



**EUROMAG**  
INTERNATIONAL

## Electromagnetic flowmeters



## Wafer sensors MUT 1100-J

DS130-1-ENG 

## Sensor MUT 1100-J

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EUROMAG INTERNATIONAL MUT1100-J are flangeless sensors that cover all diameters from DN 25 to DN 150. When light weight and compact dimensions are required, the choice of sensors cannot be other than MUT1100-J. These models are installed between two flanges surrounded by studs. For this reason they are also called “wafer sensors.”

### 1. Body and connections

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The MUT1100-J have a flow tube made in PBT and fiber glass, the coils housing is in carbon steel acrylic painted.

It is equipped with a junction box to connect the cables to the converter. The degree of protection is IP 67. It may be installed between flanges UNI 2223 from PN 16 to PN 40 or ANSI 150, 300 (see Table 4). The sensor and the flange are sealed by two O-rings supplied with the sensor. It can be operated with pressures up to 20 bar.

### 2. Internal lining

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The sensor body is in PBT with fiber glass at 20%, thus the temperature of the liquid to be measured has to be between 0°C and + 110°C.

### 3. Electrodes and grounding

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In the Standard version the MUT 1100-J has three electrodes in AISI 316L and, on request they can be supplied in the materials shown in Table 2. It should be noted that if the sensor is installed in a plastic or lined pipe line, the liquid grounding does not require the use of grounding rings, because of the presence of the third electrode.

### 4. Coupling and connecting to sensor

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MUT 1100-J sensors can be coupled to all converters produced by EUROMAG shown in Table 3. In the separate version the sensor is connected to the converter by means of two cables whose length depends on the liquid conductivity, that length should not exceed 100 meters, as shown in figure 1. The minimum length is 5 meters.

### 5. Choice of diameter

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In order to select the correct diameter use chart 13, the recommended full scale velocity, in normal applications, is around 2÷3 m/s. It should be noted that the full scale flowrate can be selected in the field through the converter keyboard. The maximum value that may be selected is the one corresponding to a velocity of 10 m/s.

### 6. Liquid temperature

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The maximum temperature the liquid can reach is +110 °C.

### 7. Calibration and maximum error

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MUT 1100-J sensors belong to the reference Group B1 (ISO 11631). Each sensor is calibrated by a hydraulic bench equipped with a reference weighting system SIT certified. The uncertainty of the measure is equal to 0, 2% of the read value, when the velocity of the liquid is more than 0, 2 m/s. The repeatability of the measure is in the order of 0, 1%.

### 8. Reference standards

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

- \* CEI EN 61010-1
- \* UNI EN ISO 6817
- \* EN 1434
- \* EN 50081 - 1
- \* EN 50082 - 1

### Maximum length of cables according to the liquid conductivity.

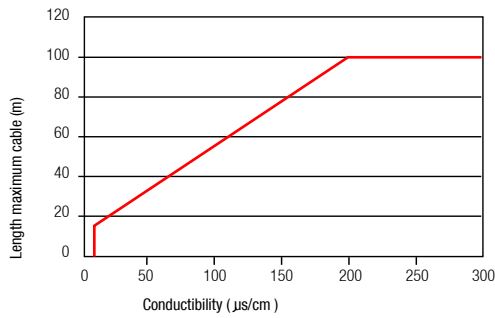


figure 1

### Standard diameters

millimeters (mm)	25	40	50	65	80	100	125	150
inches ( " )	1"	1.1/2"	2"	2.1/2"	3"	4"	5"	6"

table 1

### Available electrodes

* AISI 316 L (standard)	* Titanium
* Hastelloy B	* Hastelloy C

table 2

### Converters coupling

MUT 1100-J versions	MC 106 A	MC 106 B	MC 308	MC 308 C	MC 108
	[1]	[1]	[1] [2]	[2]	[2]
SEPARATE	●	●	●	●	●
COMPACT	●		●	●	

