ISOMAG

The friendly magmeter

DATA SHEET

MS2500

ISOIL INDUSTRIA

INDEX

TECHNICAL DATA

OVERALL FEATURES	
Nominal diameter	❑ DN 25 ÷ 2000
Minimum conductivity	❑ 5 µS/cm
Humidity Range	❑ 0÷100% (IP 67)
Accuracy	❑ See relevant converter data sheet
CE Certification	❑ Yes
PED	❑ Yes

STANDARD FEATURES	
Body material	❑ Carbon steel painted
Nominal pressure	❑ 1600 kPa (4000 kPa up to DN 50)
Process connection	❑ Flanges std : UNI PN 16
Version – protection rating	❑ Compact IP67 (IP68 on request)
Flanges material	❑ Carbon steel
Lining material	❑ Polipropilene (max. PN 16) ❑ Ebonite ❑ PTFE (max PN 40) ❑ Rilsan (max. PN 16)
Gasket material (ONLY for lining in Polypropylene)	❑ FPM
Liquid temperature	❑ 0°C ÷ 70°C with Rilsan lining ❑ 0°C ÷ 60°C with PP lining ❑ -5°C ÷ 80°C with ebonite lining ❑ -20°C ÷130° (100°C with PTFE lining in compact version)
Vacuum resistance	❑ 20 Kpa (absolute) at 100 °C (60/80°C for PP/Ebonite)
Electrodes material	❑ Acciaio inox AISI 316L ❑ Hastelloy C276 ❑ Platinum ❑ Titanium ❑ Tantalum
Materials Certifications	❑ WRAS, NSF, DM174
Flow profile sensitivity class	❑ U0D0 according to ISO 4064 - OIMLR49 - MID

OPTIONAL FEATURES (CHECK FOR MORE DETAILS 'HOW TO ORDER' ON LAST PAGE)	
Body material	❑ Stainless steel AISI 304 or 316
Gaskets material (ONLY for lining in Polypropylene)	❑ EPDM
Nominal pressure	❑ Higher pressure rates available on request
Process connection	❑ Flanges: UNI, ANSI, DIN, JIS Others on request
Flanges material	❑ Stainless steel AISI 304 - AISI316L
Liquid temperature	❑ -20°C ÷ 180°C* with PTFE lining in separate version: * sensors with working temperature higher than 110 ° C are classified according to PED guidelines (details on table in the next page).
Lining material	❑ On request
Electrodes material	❑ On request
Version – protection rating	❑ Separate version (max 20m) – IP 68 ❑ Separate version (max 500 m), with preamplifier – IP 67 ❑ Separate version (max 500 m), with preamplifier – IP 68
MID Certifications	❑ MI-001 (check table below) ❑ MI-004 (check table below)

2014/68/UE PED DIRECTIVE

Here below the tables of wproducts subject to Directive 2014/68/UE for MS2500
The tables show which category of PED is applicable according to the water operating temperature (TAB A T <110 ° C TAB B T> = 110 ° C), sensor's DN and its nominal pressure.

DN / PN CORRELATION TABLE AND PED DIRECTIVE

ONLY FOR FAMILY MS2500-MS1000 AND PN MAX 40 Bar
ONLY FOR METER WITH LINING IN PTFE
FOR METER FAMILY MS2500 TYPE FLANGE ONLY UNI EN1092 - P245GH OR ASTM A105

ONLY FOR METER FOR WATER WITH T. > 110°C

DN	PN - Nominal Pressure			
	B	C	D	E
25	USE PN 40		USE PN 40	40
32				40
40				40
50	USE PN 16	16		40
65		16		40
80		16		40
100		16		40
125		16		40
150		16		40
200	10	16	25	40
250	10	16	25	40
300	10	16	25	40
350	10	16	25	40
400	10	16	25	40
450	10	16	25	40
500	10	16	25	40

CONDITIONS TO SATISFY FOR T.> 110 ° C:
VAPOR PRESSURE p> 1.5 ATA

CATI I
32>DN<=DN100+ PS*DN> 1000<=3500
CAT II
100>DN<=250 + PS*DN>3500<=5000
CATI III
DN> 250 + PS*DN>5000

MEANING OF TABLES CODE

=	OUT OF PED
=	CAT. I
=	CAT. II
=	CAT. III
=	USE DIFF. PN

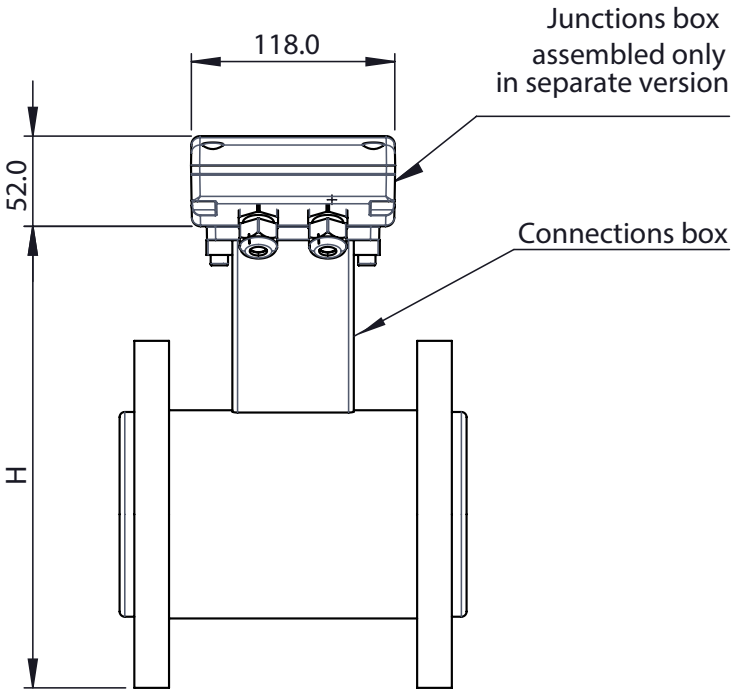
DN / PN CORRELATION TABLE AND PED DIRECTIVE

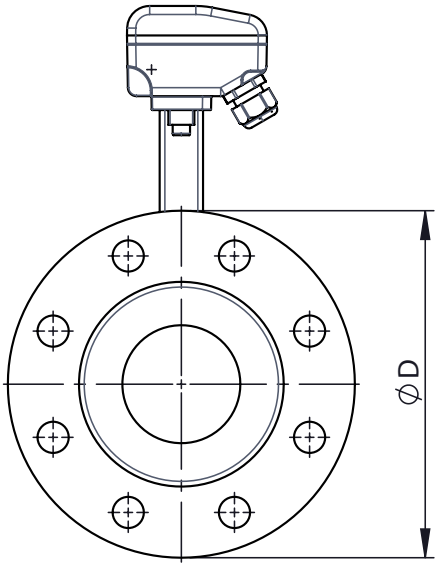
ONLY FOR METER FOR WATER WITH T.< 110°C

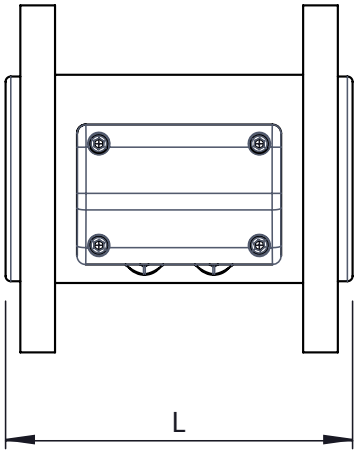
DN	PN - Nominal Pressure			
	B	C	D	E
25	USE PN 40		USE PN 40	40
32				40
40				40
50	USE PN 16			40
65				40
80				40
100				40
125				40
150				40
200	10		25	40
250	10	16	25	40
300	10	16	25	40
350	10	16	25	40
400	10	16	25	40
450	10	16	25	40
500	10	16	25	40
600	10	16	25	40
700	10	16	25	40
800	10	16	25	40
1000	10	16	25	40
1200	10	16	25	40
1300	10	16	25	40
1400	10	16	25	40
1500	10	16	25	40
1600	10	16	25	40
1700	10	16	25	40
1800	10	16	25	40
2000	10	16	25	40
2400	10	16	25	40

