12 | 26 | 373 | 413 | 408 | 454 |
| 500 | 500(+0/-9) | 570 | 490 | 641 | 705 | 16 | 26 | 399 | 438 | 433 | 479 |
| 600 | 600(+0/-9) | 684 | 592 | 756 | 825 | 16 | 30 | 456 | 495 | 490 | 536 |
| 700 | 700(+0/-9) | 783 | 691 | 845 | 910 | 20 | 30 | 505 | 545 | 540 | 586 |
| 800 | 800(+0/-9) | 885 | 791 | 984 | 995 | 20 | 36 | 556 | 596 | 591 | 637 |
| 900 | 900(+0/-15) | 996 | 890 | 1092 | 1060 | 24 | 36 | 612 | 651 | 646 | 692 |
| 1000 | 1000(+0/-15) | 1098 | 992 | 1175 | 1175 | 24 | 36 | 663 | 702 | 697 | 743 |
| 1200 | 1200(+0/-15) | 1312 | 1191 | 1410 | 1490 | 32 | 36 | 770 | 809 | 804 | 850 |

MUT2200EL PN 10 EN 1092-1

| DN | L4 | D5 | Di | D6 | D7 | N | S | H | H1 | H2 | H3 |
|------|--------------|------|------|------|------|----|----|------|------|------|------|
| 15 | 200(+0/-3) | 84 | 11 | 65 | 95 | 4 | 14 | 156 | 195 | 190 | 236 |
| 20 | 200(+0/-3) | 84 | 17 | 75 | 105 | 4 | 14 | 156 | 195 | 190 | 236 |
| 25 | 200(+0/-3) | 74 | 24 | 85 | 115 | 4 | 14 | 151 | 190 | 185 | 231 |
| 32 | 200(+0/-3) | 83 | 31 | 100 | 140 | 4 | 18 | 155 | 195 | 190 | 236 |
| 40 | 200(+0/-3) | 88 | 37 | 110 | 150 | 4 | 18 | 158 | 197 | 192 | 238 |
| 50 | 200(+0/-3) | 102 | 47 | 125 | 165 | 4 | 18 | 165 | 204 | 199 | 245 |
| 65 | 200(+0/-3) | 114 | 63 | 145 | 185 | 8 | 18 | 171 | 210 | 205 | 251 |
| 80 | 200(+0/-3) | 127 | 75 | 160 | 200 | 8 | 18 | 177 | 217 | 212 | 258 |
| 100 | 250(+0/-3) | 161 | 99 | 180 | 220 | 8 | 18 | 194 | 234 | 229 | 275 |
| 125 | 250(+0/-3) | 187 | 124 | 210 | 250 | 8 | 18 | 207 | 247 | 242 | 288 |
| 150 | 300(+0/-3) | 210 | 152 | 240 | 285 | 8 | 22 | 219 | 258 | 253 | 299 |
| 200 | 350(+0/-3) | 261 | 201 | 295 | 340 | 8 | 22 | 244 | 284 | 279 | 325 |
| 250 | 450(+0/-5) | 319 | 255 | 350 | 395 | 12 | 22 | 273 | 313 | 308 | 354 |
| 300 | 500(+0/-5) | 371 | 308 | 400 | 445 | 12 | 22 | 299 | 339 | 334 | 380 |
| 350 | 550(+0/-5) | 404 | 340 | 460 | 505 | 16 | 22 | 316 | 355 | 350 | 396 |
| 400 | 600(+0/-5) | 455 | 390 | 515 | 565 | 16 | 26 | 341 | 381 | 376 | 422 |
| 450 | 450(+0/-7) | 519 | 441 | 565 | 615 | 20 | 26 | 373 | 413 | 408 | 454 |
| 500 | 500(+0/-9) | 570 | 492 | 620 | 670 | 20 | 26 | 399 | 438 | 433 | 479 |
| 600 | 600(+0/-9) | 684 | 592 | 725 | 780 | 20 | 30 | 456 | 495 | 490 | 536 |
| 700 | 700(+0/-9) | 783 | 695 | 840 | 895 | 24 | 30 | 505 | 545 | 540 | 586 |
| 800 | 800(+0/-9) | 885 | 795 | 950 | 1015 | 24 | 33 | 556 | 596 | 591 | 637 |
| 900 | 900(+0/-15) | 996 | 896 | 1050 | 1115 | 28 | 33 | 612 | 651 | 646 | 692 |
| 1000 | 1000(+0/-15) | 1098 | 996 | 1160 | 1230 | 28 | 36 | 663 | 702 | 697 | 743 |
| 1200 | 1200(+0/-15) | 1312 | 1199 | 1380 | 1445 | 32 | 39 | 770 | 809 | 804 | 850 |
| 1400 | 1400(+0/-15) | 1512 | 1402 | 1590 | 1675 | 36 | 42 | 870 | 909 | 904 | 950 |
| 1500 | 1500(+0/-15) | 1612 | 1500 | 1700 | 1785 | 36 | 44 | 920 | 959 | 954 | 1000 |
| 1600 | 1600(+0/-15) | 1712 | 1602 | 1820 | 1915 | 40 | 48 | 970 | 1009 | 1004 | 1050 |
| 1800 | 1800(+0/-15) | 1922 | 1803 | 2020 | 2115 | 44 | 48 | 1075 | 1114 | 1109 | 1155 |
| 2000 | 2000(+0/-15) | 2122 | 2004 | 2230 | 2325 | 48 | 48 | 1175 | 1214 | 1209 | 1255 |