[1] Case in abs [2] Case in aluminium [3] Case in stainless steel

table 3

### Usable FLANGE, Diameter and Number of bolts and Tightening torque

DN		PN16			PN25			PN40			ANSI150			ANSI300			Length
[mm]	[ " ]	Db	Nb	T [Nm]	Db	Nb	T [Nm]	Db	Nb	T [Nm]	Db	Nb	T [Nm]	Db	Nb	T [Nm]	MUT1100-J
25	1"	M12	4	18	M12	4	22	M12	4	28	1/2"	4	20	5/8"	4	25	68mm
40	1" 1/2"	M16	4	30	M16	4	35	M16	4	41	1/2"	4	23	3/4"	4	30	96 mm
50	2"	M16	4	35	M16	4	40	M16	4	47	5/8"	4	33	5/8"	8	23	86 mm
65	2" 1/2"	M16	4	48	M16	8	38	M16	8	38	5/8"	4	47	3/4"	8	30	104 mm
80	3"	M16	8	35	M16	8	40	M16	8	47	5/8"	4	60	3/4"	8	48	112 mm
100	4"	M16	8	48	M20	8	98	M20	8	116	5/8"	8	47	3/4"	8	68	130 mm
125	5"	M16	8	61	M22	8	105	M22	8	125	3/4"	8	67	3/4"	8	90	152 mm
150	6"	M20	8	85	M22	8	110	M22	8	131	3/4"	8	81	3/4"	12	90	196 mm

The nuts and bolts are considered new and correctly greased.

table 4

### General characteristics of MUT 1100-J sensors.

Available diameters	25 mm 1"	40 mm 1.1/2"	50 mm 2"	65 mm 2.1/2"	80 mm 3"	100 mm 4"	125 mm 5"	150 mm 6"
Connections: coupling flange [1]	UNI2223			ANSI 150			ANSI 300	
Maximum pressure[1]	20 bar							
Liquid temperature	0°C , +110°C							
Degree of protection	IP67							
Converters compatibility [2]	MC 106 A	MC 106 B	MC 308	MC 308 C	MC 108			
Dimensions	See figure 2							
Parts in contact with the liquid	Flow Tube: PBT with fiber glass				O - Ring: Viton [3]			

[1]See Table 4.

[2]See Table 3.

