

ULTRA COMPACT INSERTION MAG METER

ISOMAG ™

The friendly magmeter

MS 3790



Warranty conditions are available on this website:
www.isomag.eu only in English version

ISOIL 
INDUSTRIA
The solutions that count

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TECHNICAL DATA

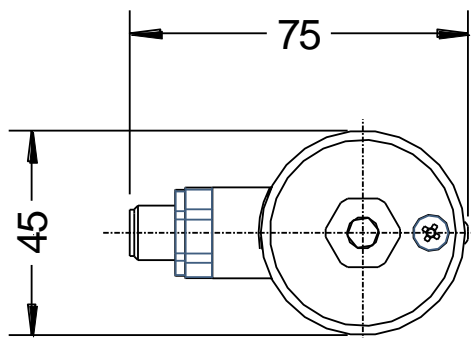
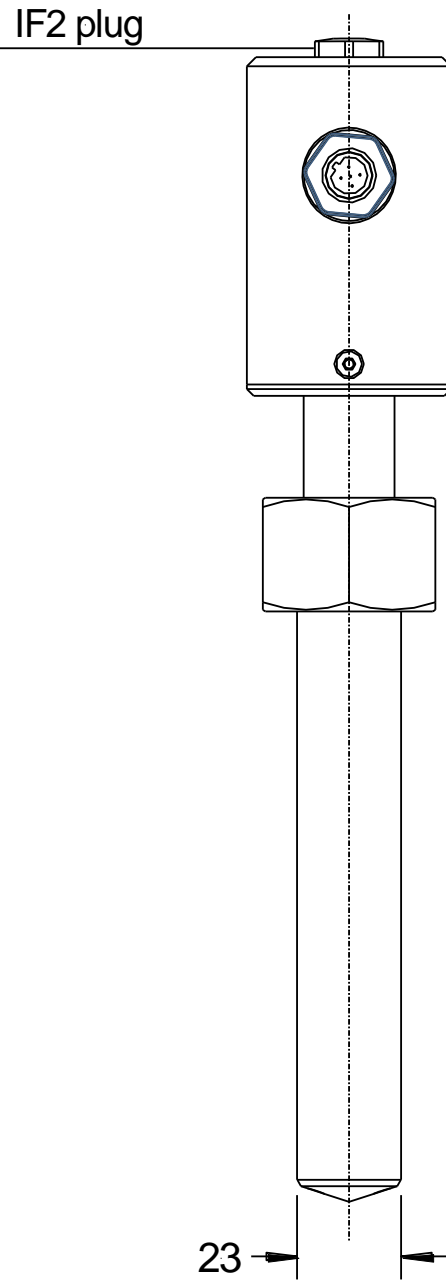
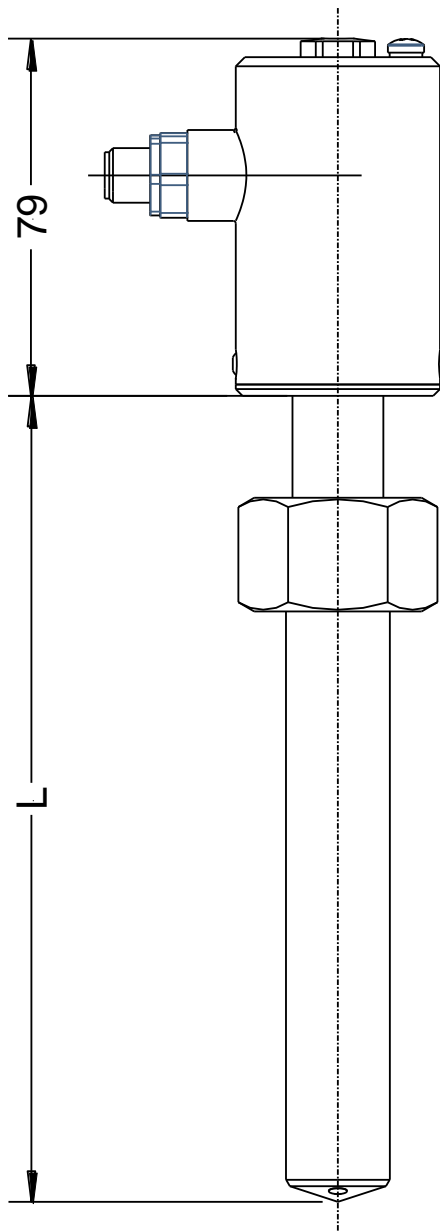
<i>OVERALL FEATURES</i>	
Size for pipe line Ø	<input type="checkbox"/> Size 1 Ø ≤ 500mm <input type="checkbox"/> Size 2 Ø ≤ 1000mm <input type="checkbox"/> Size 3 Ø ≤ 2000mm
Minimum conductivity	<input type="checkbox"/> 20 µS/cm
Altitude	<input type="checkbox"/> -200m up to 4000 m
Humidity Range	<input type="checkbox"/> 0÷100% (IP 67)
CE Certification	<input type="checkbox"/> Yes