MUT2200EL PN 16 EN 1092-1

| DN | L4 | D5 | Di | D6 | D7 | N | S | H | H1 | H2 | H3 |
|------|--------------|------|------|------|------|----|----|------|------|------|------|
| 15 | 200(+0/-3) | 84 | 11 | 65 | 95 | 4 | 14 | 156 | 195 | 190 | 236 |
| 20 | 200(+0/-3) | 84 | 17 | 75 | 105 | 4 | 14 | 156 | 195 | 190 | 236 |
| 25 | 200(+0/-3) | 74 | 24 | 85 | 115 | 4 | 14 | 151 | 190 | 185 | 231 |
| 32 | 200(+0/-3) | 83 | 31 | 100 | 140 | 4 | 18 | 155 | 195 | 190 | 236 |
| 40 | 200(+0/-3) | 88 | 37 | 110 | 150 | 4 | 18 | 158 | 197 | 192 | 238 |
| 50 | 200(+0/-3) | 102 | 47 | 125 | 165 | 4 | 18 | 165 | 204 | 199 | 245 |
| 65 | 200(+0/-3) | 114 | 63 | 145 | 185 | 8 | 18 | 171 | 210 | 205 | 251 |
| 80 | 200(+0/-3) | 127 | 75 | 160 | 200 | 8 | 18 | 177 | 217 | 212 | 258 |
| 100 | 250(+0/-3) | 161 | 99 | 180 | 220 | 8 | 18 | 194 | 234 | 229 | 275 |
| 125 | 250(+0/-3) | 187 | 124 | 210 | 250 | 8 | 18 | 207 | 247 | 242 | 288 |
| 150 | 300(+0/-3) | 210 | 152 | 240 | 285 | 8 | 22 | 219 | 258 | 253 | 299 |
| 200 | 350(+0/-3) | 261 | 201 | 295 | 340 | 12 | 22 | 244 | 284 | 279 | 325 |
| 250 | 450(+0/-5) | 319 | 255 | 355 | 405 | 12 | 26 | 273 | 313 | 308 | 354 |
| 300 | 500(+0/-5) | 371 | 308 | 410 | 460 | 12 | 26 | 299 | 339 | 334 | 380 |
| 350 | 550(+0/-5) | 404 | 340 | 470 | 520 | 16 | 26 | 316 | 355 | 350 | 396 |
| 400 | 600(+0/-5) | 455 | 390 | 525 | 580 | 16 | 30 | 341 | 381 | 376 | 422 |
| 450 | 450(+0/-7) | 519 | 439 | 585 | 640 | 20 | 30 | 373 | 413 | 408 | 454 |
| 500 | 500(+0/-9) | 570 | 490 | 650 | 715 | 20 | 33 | 399 | 438 | 433 | 479 |
| 600 | 600(+0/-9) | 684 | 592 | 770 | 840 | 20 | 36 | 456 | 495 | 490 | 536 |
| 700 | 700(+0/-9) | 783 | 691 | 840 | 910 | 24 | 36 | 505 | 545 | 540 | 586 |
| 800 | 800(+0/-9) | 885 | 791 | 950 | 1025 | 24 | 39 | 556 | 596 | 591 | 637 |
| 900 | 900(+0/-15) | 996 | 890 | 1050 | 1125 | 28 | 39 | 612 | 651 | 646 | 692 |
| 1000 | 1000(+0/-15) | 1098 | 992 | 1170 | 1255 | 28 | 42 | 663 | 702 | 697 | 743 |
| 1200 | 1200(+0/-15) | 1312 | 1191 | 1390 | 1485 | 32 | 48 | 770 | 809 | 804 | 850 |
| 1400 | 1400(+0/-15) | 1512 | 1392 | 1590 | 1685 | 36 | 48 | 870 | 909 | 904 | 950 |
| 1500 | 1500(+0/-15) | 1612 | 1492 | 1710 | 1820 | 36 | 57 | 920 | 959 | 954 | 1000 |
| 1600 | 1600(+0/-15) | 1712 | 1594 | 1820 | 1930 | 40 | 56 | 970 | 1009 | 1004 | 1050 |
| 1800 | 1800(+0/-15) | 1922 | 1795 | 2020 | 2130 | 44 | 56 | 1075 | 1114 | 1109 | 1155 |
| 2000 | 2000(+0/-15) | 2122 | 1994 | 2230 | 2345 | 48 | 62 | 1175 | 1214 | 1209 | 1255 |

