ISOMAG ™

The friendly magmeter

MS 3900

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

## ISOIL
INDUSTRIA
The solutions that count

INDEX

TECHNICAL DATA

Nominal diameter	❑ **10 / 15 /20 / 25 / 32 / 40 / 50**
Body material	❑ **Ptfe coated Zincked steel**
Nominal pressure	❑ **1600 kPa**
Lining material	❑ **PTFE**
Process connection	❑ **Thread male UNI 338/NPT**
Gasket material	❑ **FPM**
Electrodes material	❑ **Stainless steel AISI 316**
Temperature range	❑ **Medium -10 to +100°C** ❑ **Ambient -10 to +60°C**
Vacuum resistance	❑ **20 kPa (absolute) at 100 °C**
Protection	❑ **IP 67**
Operating Voltage	❑ **18-30 V⎓**
Electrical connections	❑ **M16 connectors (5 pins)**
Programming Plug In	❑ **Protected plug-in for connection to PC (IF2X)**
Digital Input/Outputs	❑ **N° 2 OUT for volume/alarms; N° 1 freely programmable as input or output**
Current Output	❑ **0-20 or 4-20 mA Programmable**
Temperature measure	❑ **measure of temperature -10 .. +100 (it can be set as analog out on 4-20 mA)**
Empty Pipe Detect Diagnostic Funct.	❑ **Yes**
Bi-Directional	❑ **Yes**
Full scale value	❑ **0,4...10m/s**
Data Storage	❑ **F-ram not volatile stored measuring values on power failure**
CE Certification	❑ **Instrument with CE certificate**
Minimum conductivity	❑ **50 μS/cm**
Minimum Measurable Velocity	❑ **0,2 m/s**
Accuracy	❑ **FLOW RATE/VOLUME +/- 2% r.v.** ❑ **TEMPERATURE : +/- 2°C**

OVERALL DIMENSIONS
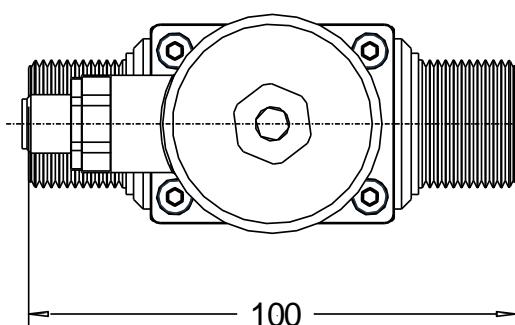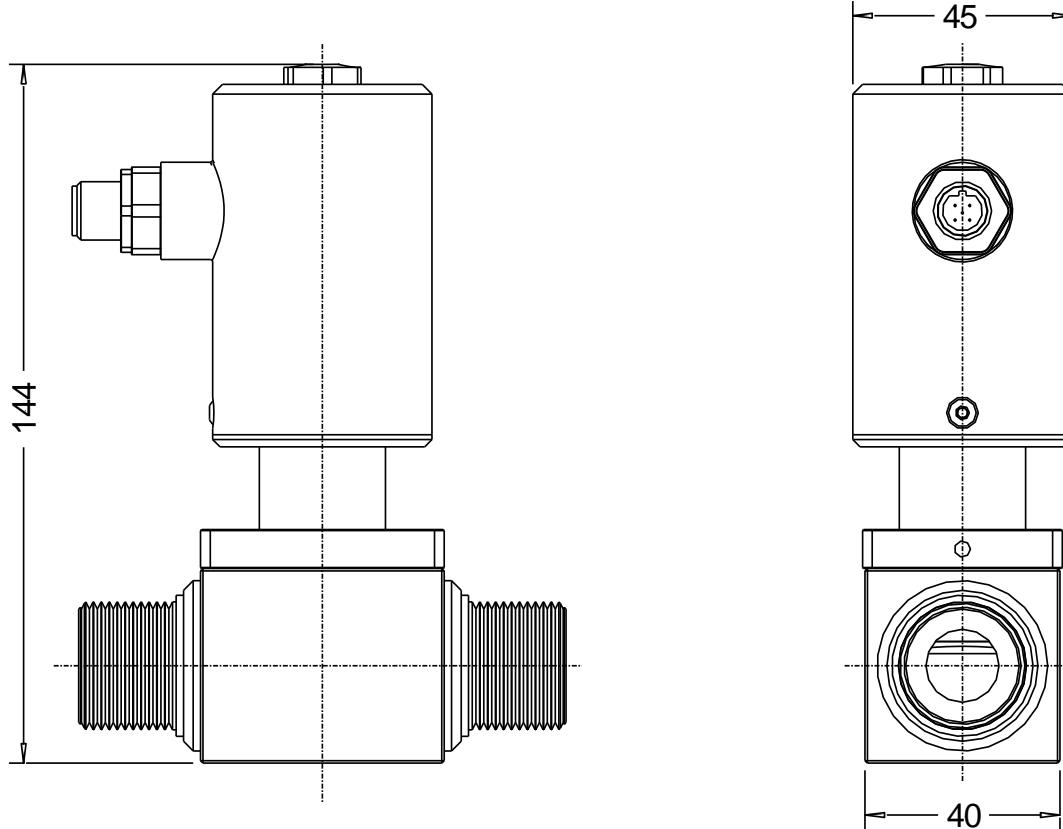
| DN	GAS / NPT	L
10	1/2"	100
15	3/4"	100
20	1"	100
25	1"	200
32	1-1/4"	200
40	1-1/2"	200
50	2"	200

