



ISOMAG[®]

The friendly magmeter

DATA SHEET

MV110W



CE

ISOIL[®]
I N D U S T R I A

INDEX

TECHNICAL DATA	3
OVERALL DIMENSIONS	4
OVERALL DIMENSIONS (STAINLESS STEEL VERSION)	7
MV110W EXPLODED LAYOUT	9
MV110W CONSTRUCTION (STAINLESS STEEL VERSION)	10
MAIN PAGES VISUALISATION	11
ELECTRICAL CONNECTIONS	12
DIGITAL INPUT	13
DIGITAL OUTPUTS	13
FUNCTIONS MENU	14
ACCURACY	18
OIML R49	19
MI-001	22
MI-004 OIML R75 CLASS1	25
HOW TO ORDER	27

TECHNICAL DATA

OVERALL FEATURES

Suitable For	☐ All the ISOMAG® sensors, up to DN 1000
Minimum conductivity	☐ 5 µS/cm
Altitude	☐ -200 m up to 4000 m
Ambient Temperature	☐ -20... +60°C / -4... +140 °F - Aluminium housing ☐ -10... +50°C / +14...+122 °F - Reinforced Nylon
Humidity Range	☐ 0÷100%

STANDARD FEATURES

Housing materials	☐ Painted Aluminium die casting ☐ Nylon reinforced with 15% of fiber glass ☐ AISI304 Stainless Steel
Protection Rate	☐ IP 67
Power Supply/Consumption	☐ 100-240 V~ (20VA) – 44-66 Hz
Cable Gland	☐ N° 5 cable gland PG 11
Full scale value	☐ 0,4...10m/s
Dig. Input/output	☐ N°1 , programmable output (i.e. Totalizer reset) / N°1 digital input
Data Storage	☐ Values storing system in case of power failure
Galvanic Insulation	☐ All the inputs/outputs are galvanically insulated
Programming Plug In	☐ USB port for the connection to PC (USB cable type A/USB MINI B is required for the programming)
Bi-Directional	☐ Yes
Diagnostic Funct.	☐ Yes
Empty Pipe Detect.	☐ Yes
CE Certification	☐ Yes

OPTIONAL FEATURES

(CHECK HOW TO ORDER, AT LAST PAGE, FOR MORE DETAILS)

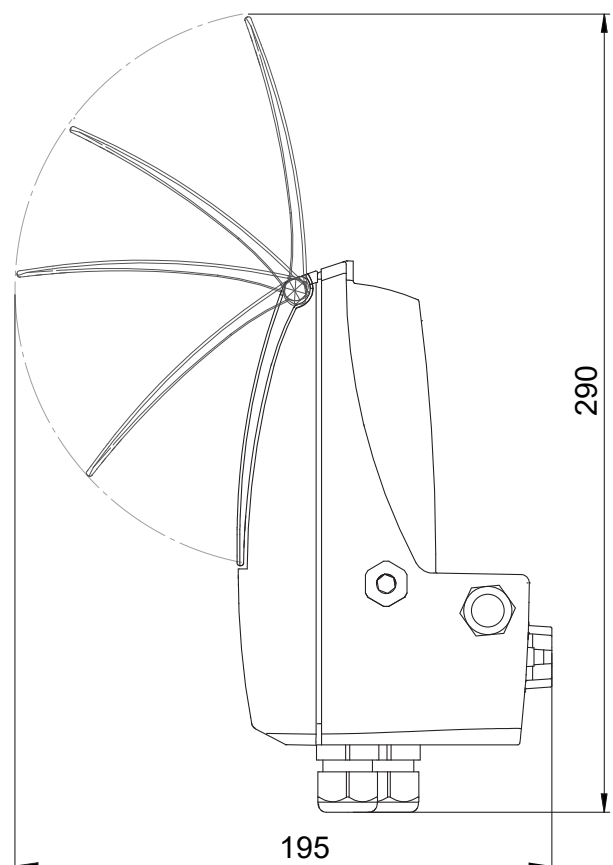
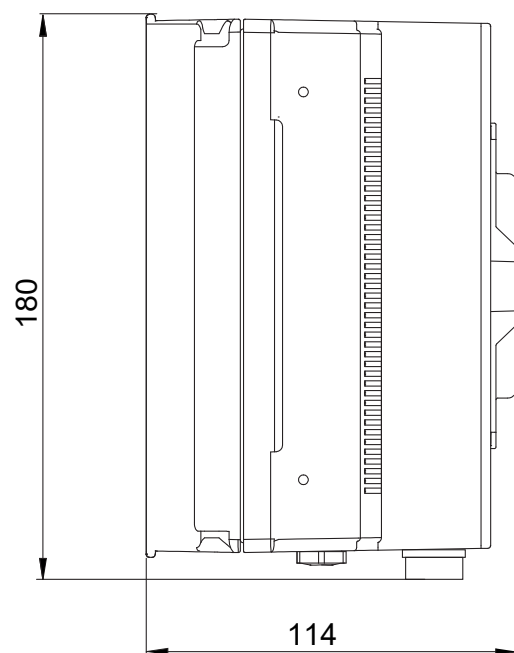
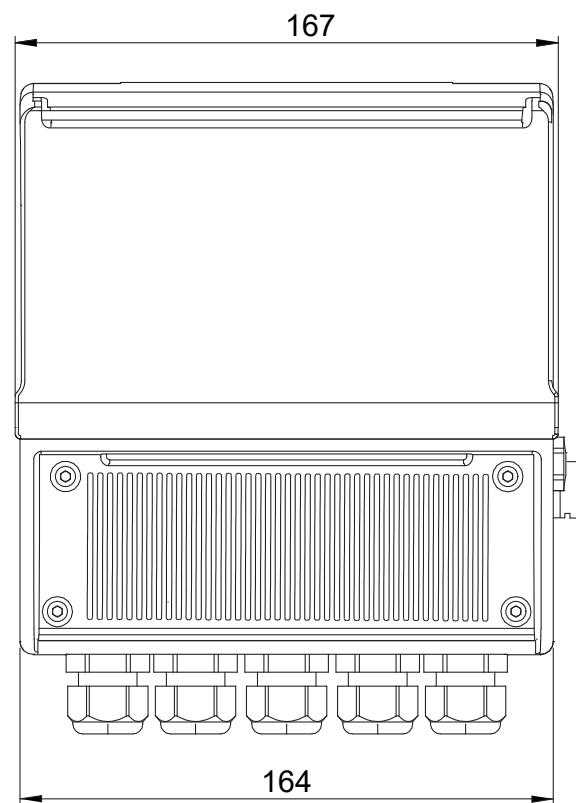
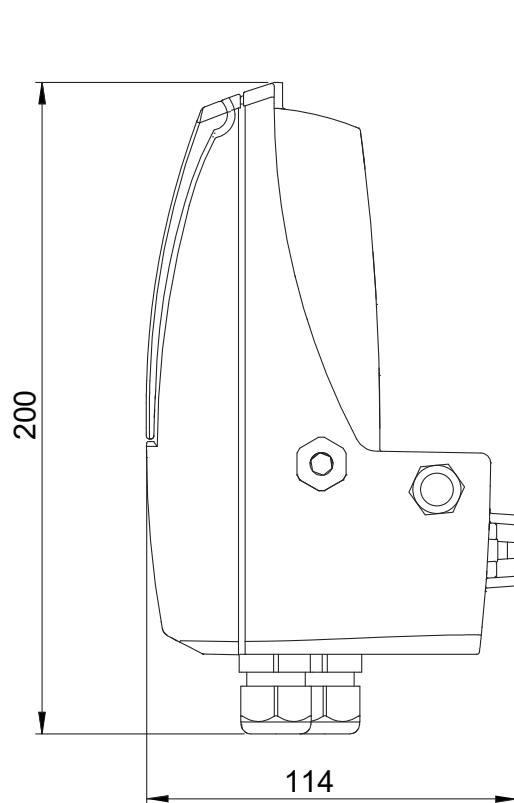
Version	☐ Compact ☐ Separate
Protection Rate	☐ IP 68
Conn. Sensor Cable	☐ CABLE C014 for separate version
LCD Display	☐ Graphic display 128x64 pixels back light, 3 programming keys
Power Supply/Consumption	☐ Power supply : 100 ... 240 VAC 44/66 Hz ☐ Power supply : 24 ... 36 VAC/VDC 0...45/66 Hz ☐ Power supply : 12...48 VDC ☐ Power supply : 100 ... 240 VAC 44/66 Hz + 1 Rechargeable Battery ☐ Power supply : 24 ... 36 VAC/VDC 0...44/66 Hz + 1 Rechargeable Battery ☐ Power supply : 12...48 VDC + 1 Rechargeable Battery
MID Certifications	☐ MI-001  ☐ MI-004

