

ISOMAG ™

THE FRIENDLY MAG METER

CONVERTER

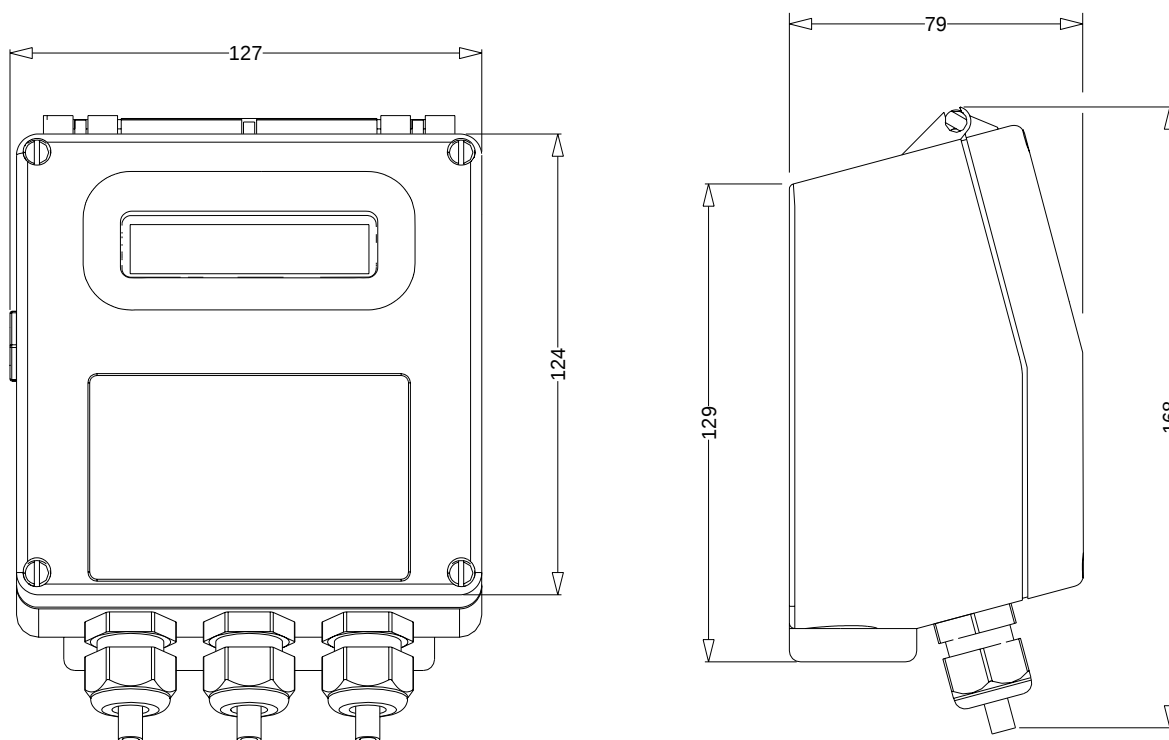
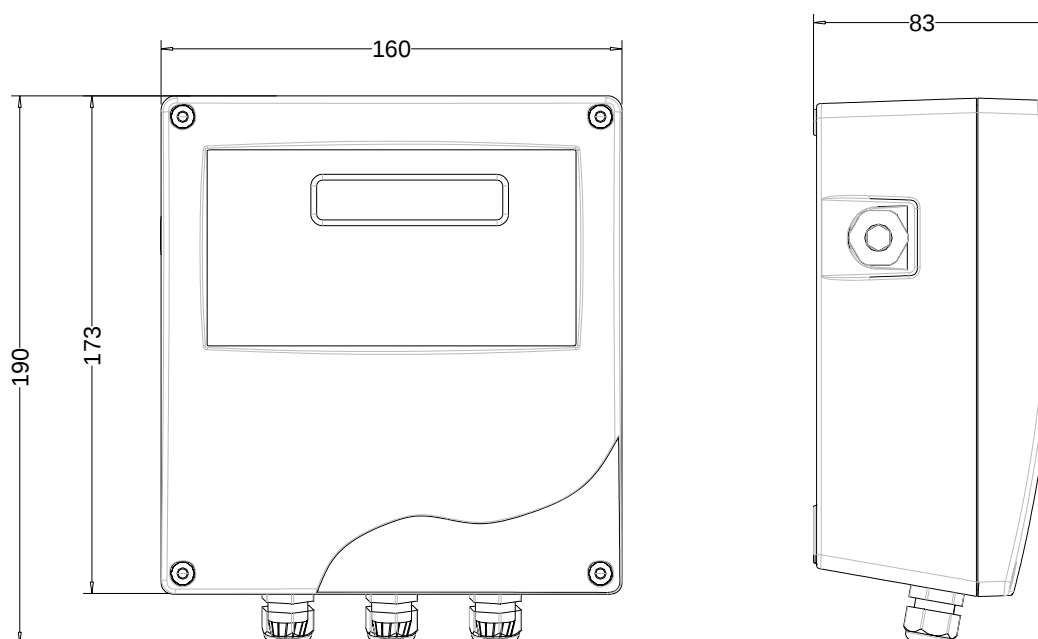
ML 110