[3]Other materials on request

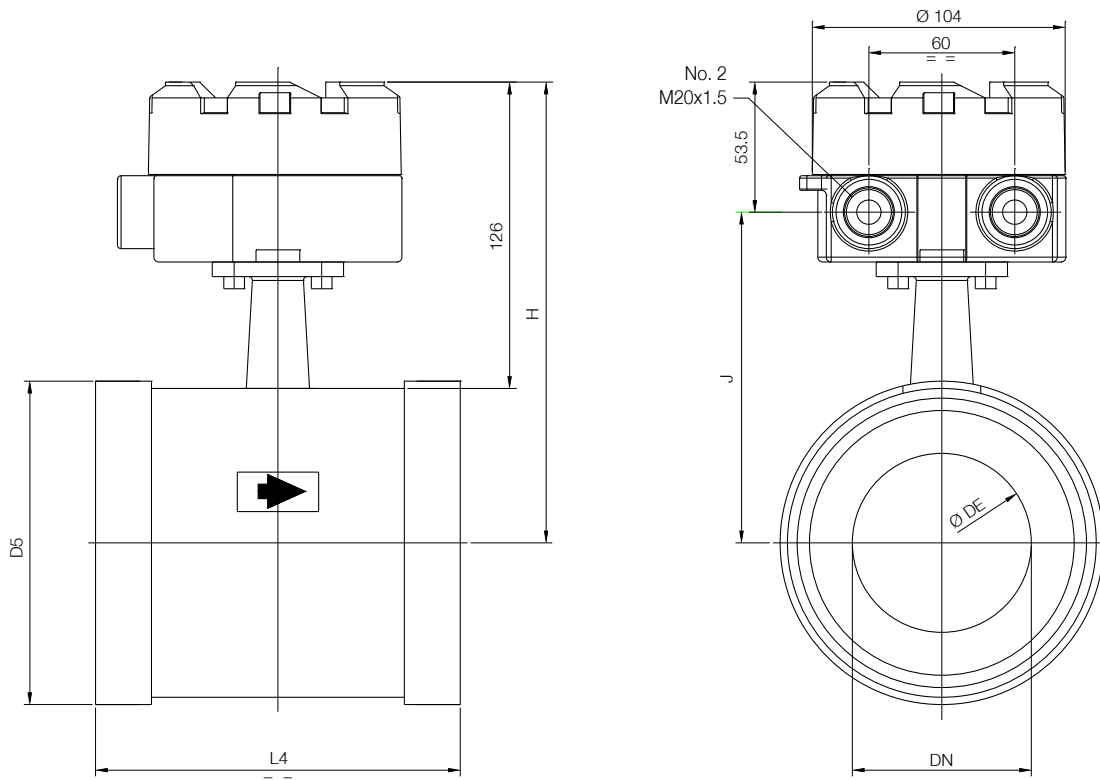
table 5

Weight of MUT1100-J sensors in the separate version without packing.

DN	[mm]	25	40	50	65	80	100	125	150
DN	[ " ]	1"	1" 1/2	2"	2" 1/2	3"	4"	5"	6"
WEIGHT	[kg]	1,1	1,5	1,8	2,5	3	4	5	6,5

table 6

Fig. 2 - Overall dimensions

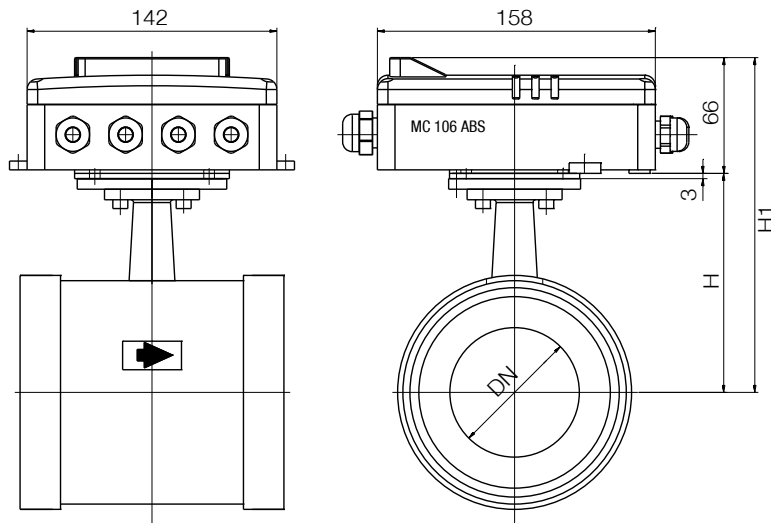


Maximum dimensions of MUT 1100-J.

DN		D5	L4	J	H	H
[mm]	[ " ]					
25	1"	66	68 <sup>0</sup> <sub>-3</sub>	105	158	25
40	1" 1/2	86	96 <sup>0</sup> <sub>-3</sub>	115	168	39
50	2"	103	86 <sup>0</sup> <sub>-3</sub>	122	175	46
65	2" 1/2	122	104 <sup>0</sup> <sub>-3</sub>	133	186	64
80	3"	134	112 <sup>0</sup> <sub>-3</sub>	138	192	80
100	4"	160	130 <sup>0</sup> <sub>-3</sub>	148	202	102
125	5"	190	152 <sup>0</sup> <sub>-3</sub>	166	220	125
150	6"	220	196 <sup>0</sup> <sub>-3</sub>		234	150