ACCURACY

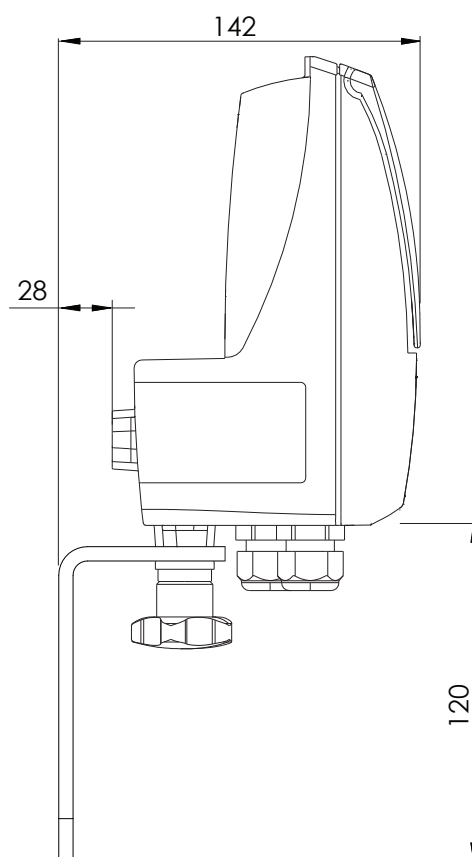
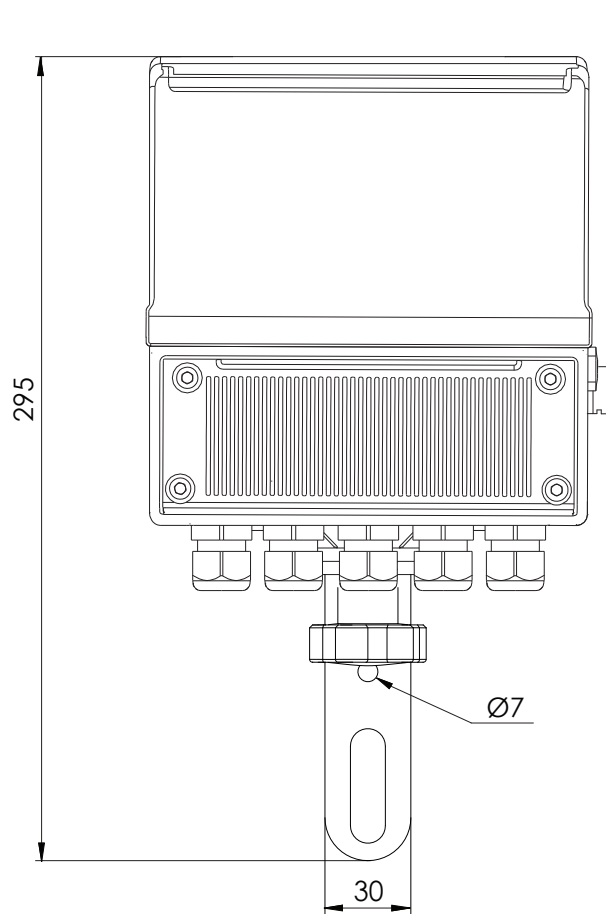
Accuracy (whole system converter+sensor)	☐ See table below
---	--