MUT2200EL PN 25 EN 1092-1

| DN | L4 | D5 | Di | D6 | D7 | N | S | H | H1 | H2 | H3 |
|------|--------------|------|------|------|------|----|----|------|------|------|------|
| 15 | 200(+0/-3) | 84 | 11 | 65 | 95 | 4 | 14 | 156 | 195 | 190 | 236 |
| 20 | 200(+0/-3) | 84 | 17 | 75 | 105 | 4 | 14 | 156 | 195 | 190 | 236 |
| 25 | 200(+0/-3) | 74 | 24 | 85 | 115 | 4 | 14 | 151 | 190 | 185 | 231 |
| 32 | 200(+0/-3) | 83 | 31 | 100 | 140 | 4 | 18 | 155 | 195 | 190 | 236 |
| 40 | 200(+0/-3) | 88 | 37 | 110 | 150 | 4 | 18 | 158 | 197 | 192 | 238 |
| 50 | 200(+0/-3) | 102 | 47 | 125 | 165 | 4 | 18 | 165 | 204 | 199 | 245 |
| 65 | 200(+0/-3) | 114 | 63 | 145 | 185 | 8 | 18 | 171 | 210 | 205 | 251 |
| 80 | 200(+0/-3) | 127 | 75 | 160 | 200 | 8 | 18 | 177 | 217 | 212 | 258 |
| 100 | 250(+0/-3) | 161 | 99 | 190 | 235 | 8 | 22 | 194 | 234 | 229 | 275 |
| 125 | 250(+0/-3) | 187 | 124 | 220 | 270 | 8 | 26 | 207 | 247 | 242 | 288 |
| 150 | 300(+0/-3) | 210 | 152 | 250 | 300 | 8 | 26 | 219 | 258 | 253 | 299 |
| 200 | 350(+0/-3) | 261 | 201 | 310 | 360 | 12 | 26 | 244 | 284 | 279 | 325 |
| 250 | 450(+0/-5) | 319 | 255 | 370 | 425 | 12 | 30 | 273 | 313 | 308 | 354 |
| 300 | 500(+0/-5) | 371 | 306 | 430 | 485 | 16 | 30 | 299 | 339 | 334 | 380 |
| 350 | 550(+0/-5) | 404 | 338 | 490 | 555 | 16 | 33 | 316 | 355 | 350 | 396 |
| 400 | 600(+0/-5) | 455 | 386 | 550 | 620 | 16 | 36 | 341 | 381 | 376 | 422 |
| 450 | 450(+0/-7) | 519 | 437 | 600 | 670 | 20 | 36 | 373 | 413 | 408 | 454 |
| 500 | 500(+0/-9) | 570 | 488 | 660 | 730 | 20 | 36 | 399 | 438 | 433 | 479 |
| 600 | 600(+0/-9) | 684 | 588 | 770 | 845 | 20 | 39 | 456 | 495 | 490 | 536 |
| 700 | 700(+0/-9) | 783 | 685 | 875 | 960 | 24 | 42 | 505 | 545 | 540 | 586 |
| 800 | 800(+0/-9) | 885 | 787 | 990 | 1085 | 24 | 48 | 556 | 596 | 591 | 637 |
| 900 | 900(+0/-15) | 996 | 884 | 1090 | 1185 | 28 | 48 | 612 | 651 | 646 | 692 |
| 1000 | 1000(+0/-15) | 1098 | 984 | 1210 | 1320 | 28 | 56 | 663 | 702 | 697 | 743 |
| 1200 | 1200(+0/-15) | 1312 | 1181 | - | - | - | - | 770 | 809 | 804 | 850 |
| 1400 | 1400(+0/-15) | 1512 | 1382 | - | - | - | - | 870 | 909 | 904 | 950 |
| 1500 | 1500(+0/-15) | 1612 | 1482 | - | - | - | - | 920 | 959 | 954 | 1000 |
| 1600 | 1600(+0/-15) | 1712 | 1580 | - | - | - | - | 970 | 1009 | 1004 | 1050 |
| 1800 | 1800(+0/-15) | 1922 | 1783 | - | - | - | - | 1075 | 1114 | 1109 | 1155 |
| 2000 | 2000(+0/-15) | 2122 | 1978 | - | - | - | - | 1175 | 1214 | 1209 | 1255 |