table 7

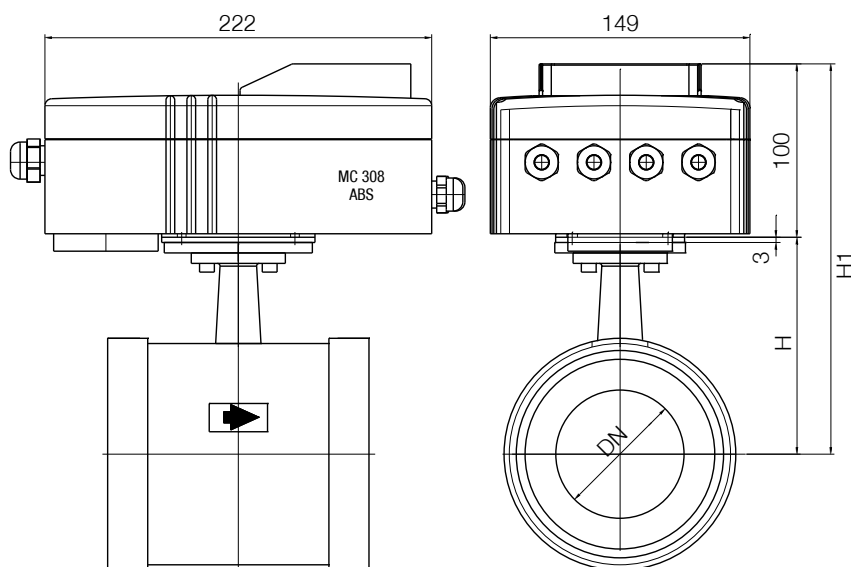
Fig. 3 - MUT 1100-J Compact - Converter MC 106 ABS Horizontal



Ø DN	H	H1
[mm]	[mm]	[mm]
25	87	153
40	97	163
50	104	170
65	115	
80	120	186
100	130	196
125	148	214
150	163	229

table 8

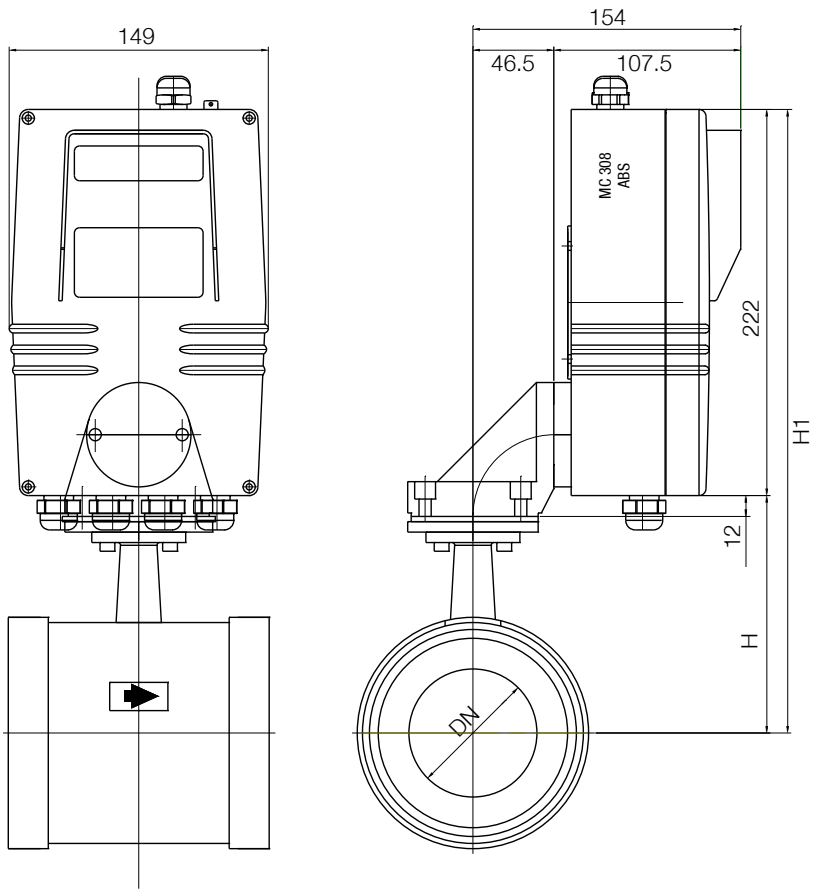
Fig. 4 - MUT 1100-J Compact - Converter MC 308 ABS Horizontal