OVERALL DIMENSIONS

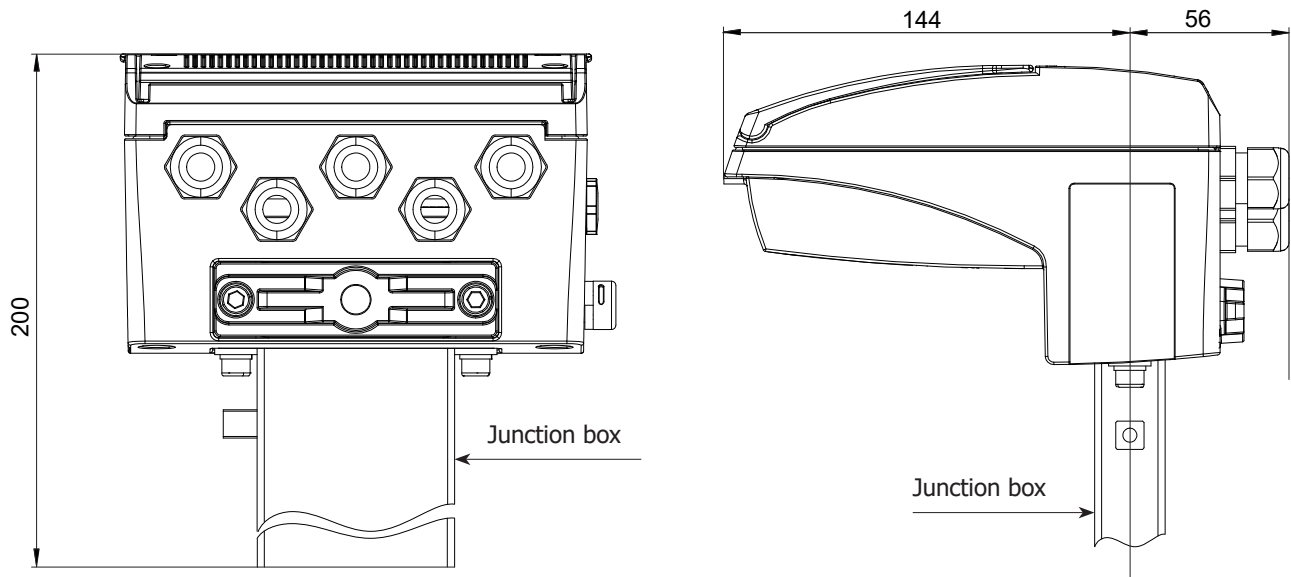
Compact version



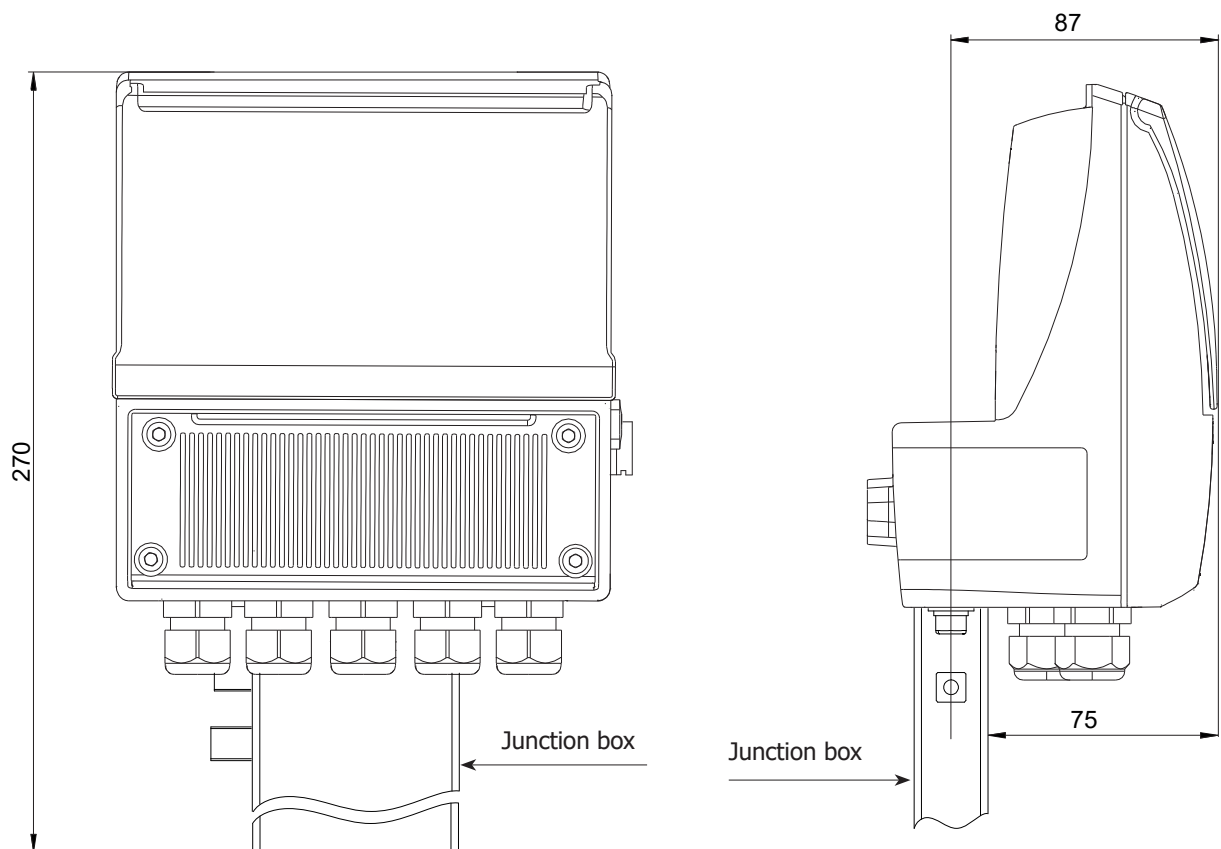
Separate (wall) version



Horizontal version

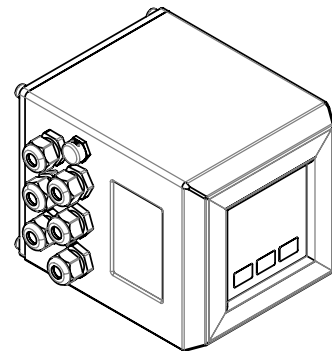
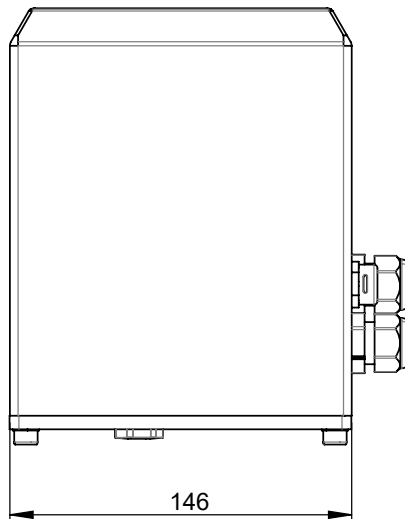
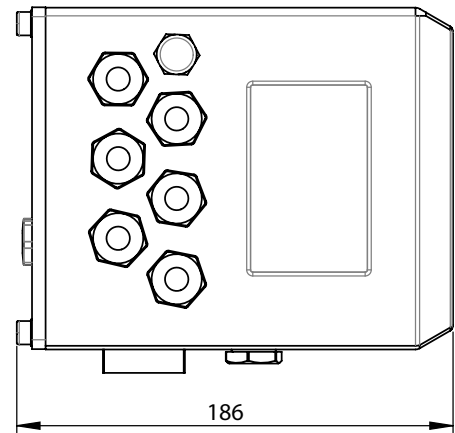
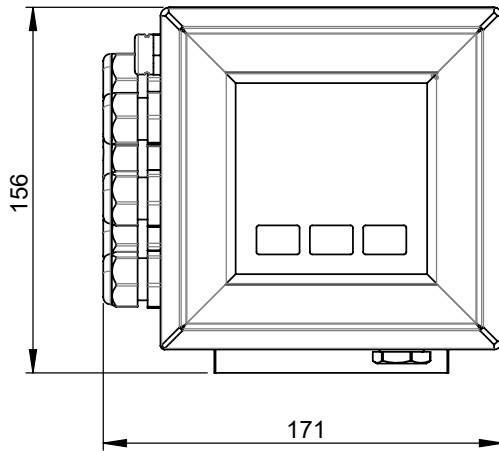


Vertical version

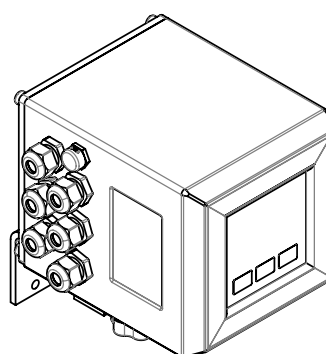
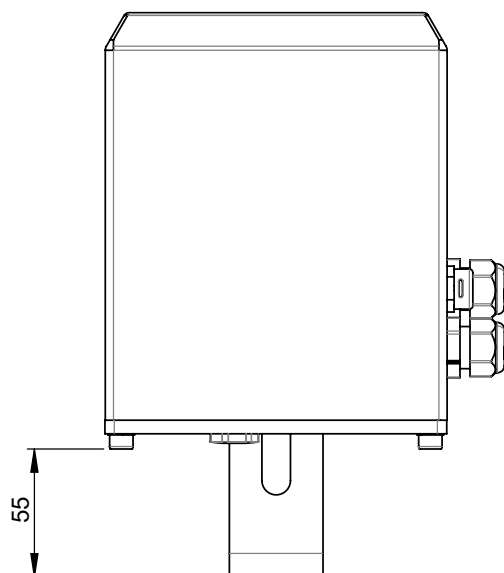
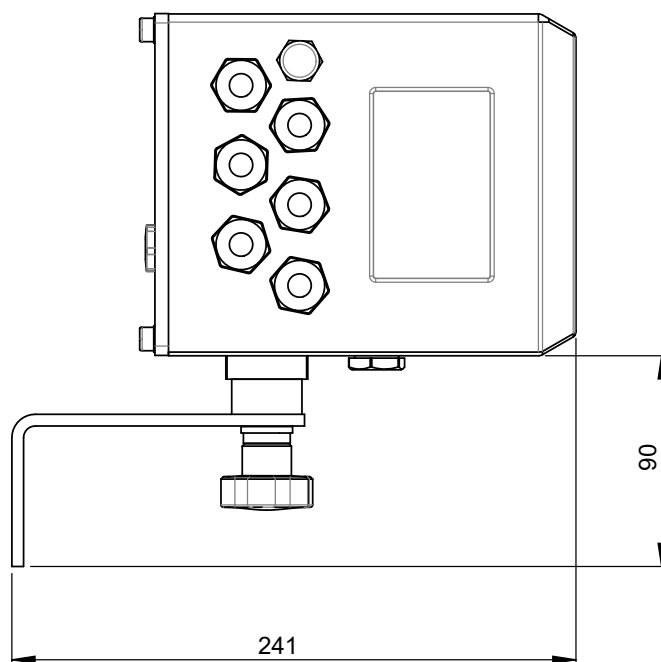
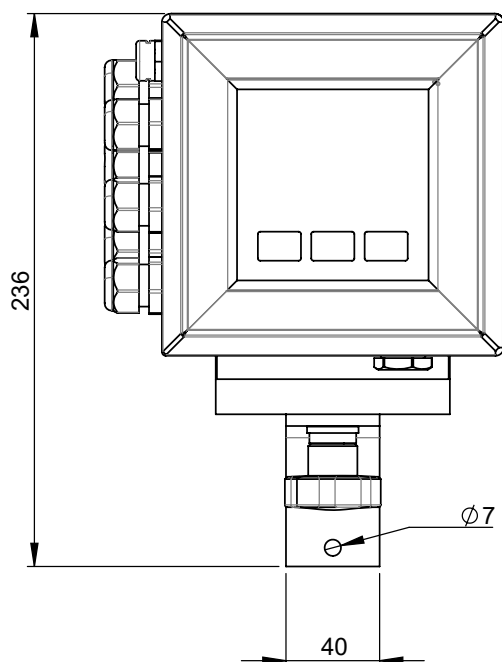


OVERALL DIMENSIONS (STAINLESS STEEL VERSION)