MUT2200EL PN 40 EN 1092-1

| DN | L4 | D5 | Di | D6 | D7 | N | S | H | H1 | H2 | H3 |
|------|--------------|------|------|-----|-----|----|----|------|------|------|------|
| 15 | 200(+0/-3) | 84 | 11 | 65 | 95 | 4 | 14 | 156 | 195 | 190 | 236 |
| 20 | 200(+0/-3) | 84 | 17 | 75 | 105 | 4 | 14 | 156 | 195 | 190 | 236 |
| 25 | 200(+0/-3) | 74 | 24 | 85 | 115 | 4 | 14 | 151 | 190 | 185 | 231 |
| 32 | 200(+0/-3) | 83 | 31 | 100 | 140 | 4 | 18 | 155 | 195 | 190 | 236 |
| 40 | 200(+0/-3) | 88 | 37 | 110 | 150 | 4 | 18 | 158 | 197 | 192 | 238 |
| 50 | 200(+0/-3) | 102 | 47 | 125 | 165 | 4 | 18 | 165 | 204 | 199 | 245 |
| 65 | 200(+0/-3) | 114 | 63 | 145 | 185 | 8 | 18 | 171 | 210 | 205 | 251 |
| 80 | 200(+0/-3) | 127 | 75 | 160 | 200 | 8 | 18 | 177 | 217 | 212 | 258 |
| 100 | 250(+0/-3) | 161 | 99 | 190 | 235 | 8 | 22 | 194 | 234 | 229 | 275 |
| 125 | 250(+0/-3) | 187 | 124 | 220 | 270 | 8 | 26 | 207 | 247 | 242 | 288 |
| 150 | 300(+0/-3) | 210 | 152 | 250 | 300 | 8 | 26 | 219 | 258 | 253 | 299 |
| 200 | 350(+0/-3) | 261 | 195 | 320 | 375 | 12 | 30 | 244 | 284 | 279 | 325 |
| 250 | 450(+0/-5) | 319 | 249 | 385 | 450 | 12 | 33 | 273 | 313 | 308 | 354 |
| 300 | 500(+0/-5) | 371 | 302 | 450 | 515 | 16 | 33 | 299 | 339 | 334 | 380 |
| 350 | 550(+0/-5) | 404 | 334 | 510 | 580 | 16 | 36 | 316 | 355 | 350 | 396 |
| 400 | 600(+0/-5) | 455 | 382 | 585 | 660 | 16 | 39 | 341 | 381 | 376 | 422 |
| 450 | 450(+0/-7) | 519 | 431 | 610 | 685 | 20 | 39 | 373 | 413 | 408 | 454 |
| 500 | 500(+0/-9) | 570 | 480 | 670 | 755 | 20 | 42 | 399 | 438 | 433 | 479 |
| 600 | 600(+0/-9) | 684 | 578 | 795 | 890 | 20 | 48 | 456 | 495 | 490 | 536 |
| 700 | 700(+0/-9) | 783 | 677 | - | - | - | - | 505 | 545 | 540 | 586 |
| 800 | 800(+0/-9) | 885 | 775 | - | - | - | - | 556 | 596 | 591 | 637 |
| 900 | 900(+0/-15) | 996 | 872 | - | - | - | - | 612 | 651 | 646 | 692 |
| 1000 | 1000(+0/-15) | 1098 | 970 | - | - | - | - | 663 | 702 | 697 | 743 |
| 1200 | 1200(+0/-15) | 1312 | 1165 | - | - | - | - | 770 | 809 | 804 | 850 |
| 1400 | 1400(+0/-15) | 1512 | 1364 | - | - | - | - | 870 | 909 | 904 | 950 |
| 1500 | 1500(+0/-15) | 1612 | 1462 | - | - | - | - | 920 | 959 | 954 | 1000 |
| 1600 | 1600(+0/-15) | 1712 | 1560 | - | - | - | - | 970 | 1009 | 1004 | 1050 |
| 1800 | 1800(+0/-15) | 1922 | 1759 | - | - | - | - | 1075 | 1114 | 1109 | 1155 |
| 2000 | 2000(+0/-15) | 2122 | 1954 | - | - | - | - | 1175 | 1214 | 1209 | 1255 |