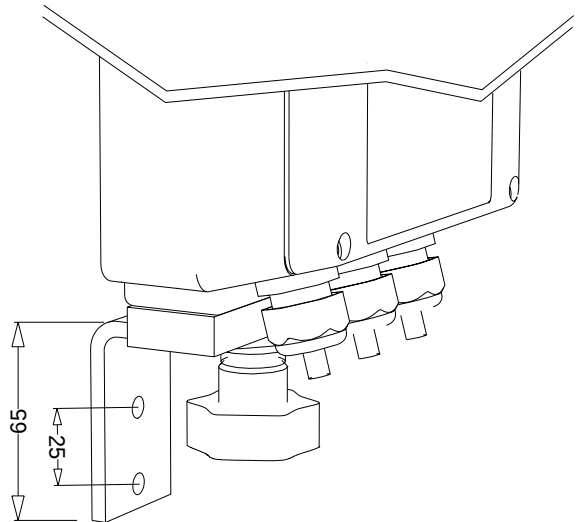
ALFANUMERICAL DISPLAY CONVERTER

TECHNICAL DATA

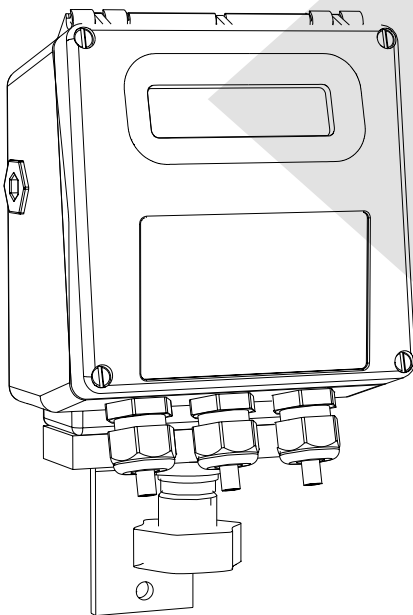
[illegible]

OVERALL DIMENSIONS**COMPACT VERSION (PLASTIC)****COMPACT VERSION (Aluminium)**

SEPARATE VERSION



VISUALIZATION PAGES



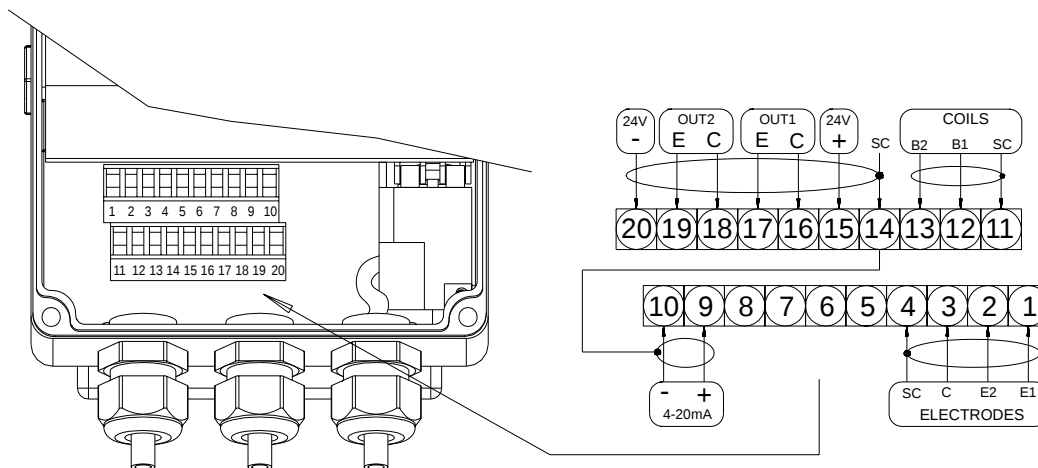
	<code>dm³/s +0.0000 ! +0.00%-----</code>	Flow rate value
	<code>T+dm³ 56.043 P+dm³ 271013.447</code>	Totalizer values
	<code>dm³/s +0.000 !1 P+dm³! .000</code>	Direct and reverse totalizer
	<code>dm³/s +0.168 1 m/s 0.92-----</code>	Flowrate and speed of media
	<code>=====> <=====</code>	Alternate visualization of data
	<code>01/01/00 00:00* PORTATA>FS</code>	Alarm ON visualization