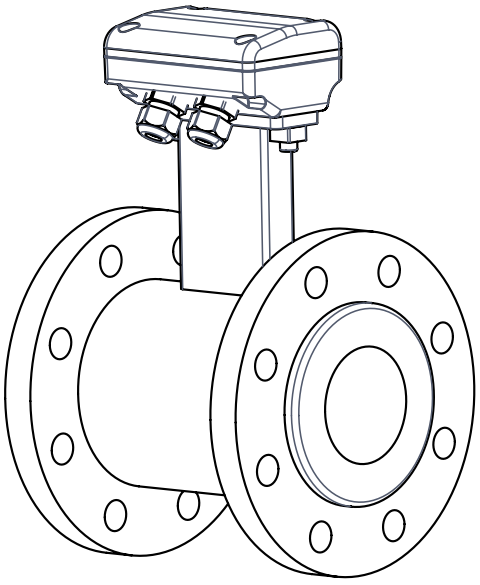
For each product is released a declaration of conformity, identified by the instrument's serial number

OVERALL DIMENSIONS









MS 2500 PN 10/64 - ANSI 150/300 OVERALL DIMENSIONS

DIMENSIONS mm (inches)			PN						
			PN 10	PN 16	PN 25	PN 40	PN 64	ANSI 150	ANSI 300
DN	25 (1")	**L**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**
		H	185 (7.28)	185 (7.28)	185 (7.28)	185 (7.28)	198 (7.80)	181 (7.13)	190 (7.48)
		D	**115 (4.53)**	**115 (4.53)**	**115 (4.53)**	**115 (4.53)**	**140 (5.51)**	**108 (4.25)**	**124 (4.88)**
	32 (1"1/4)	L	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)
		H	**203 (8)**	**203 (8)**	**203 (8)**	**203 (8)**	**209 (8.23)**	**192 (7.56)**	**199 (7.83)**
		D	140 (5.51)	140 (5.51)	140 (5.51)	140 (5.51)	155 (6.10)	118 (4.65)	133 (5.24)
	40 (1"1/2)	**L**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**
		H	213 (8.39)	213 (8.39)	213 (8.39)	213 (8.39)	220 (8.66)	207 (8.15)	221 (8.7)
		D	**150 (5.90)**	**150 (5.90)**	**150 (5.90)**	**150 (5.90)**	**170 (6.69)**	**127 (5)**	**156 (6.14)**
	50 (2")	L	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)
		H	**228 (8.98)**	**228 (8.98)**	**228 (8.98)**	**228 (8.98)**	**233 (9.17)**	**222 (8.74)**	**228 (8.98)**
		D	165 (6.50)	165 (6.50)	165 (6.50)	165 (6.50)	180 (7.09)	152 (5.98)	165 (6.5)
	65 (2"1/2)	**L**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**	**200 (7.87)**
		H	248 (9.76)	248 (9.76)	248 (9.76)	248 (9.76)	257 (10.12)	245 (9.65)	251 (9.88)
		D	**185 (7.28)**	**185 (7.28)**	**185 (7.28)**	**185 (7.28)**	**205 (8.07)**	**178 (7.01)**	**191 (7.52)**
	80 (3")	L	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)
		H	**263 (10.35)**	**263 (10.35)**	**263 (10.35)**	**263 (10.35)**	**267 (10.51)**	**259 (10.2)**	**268 (10.55)**
		D	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)	215 (8.46)	191 (7.52)	210 (8.27)
	100 (4")	**L**	**250 (9.84)**	**250 (9.84)**	**250 (9.84)**	**250 (9.84)**	**250 (9.84)**	**250 (9.84)**	**250 (9.84)**
		H	283 (11.14)	283 (11.14)	294 (11.57)	294 (11.57)	297 (11.69)	288 (11.34)	300 (11.81)
		D	**220 (8.66)**	**220 (8.66)**	**235 (9.25)**	**235 (9.25)**	**250 (9.84)**	**229 (9.02)**	**254 (10)**
	125 (5")	L	250 (9.84)	250 (9.84)	250 (9.84)	250 (9.84)	250 (9.84)	250 (9.84)	250 (9.84)
		H	**313 (12.32)**	**313 (12.32)**	**325 (12.80)**	**325 (12.80)**	**330 (13)**	**315 (12.4)**	**328 (12.91)**
		D	250 (9.84)	250 (9.84)	270 (10.63)	270 (10.63)	295 (11.61)	254 (10)	279 (10.98)
	150 (6")	**L**	**300 (11.81)**	**300 (11.81)**	**300 (11.81)**	**300 (11.81)**	**300 (11.81)**	**300 (11.81)**	**300 (11.81)**
		H	344 (13.54)	344 (13.54)	355 (13.98)	355 (13.98)	377 (14.84)	341 (13.43)	360 (14.17)
		D	**285 (11.22)**	**285 (11.22)**	**300 (11.81)**	**300 (11.81)**	**345 (13.58)**	**279 (10.98)**	**318 (12.52)**
	200 (8")	**L**	350 (13.78)	350 (13.78)	350 (13.78)	350 (13.78)	350 (13.78)	350 (13.78)	350 (13.78)
		H	**399 (15.71)**	**399 (15.71)**	**415 (16.34)**	**425 (16.73)**	**435 (17.13)**	**401 (15.79)**	**420 (16.54)**
		D	340 (13.39)	340 (13.39)	360 (14.17)	375 (14.76)	415 (16.34)	343 (13.5)	381 (15)
	250 (10)	**L**	**450 (17.72)**	**450 (17.72)**	**450 (17.72)**	**450 (17.72)**	**450 (17.72)**	**450 (17.72)**	**450 (17.72)**
		H	454 (17.87)	460 (18.11)	475 (18.7)	493 (19.41)	491 (19.33)	461 (18.15)	480 (18.9)
		D	**395 (15.55)**	**405 (15.94)**	**425 (16.73)**	**450 (17.72)**	**470 (18.5)**	**406 (15.98)**	**445 (17.52)**
	300 (12")	**L**	500 (19.69)	500 (19.69)	500 (19.69)	500 (19.69)	500 (19.69)	500 (19.69)	500 (19.69)
		H	**504 (19.84)**	**515 (20.28)**	**535 (21.06)**	**558 (21.97)**	**545 (21.46)**	**527 (20.75)**	**546 (21.5)**
		D	445 (17.52)	460 (18.11)	485 (19.09)	515 (20.28)	530 (20.87)	483 (19.02)	521 (20.51)
	350 (14")	**L**	**550 (21.65)**	**550 (21.65)**	**550 (21.65)**	**550 (21.65)**	**550 (21.65)**	**550 (21.65)**	**550 (21.65)**
		H	564 (22.2)	575 (22.64)	598 (23.54)	619 (24.37)	603 (23.74)	582 (22.91)	607 (23.9)
		D	**505 (19.88)**	**520 (20.47)**	**555 (21.85)**	**580 (22.83)**	**600 (23.62)**	**533 (20.98)**	**584 (22.99)**
	400 (16")	**L**	600 (23.62)	600 (23.62)	600 (23.62)	600 (23.62)	600 (23.62)	600 (23.62)	600 (23.62)
		H	**620 (24.41)**	**630 (24.8)**	**659 (25.94)**	**695 (27.36)**	**670 (26.38)**	**639 (25.16)**	**664 (26.14)**
		D	565 (22.24)	580 (22.83)	62 (2.44)	660 (25.98)	670 (26.38)	597 (23.5)	648 (25.51)
	450 (18")	**L**	**600 (23.62)**	**600 (23.62)**	**600 (23.62)**	**600 (23.62)**		**600 (23.62)**	**600 (23.62)**
		H	670 (26.38)	690 (27.17)	709 (27.91)	720 (28.35)		688 (27.09)	726 (28.58)
		D	**615 (24.21)**	**640 (25.2)**	**670 (26.38)**	**685 (26.97)**		**635 (25)**	**711 (27.99)**
	500 (20")	**L**	600 (23.62)	600 (23.62)	600 (23.62)	600 (23.62)		600 (23.62)	600 (23.62)
		H	**725 (28.54)**	**758 (29.84)**	**769 (30.28)**	**784 (30.87)**		**751 (29.57)**	**770 (30.31)**
		D	670 (26.38)	715 (28.15)	730 (28.74)	755 (29.72)		699 (27.52)	775 (30.51)