Compact Version

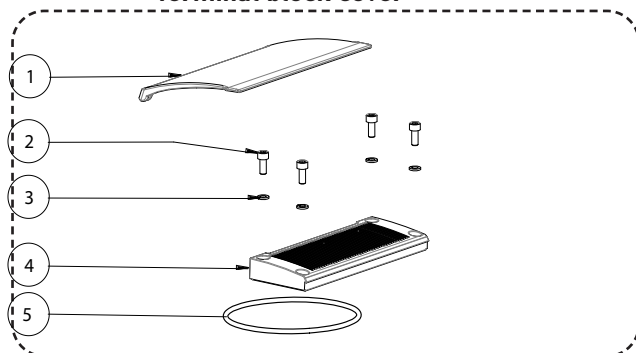


Separate Version

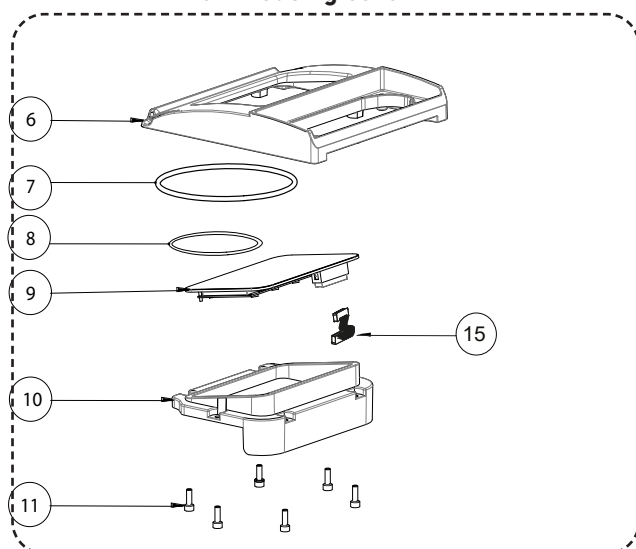


MV110W EXPLODED LAYOUT

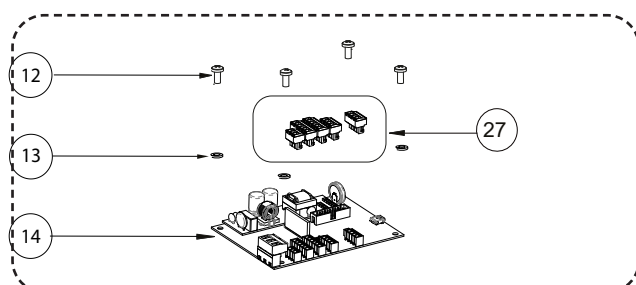
Terminal block cover



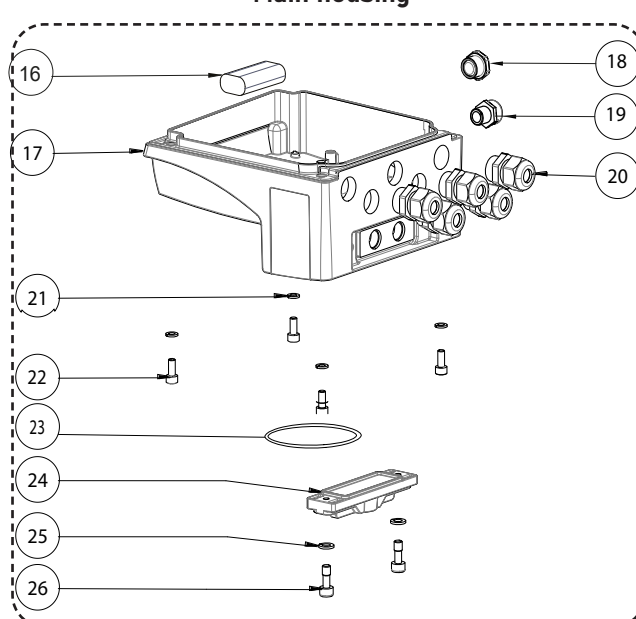
Main housing cover



PCB MV210

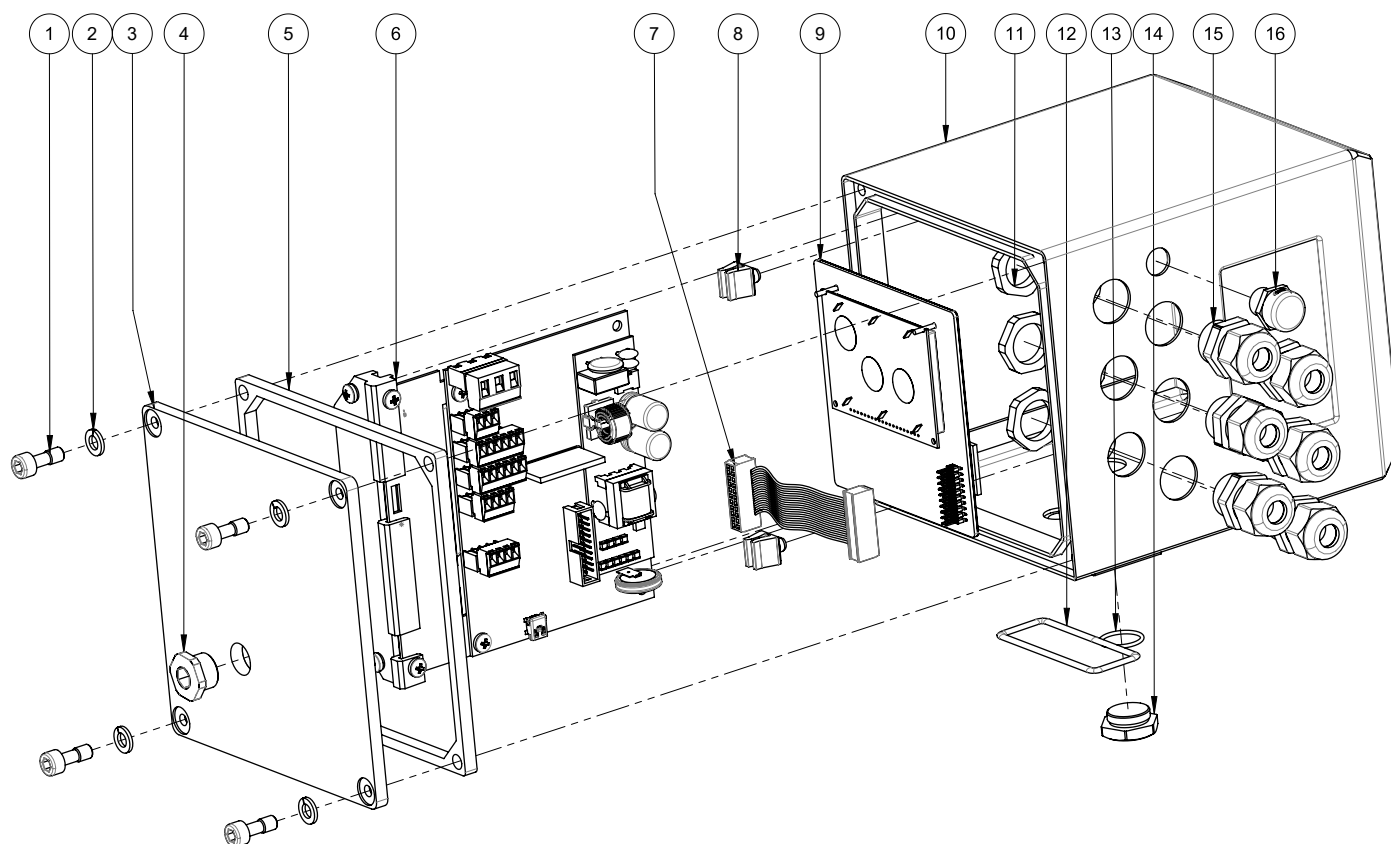


Main housing



POS.	DESCRIPTION	
	PA6 VERSION	ALLUMINIUM VERSION
1	PROTECTION COVER	
2	VITE M4x12	VITE M5x12
3	GROWER Ø4	GROWER Ø5
4	TERMINAL COVER	TERMINAL COVER
5	O-RING-4400	
6	HOUSING COVER	HOUSING COVER
7	O-RING-4700 (HOUSING COVER)	
8	O-RING-117x3 (DISPLAY)	
9	DISPLAY	
10	FIXING DISPLAY FRAME (MATERIAL PA06)	
11	SELF-TAPPING SCREW 4x10	TRILOBO SCREW 4x10
12	SELF-TAPPING SCREW 4x10	TRILOBO SCREW 4x10
13	GROWER Ø4	SPRING WASHER Ø4
14	PCB MV210	
15	FLAT CABLE	
16	LITHIUM BATTERY	
17	PA6 MAIN HOUSING	ALUMINIUM MAIN HOUSING
18	PG9 CAP	
19	PRESSURE COMPENSATION PLUG	
20	PG11 CABLE GLAND CABLE DIAMETER: Ø5-Ø10mm	
21	GROWER Ø4	SPRING WASHER Ø5
22	SCREW M4x12	SCREW M5x12
23	O-RING-155	
24	VERSION CAP (MATERIAL PA06)	
25	GROWER Ø6	
26	SCREW M6x16	
27	TERMINAL BLOCK SOLID WIRE: 26-16 AWG / 0.129-1.31 mm ² STRANDED WIRE: 26-16 AWG / 0.129-1.31 mm ² TORQUE: 3.0 Lb.In / 0.34 Nm	

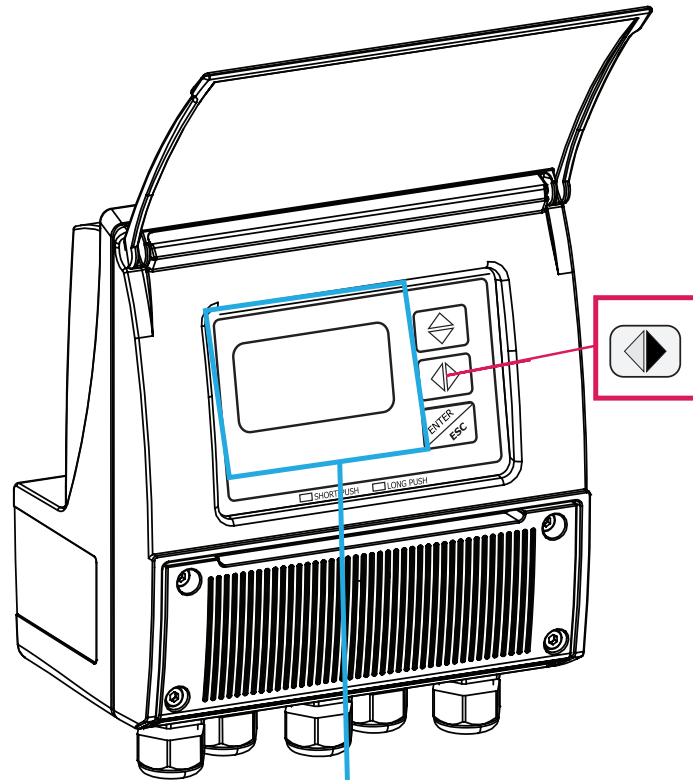
MV110W CONSTRUCTION (STAINLESS STEEL VERSION)