MS3900: COMPONENTS

PG7 for IF23 plug

5 poles plug
(phoenix contact SACC-FS-5SC SH SCO)
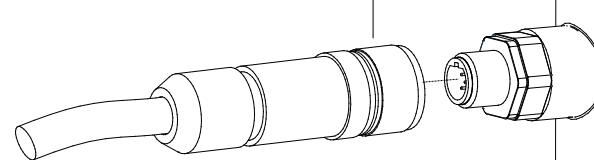
M4 screws
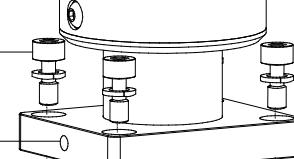
Groud connection

O-Ring 4106 (26.58X3.53)

Lined body
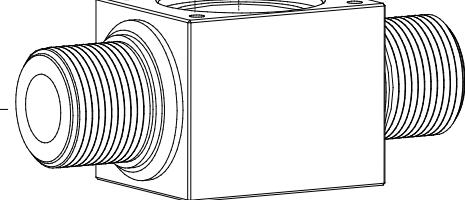
TORQUES	
PG7 Plug	4Nm
5 poles plug	4Nm
M4 screws	3Nm

ELECTRICAL CONNECTIONS

INPUT/OUTPUTS

1 (+) POWER SUPPLY

2 (+) OUTPUT 1 / INPUT

3 (+) OUTPUT 2 (OPTIONAL)