DIMENSIONS mm (inches)			PN						
			PN 10	PN 16	PN 25	PN 40	PN 64	ANSI 150	ANSI 300
DN	600 (24″)	L	**600 (23.62)**	**600 (23.62)**	**600 (23.62)**	**600 (23.62)**		**600 (23.62)**	**600 (23.62)**
		H	830 (32.68)	879 (34.61)	880 (34.65)	911 (35.87)		866 (34.09)	916 (36.06)
		D	**780 (30.71)**	**840 (33.07)**	**845 (33.27)**	**890 (35.04)**		**813 (32.01)**	**914 (35.98)**
	650 (26″)	L						650 (25.59)	650 (25.59)
		H						**921 (36.26)**	**1002 (39.45)**
		D						870 (34.25)	972 (38.27)
	700 (28″)	L	**700 (27.56)**	**700 (27.56)**	**700 (27.56)**	**700 (27.56)**		700 (27.56)	
		H	925 (36.41)	949 (37.36)	989 (38.94)	1016 (40)		1016 (40)	
		D	**895 (35.24)**	**910 (35.83)**	**960 (37.8)**	**995 (39.17)**		**927,1 (36,5)**	
	750 (30″)	L						750 (29.53)	750 (29.53)
		H						**1032 (40.63)**	**1121 (44.13)**
		D						984 (38.74)	1092 (42.99)
	800 (32″)	L	**800 (31.5)**	**800 (31.5)**	**800 (31.5)**	**800 (31.5)**		**800 (31.5)**	
		H	1058 (41.65)	1060 (41.73)	1106 (43.54)	1149 (45.24)		1149 (45.24)	
		D	**1015 (39.96)**	**1025 (40.35)**	**1085 (42.72)**	**1114 (43.86)**		**1060,5 (47,15)**	
	850 (34″)	L						850 (33.46)	850 (33.46)
		H						**1149 (45.24)**	**1230 (48.43)**
		D						1111 (43.74)	1207 (47.52)
	900 (36″)	L	**900 (35.43)**	**900 (35.43)**	**900 (35.43)**	**900 (35.43)**		**900 (35.43)**	**900 (35.43)**
		H	1158 (45.59)	1160 (45.67)	1206 (47.48)	1259 (49.57)		1206 (47.48)	1292 (50.87)
		D	**1115 (43.9)**	**1125 (44.29)**	**1185 (46.65)**	**1250 (49.21)**		**1168 (45.98)**	**1270 (50)**
	1000 (40″)	L	1000 (39.37)	1000 (39.37)	1000 (39.37)	1000 (39.37)		1000 (39.37)	1000 (39.37)
		H	**1269 (49.96)**	**1284 (50.55)**	**1329 (52.32)**	**1369 (53.9)**		**1381 (54.37)**	**1467 (57.76)**
		D	1230 (48.43)	1255 (49.41)	1320 (51.97)	1360 (53.54)		1346 (52.99)	1448 (57.01)
	1050 (42″)	L						**1050 (41.3)**	
		H						1355.0 (54.00)	
		D						1346.2 (53.00)	
	1100 (44″)	L						**1100 (43.3)**	
		H						1428 (56.25)	
		D						1403.4 (55.25)	
	1200 (48″)	L						**1200 (47.24)**	
		H						1530 (60.50)	
		D						1511.3 (59.50)	
	1800 (72″)	L						**1800 (72.00)**	
		H						1381 (54.37)	
		D						2197 (86.50)	

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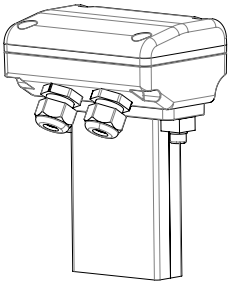
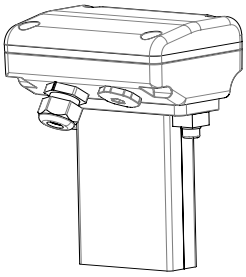
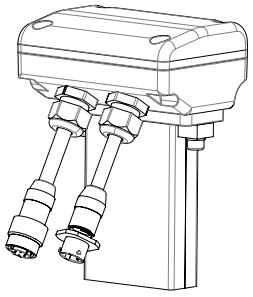
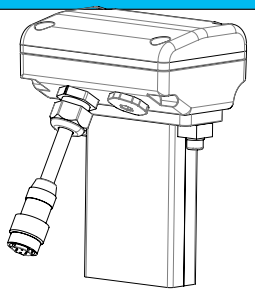
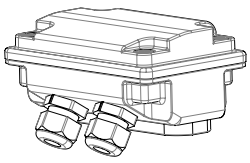
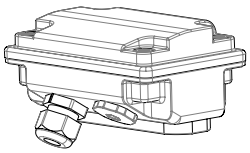
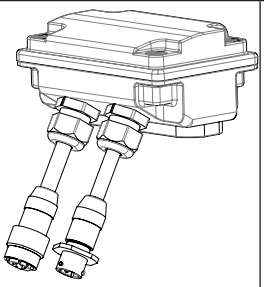
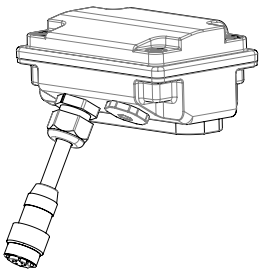
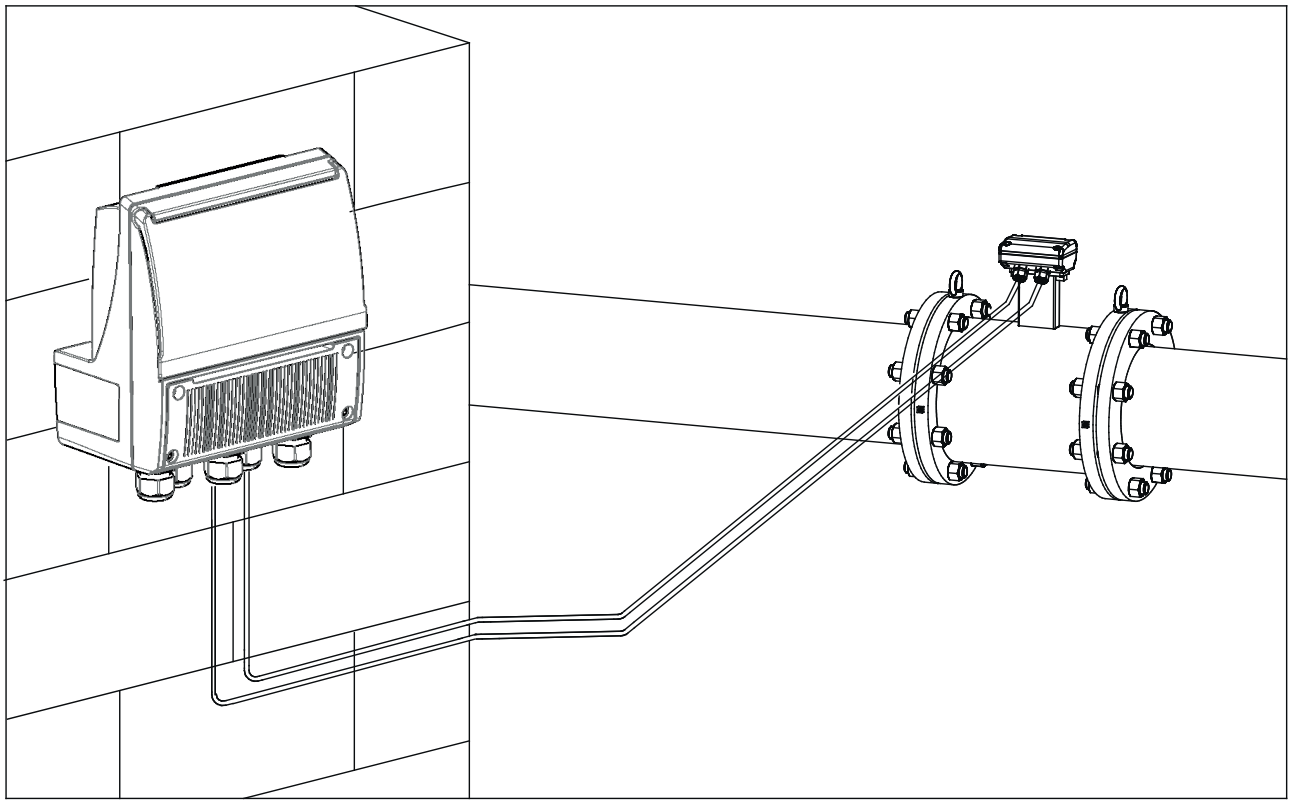
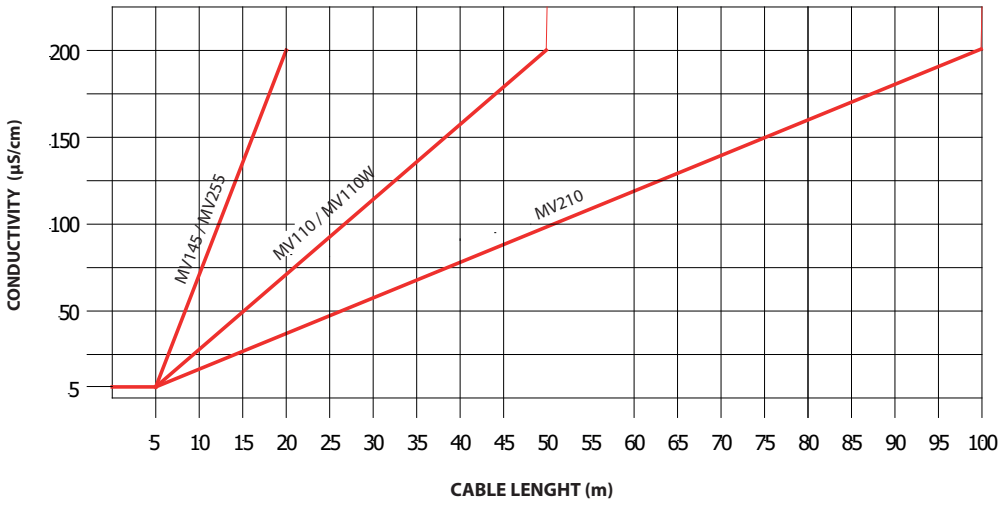
A PAINTED ALUMINIUM				
B AISI 304				