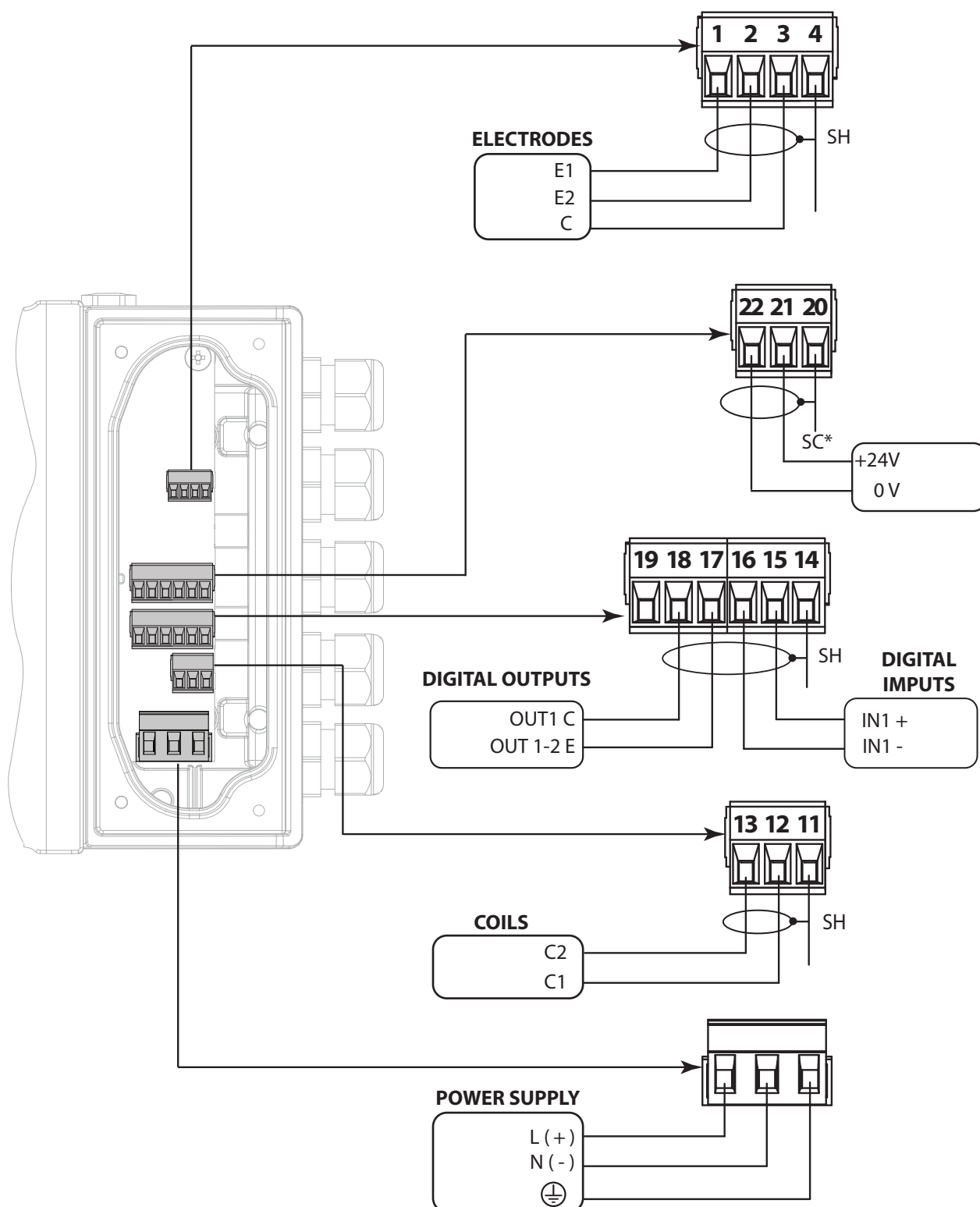
POS.	DESCRIPTION
1	SCREW M6X16
2	GROWER Ø 6
3	POLISHED COVER
4	PG9 CAP IP68
5	GASKET FOR Stainless steel HOUSING
6	BOARD FRAME M3C
7	FLAT CABLE
8	BOARD FIXING CLIPS
9	DISPLAY/BLIND
10	POLISHED Stainless steel HOUSING
11	PG11 NUT
12	FLAT GASKET O-RING 155
13	O-RING ORM 0160-15 Ø16X1.5
14	STAINLESS STEEL CAP M18X0.75
15	PG11 CABLE GLANDS
16	ANTICONDENSATION CAP

MAIN PAGES VISUALISATION

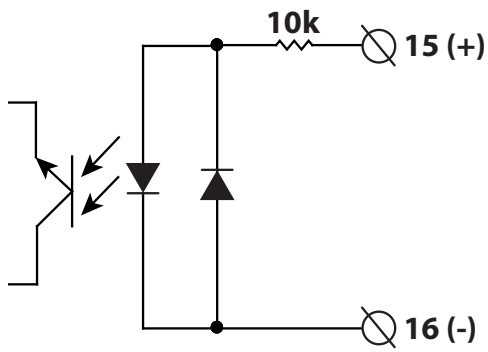
Different visualization possibilities by simply pressing of a key.



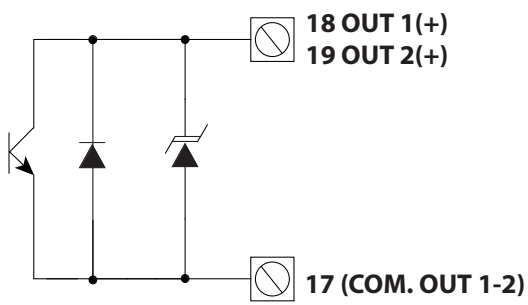
ELECTRICAL CONNECTIONS



DIGITAL INPUT



DIGITAL OUTPUTS



FUNCTIONS MENU

SENSOR

MAIN MENU			
1	1-Sensor		
2	2-Units		
3	3-Settings		
4	4-About		
5	5-Factory		
6	6-Reset		
7	7-Flow		
8	8-Pressure		
9	9-Temperature		
10	10-Diagnostic		
11	11-Data		
12	12-Report		
13	13-Exit		
SENSOR			
1	S. model =	0	1.1 Sensors model: Enter the first two characters of the serial number of the sensor
2	Lining =	UNSPEC.	1.2 Flow sensor lining material type
3	S. type =	FULL BORE	1.3 Type of sensor: fullbore or insertion
4	u. type =	METRIC	1.4 Type of measure units for sensor parameter: metric or imperial
5	Diam	mm 00025.0	1.5 Insert ND of sensor (0-2500)
6	KA =	+00.9637	1.6 Calibration data of sensor visualized on sensor's label
7	KA- =	-04.4904	1.7 Calibration data of sensor for negative flow
8	KZ =	+0000000	1.8 Sensor coefficient KZ (zero point)
9	KD =	+0000000	1.9 Sensor coefficient KD
10	Ins. position =	0	1.10 Insertion position
11	KP Dinamic =	OFF	1.11 KP dynamic, coefficient for insertion
12	Ki =	01.8727	1.12 Sensor coefficient Ki
13	Kp =	01.0000	1.13 Sensor coefficient Kp
14	KC =	1.00000	1.14 Sensor coefficient KC
15	C.curr = mA	025.0	1.15 Sensor excitation current
16	C.Reg.PB =	004	1.16 Current regulator proportional band
17	C.Reg.DH =	008	1.17 Current regulator derivation constant
18	S. Freq. = Hz	50	1.18 Measure sampling frequency
19	Preamplif.	OFF	1.19 Enables the preamplifier
20	E.P Detect =	ON	1.20 Enables the empty pipe detection feature
21	R max = kohm	0500	1.21 Empty pipe detection threshold
22	El. Cleaning =	OFF	1.22 Electrode cleaning
23	S. cable =	m 000	1.23 Sensor connecting cable length
24	S. err. delay =	010	1.24 Signal error delay (n. sample)
25	Sens. verify =	OFF	1.25 Automatic sensor verify enable
26	Zero point cal.		1.26 Pipe hydraulic zero calibration
27	HL	00.00000000	1.27 Linearization coefficient

UNITS

MAIN MENU			
1	1-Sensor		
2	2-Units		
3	3-Settings		
4	4-About		
5	5-Factory		
6	6-Reset		
7	7-Flow		
8	8-Pressure		
9	9-Temperature		
10	10-Diagnostic		
11	11-Data		
12	12-Report		
13	13-Exit		
UNITS			
1	Diam.	mm	2.1 Nominal diameter measure unit
2	S.cable	m	2.2 Cable length on separate version
3	FR.unit	METRIC	2.3 Flowrate type measure unit: metric or not metric
4	PI1 unit	METRIC	2.4 Pulse 1 type measure unit: metric or not metric
5	T+ unit	METRIC	2.5 Total direct totalizer measure unit type: metric or not metric
6	T+ unit	g	2.6 Total direct totalizer measure unit
7	T+ D.P	3	2.7 Total direct totalizer decimal point position
8	P+ unit	METRIC	2.8 Partial direct totalizer measure unit type: metric or not metric
9	P+ unit	g	2.9 Partial direct totalizer measure unit
10	P+ D.P	3	2.10 Partial direct totalizer decimal point position
11	T- unit	METRIC	2.11 Total reverse totalizer measure unit type: metric or not metric
12	T- unit	g	2.12 Total reverse totalizer measure unit
13	T- D.P	3	2.13 Total reverse totalizer decimal point position
14	P- unit	METRIC	2.14 Partial reverse totalizer measure unit type: metric or not metric
15	P- unit	g	2.15 Partial reverse totalizer measure unit
16	P- D.P	3	2.16 Partial reverse totalizer decimal point position
17	Temp.unit	°C	2.17 Temperature measure unit
18	Mass units	ON	2.18 Enable/disable the selection of mass units on full scale set
19	Sg=kg/dm3	1.0000	2.19 Specific gravity coefficient

SCALES

MAIN MENU	
1-Sensor	
2-Units	
3-Scales	
4-Measure	
5-ALARMS	
6-Inputs	
SCALES	
7-FS1 g/s	4908.7
8-FS2 g/s	4908.7
9-Pls1=g	1000.00
10-Tpls1=ms	0050.0
11-Pls2=g	1000.00
12-Tpls2=g	0050.0
13-Frq1=Hz	1000.00
14-Frq2=Hz	1000.00

3.1	Full scale flow rate 1
3.2	Full scale flow rate 2
3.3	Pulse value on channel 1
3.4	Duration of the pulse generated on channel 1
3.5	Pulse value on channel 2
3.6	Duration of the pulse generated on channel 2
3.7	Full scale frequency for channel 1 (0.1Hz-1000.0Hz)
3.8	Full scale frequency for channel 2 (0.1Hz-1000.0Hz)