<i>STANDARD FEATURES</i>	
Protection Rate	<input type="checkbox"/> IP 67
Power Supply/Consumption	<input type="checkbox"/> 18-30V⁻⁻⁻ (1W)
Electrical connections	<input type="checkbox"/> 5 pins connector M12X1 complete of plug
Full scale value	<input type="checkbox"/> 0,4...10m/s
Protocols	<input type="checkbox"/> ETP
Digital Input/Outputs	<input type="checkbox"/> N° 1 channel freely programmable as INPUT or OUTPUT for volume pulses/alarms
Data Storage	<input type="checkbox"/> Eeprom values storing system in case of power failure
Programming Plug In	<input type="checkbox"/> Protected plug in for the connection to PC
Bi-Directional	<input type="checkbox"/> Yes
Body material	<input type="checkbox"/> Stainless steel AISI 304
Nominal pressure	<input type="checkbox"/> 1600 kPa
Process connection	<input type="checkbox"/> 1" Threaded end
Version – protection rating	<input type="checkbox"/> Compact IP67
Connection material	<input type="checkbox"/> Stainless steel AISI 304
Lining material/gasket	<input type="checkbox"/> PTFE/FPM
Liquid temperature	<input type="checkbox"/> 0°C ÷ 100°C compact version
Electrodes material	<input type="checkbox"/> Stainless steel AISI 316

OPTIONAL FEATURES <i>(CHECK FOR MORE DETAILS 'HOW TO ORDER' ON LAST PAGE)</i>	
Pulses/ Alarm Outputs	<input type="checkbox"/> N°1 Digital Output
Current Output	<input type="checkbox"/> N°1 , 0/4...20mA – RL=1000Ω
Size for pipe line Ø	<input type="checkbox"/> Other on request
Body material	<input type="checkbox"/> Stainless steel AISI 316
Nominal pressure	<input type="checkbox"/> Others on request
Process connection	<input type="checkbox"/> Others on request
Electrodes material	<input type="checkbox"/> Others on request

ACCURACY	
Measurements tolerance (board)	<input type="checkbox"/> Volume = ±0,2% v.l. <input type="checkbox"/> Out 4/20 mA = ± 0,2 % v.l.
Accuracy (whole system)	<input type="checkbox"/> See table below

OVERALL DIMENSIONS

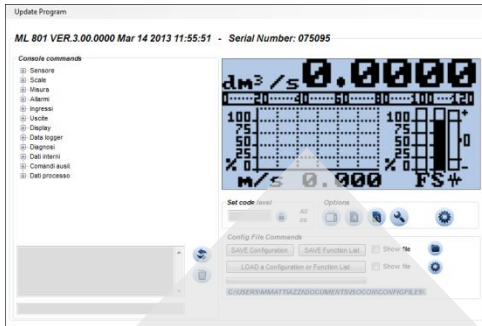


SIZE	"L" DIMENSION
1	176mm
2	244mm
3	462mm

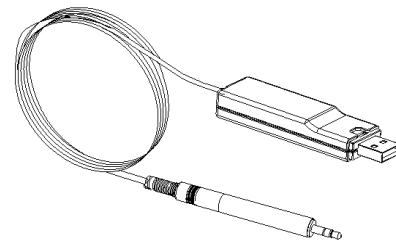
ACCESS TO THE CONFIGURATION MENU

ISOCON INTERFACE

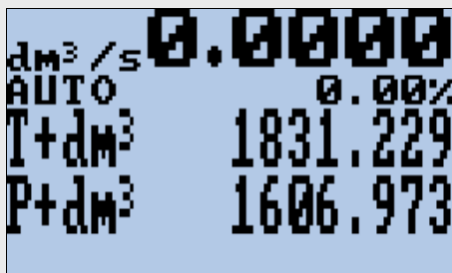
Isocon is a Windows® software that allows to set all the converter functions and customize the menu (IF2X is required), see suitable manual for details.