PRICE LIST OPTIONS	JUNCTION BOX TYPE (surface finish)
A	Without junction box, converter connected on the connections box
B	A-1 A-2 only for MV110
G	A-4
F	A-3
N	A-2 with preamplifier
Q	A-4 with preamplifier
U	B-1 (raw) B-2 only for ML110 (raw)
S	B-4 (raw)
T	B-3 (raw)
P	B-2 with preamplifier (raw)
R	B-4 with preamplifier (raw)
K	B-1 (polished) B-2 only for ML110 (polished)
Y	B-4 (polished)
W	B-3 (polished)
V	B-2 with preamplifier (polished)
J	B-4 with preamplifier (polished)

SEPARATE VERSION



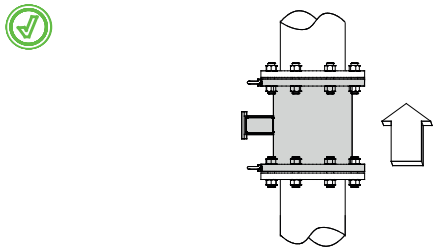


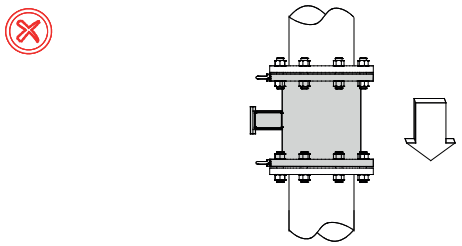
Notes:

- It is recommended to install the connection cables away from, or protect against sources of electromagnetic noise.
- The minimum conductivity of the liquid medium to ensure correct functionality of the empty pipe detection is 20 µS/cm

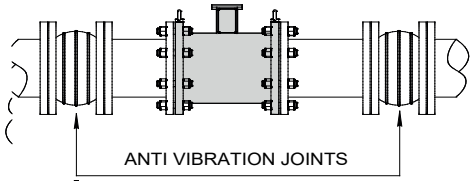
INSTALLATION RECOMMENDATIONS

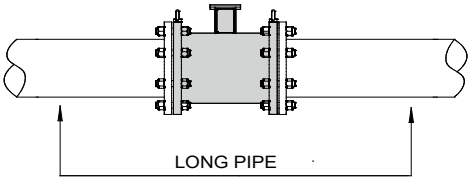
In vertical installations an ascending flow is preferable. For vertical installations with descending flowdirection contact the manufacturer



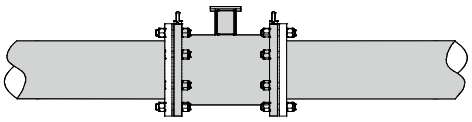


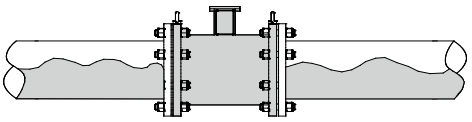
For installations in long pipe lines, please use anti vibration joints



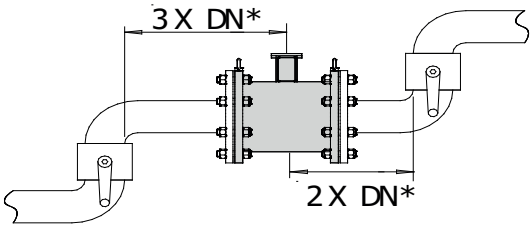


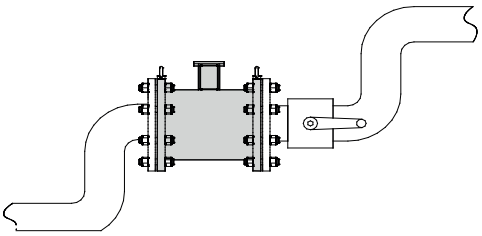
Avoid a partially empty pipe, during operation the pipe must be either completely full of liquid or completely empty



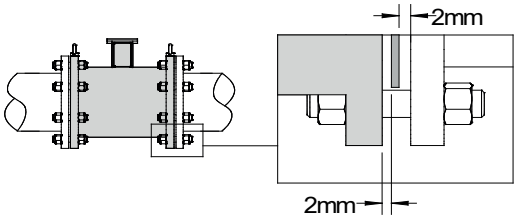


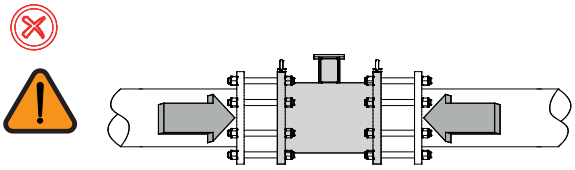
Install the sensor away from bends and hydraulic accessories