4 (+) 4-20mA OUTPUT

5 (-) POWER SUPPLY / OUTPUTS / INPUT
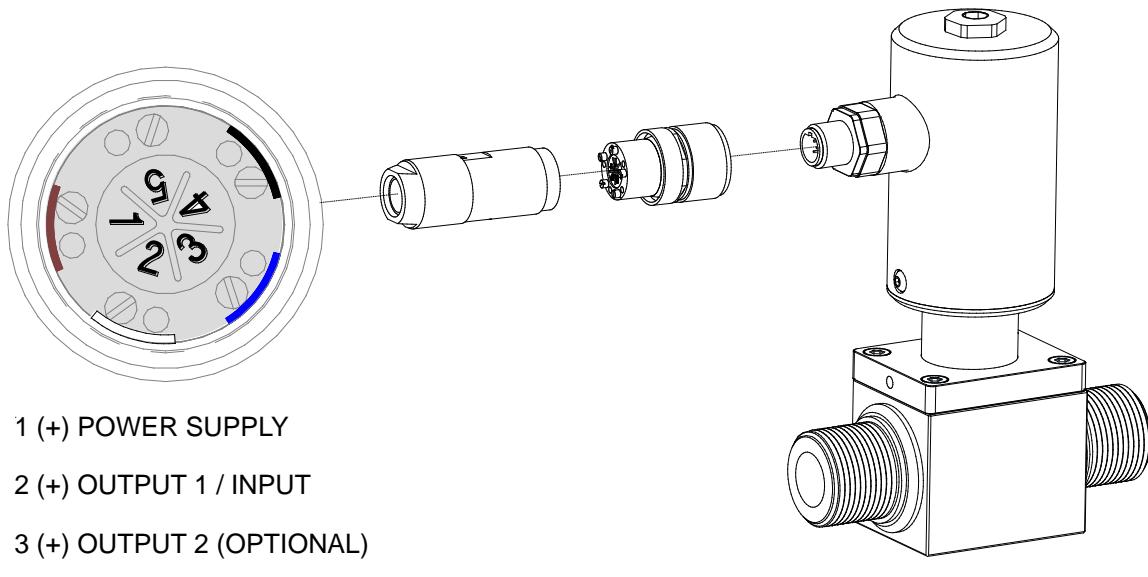
GROUNDING CONNECTION
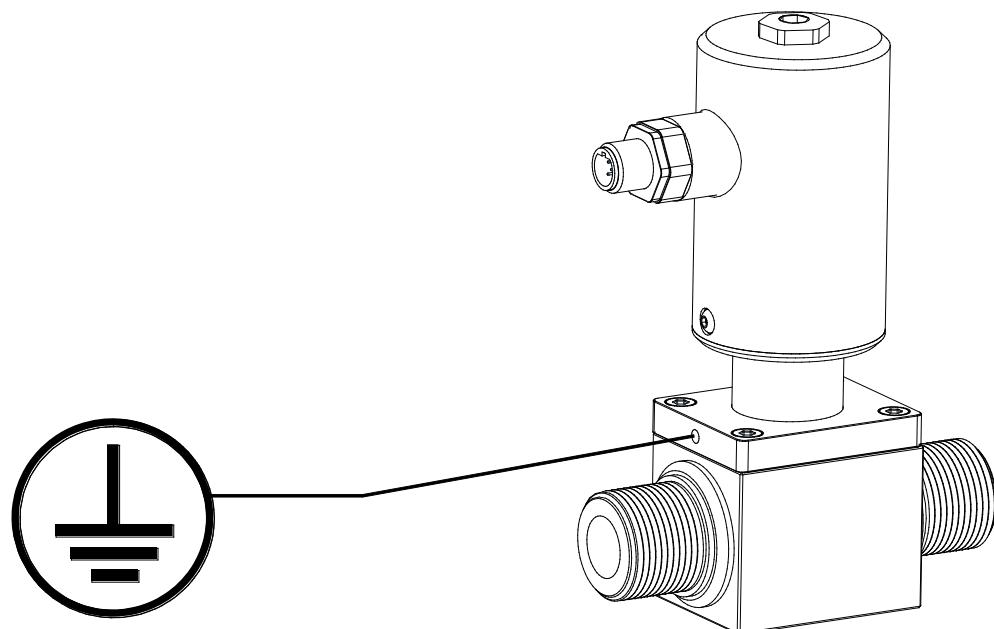
INPUT/OUTPUTS: SCHEMATICS

DIGITAL INPUT

2 (+)

5 (-)

DIGITAL OUTPUTS

2 (out1)
3 (out2)

5 (-)

ANALOG OUTPUT

+24V INTERNAL

mA

I

4 (+)

4-20mA OUT

5 (-)