Ø DN	H	H1
[mm]	[mm]	[mm]
25	87	187
40	97	197
50	104	204
65	115	215
80	120	220
100	130	230
125	148	248
150	163	263

table 9

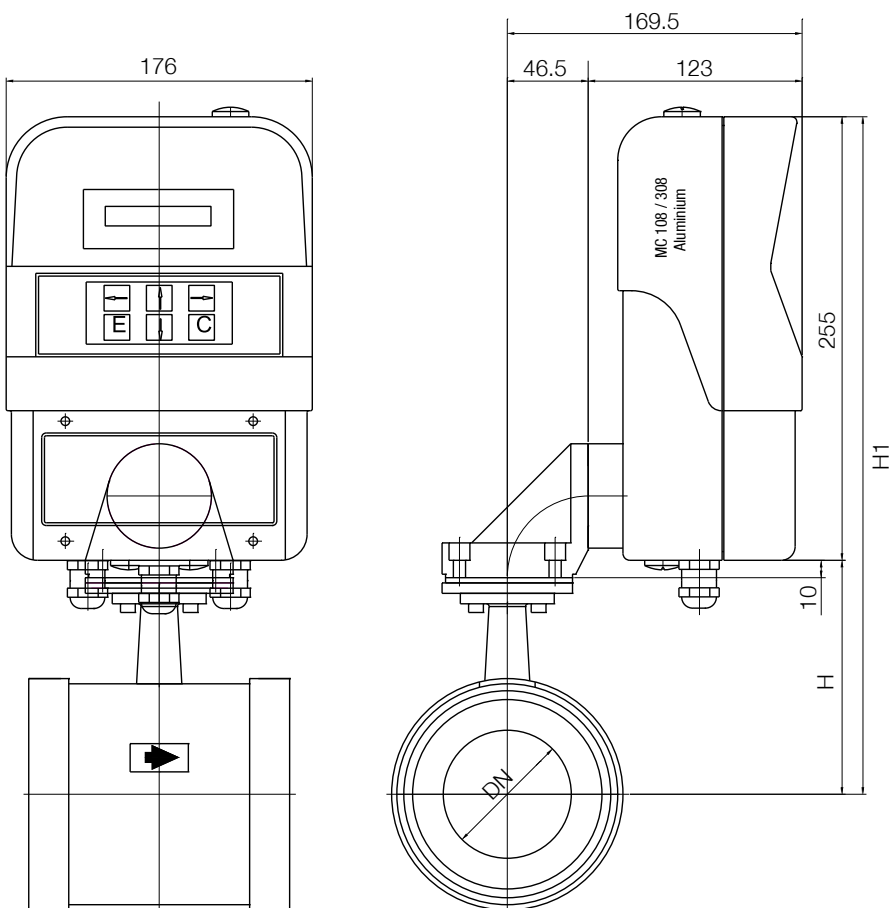
Fig. 5 - MUT 1100-J Compact - Converter MC 308 ABS Vertical



Ø DN	H	H1
[mm]	[mm]	[mm]
25	99	
40	109	
50	116	338
65	127	349
80	132	354
100	142	364
125	160	382
150	175	397