Different possibilities of visualization with simple pressure of a key

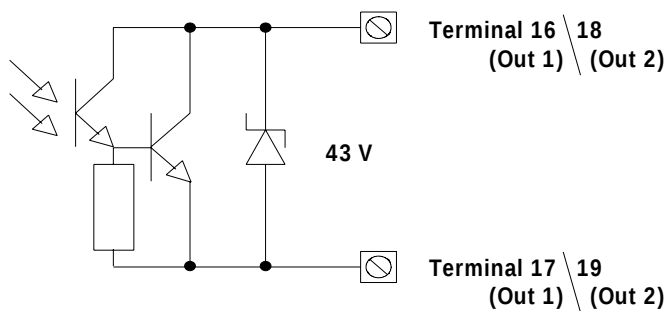
ELECTRICAL CONNECTIONS

TERMINAL BLOCK VIEW



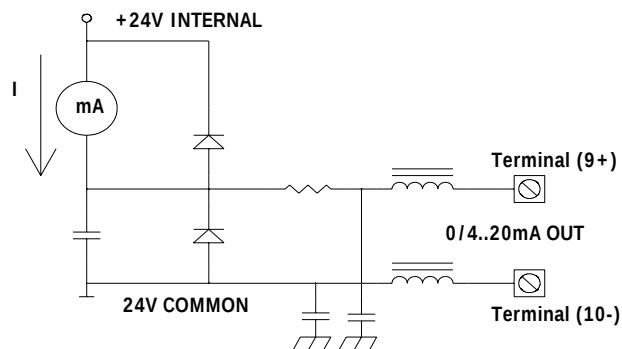
ON/OFF OUTPUT

ON/OFF OUTPUT



ANALOG OUTPUT

ANALOG OUTPUT



FUNCTIONS

MAIN MENU 1-Sensor

```
1-SENSOR
ND=mm      00025
KA=        +01.0000
Sens.type= 00
Ins.position= 0
KL=[0]    +00.0000
KL=[0]    +00.0000
E.P.detect= OFF
Autozero cal.
E.P.calibr.
```

- 1.1 Insert ND of sensor (0-3000)
- 1.2 Calibration data of sensor visualized on sensor's label
- 1.3 Type of sensor: Enter the first two characters of the serial number of the sensor
- 1.4 Position for insertion sensors: 0=1/8DN, 1=1/2DN, 2=7/8DN
- 1.5 Factory parameter
- 1.6 Enables the empty pipe detection feature
- 1.7* Enables the automatic zero calibration system
- 1.8* Enables the automatic calibration procedure of the empty pipe detection

MAIN MENU 2-Scales

```
2-SCALES
Fs1=dm³/s 05.000
Fs2=dm³/s 05.000
Tot.MU=dm³ 1.000
Pls1=dm³   01.0000
Pls2=dm³   01.0000
Tpls1=ms 0050.00
Tpls2=ms 0050.00
Frq1=Hz 01000.00
Frq2=Hz 01000.00
```

- 2.1* Full scale value set for range N.1
- 2.2* Full scale value set for range N.2
- 2.3* Unit of measure and number of decimal totalizes
- 2.4* Pulse value on channel 1
- 2.5* Pulse value on channel 2
- 2.6* Duration of the pulse generated on channel 1
- 2.7* Duration of the pulse generated on channel 2
- 2.8 Full scale freq. for channel 1 (0.1Hz-1000.0Hz)
- 2.9 Full scale freq. for channel 2 (0.1Hz-1000.0Hz)

MAIN MENU 3-Measure

```
3-MEASURE
Tconst=s 0002.0
Skip thr=% 025
Peak thr=% 125
Cut-off=% 07.0
Filter=s 0.2
Autocal.= OFF
Autorange= ON
E.saving= OFF
```

- 3.1* Time constant
- 3.2* Acceleration threshold
- 3.3* Anomalous signal pick cut off threshold
- 3.4 Low flow zero threshold: 0-25% of full scale value
- 3.5 Filter on the power supply: 0.1s="ready" measure; 0.5s=filter of noise on the liquid
- 3.6 Enable every hour an internal cycle of calibration. The measure it's stopped for 8-15 sec.
- 3.7* Automatic change of scale
- 3.8* Energy saving

MAIN MENU 4-Alarms

```
4-ALARMS
Max thr=% 000
Min thr=% 000
Hyst.=% 03
E.P.thr.= 075
mA v.fault=% 010
Hz v.fault=% 125
```

- 4.1 Maximum value alarm set for flow rate
- 4.2 Maximum value alarm set for flow rate
- 4.3 Hysteresis threshold set for the minimum and maximum flow rate alarms
- 4.4 Empty pipe detection threshold. It's automatically set by the function 1.9
- 4.5* Current output value in case of failure
- 4.6* Frequency output value in case of failure