24V COMMON
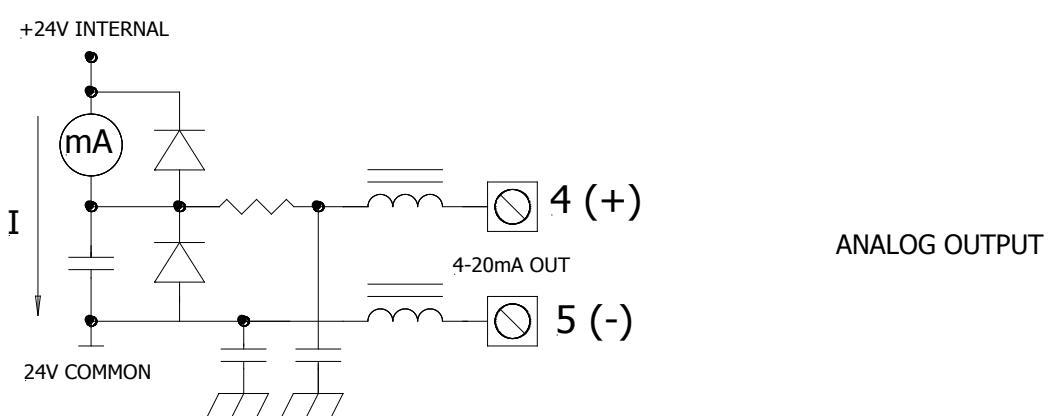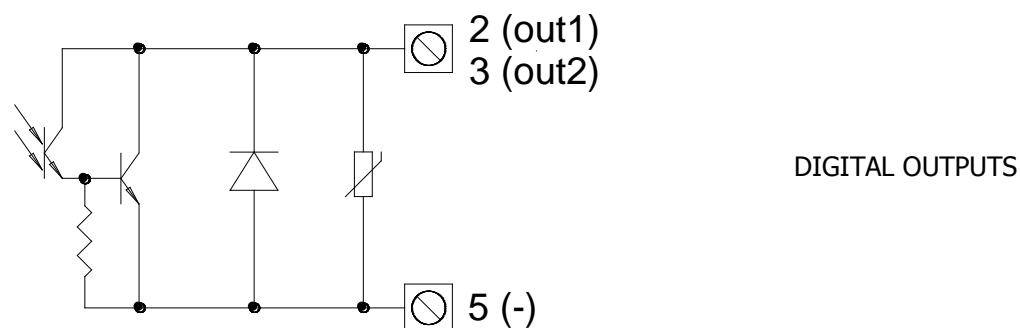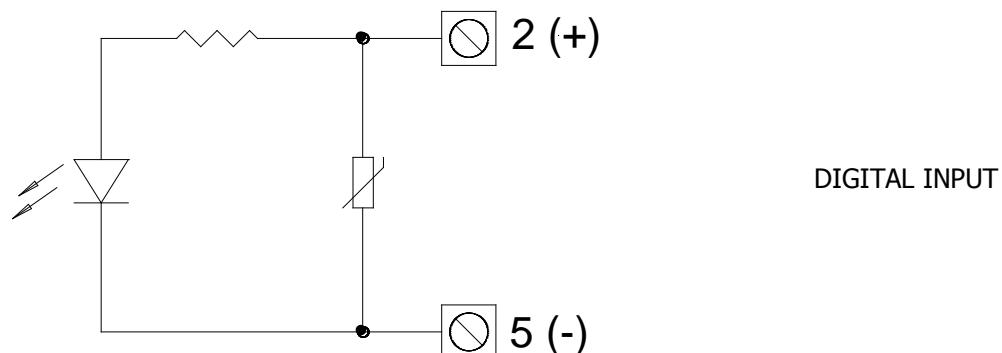
U S E R   I N T E R F A C E

