



ISOMAG

The friendly magmeter

DATA SHEET



MS 3900

CE

ISOIL 
I N D U S T R I A



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TECHNICAL DATA

OVERALL FEATURES

Nominal diameter	☐ 10 / 15 / 20 / 25 / 32 / 40 / 50 / 65 / 80
Nominal pressure	☐ 1600 kPa
Gasket material	☐ FPM
Temperature range	☐ Medium -10 to +100°C ☐ Ambient -10 to +60°C
Vacuum resistance	☐ 20 kPa (absolute) at 100 °C
Protection	☐ IP 67
Programming Plug In	☐ Protected plug-in for connection to PC (IF2X)
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 +/- 1 % r.v. (UP TO 0,5% ON REQUEST) ☐ TEMPERATURE : +/- 2°C

STANDARD FEATURES

Body material	☐ Ptfе coated Zincked steel
Process connection	☐ Thread male UNI 338/NPT
Lining material	☐ PTFE
Electrodes material	☐ Stainless steel AISI 316
Operating Voltage	☐ 18-30 V ---
Electrical connections	☐ M16 connectors (5 pins)
Digital Input/Outputs	☐ N° 1 freely programmable as input or output

OPTIONAL FEATURES

(CHECK FOR MORE DETAILS 'HOW TO ORDER' ON LAST PAGE)

Body material	☐ PTFE coated SS AISI 304 (up to 1")
Electrical connections	☐ factory wired 5-poles cable, 2 meters
Current Output	☐ 0-20 or 4-20 mA Programmable
Digital Input/Outputs	☐ N° 1 OUT for volume/alarms

OVERALL DIMENSIONS

MS3900 DN 10÷20

DN	FITTING	A	L	H
10	1/2"	40	100	144
15	3/4"	40	100	144
20	1"	40	100	144
25	1"	56	200	148
32	1 1/4"	56	200	148
40	1 1/2"	62	200	156
50	2"	69	200	164
65	2 1/2"	87	200	183
80	3"	105	200	202

MS3900 DN 25÷80

MS3900: LAYOUT

PG7 for IF23 plug

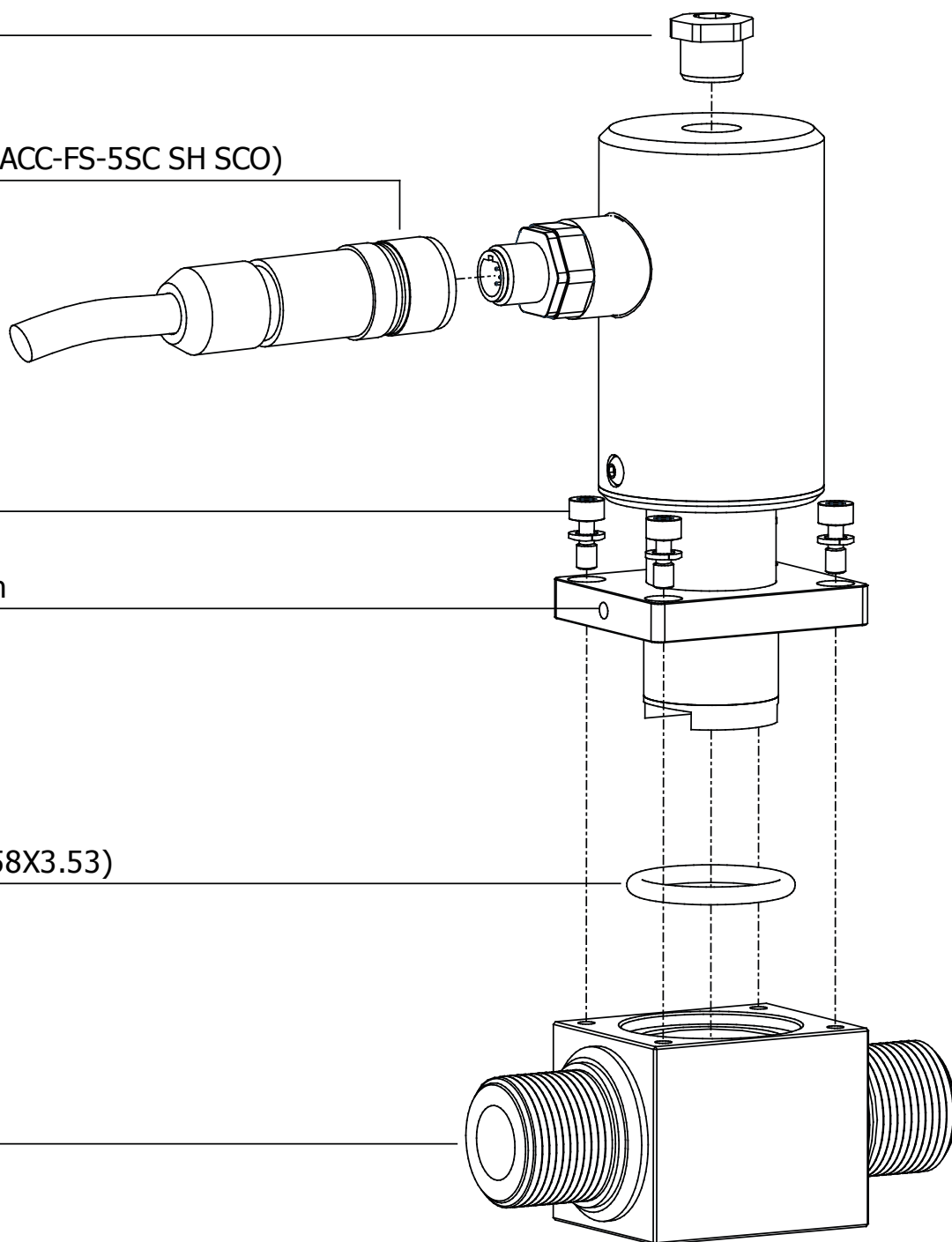
5 poles plug
(phoenix contact SACC-FS-5SC SH SCO)