MAIN MENU 6-Outputs

```
6-OUTPUTS
Out1= #1 FREQ
Out2= #2 FREQ+
Duty cycle1=% 50
Duty cycle2=% 50
Out mA1=4_22
```

- 6.1* Output 1 functions
- 6.2* Output 2 functions
- 6.3* Duty cycle value for pulses/frequency output
- 6.4* Choice of the function and the range of current output n.1

MAIN MENU 7-Communication

```
7-COMMUNICATION
IF2 prot.= DPP
```

- 7.1 Choice of the communication protocol for the IF2 device

MAIN MENU 8-Display

```

8-DISPLAY
Language= EN
D.rate=Hz 1
Contrast= 7
Quick start= OFF
Tot.modif.= OFF
Net total.= OFF
T+ reset
P+ reset
T- reset
P- reset
Currency= ON
Curr.decim.= 2
EUR/dm³+ 01.0000
EUR/dm³- 01.0000

```

- 8.1 Choice of the language: E= English, I=italian, F= French, S= Spanish
- 8.2 Updating frequency on the display: 1-2-5-10 Hz
- 8.3 Display contrast
- 8.4 Quick start menu visualization
- 8.5* Enable the change value of the totalises
- 8.6 Enable the page of net totalizer (difference between direct and reverse. see page 17)
- 8.7* Total direct (positive) flow totalise reset
- 8.8* Partial direct (positive) flow totalise reset
- 8.9* Total reverse (negative) flow totalise reset
- 8.10* Partial reverse (negative) flow totalise reset
- 8.11 Visualizes the values of the partial totalise in the unit of selected currency
- 8.12 Choice of the numbers of decimals for the visualization currency value: From 0 to 3
- 8.13* Value of conversion/currency for direct totalizer
- 8.14* Value of conversion/currency for reverse totalizer

MAIN MENU 10-Diagnostic

```

10-DIAGNOSTIC
Calibration
Self test
Simulation= OFF

```

- 10.1* Enable the calibration of the converter
- 10.2* Converter autotest
- 10.3* Flow rate simulation enabling

MAIN MENU 11-Internal data

```

11-INTERNAL DATA
L2 keycode=000000
Load fact.pres.
Load user pres.
Save user pres.
Hours= 000031
Ign.cal.err= OFF
KS= +1.0000

```

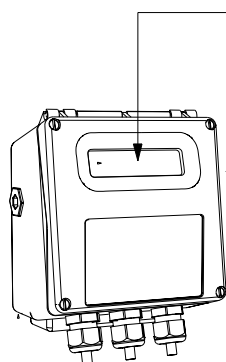
- 11.1 Level 2 access code enter
- 11.2 Load factory data pre-set
- 11.3 Load user data saved
- 11.4 Save user data
- 11.5 Visualisation of the total operation hours of the converter (function not editable)
- 11.6 Ignore the calibration error during the switch on test
- 11.7 Ks Coefficient

HOW TO ORDER

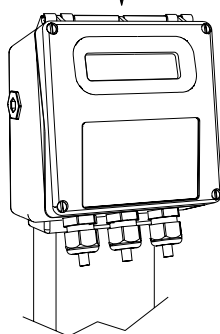
ML 110	Display
A	Blind execution (without display and programming keys)
B	Complete with 2 line back light display (each of 16 characters) and 3 programming keys
Housing material - Protection rate	
0	Nylon with glass fiber (IP 65)
1	Painted aluminum die casting, protection rate IP67
Version	
A	Compact version with sensor MS.... (liquid maximum temperature 100 °C)
B	Separate version for wall mounting, complete with mounting accessories (C018 CABLE)
Power supply	
1	Power supply : 90 ... 265 V 45/66 Hz
2	Power supply : 18...63 V dc / 15...45 V ac - 45...66 Hz
9	Power supply : other
Analogue output	
A	Without analogue output
B	Analogue output 0/4...20/22 mA

ML 110 A 0 A 1 A

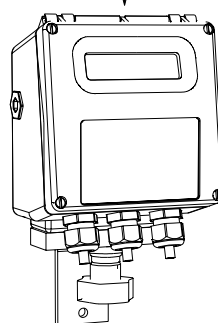
EXAMPLE OF CODE FOR ORDER



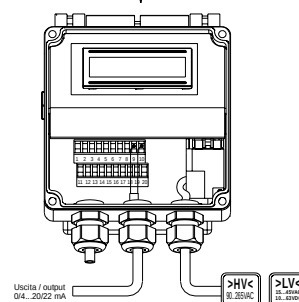
ML 110



COMPACT VERSION



SEPARATE VERSION



INTERNAL VIEW

In accordance with a continuous evolution of the product, the company reserves the right to modify without warning the information contained in this document