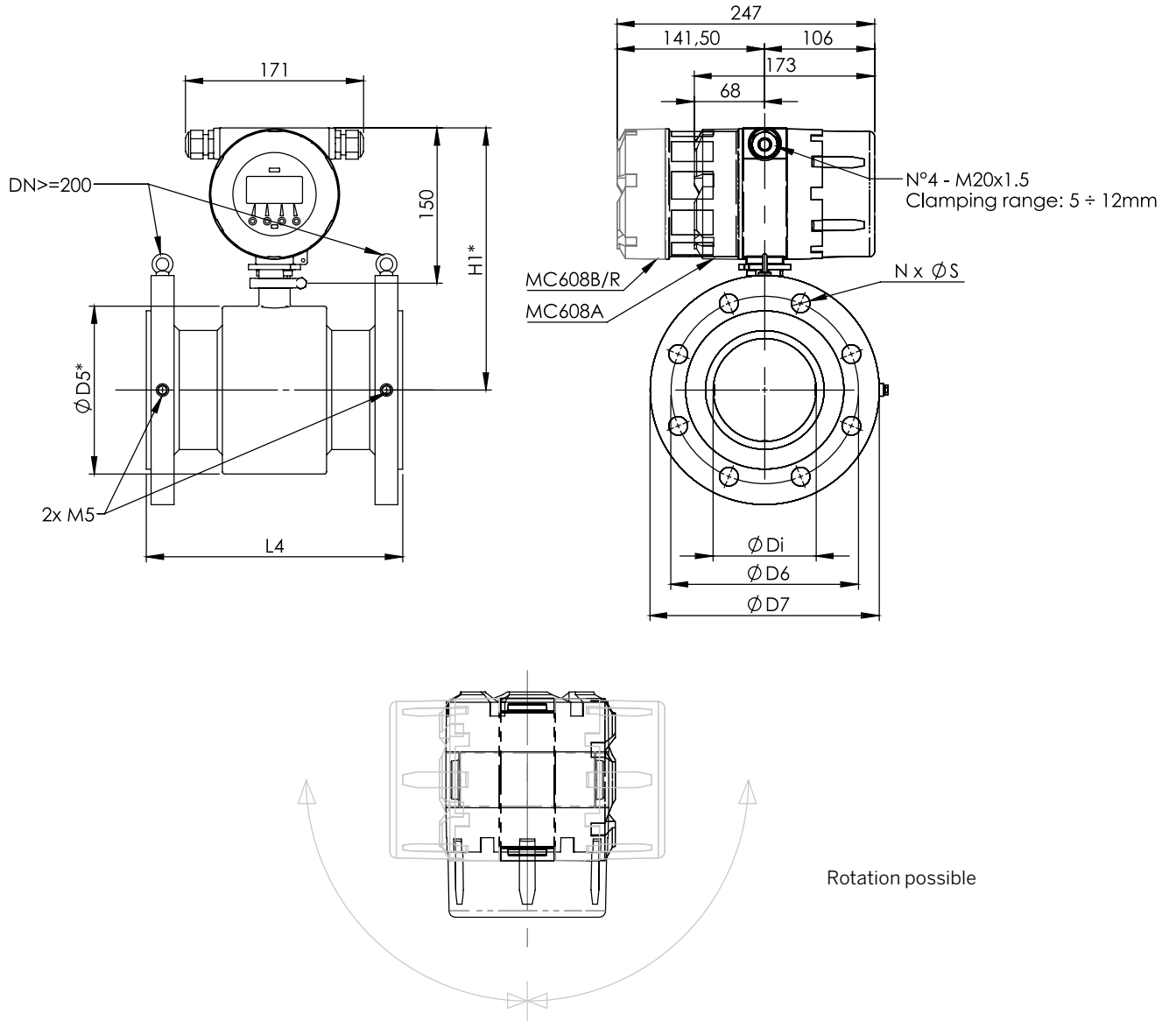
MUT2200EL ANSI 150

| DN | L4 | D5 | Di | D6 | D7 | N | S | H | H1 | H2 | H3 |
|--------|--------------|------|--------|--------|--------|----|-------|------|------|------|------|
| 1/2" | 200(+0/-3) | 84 | 11,3 | 60,3 | 90 | 4 | 15,88 | 156 | 195 | 190 | 236 |
| 3/4" | 200(+0/-3) | 84 | 16,9 | 69,9 | 100 | 4 | 15,88 | 156 | 195 | 190 | 236 |
| 1" | 200(+0/-3) | 74 | 23,7 | 79,4 | 110 | 4 | 15,88 | 151 | 190 | 185 | 231 |
| 1" 1/4 | 200(+0/-3) | 83 | 31,4 | 88,9 | 115 | 4 | 15,88 | 155 | 195 | 190 | 236 |
| 1" 1/2 | 200(+0/-3) | 88 | 37,3 | 98,4 | 125 | 4 | 15,88 | 158 | 197 | 192 | 238 |
| 2" | 200(+0/-3) | 102 | 47,3 | 120,7 | 150 | 4 | 19,05 | 165 | 204 | 199 | 245 |
| 2" 1/2 | 200(+0/-3) | 114 | 63,1 | 139,7 | 180 | 4 | 19,05 | 171 | 210 | 205 | 251 |
| 3" | 200(+0/-3) | 127 | 74,9 | 152,4 | 190 | 4 | 19,05 | 177 | 217 | 212 | 258 |
| 4" | 250(+0/-3) | 161 | 97,3 | 190,5 | 230 | 8 | 19,05 | 194 | 234 | 229 | 275 |
| 5" | 250(+0/-3) | 187 | 121,7 | 215,9 | 255 | 8 | 22,23 | 207 | 247 | 242 | 288 |
| 6" | 300(+0/-3) | 210 | 148,3 | 241,3 | 280 | 8 | 22,23 | 219 | 258 | 253 | 299 |
| 8" | 350(+0/-3) | 261 | 195,1 | 298,5 | 345 | 8 | 22,23 | 244 | 284 | 279 | 325 |
| 10" | 450(+0/-5) | 319 | 245 | 362 | 405 | 12 | 25,4 | 273 | 313 | 308 | 354 |