MEASURES

MAIN MENU	
1-Sensor	
2-Units	
3-Scales	
4-Measure	
5-ALARMS	
6-Inputs	
MEASURES	
7-Damping	SMART
8-Cut-off= %	00.1
9-DT Min.	ON
10-T1HC enable	ON
11-T1HC	OFF

4.1	Measure filter
4.2	Low flow zero threshold: 0-25% of full scale value
4.3	Automatic calibration verify
4.4	Automatic change of measurement range
4.5	High immunity inputs

ALARMS

MAIN MENU	
1-Sensor	
2-Units	
3-Scales	
4-Measure	
5-ALARMS	
6-Inputs	
ALARMS	
7-Max+ = dm3/s	OFF
8-Max- = dm3/s	OFF
9-Min+ = dm3/s	OFF
10-Min- = dm3/s	OFF
11-Hysteresis=%	03
12-mA v.alarm=%	000
13-Hz v.alarm=%	000

5.1	Maximum value alarm set for direct flow rate
5.2	Maximum value alarm set for reverse flow rate
5.3	Minimum value alarm set for direct flow rate
5.4	Minimum value alarm set for reverse flow rate
5.5	Hysteresis threshold set for the minimum and maximum flow rate alarms
5.6	Current output value in case of failure
5.7	Frequency output value in case of alarms

INPUTS

MAIN MENU	
1-Sensor	
2-Units	
3-Scales	
4-Measure	
5-ALARMS	
6-Inputs	
INPUTS	
7-T+ reset	OFF
8-P+ reset	OFF
9-T- reset	OFF
10-P- reset	OFF
11-Count lock	OFF
12-Meas.lock	OFF
13-Calibration	OFF
14-Range change	OFF

6.1	Total direct (positive) flow totalizer reset enable
6.2	Partial direct (positive) flow totalizer reset enable
6.3	Total reverse (negative) flow totalizer reset enable
6.4	Partial reverse (negative) flow totalizer reset enable
6.5	Totalizer counting lock command
6.6	Measure zero lock command
6.7	Calibration external command
6.8	Range change external command

OUTPUTS

```

MAIN MENU
1-Sensor
2-Units
3-Scales
4-Measure
5-Alarms
6-Inputs
7-Outputs
8-Communication
9-Display
10-Data logger
11-Functions
12-Diagnostic
13-System
  
```

OUTPUTS

Out1 PULSES+

7.1 Output 1 functions

DISPLAY

```

MAIN MENU
1-Sensor
2-Units
3-Scales
4-Measure
5-Alarms
6-Inputs
7-Outputs
8-Communication
9-Display
10-Data logger
11-Functions
12-Diagnostic
13-System
  
```

DISPLAY

Language EN
 Contrast 5
 Disp.time=s 020
 D.rate=Hz 5
 Disp. Fn. 1
 Disp.lock ON
 Part. Tot ON
 Neg. Tot. ON
 Net tot. ON
 Disp.date ON
 Quick start ON

9.1 Choice of the language
 9.2 Display contrast
 9.3 Display/keyboard inactivity time
 9.4 Display updating frequency: 1-2-5-10 Hz
 9.5 Display function number
 9.6 Display function selection lock
 9.7 Partial totalizer enable
 9.8 Negative totalizer enable
 9.9 Net totalizer enable
 9.10 Time and date display enable
 9.11 Quick start menu visualization

FUNCTIONS

FUNCTIONS

```

MAIN MENU
1-Sensor
2-Units
3-Scales
4-Measure
5-Alarms
6-Inputs
7-Outputs
8-Communication
9-Display
10-Data logger
11-Functions
12-Diagnostic
13-System
  
```

T+ reset
 P+ reset
 T- reset
 P- reset
 Load Sens. F. def
 Load Conv. F. def
 Save Sens. F. def
 Save Conv. F. def
 Calibration

11.1 Execute immediate reset of total direct totalizer
 11.2 Execute immediate reset of partial direct totalizer
 11.3 Execute immediate reset of total reverse totalizer
 11.4 Execute immediate reset of partial reverse totalizer
 11.5 Load sensor factory default
 11.6 Load converter factory default
 11.7 Save sensor factory default values
 11.8 Save converter factory default values
 11.9 Execute immediate internal circuit calibration

DIAGNOSTIC

```

DIAGNOSTIC
Self test
Test display
Flow sim. = ON
Display measures
Disp. Coom. Vars
Firmware info
S/N= 999001
WT= 0002:21:00 : 22
9-Display
10-Data logger
11-Functions
12-Diagnostic
13-System
    
```

- 12.1 Self test diagnostic function
- 12.2 Function tests physical display
- 12.3 Flow rate simulation enabling
- 12.4 Display internal measured value
- 12.5 Display comm. diagnostic values
- 12.6 Firmware version/revision
- 12.7 Board serial number
- 12.8 Total working time

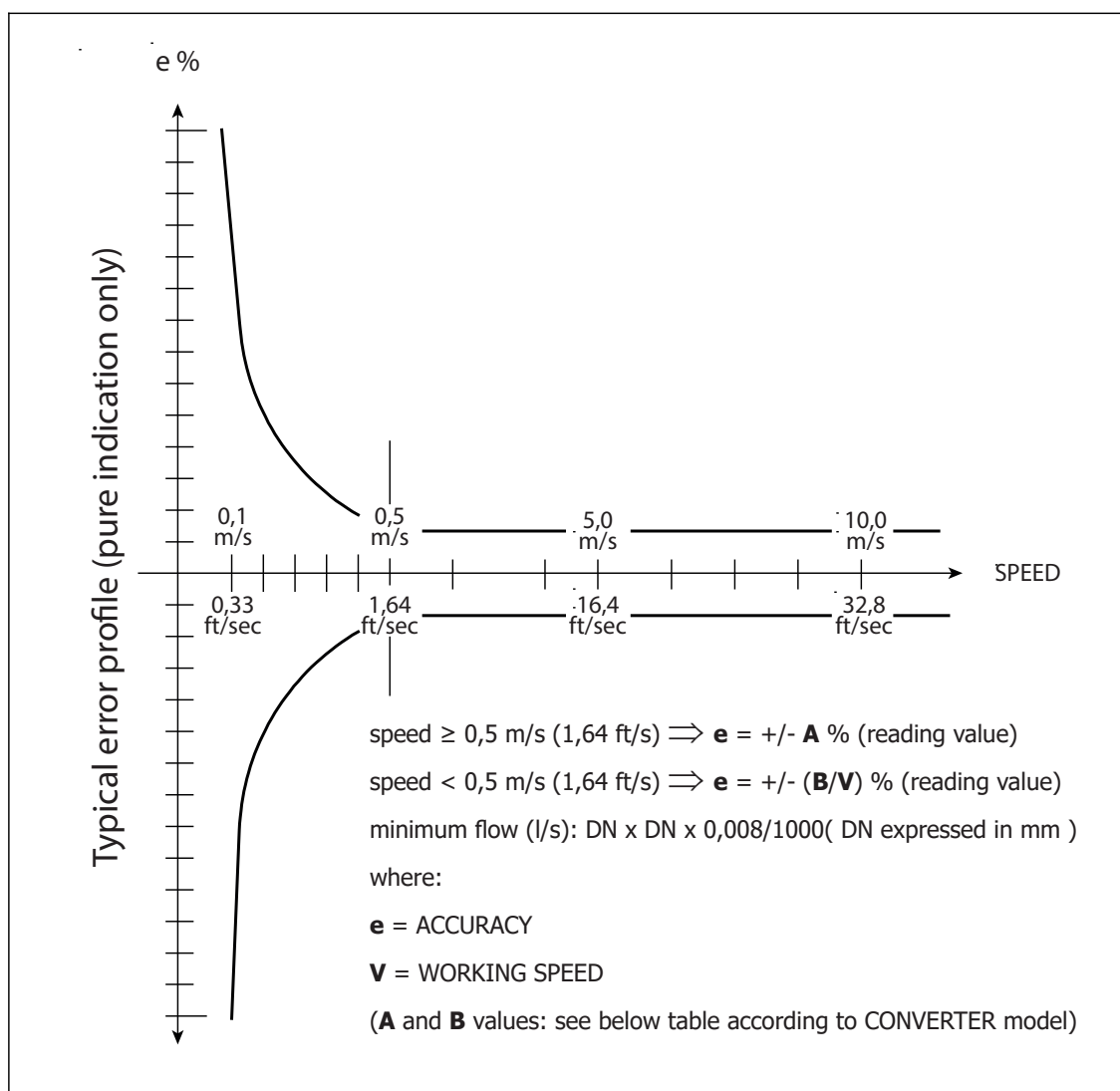
SYSTEM

```

SYSTEM
L1 code = *****
L2 code = *****
L3 code = *****
L4 code = *****
L5 code = *****
L6 code = *****
Restr. Access= ON
010.011.012.013
010.011.012.014
255.255.255.000
RT 0.96469
KS 1.00000
KR 1.00000
Stand-by 3453
FW update 14718
9-Display
10-Data logger
11-Functions
12-Diagnostic
13-System
    
```