MS 3900 can be programmed by ISOCON interface (IF23 is required)
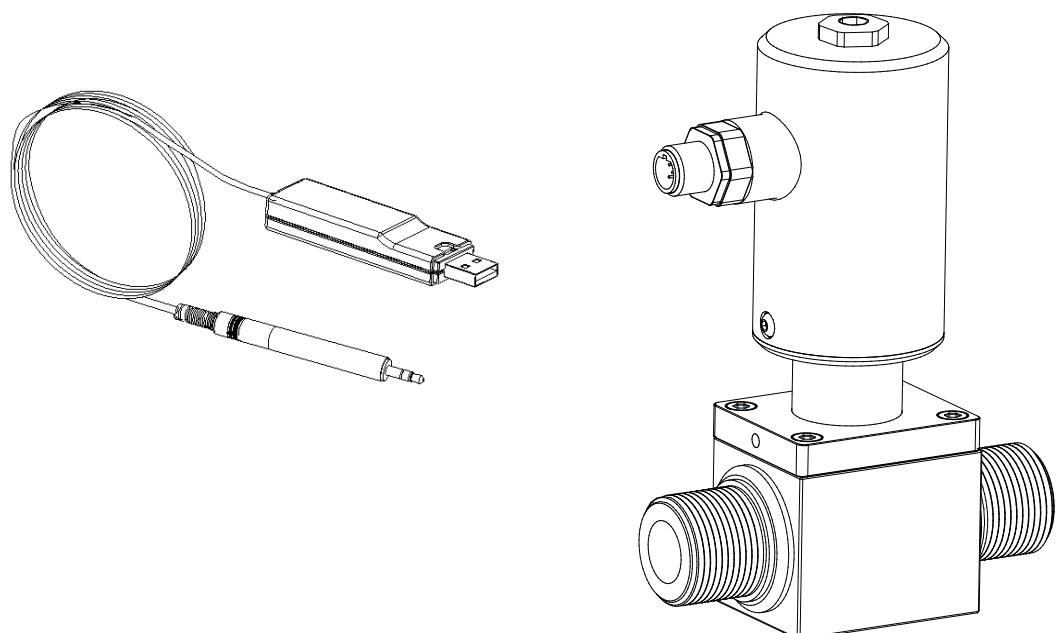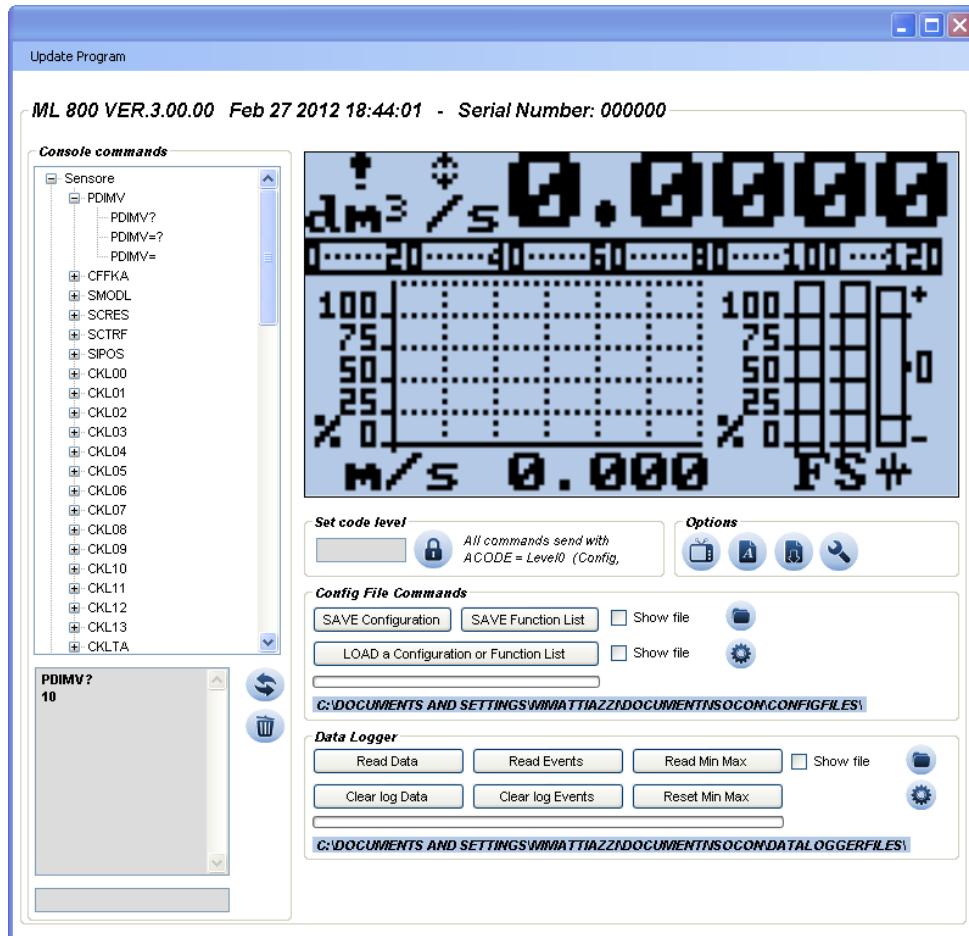
AVAILABLE FUNCTIONS

```
MAIN MENU
 1-Sensor
  1-SENSOR
ND=mm       00015
KA=     -01.4310
Sens.type=    018
E.P.detect=    ON
E.cleaning=   MAX
E.p.thr.=     200
Autozero cal.
```