Avoid positioning flanges by tigthening the nuts



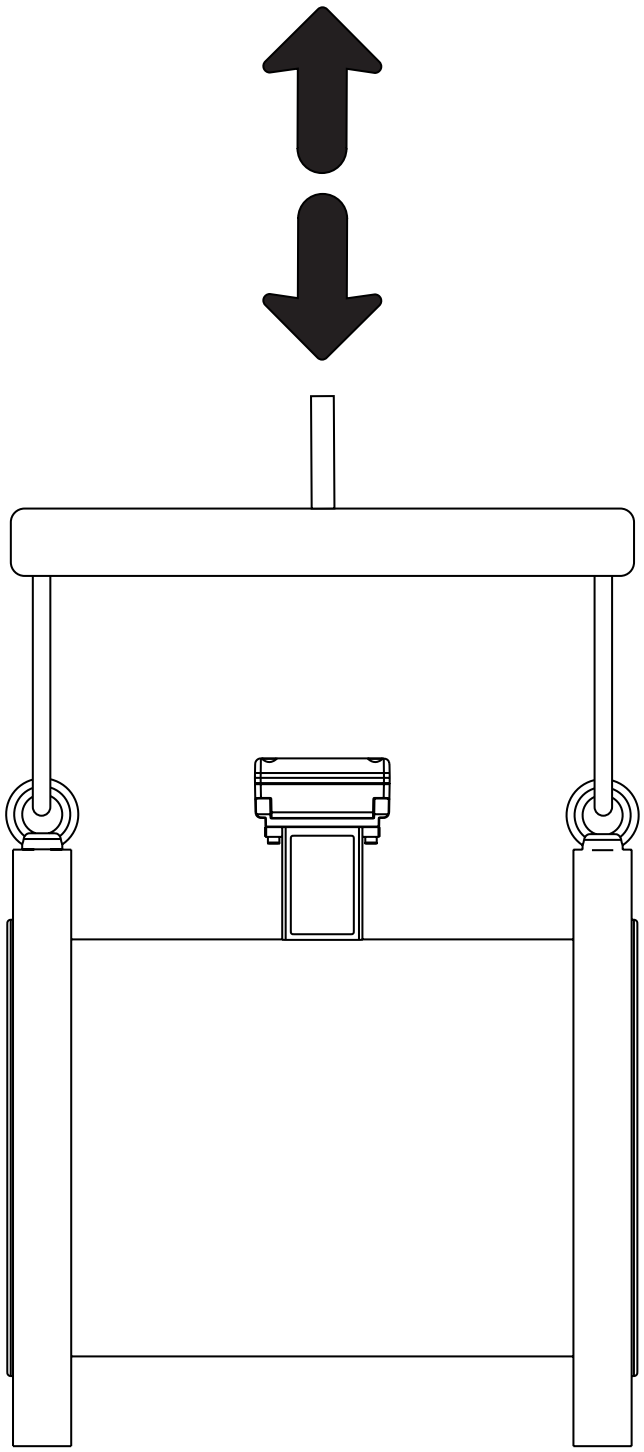


(*) Flow profile sensitivity class: U0D0 according to ISO 4064 - OIMLR49 - MID

RECOMMENDED INSTALLATION PROCEDURE

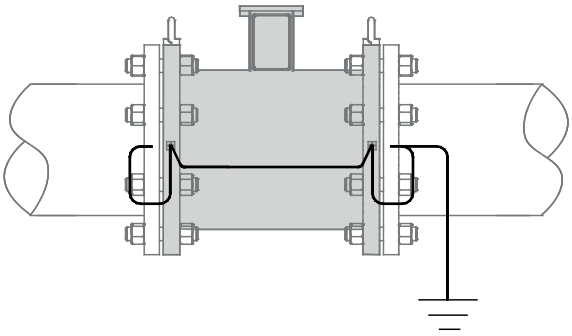
Sensors weighing more than 20Kg are equipped of appropriate eyebolts to lift the sensor according to the drawing above.

The eyebolts support ONLY the weight of the meter.

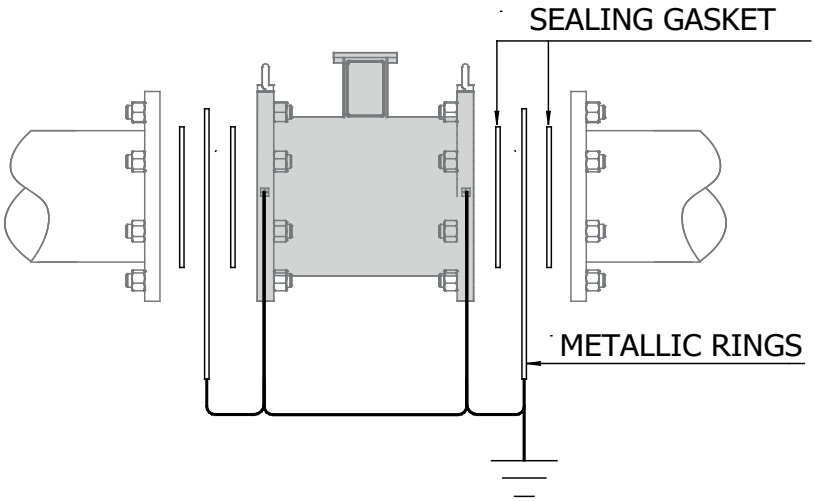


SENSOR GROUNDING

METALLIC PIPE

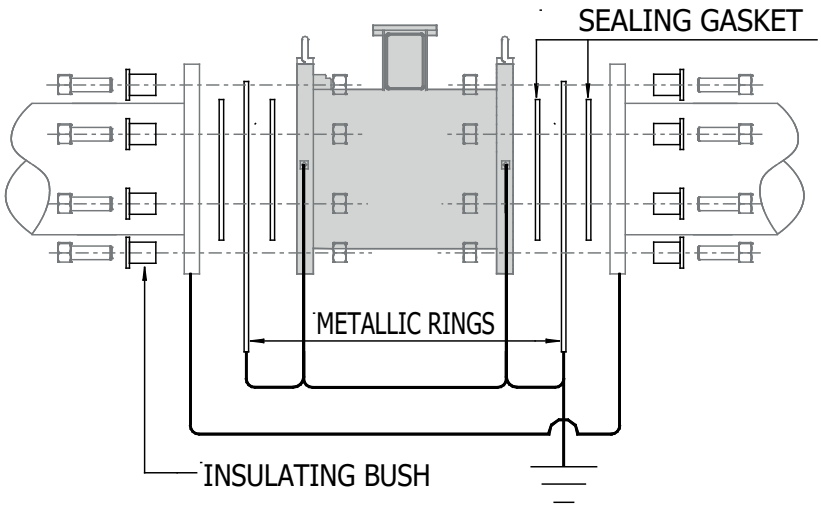


INSULATED PIPE



If the sensor has to be installed in a pipe made of an insulating material, thefollowing are necessary:
- Inserting two metallic rings between the sensor flanges and the pipe line counter flanges

PIPE WITH CATHODIC PROTECTION

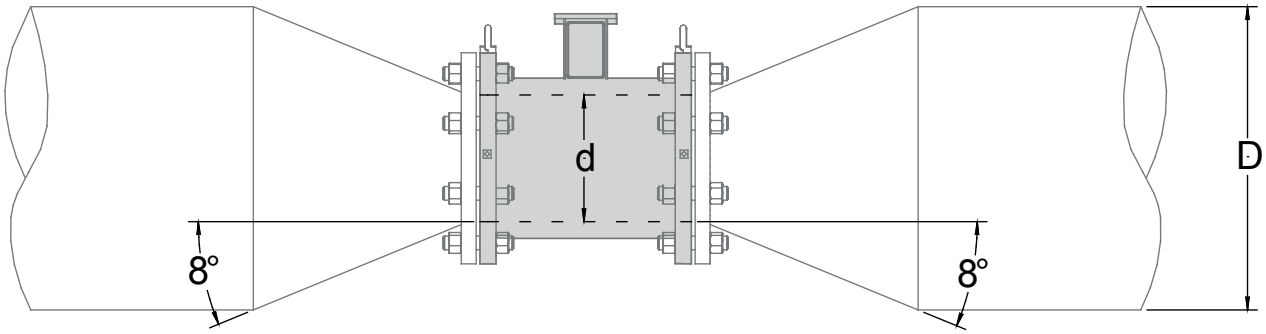


If the sensor has to beinstalled in the pipe with a cathodic protection,the following are necessary:

using insulating bushesto isolate the bolts

Metallic grounding rings should be provided to ground the liquid using insulating gasket between the rings