| 12" | 500(+0/-5) | 371 | 307,9 | 431,8 | 485 | 12 | 25,4 | 299 | 339 | 334 | 380 |
| 14" | 550(+0/-5) | 404 | 337,6 | 476,3 | 535 | 12 | 28,58 | 316 | 355 | 350 | 396 |
| 16" | 600(+0/-5) | 455 | 386,4 | 539,8 | 595 | 16 | 28,58 | 341 | 381 | 376 | 422 |
| 18" | 450(+0/-7) | 519 | 437,2 | 577,9 | 635 | 16 | 31,75 | 373 | 413 | 408 | 454 |
| 20" | 500(+0/-9) | 570 | 488 | 635 | 700 | 20 | 31,75 | 399 | 438 | 433 | 479 |
| 24" | 600(+0/-9) | 684 | 587,6 | 749,3 | 815 | 20 | 34,93 | 456 | 495 | 490 | 536 |
| 28" | 700(+0/-9) | 783 | 687,2 | 863,6 | 927,1 | 28 | 34,93 | 505 | 545 | 540 | 586 |
| 32" | 800(+0/-9) | 885 | 786,8 | 977,9 | 1060,4 | 28 | 41,28 | 556 | 596 | 591 | 637 |
| 36" | 900(+0/-15) | 996 | 888,4 | 1085,9 | 1168,4 | 32 | 41,28 | 612 | 651 | 646 | 692 |
| 40" | 1000(+0/-15) | 1098 | 988 | 1200 | 1290 | 36 | 41,28 | 663 | 702 | 697 | 743 |
| 48" | 1200(+0/-15) | 1312 | 1187,2 | 1422,4 | 1511,1 | 44 | 41,28 | 770 | 809 | 804 | 850 |
| 56" | 1400(+0/-15) | 1512 | 1386,4 | - | - | - | - | 870 | 909 | 904 | 950 |
| 60" | 1500(+0/-15) | 1612 | 1484 | - | - | - | - | 920 | 959 | 954 | 1000 |
| 64" | 1600(+0/-15) | 1712 | 1585,6 | - | - | - | - | 970 | 1009 | 1004 | 1050 |
| 72" | 1800(+0/-15) | 1922 | 1786,8 | - | - | - | - | 1075 | 1114 | 1109 | 1155 |
| 80" | 2000(+0/-15) | 2122 | 1986 | - | - | - | - | 1175 | 1214 | 1209 | 1255 |