- 13.1 Access level 1 code
- 13.2 Access level 2 code
- 13.3 Access level 3 code
- 13.4 Access level 4 code
- 13.5 Access level 5 code
- 13.6 Access level 6 code
- 13.7 Restricted access level
- 13.8 Device IP network address
- 13.9 Client IP network address
- 13.10 Network mask
- 13.11 Calibration coefficient KT
- 13.12 Calibration coefficient KF
- 13.13 Calibration coefficient KR
- 13.14 Stand-by
- 13.15 firmware update

ACCURACY



Full bore Sensor

MS501/MS1000/MS2410/MS2500			MS 600			MS5000		
A	B(m/s)	B(ft/s)	A	B(m/s)	B(ft/s)	A	B(m/s)	B(ft/s)
0,8*	0,4**	1,31**	0,8*	0,4**	1,31**	2	1	3,28

* = 0,4 (special)

** = 0,2(m/s) ; 0,66(ft/s) - special

Insertion sensor

See sensor DATA SHEET

Reference conditions below and as per internal testing procedures:

- ☐ Constant flow rate during the test
- ☐ Pressure: >30 Kpa
- ☐ Flow condition : fully developed flow profile
- ☐ Zero stability +/- 0,005 %

OIML R49

The sensor **MS2500** diameters below, coupled with **MV110W** 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	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	

SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.26	0.16	100
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	
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	80
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	
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	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	250
650	26	10000	40	25	
700	28	10000	64	40	160
750	30	10000	64	40	
800	32	16000	160	100	100
900	36	16000	160	100	
1000	42	16000	256	160	80
1200	48	16000	320	200	
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	160
650	26	10000	64	40	
700	28	10000	64	40	100
750	30	10000	64	40	
800	32	16000	160	100	80
900	36	16000	160	100	
1000	42	16000	256	160	40
1200	48	16000	320	200	
1400	56	16000	320	200	
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	40
1800	72	16000	640	400	
2000	80	16000	640	400	

MI-001

The sensor **MS2500** diameters below, coupled with **MV110W** 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	250
650	26	10000	40	25	
700	28	10000	64	40	
750	30	10000	64	40	160
800	32	16000	160	100	
900	36	16000	160	100	100
1000	42	16000	256	160	
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	

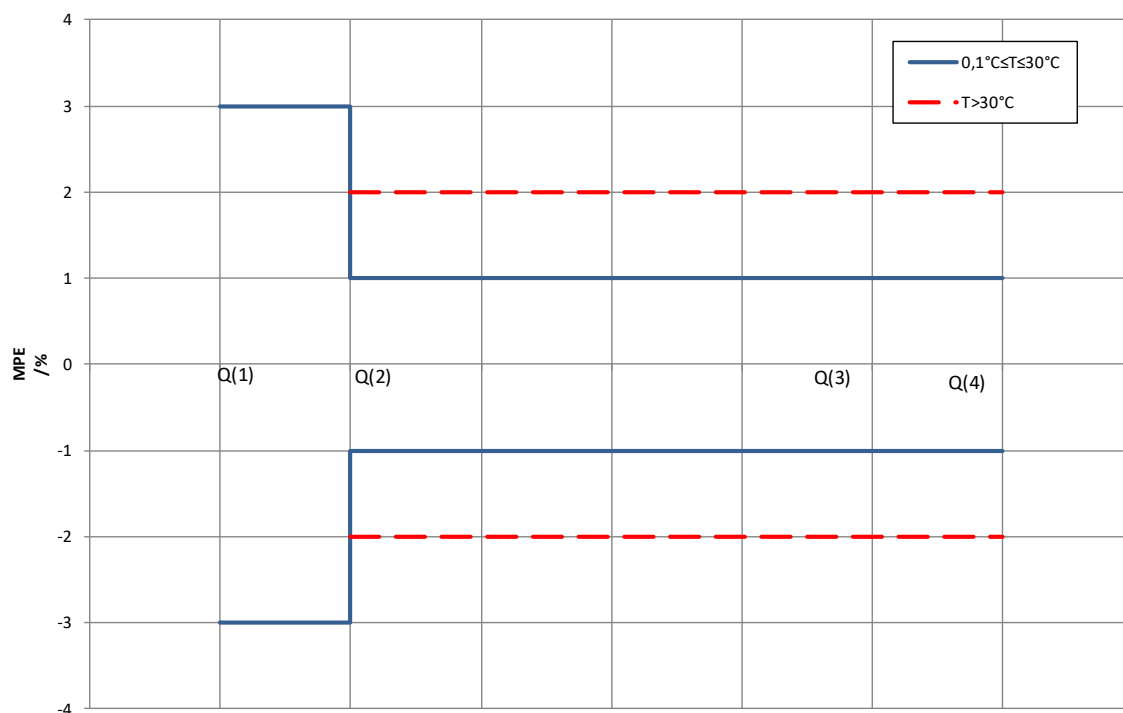
SIZE		Q3	Q2	Q1	R
mm	inch	m3/h			Q3/Q1
25	1	16	0.10	0.064	250
32	1 ¼	25	0.16	0.10	
40	1 ½	40	0.26	0.16	
50	2	63	0.40	0.25	
65	2 ½	100	0.64	0.40	
80	3	160	1.0	0.64	
100	4	250	1.6	1.0	
125	5	400	2.6	1.6	
150	6	630	4.0	2.5	
200	8	1000	6.4	4.0	
250	10	1600	10	6.4	
300	12	2500	16	10	
350	14	2500	16	10	
400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

The sensor **MS2500** diameters below, coupled with **MV110W** 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	0.40	
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	40
1800	72	16000	640	400	
2000	80	16000	640	400	

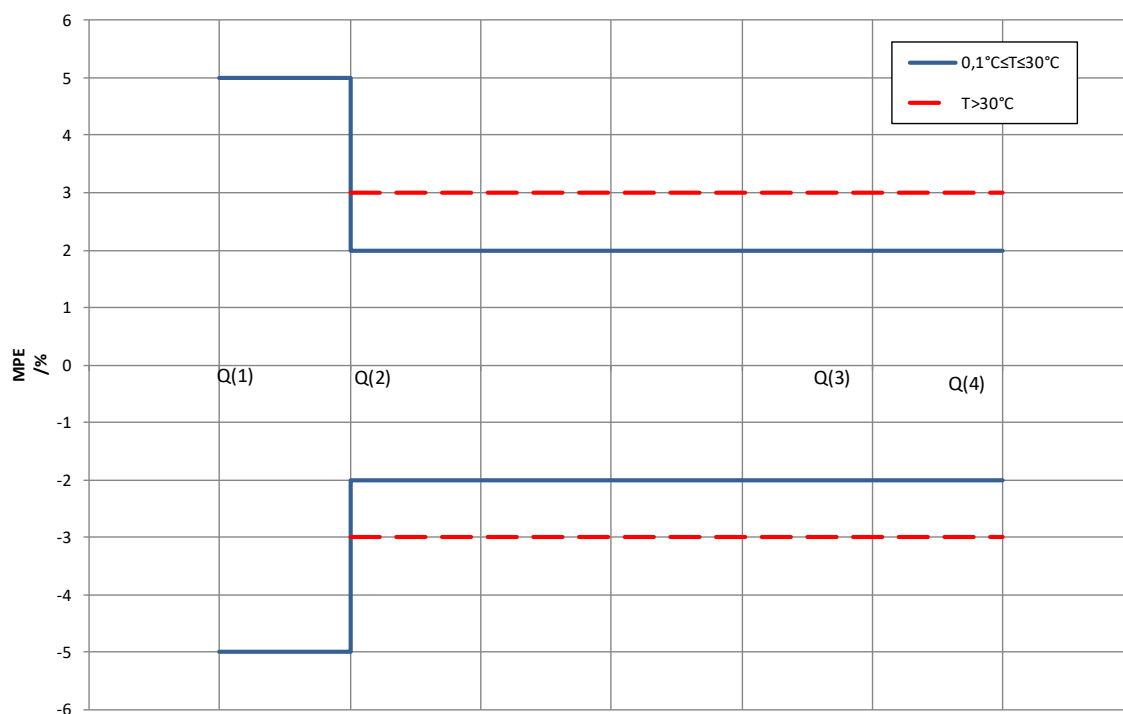
MPE - MI 001 - OIML R49 ACCURACYCLASS 1

(OIML R 49-1:2013 (E) - ISO4064-1:2017)



MPE - MI 001 - OIML R49 ACCURACYCLASS 2

(OIML R 49-1:2013 (E) - ISO4064-1:2017)



MI-004 OIML R75 CLASS1

The **MS2500** sensor's diameters listed below, coupled with **MV110W** comply with the European directive: DIRECTIVE 2014/32/EU (MID) ANNEX VI (MI-004) - OIML R75