PRESSURE LOSS CALCULATION (CONES 8° ANGLES)



$$\Delta p = \left[0.10 + 0.20 \left(\left(\frac{d}{D} \right)^{-2} - 1 \right)^{2} \left(\frac{d}{D} \right)^{4} \right] \left(\rho \frac{u^2}{2} \right)$$

Were:

Δp = Pressure loss in [Pa]
ρ = Fluid density [kg/m³] typical value ρ = 1000 [kg/m³]
d = sensor diameter [m]
D = pipe diameter (greater than sensor diameter) [m]
u = Mean flow velocity in sensor diameter [m/s]

Calculation examples Δp [mbar]								
u / d/D	1 [m/s]	2 [m/s]	3 [m/s]	4 [m/s]	5 [m/s]	6 [m/s]	7 [m/s]	8 [m/s]
0.5	1.1	4.3	9.6	17	26.6	38.3	52.1	68
0.6	0.9	3.6	8.2	14.6	22.7	32.7	44.6	58.2
0.7	0.8	3	6.8	12.2	19	27.4	37.2	48.6
0.8	0.6	2.5	5.7	10.1	15.7	22.7	30.9	40.3
0.9	0.5	2.1	4.8	8.6	13.4	19.3	26.3	34.3

Notes:

- ρ = 1000 [kg/m³] as goodness approximation of water density in common use
- Inner diameter of sensor is used for d, express in meters.
- Indeed pressure loss equation is dimensionally correct in [Pa]. The equation results in table are show in [mbar].

OIML R49: MV110/ MV110W/ MV145

The sensor **MS2500** diameters below, coupled with **MV110/MV110W/MV145** are certified in accordance with OIML R49:2013

CLASS 1

SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.10	0.064	
32	1 ¼	25	0.16	0.10	
40	1 ½	40	0.26	0.16	
50	2	63	0.40	0.25	
65	2 ½	100	0.64	0.40	
80	3	160	1.0	0.64	
100	4	250	1.6	1.0	
125	5	400	2.6	1.6	
150	6	630	4.0	2.5	250
200	8	1000	6.4	4.0	
250	10	1600	10	6.4	
300	12	2500	16	10	
350	14	2500	16	10	
400	16	4000	26	16	
450	18	4000	26	16	
500	20	6300	40	25	
600	24	10000	64	40	

SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.26	0.16	
32	1 ¼	25	0.4	0.25	
40	1 ½	40	0.64	0.4	
50	2	63	1.01	0.63	
65	2 ½	100	1.6	1	
80	3	160	2.6	1.6	
100	4	250	4	2.5	
125	5	400	6.4	4	
150	6	630	10.1	6.3	100
200	8	1000	16	10	
250	10	1600	26	16	
300	12	2500	40	25	
350	14	2500	40	25	
400	16	4000	64	40	
450	18	4000	64	40	
500	20	6300	101	63	
600	24	10000	160	100	

SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.32	0.2	
32	1 ¼	25	0.5	0.31	
40	1 ½	40	0.8	0.5	
50	2	63	1.3	0.79	
65	2 ½	100	2	1.25	
80	3	160	3.2	2	
100	4	250	5	3.13	
125	5	400	8	5	
150	6	630	13	7.88	80
200	8	1000	20	12.5	
250	10	1600	32	20	
300	12	2500	50	31.25	
350	14	2500	50	31.25	
400	16	4000	80	50	
450	18	4000	80	50	
500	20	6300	126	78.75	
600	24	10000	200	125	

CLASS 2

SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.064	0.040	
32	1 ¼	25	0.10	0.063	
40	1 ½	40	0.16	0.10	
50	2	63	0.25	0.16	
65	2 ½	100	0.40	0.25	
80	3	160	0.64	0.40	
100	4	250	1.0	0.63	
125	5	400	1.6	1.0	
150	6	630	2.5	1.6	400
200	8	1000	4.0	2.5	
250	10	1600	6.4	4.0	
300	12	2500	10	6.3	
350	14	2500	10	6.3	
400	16	4000	16	10	
450	18	4000	16	10	
500	20	6300	25	16	
600	24	10000	40	25	
650	26	10000	40	25	
700	28	10000	64	40	250
750	30	10000	64	40	
800	32	16000	160	100	160
900	36	16000	160	100	
1000	42	16000	256	160	100
1200	48	16000	320	200	
1400	56	16000	320	200	80
1600	64	16000	320	200	
1800	72	16000	640	400	40
2000	80	16000	640	400	

SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.10	0.064	
32	1 ¼	25	0.16	0.10	
40	1 ½	40	0.26	0.16	
50	2	63	0.40	0.25	
65	2 ½	100	0.64	0.40	
80	3	160	1.0	0.64	
100	4	250	1.6	1.0	
125	5	400	2.6	1.6	
150	6	630	4.0	2.5	
200	8	1000	6.4	4.0	250
250	10	1600	10	6.4	
300	12	2500	16	10	
350	14	2500	16	10	
400	16	4000	26	16	
450	18	4000	26	16	
500	20	6300	40	25	
600	24	10000	64	40	
650	26	10000	64	40	
700	28	10000	64	40	
750	30	10000	64	40	
800	32	16000	160	100	160
900	36	16000	160	100	
1000	42	16000	256	160	100
1200	48	16000	320	200	
1400	56	16000	320	200	80
1600	64	16000	320	200	
1800	72	16000	640	400	40
2000	80	16000	640	400	

CLASS 2

SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.16	0.10	160
32	1 ¼	25	0.25	0.16	
40	1 ½	40	0.40	0.25	
50	2	63	0.63	0.40	
65	2 ½	100	1.0	0.63	
80	3	160	1.6	1.0	
100	4	250	2.5	1.6	
125	5	400	4.0	2.5	
150	6	630	6.3	4.0	
200	8	1000	10	6.3	
250	10	1600	16	10	
300	12	2500	25	16	
350	14	2500	25	16	
400	16	4000	40	25	
450	18	4000	40	25	
500	20	6300	63	40	
600	24	10000	100	63	
650	26	10000	100	63	
700	28	10000	100	63	
750	30	10000	160	100	
800	32	16000	160	100	
900	36	16000	160	100	
1000	42	16000	250	160	100
1200	48	16000	320	200	80
1400	56	16000	320	200	
1600	64	16000	320	200	
1800	72	16000	640	400	40
2000	80	16000	640	400	

MI-001: MV110 / MV110W/ MV145/ MV255

The sensor **MS2500** diameters below, coupled with **MV110/MV110W/MV145/MV255** are certified in accordance with European directive 2014/32/EU category MI-001

SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.064	0.040	400
32	1 ¼	25	0.10	0.063	
40	1 ½	40	0.16	0.10	
50	2	63	0.25	0.16	
65	2 ½	100	0.40	0.25	
80	3	160	0.64	0.40	
100	4	250	1.0	0.63	
125	5	400	1.6	1.0	
150	6	630	2.5	1.6	
200	8	1000	4.0	2.5	
250	10	1600	6.4	4.0	
300	12	2500	10	6.3	
350	14	2500	10	6.3	
400	16	4000	16	10	
450	18	4000	16	10	
500	20	6300	25	16	
600	24	10000	40	25	
650	26	10000	40	25	
700	28	10000	64	40	250
750	30	10000	64	40	
800	32	16000	160	100	160
900	36	16000	160	100	
1000	42	16000	256	160	100
1200	48	16000	320	200	80
1400	56	16000	320	200	
1600	64	16000	320	200	
1800	72	16000	640	400	40
2000	80	16000	640	400	

SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.10	0.064	250
32	1 ¼	25	0.16	0.10	
40	1 ½	40	0.26	0.16	
50	2	63	0.40	0.25	
65	2 ½	100	0.64	0.40	
80	3	160	1.0	0.64	
100	4	250	1.6	1.0	
125	5	400	2.6	1.6	
150	6	630	4.0	2.5	
200	8	1000	6.4	4.0	
250	10	1600	10	6.4	
300	12	2500	16	10	
350	14	2500	16	10	
400	16	4000	26	16	
450	18	4000	26	16	
500	20	6300	40	25	
600	24	10000	64	40	
650	26	10000	64	40	
700	28	10000	64	40	
750	30	10000	64	40	
800	32	16000	160	100	160
900	36	16000	160	100	
1000	42	16000	256	160	100
1200	48	16000	320	200	80
1400	56	16000	320	200	
1600	64	16000	320	200	
1800	72	16000	640	400	40
2000	80	16000	640	400	

The sensor **MS2500** diameters below, coupled with **MV110/MV110W/MV145/MV255** are certified in accordance with European directive 2014/32/EU category MI-001

SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.16	0.10	
32	1 ¼	25	0.25	0.16	
40	1 ½	40	0.40	0.25	
50	2	63	0.63	0.40	
65	2 ½	100	1.0	0.63	
80	3	160	1.6	1.0	
100	4	250	2.5	1.6	
125	5	400	4.0	2.5	
150	6	630	6.3	4.0	
200	8	1000	10	6.3	
250	10	1600	16	10	
300	12	2500	25	16	**160**
350	14	2500	25	16	
400	16	4000	40	25	
450	18	4000	40	25	
500	20	6300	63	40	
600	24	10000	100	63	
650	26	10000	100	63	
700	28	10000	100	63	
750	30	10000	160	100	
800	32	16000	160	100	
900	36	16000	160	100	
1000	42	16000	250	160	**100**
1200	48	16000	320	200	
1400	56	16000	320	200	**80**
1600	64	16000	320	200	
1800	72	16000	640	400	**40**
2000	80	16000	640	400	

MI-001: MV800

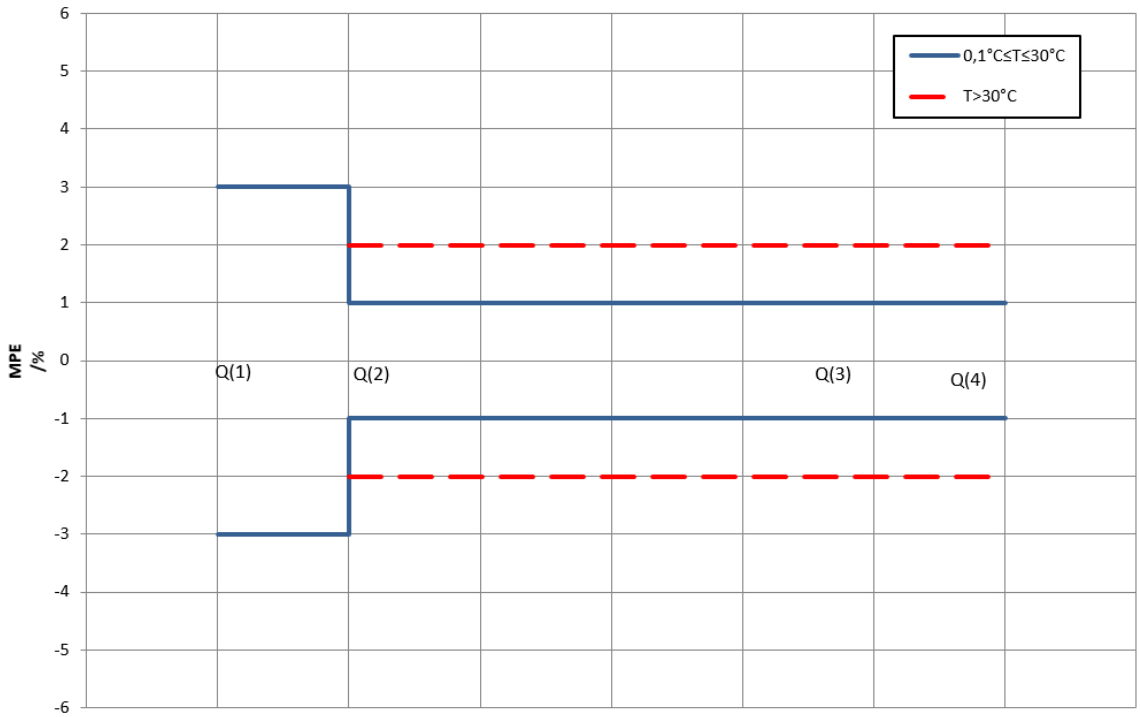
The sensor **MS2500** diameters below, coupled with **MV800** are certified in accordance with European directive 2014/32/EU category MI-001

SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.16	0.10	160
32	1 ¼	25	0.25	0.16	
40	1 ½	40	0.40	0.25	
50	2	63	0.63	0.39	
65	2 ½	100	1.0	0.63	
80	3	160	1.6	1.0	
100	4	250	2.5	1.6	
125	5	400	4.0	2.5	
150	6	630	6.3	3.9	
200	8	630	6.3	3.9	
250	10	630	6.3	3.9	

SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.06	0.04	400
32	1 ¼	25	0.10	0.063	
40	1 ½	40	0.16	0.10	
50	2	63	0.25	0.16	
65	2 ½	100	0.40	0.25	
80	3	160	0.64	0.40	
100	4	250	1.0	0.63	
125	5	400	1.6	1.0	
150	6	630	2.5	1.6	

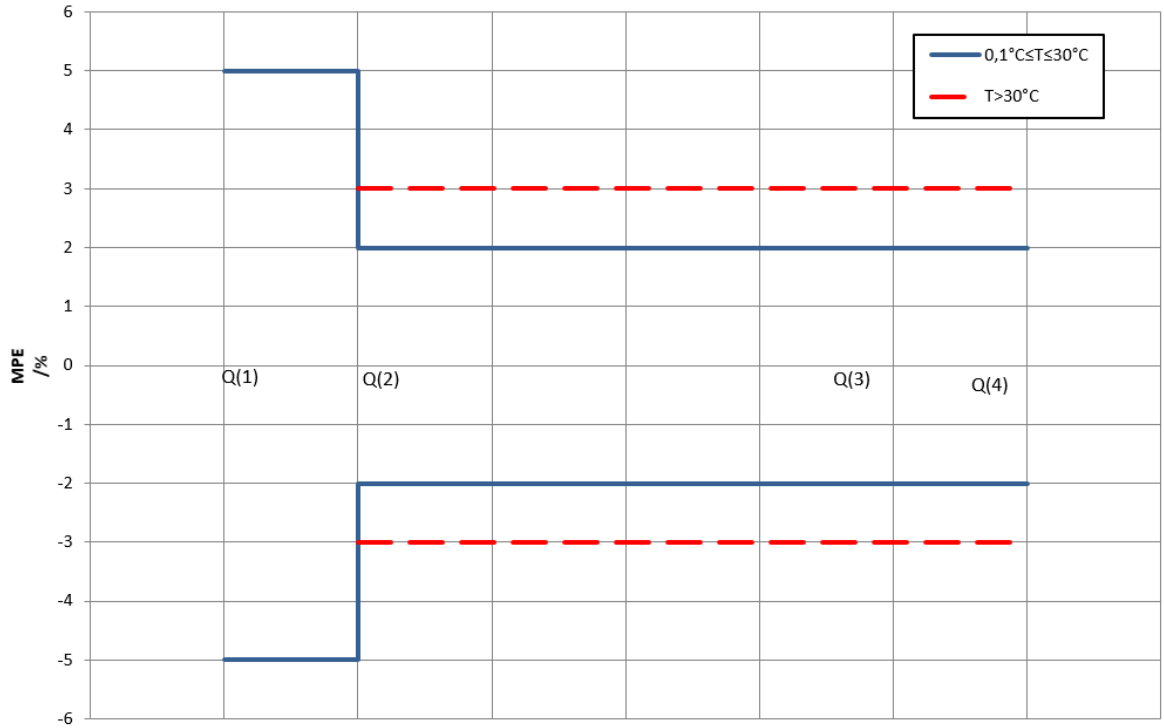
OIML R49 ACCURACY CLASS 1

(OIML R 49-1:2013 (E) - ISO4064:2014)