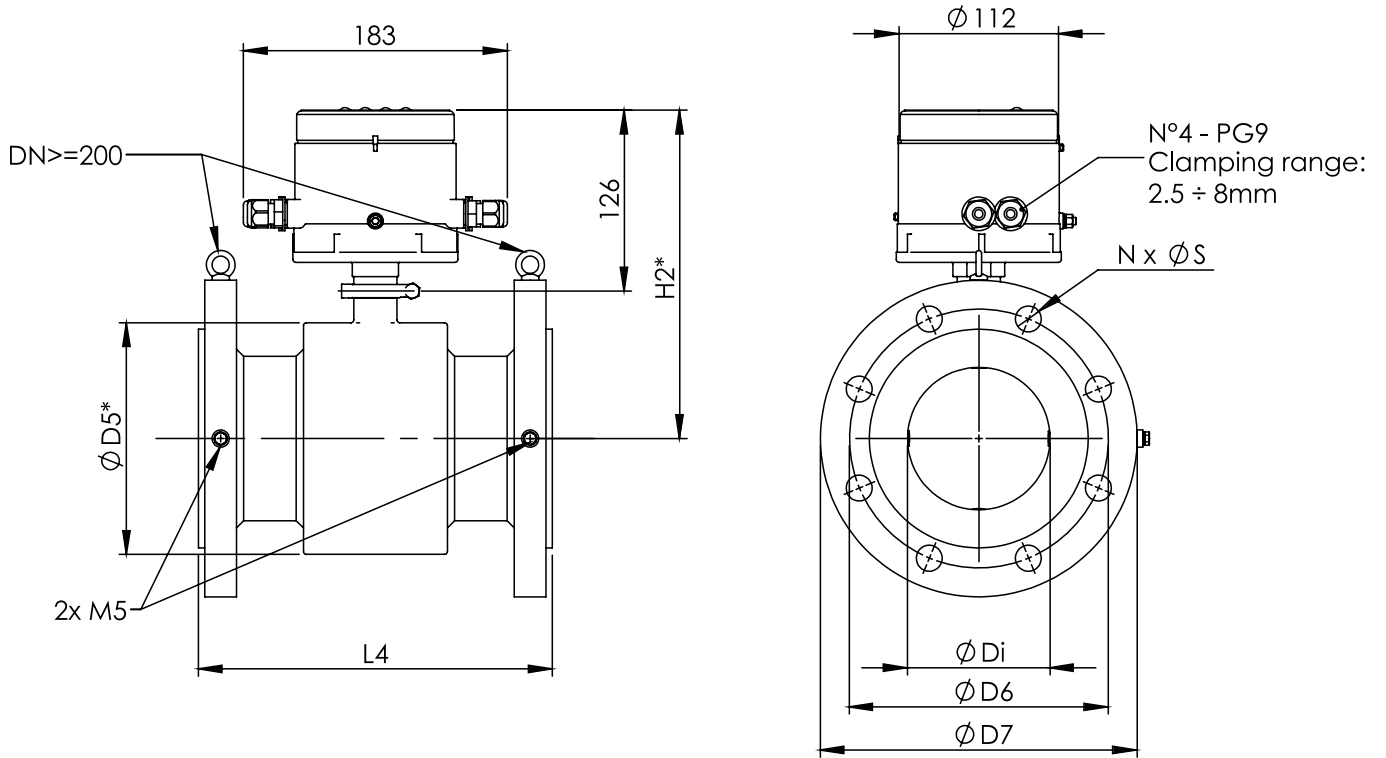
MUT2200EL ANSI 300

| DN | L4 | D5 | Di | D6 | D7 | N | S | H | H1 | H2 | H3 |
|--------|--------------|------|--------|-------|-----|----|-------|------|------|------|------|
| 1/2" | 200(+0/-3) | 84 | 11,3 | 66,7 | 95 | 4 | 15,88 | 156 | 195 | 190 | 236 |
| 3/4" | 200(+0/-3) | 84 | 16,9 | 82,6 | 115 | 4 | 19,05 | 156 | 195 | 190 | 236 |
| 1" | 200(+0/-3) | 74 | 23,7 | 88,9 | 125 | 4 | 19,05 | 151 | 190 | 185 | 231 |
| 1" 1/4 | 200(+0/-3) | 83 | 31,4 | 98,4 | 135 | 4 | 19,05 | 155 | 195 | 190 | 236 |
| 1" 1/2 | 200(+0/-3) | 88 | 37,3 | 114,3 | 155 | 4 | 22,23 | 158 | 197 | 192 | 238 |
| 2" | 200(+0/-3) | 102 | 47,3 | 127 | 165 | 8 | 19,05 | 165 | 204 | 199 | 245 |
| 2" 1/2 | 200(+0/-3) | 114 | 63,1 | 149,2 | 190 | 8 | 22,23 | 171 | 210 | 205 | 251 |
| 3" | 200(+0/-3) | 127 | 74,9 | 168,3 | 210 | 8 | 22,23 | 177 | 217 | 212 | 258 |
| 4" | 250(+0/-3) | 161 | 99,3 | 200 | 255 | 8 | 22,23 | 194 | 234 | 229 | 275 |
| 5" | 250(+0/-3) | 187 | 121,7 | 235 | 280 | 8 | 22,23 | 207 | 247 | 242 | 288 |
| 6" | 300(+0/-3) | 210 | 150,3 | 269,9 | 320 | 12 | 22,23 | 219 | 258 | 253 | 299 |
| 8" | 350(+0/-3) | 261 | 195,1 | 330,2 | 380 | 12 | 25,4 | 244 | 284 | 279 | 325 |
| 10" | 450(+0/-5) | 319 | 249 | 387,4 | 445 | 16 | 28,58 | 273 | 313 | 308 | 354 |
| 12" | 500(+0/-5) | 371 | 299,9 | 450,8 | 520 | 16 | 28,58 | 299 | 339 | 334 | 380 |
| 14" | 550(+0/-5) | 404 | 329,6 | 514,4 | 585 | 20 | 28,58 | 316 | 355 | 350 | 396 |
| 16" | 600(+0/-5) | 455 | 378,4 | 571,5 | 650 | 20 | 34,93 | 341 | 381 | 376 | 422 |
| 18" | 450(+0/-7) | 519 | 427,2 | 628,6 | 710 | 24 | 34,93 | 373 | 413 | 408 | 454 |
| 20" | 500(+0/-9) | 570 | 476 | 685,8 | 775 | 24 | 34,93 | 399 | 438 | 433 | 479 |
| 24" | 600(+0/-9) | 684 | 571,6 | 812,8 | 915 | 24 | 34,93 | 456 | 495 | 490 | 536 |
| 28" | 700(+0/-9) | 783 | 671,2 | - | - | - | - | 505 | 545 | 540 | 586 |
| 32" | 800(+0/-9) | 885 | 766,8 | - | - | - | - | 556 | 596 | 591 | 637 |
| 36" | 900(+0/-15) | 996 | 864,4 | - | - | - | - | 612 | 651 | 646 | 692 |
| 40" | 1000(+0/-15) | 1098 | 962 | - | - | - | - | 663 | 702 | 697 | 743 |
| 48" | 1200(+0/-15) | 1312 | 1159,2 | - | - | - | - | 770 | 809 | 804 | 850 |
| 56" | 1400(+0/-15) | 1512 | 1352,4 | - | - | - | - | 870 | 909 | 904 | 950 |
| 60" | 1500(+0/-15) | 1612 | 1450 | - | - | - | - | 920 | 959 | 954 | 1000 |
| 64" | 1600(+0/-15) | 1712 | 1547,6 | - | - | - | - | 970 | 1009 | 1004 | 1050 |
| 72" | 1800(+0/-15) | 1922 | 1746,8 | - | - | - | - | 1075 | 1114 | 1109 | 1155 |
| 80" | 2000(+0/-15) | 2122 | 1938 | - | - | - | - | 1175 | 1214 | 1209 | 1255 |