1.1	Sensor ND (10-15-20mm)
1.2	Sensor calibration data, visualized on sensor label
1.3	Sensor type: enter the first two characters of the sensor serial number
1.4	Enables the empty pipe detection feature
1.5	Electrodes cleaning
1.6	Value of empty pipe sensibility detection
1.7	Enables the automatic procedure of zero calibration

```
MAIN MENU
 1-Sensor
 2-Scales
  2-SCALES
Fsc=  l/h 4000.0
Ss.temp=°C   +000
Fs.temp=°C   +100
Tot.MU= ml 1.000
Pls1= ml 1000.00
Pls2= ml 1000.00
Tpls1=ms 0050.00
Tpls2=ms 0050.00
Sg=kg/dm³ 01.0000
```

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

```
MAIN MENU
 1-Sensor
 2-Scales
 3-Measure
  3-MEASURE
Cut-off=%    00.0
AC filter=s   0.2
M.filter=s  006.0
```

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

```
 2-Scales
 3-Measure
 4-Alarms
  4-ALARMS
Al.max+=%     000
Al.min+=%     000
Al.max-=%     000
Al.min-=%     000
Al.max T=°C +100
Al.min T=°C +000
Hyst.=%        03
mA v.fault=% 010
```

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	Maximum value alarm set for temperature
4.6	Minimum value alarm set for temperature
4.7	Hysteresis threshold set for the minimum and maximum flow rate and temperature alarms
4.8	Current output value in case of failure

```
 3-Measure
 4-Alarms
 5-Inputs
  5-INPUTS
T+ reset=     OFF
P+ reset=      ON
T- reset=     OFF
P- reset=      ON
Count lock=    ON
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
5.6	Autozero calibration external command

```
4-Alarms
5-Inputs
6-Outputs
```
```
6-OUTPUTS
Out1=          OFF
Out2=         PLS+
Out   mA=4÷22
Out   mA=    TEMP
```

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 or temperature

```
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 and temperature values
9.2   Immediate reset all minimum and maximum flow rate and temperature 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
KS=      +1.0000
KTMP=    +1.0500
```

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   KS coefficient (only for service purposes)
11.5   KTMP, temperature coefficient (only for service purposes)

H O W   T O   O R D E R

CODE EXAMPLE	Size	
	1	10 mm (thread 1/2")
	2	15 mm (thread 3/4")
	3	20 mm (thread 1")
1	**4**	25 mm (thread 1")
	5	32 mm (thread 1"1/4)
	6	40 mm (thread 1"1/2)
	7	50 mm ((thread 2"))
Materials : body/lining /electrodes/ internal gasket		
A	**A**	Materials : PTFE coated Steel body, Sensor body in AISI304 (head in PTFE), electrodes in AISI316 , gasket in FKM
	Z	Sensor material: to be specified
Mounting		
	0	UNI 338 (GAS)Thread Male
0	**1**	NPT-Thread Male
	8	WIHTOUT FITTING
	9	Special connection
Electronic board		
A	**A**	SB 800 (Complete of n° 1 freely programmable digital I/O)
ANALOG Output		
0	**0**	**without** Analog Out
	1	**with** Analog Out
DIGITAL Output		
A	**A**	without Additional Digital Out
	B	n° 1 additional digital out

MS3900-1A0A0A (Complete code example for order)

Due to the constant technical development and improvements of its products, the manufacturer reserves the right to make changes and / or modify the information contained in this document without notice. Information contained herein is not binding.