IF2X



MAIN PAGES



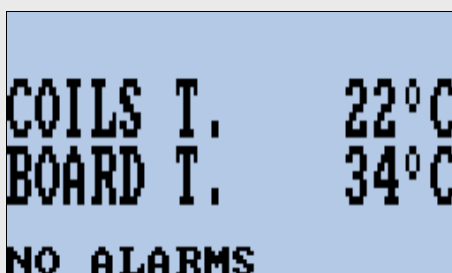
- Flow rate value
- Direct/reverse totalizer (partial and total)



- Flow rate value
- Flow speed variation
- Analogical bar % full scale
- Analogical bar of flow rate variation



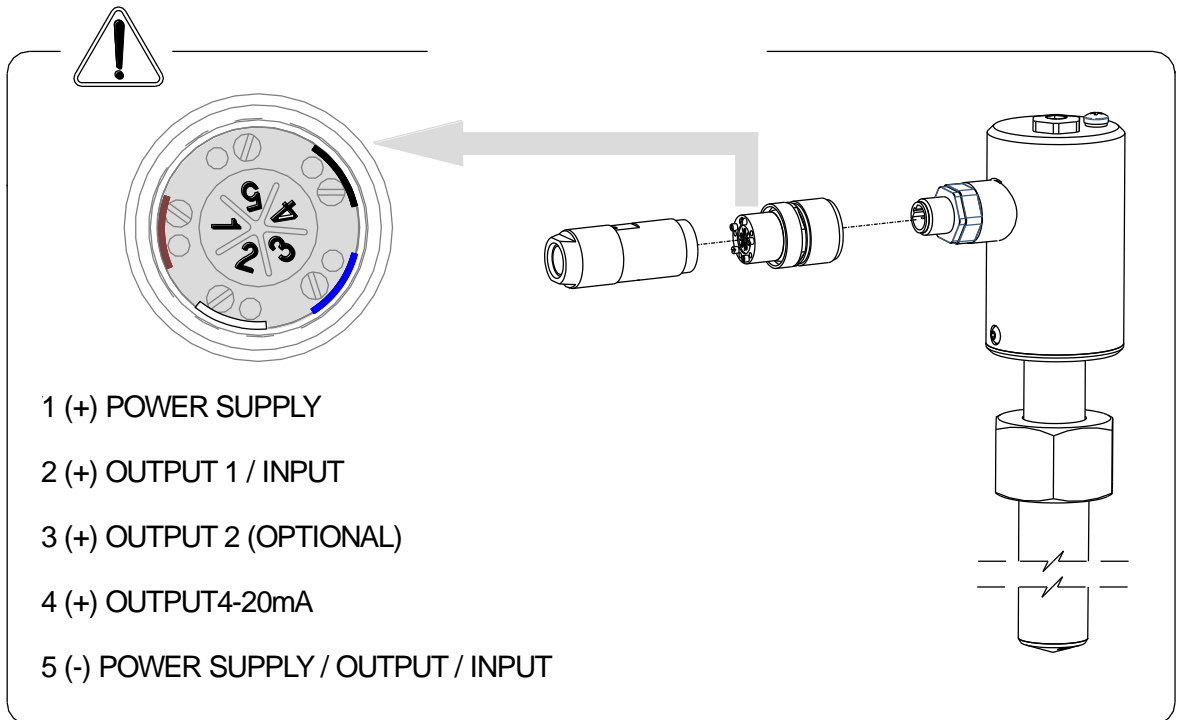
- Flow rate value
- Analogical bar % full scale