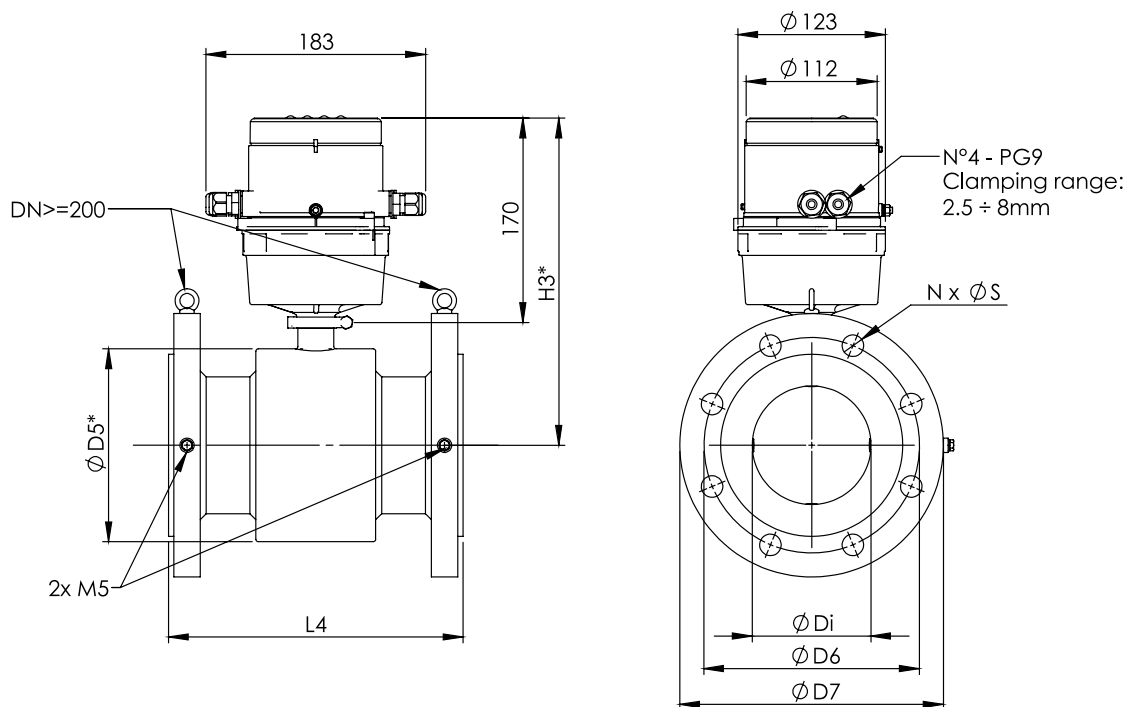
MUT2200EL - MC608 A/B/R*



MUT2200EL - MC406 - max DN 600



MUT2200EL - MC406 GSM - max DN 600



Notes



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November 2024

0800 494 723
hygradewater.co.nz

102 Neilson Street
Onehunga, Auckland 1061, New Zealand
PO Box 58142, Botany, Auckland 2163