table 10

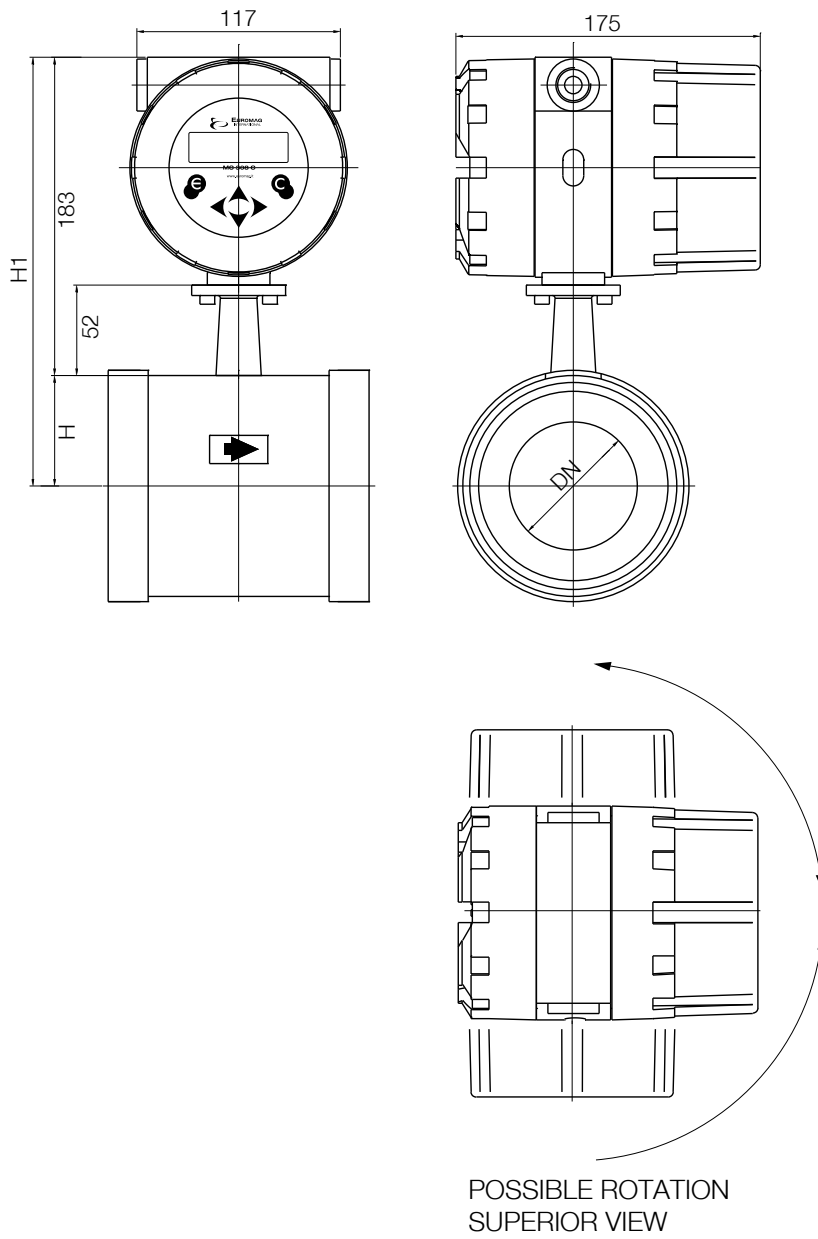
Fig. 5 - MUT 1100-J Compact - Converter MC 308 ABS Vertical



Ø DN	H	H1
[mm]	[mm]	[mm]
25	97	352
40	107	362
50	114	369
65	125	380
80	130	385
100	140	395
125	158	413
150	173	428

table 11

Fig. 7 - MUT 1100-J Compact - Converter MC 308 C



Ø DN	H	H1
[mm]	[mm]	[mm]
25	32	215
40	42	225
50	49	232
65	60	243
80	65.5	248.5
100	75.5	258.5
125	94	277
150	108	

table 12

Flowrate table (To prefer the values in blue)

DN	VELOCITY [m/s]			
	0,05	0,5	5	10
25	8,80 l/h	0,88 m <sup>3</sup> /h	8,84 m <sup>3</sup> /h	17,67 m <sup>3</sup> /h
40	21,50 l/h	2,15 m <sup>3</sup> /h	21,50 m <sup>3</sup> /h	43,01 m <sup>3</sup> /h
50	30,00 l/h	2,99 m <sup>3</sup> /h	29,91 m <sup>3</sup> /h	59,83 m <sup>3</sup> /h
65	58,00 l/h	5,79 m <sup>3</sup> /h	57,91 m <sup>3</sup> /h	115,81 m <sup>3</sup> /h
80	90,00 l/h	9,05 m <sup>3</sup> /h	90,48 m <sup>3</sup> /h	180,96 m <sup>3</sup> /h
100	147,00 l/h	14,71 m <sup>3</sup> /h	147,08 m <sup>3</sup> /h	294,17 m <sup>3</sup> /h
125	221,00 l/h	22,09 m <sup>3</sup> /h	220,89 m <sup>3</sup> /h	441,79 m <sup>3</sup> /h
150	318,00 l/h	31,81 m <sup>3</sup> /h	318,09 m <sup>3</sup> /h	636,17 m <sup>3</sup> /h

table 13

The data shown in this catalogue are subject to modification without prior notice.