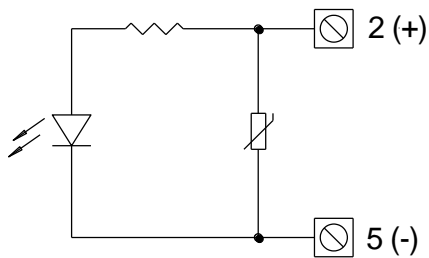
- Temperatures
- Alarms

ELECTRICAL CONNECTIONS

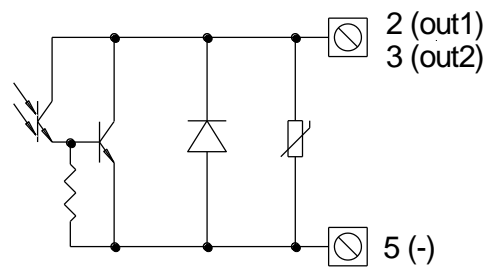
TERMINAL BLOCK VIEW



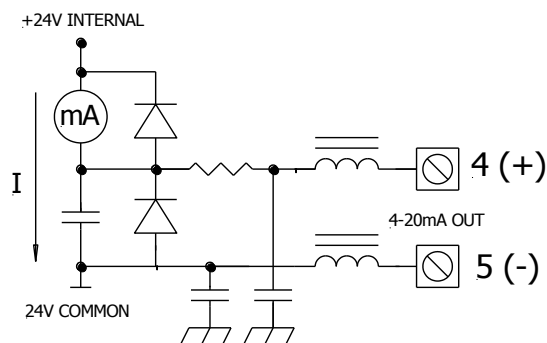
ON/OFF INPUT



ON/OFF OUTPUT



ANALOG OUTPUT



FUNCTIONS

```

MAIN MENU
1-Sensor
2-Scales
2-SCALES
Fsc= 1/h 1800.0
Tot.MU= ml 1.000
Pls1= ml 1000.00
Pls2= ml 1000.00
1 Tpls1=ms 0050.00
1 Tpls2=ms 0050.00
1 Sg=kg/dm³ 01.0000
  
```

- 2.1* Flow rate full scale value
- 2.2* Unit of measure and number of decimal place
- 2.3* Pulse value on channel 1
- 2.4* Pulse value on channel 2
- 2.5* Duration of the pulse generated on channel 1
- 2.6* Duration of the pulse generated on channel 2
- 2.7 Specific gravity set in kg/dm³

```

MAIN MENU
1-Sensor
2-Scales
3-Measure
4-alarms
3-MEASURE
Damping= OFF
Cut-off=% 01.0
  
```

- 3.1* Measure filter
- 3.2 Low flow zero threshold: 0-25% of full scale value

```

2-Scales
3-Measure
4-alarms
4-ALARMS
Al.max+=% 000
Al.min+=% 000
1 Al.max-=% 025
1 Al.min-=% 025
1 Hyst.=% 01
1 mA v.fault=% 000
  
```

- 4.1 Maximum value alarm set for direct flow rate
- 4.2 Minimum value alarm set for direct flow rate
- 4.3 Maximum value alarm set for reverse flow rate
- 4.4 Minimum value alarm set for reverse flow rate
- 4.5 Hysteresis threshold set for the minimum and maximum flow rate alarms
- 4.6* Current output value in case of failure

```

3-Measure
4-alarms
5-Inputs
5-INPUTS
I+ reset= OFF
P+ reset= ON
1 I- reset= OFF
1 P- reset= ON
Count lock= ON
Meas.lock= OFF
Calibration= OFF
  
```

- 5.1* Total direct (positive) flow totalizers reset enable
- 5.2* Partial direct (positive) flow totalizers reset enable
- 5.3* Total reverse (negative) flow totalizers reset enable
- 5.4* Partial reverse (negative) flow totalizers reset enable
- 5.5 Totalizers counting lock command (see page 9)
- 5.6* Block measures command
- 5.7* Autozero calibration external command

```

4-alarms
5-Inputs
6-Outputs
6-OUTPUTS
1 Out1= OFF
1 Out2= PLS+
1 Out mA=4÷22
1 Out mA= FLOW
  
```

- 6.1* Output 1 functions
- 6.2* Output 2 functions
- 6.3* Choice of the current output range
- 6.4 Choice of the current output function: flow rate


```

5-Inputs
6-Outputs
8-Display
8-DISPLAY
Language= EN
D.rate=Hz 5
Quick start= OFF
T+ reset
P+ reset
T- reset
P- reset

```

- 8.1 Choice of the language: EN= English, IT=Italian, FR= French, SP= Spanish
- 8.2 Display updating frequency: 1-2-5-10 Hz
- 8.3 Quick start menu visualization
- 8.4* Total direct (positive) flow totalizer reset
- 8.5* Partial direct (positive) flow totalizer reset
- 8.6* Total reverse (negative) flow totalizer reset
- 8.7* Partial reverse (negative) flow totalizer reset

```

6-Outputs
8-Display
9-Data logger
9-DATA LOGGER
Disp.min/max
Reset min/max

```

- 9.1 Visualization function of minimum and maximum flow rate values
- 9.2 Immediate reset all minimum and maximum flow rate values stored

```

8-Display
9-Data logger
10-Diagnostic
10-DIAGNOSTIC
Calibration
Self test
Simulation= OFF
Firmware rev.