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	

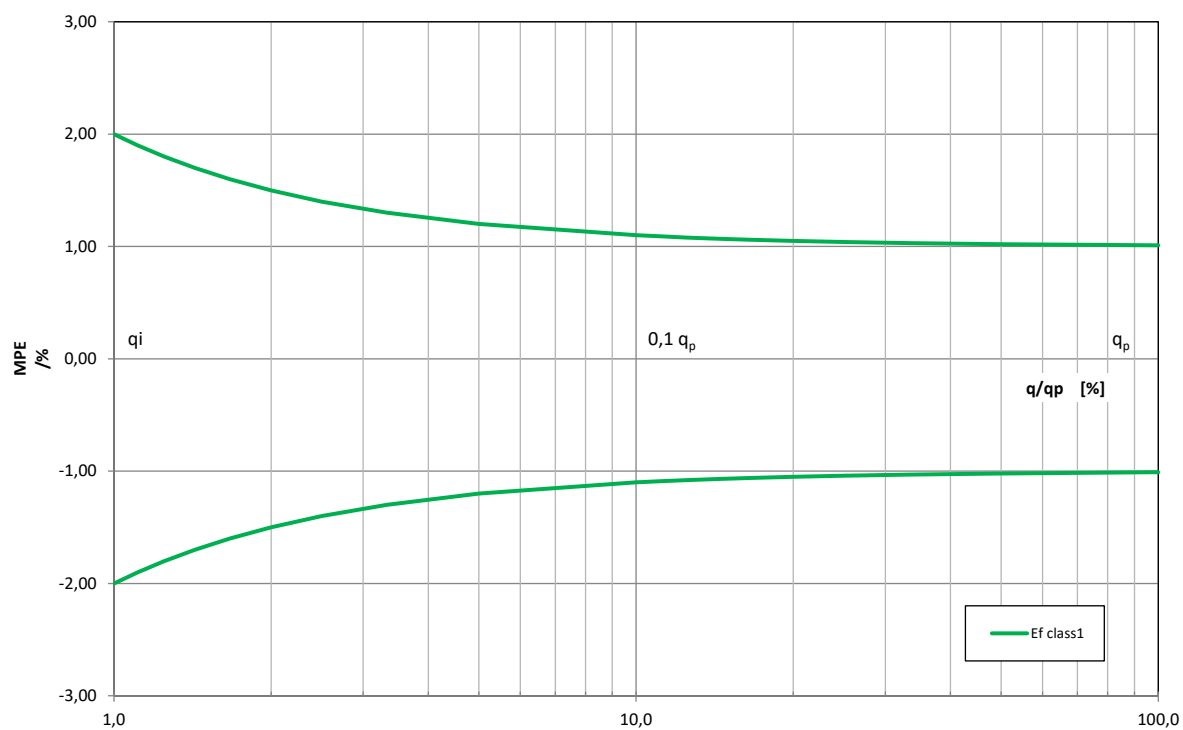
SIZE		q _p	q _s	0,1 q _p	q _i	MC
mm	inch	m3/h				q _p /q _i
25	1	10	16	1	0,2	50
32	1 ¼	16	25	1,6	0,32	
40	1 ½	25	40	2,5	0,5	
50	2	40	63	4	0,8	
65	2 ½	63	100	6,3	1,26	
80	3	100	160	10	2	
100	4	160	250	16	3,2	
125	5	250	400	25	5	
150	6	400	630	40	8	
200	8	630	1000	63	12,6	
250	10	1000	1600	100	20	10
300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

(*) : Flow rates reduced to the limits of the system

MI 004 - MPE - ACCURACY CLASS 1 (UNI EN 1434-1:2016)



(*) : Reduced flowrates to the test rig limits

HOW TO ORDER

CODE EXAMPLE		CODE/DESCRIPTION
Display		
A	A	Blind version (without display and programming keys, cable USB type A/USB MINI B is REQUIRED TO PROGRAMMING)
	B	Graphic LCD WSTN - B/W - back light display, point matrix 128 x 64, 8 line/16 characters and 3 programming keys (mandatory for MI001)
Housing material / Protection rate		
0	0	Nylon PA6 with fiber glass, protection rate IP 67
	1	Painted aluminum die casting, protection rate IP67
	2	Painted aluminum die casting, protection rate IP68 1,5 meters under water, Compact Version, n° 1 IP 68 MIL connector for power supply (CONNECTORS SUPPLIED: MALE + FEMALE)
	3	Painted aluminum die casting, protection rate IP68 1,5 meters under water, Compact Version, Complete of n° 1 of 10 poles IP68 MIL connector (outputs connections to be specified) and n° 1 IP 68 MIL connector for power supply (CONNECTORS SUPPLIED: MALE + FEMALE)
	6	AISI304 Stainless Steel housing, protection rate IP67 (DISPLAY NOT ROTABLE) - NO CONNECTORS AVAILABLE
	7	Painted aluminum die casting, ONLY COMPACT, protection rate IP68 (NO CONNECTORS)
	8	Painted aluminum die casting, protection rate IP68 1,5 meters under water, Separate Version, Complete of n° 2 IP 68 MIL connectors for cable from the sensor, and n° 1 IP 68 MIL connector for power supply (CONNECTORS SUPPLIED: MALE + FEMALE)
	9	Painted aluminum die casting, protection rate IP68 1,5 meters under water, Separate Version, Complete of n° 2 IP 68 MIL connectors for cable from the sensor, n° 1 IP 68 MIL connector (outputs connections to be specified) and n° 1 IP 68 MIL connector for power supply (CONNECTORS SUPPLIED: MALE + FEMALE)
Version		
A	A	Compact version with sensor MS.... (liquid maximum temperature 100 °C)
	B	Separate version for wall mounting, complete with mounting accessories (CABLE C014)
	C	Compact version with display visible from the top
	D	Separate version (CABLE C014) for wall mounting, complete with mounting accessories in AISI 304
Power supply		
1	1	Power supply : 100 ... 240 VAC 44/66 Hz (NOT FOR MI001)
	2	Power supply : 24 ... 36 VAC/VDC 0...44/66 Hz (NOT FOR MI001)
	3	Power supply : 12...48 VDC (NOT FOR MI001)
	4	Power supply : 100 ... 240 VAC 44/66 Hz + 1 Rechargeable back-up Battery (the use of battery supports only the measure UP TO 30 days; all the outputs are set to OFF) (NOT FOR MI001)
	5	Power supply : 24 ... 36 VAC/VDC 0...44/66 Hz + 1 Rechargeable back-up Battery (the use of battery supports only the measure UP TO 30 days; all the outputs are set to OFF) (NOT FOR MI001)
	6	Power supply : 12...48 VDC + 1 Rechargeable back-up Battery (the use of battery supports only the measure UP TO 30 days; all the outputs are set to OFF) (NOT FOR MI001)
	7	Power supply : 100 ... 240 VAC 44/66 Hz + n° 1 SETTINGS FOR Rechargeable back-up Battery (the Rechargeable Battery is NOT included) (NOT FOR MI001)
	8	Power supply : 24 ... 36 VAC/VDC 0...44/66 Hz + n° 1 SETTINGS FOR Rechargeable back-up Battery (the Rechargeable Battery is NOT included) (NOT FOR MI001)
	9	Power supply : 12...48 VDC + n° 1 SETTINGS FOR Rechargeable back-up Battery (the Rechargeable Battery is NOT included) (NOT FOR MI001)
	a	Power supply : 100 ... 240 VAC 44/66 Hz + 1 Pack of n° 2 SUPERCAP (the use of it supports only the measure UP TO 3 minutes; all the outputs are set to OFF) Suitable for MI001
	b	Power supply : 24 ... 36 VAC/VDC 0...44/66 Hz + 1 Pack of n° 2 SUPERCAP (the use of battery supports only the measure UP TO 3 minutes; all the outputs are set to OFF) Suitable for MI001
	c	Power supply : 12...48 VDC + 1 Pack of n° 2 SUPERCAP (the use of battery supports only the measure UP TO 3 minutes; all the outputs are set to OFF) Suitable for MI001
Analogue output		
A	A	Without Analogue output
Digital Input/Output		
0	0	With Digital Input only
	1	With n°1 PROGRAMMABLE Digital Output/n°1 Digital Input (mandatory for MI004)
Communication Gateway		
A	A	Without Gateway
Protocols		
0	0	Without Protocol

Accuracy		
A	A	Standard accuracy 0,8 %
	B	Special accuracy 0,4 %
	C	Special accuracy (to be defined)
Data Logger		
0	0	Without Data Logger
Special Features		
A	A	NONE
	B	WITH ANTICONDENSE CAP
	C	n° 5 CABLE GLAND 1/2" NPT - Nickel plated brass CODE 1.609.1200.70 (CABLE 6 - 12 mm)
	D	n° 5 HOLES FOR CABLE GLAND 1/2" NPT (WITHOUT CABLE GLAND)
	E	For SANITARY sensors (MS2410/MS2420) In COMPACT Version
MID Approval		
0	0	NONE
	1	MI-001/OIMLR49-CLASS 1 (Pover Supply Code shall be a or b or c)
	2	MI-001/OIMLR49-CLASS 2 (Pover Supply Code shall be a or b or c)
	3	MI-004-CLASS 1

Complete code
example for
order

MV110W-A0A1A0A0A0A0



ISOIL INDUSTRIA S.p.A.

HEAD OFFICE	SERVICE
Via Fratelli Gracchi, 27 20092 Cinisello Balsamo (MI) Tel +39 02 66027.1 sales@isoil.it	service@isoil.it

If you want to find the complete list of our distributors access at the following link:
<http://www.isoil.it/en>



Due to the constant technical development and improvement of its products, the manufacturer reserves the right to make changes and/or modify the information contained in this document without notice.