MPE - MI 001 - OIML R49 ACCURACY CLASS 2

(OIML R 49-1:2013 (E) - ISO4064:2014)



MI-004: MV110 / MV110W / MV800

The MS2500 sensor's diameters listed below, coupled with MV110 / MV110W / MV800, are certified according to European Directive 2014/32/EU category MI-004

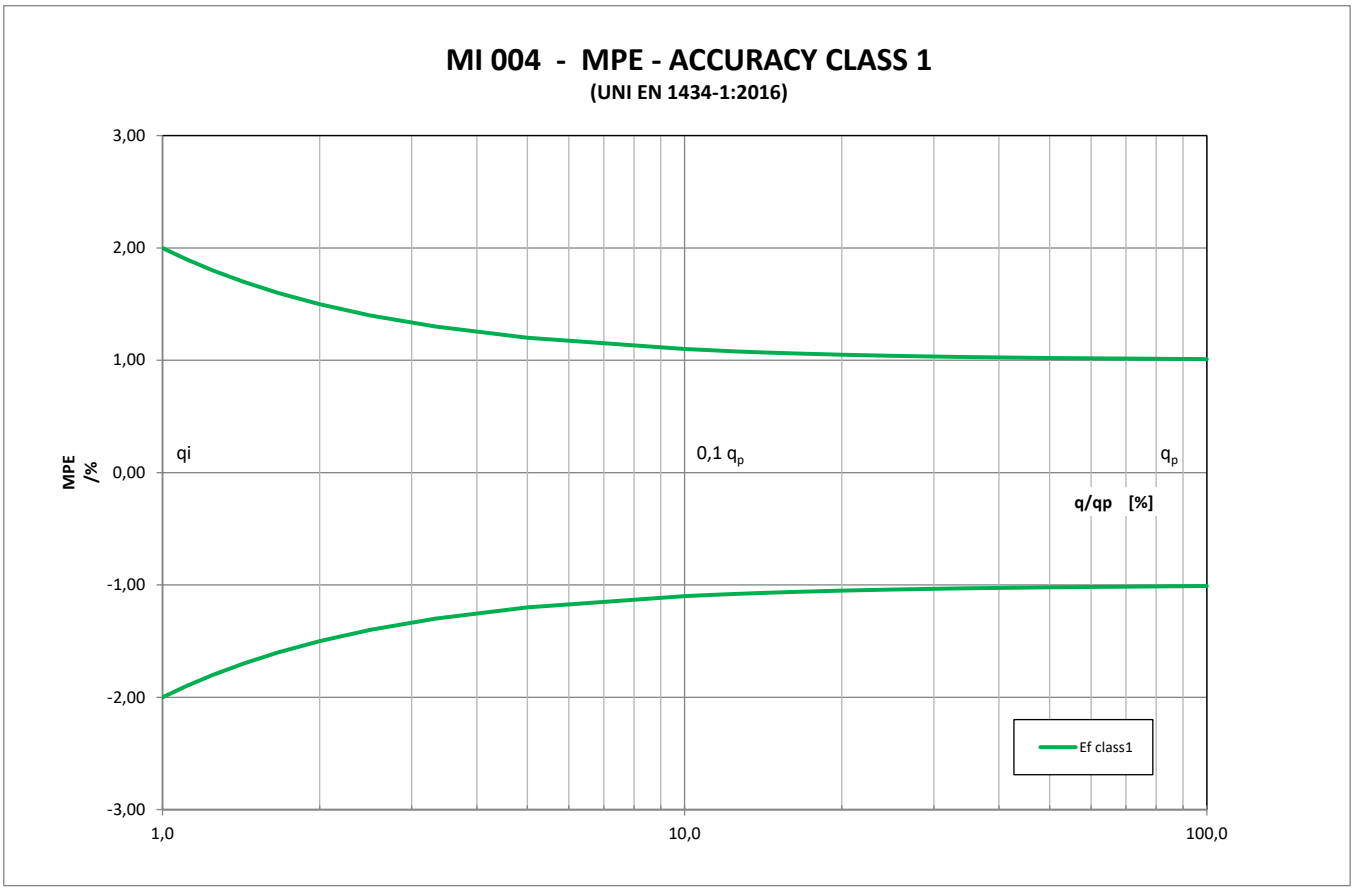
SIZE		q_p	q_s	0,1 q_p	q_i	MC
mm	inch	m3/h				q_p/q_i
25	1	16	16	1,6	0,16	100
32	1 ¼	25	25	2,5	0,25	
40	1 ½	40	40	4	0,40	
50	2	63	63	6,3	0,63	
65	2 ½	100	100	10	1,00	
80	3	160	160	16	1,60	
100	4	250	250	25	2,50	
125	5	400	400	40	4,0	
150	6	630	630	63	6,3	
200	8	1000	1000	100	10	
250	10	1600*	1600	160	20,00	80
300	12	2500*	2500	250	31,25	
350	14	2500*	2500	250	31,25	
400	16	4000*	4000	400	50,00	

SIZE		q_p	q_s	0,1 q_p	q_i	MC
mm	inch	m3/h				q_p/q_i
25	1	10	16	1	0,2	50
32	1 ¼	16	25	1,6	0,32	
40	1 ½	25	40	2,5	0,5	
50	2	40	63	4	0,8	
65	2 ½	63	100	6,3	1,26	
80	3	100	160	10	2	
100	4	160	250	16	3,2	
125	5	250	400	25	5	
150	6	400	630	40	8	
200	8	630	1000	63	12,6	
250	10	1000	1600	100	20	
300	12	1600*	2500	160	32	
350	14	2500*	2500	250	50	
400	16	2500*	4000	250	50	

SIZE		q_p	q_s	0,1 q_p	q_i	MC
mm	inch	m3/h				q_p/q_i
25	1	10	16	1	0,4	25
32	1 ¼	16	25	1,6	0,64	
40	1 ½	25	40	2,5	1	
50	2	40	63	4	1,6	
65	2 ½	63	100	6,3	2,52	
80	3	100	160	10	4	
100	4	160	250	16	6,4	
125	5	250	400	25	10	
150	6	400	630	40	16	
200	8	630	1000	63	25,2	
250	10	1000	1600	100	40	
300	12	1600*	2500	160	64	
350	14	2500*	2500	250	100	
400	16	2500*	4000	250	100	

SIZE		q_p	q_s	0,1 q_p	q_i	MC
mm	inch	m3/h				q_p/q_i
25	1	10	16	1	1	10
32	1 ¼	16	25	1,6	1,6	
40	1 ½	25	40	2,5	2,5	
50	2	40	63	4	4	
65	2 ½	63	100	6,3	6,3	
80	3	100	160	10	10	
100	4	160	250	16	16	
125	5	250	400	25	25	
150	6	400	630	40	40	
200	8	630	1000	63	63	
250	10	1000	1600	100	100	
300	12	1600*	2500	160	160	
350	14	2500*	2500	250	250	
400	16	2500*	4000	250	250	

(*) : Reduced flowrates to the test rig limits



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