```

- 10.1* immediate calibration of the instrument
- 10.2* Immediate autotest of the instrument
- 10.3* Flow rate simulation enabling
- 10.4 Visualize firmware revision/version

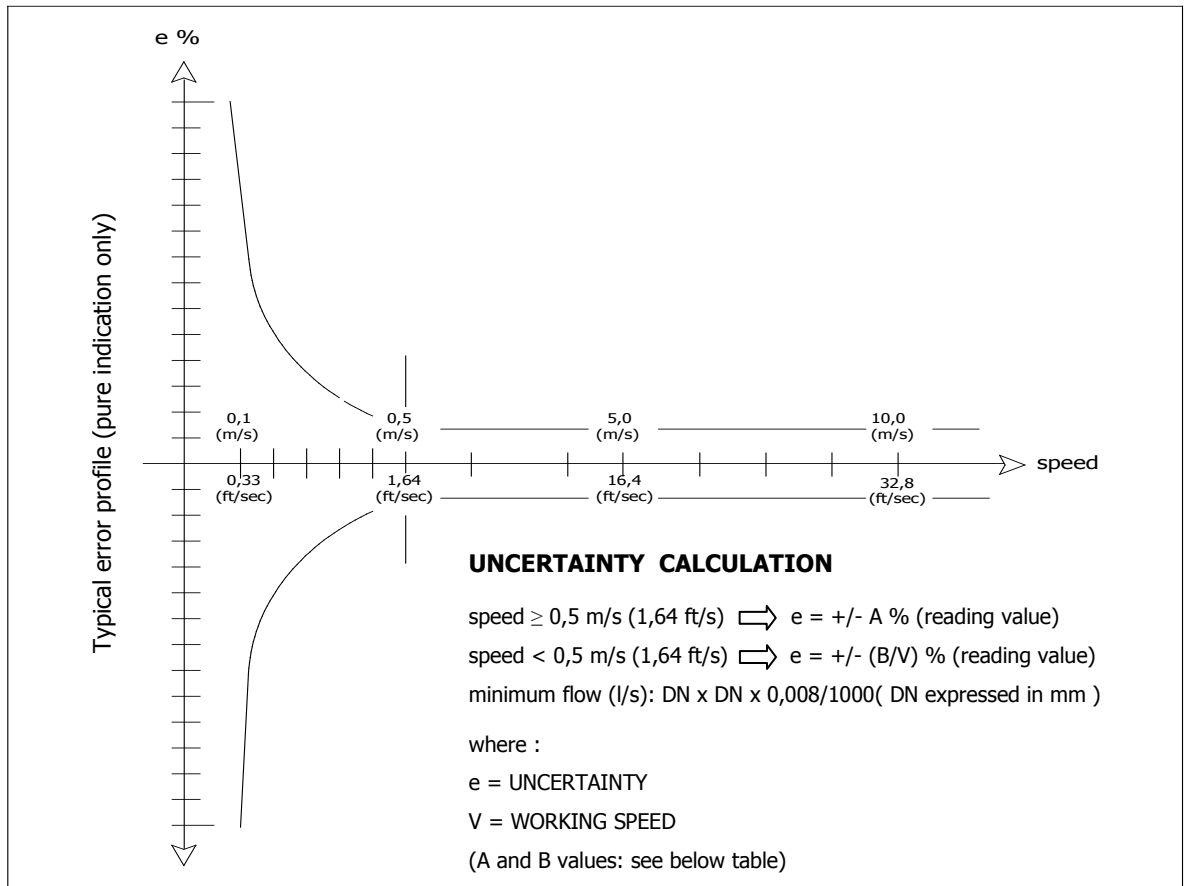
```

9-Data logger
10-Diagnostic
11-Internal data
11-INTERNAL DATA
L2 code= *****
Load fact.pres.
KR= +1.0000
MS= all page number reloaded

```

- 11.1 Level 2 access code enter
- 11.2 Immediate Re-Load of the pre-set factory data
- 11.3 KR coefficient (only for service purposes)
- 11.4 KR coefficient (only for service purposes)

ACCURACY TABLE



A	B (m/s)	B (ft/s)
2	1	3,28

Reference conditions :

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

HOW TO ORDER

Example code		MS 3790	
DN permit			
A	A	Suitable for diameter < / = 500 mm ; with SB 800 board, Complete of n° 1 freely programmable digital I/O	
	B	Suitable for diameter < / = 1000 mm ; with SB 800 board, Complete of n° 1 freely programmable digital I/O	
	C	Suitable for diameter < / = 2000 mm ; with SB 800 board, Complete of n° 1 freely programmable digital I/O	
Sensor and electrodes material / lining / internal gasket			
1	1	Materials : Sensor housing in AISI304 (head in PTFE), electrodes in AISI316 , gasket in FKM	
	2	Sensor material: to be specified	
Connection type			
A	A	1" uni 338 (GAS) female threaded connection	
	B	Connection: to be specified	
Execution / Protection rate			
0	0	without Analog Out	
	1	with Analog Out	
Execution / Protection rate			
A	A	without Additional Digital Out	
	B	n° 1 additional digital out	



MS3790-A1A0A (Complete code example for order)

The manufacturer reserves the right to make design improvements without notice.