M4 screws

Ground connection

O-Ring 4106 (26.58X3.53)

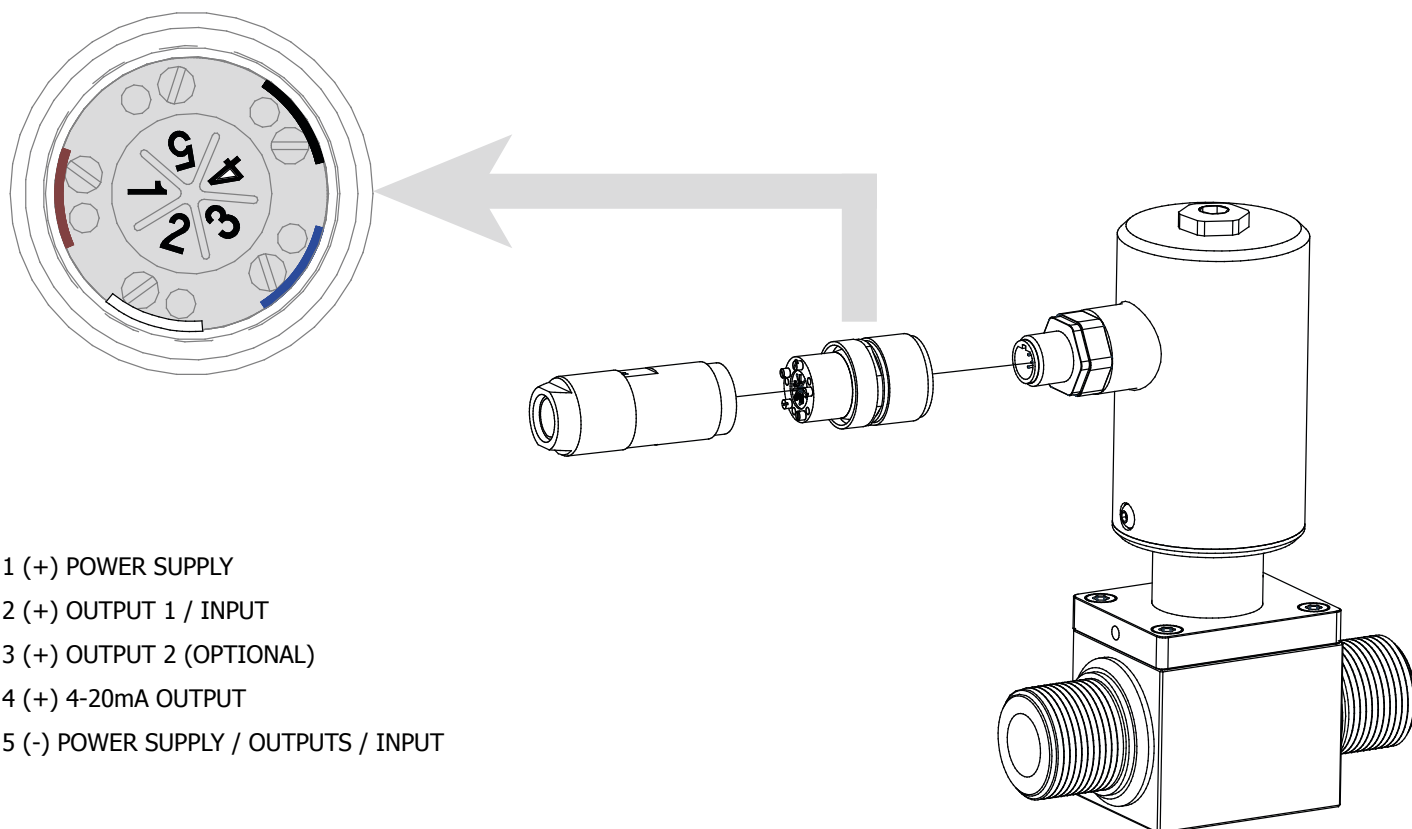
Lined body



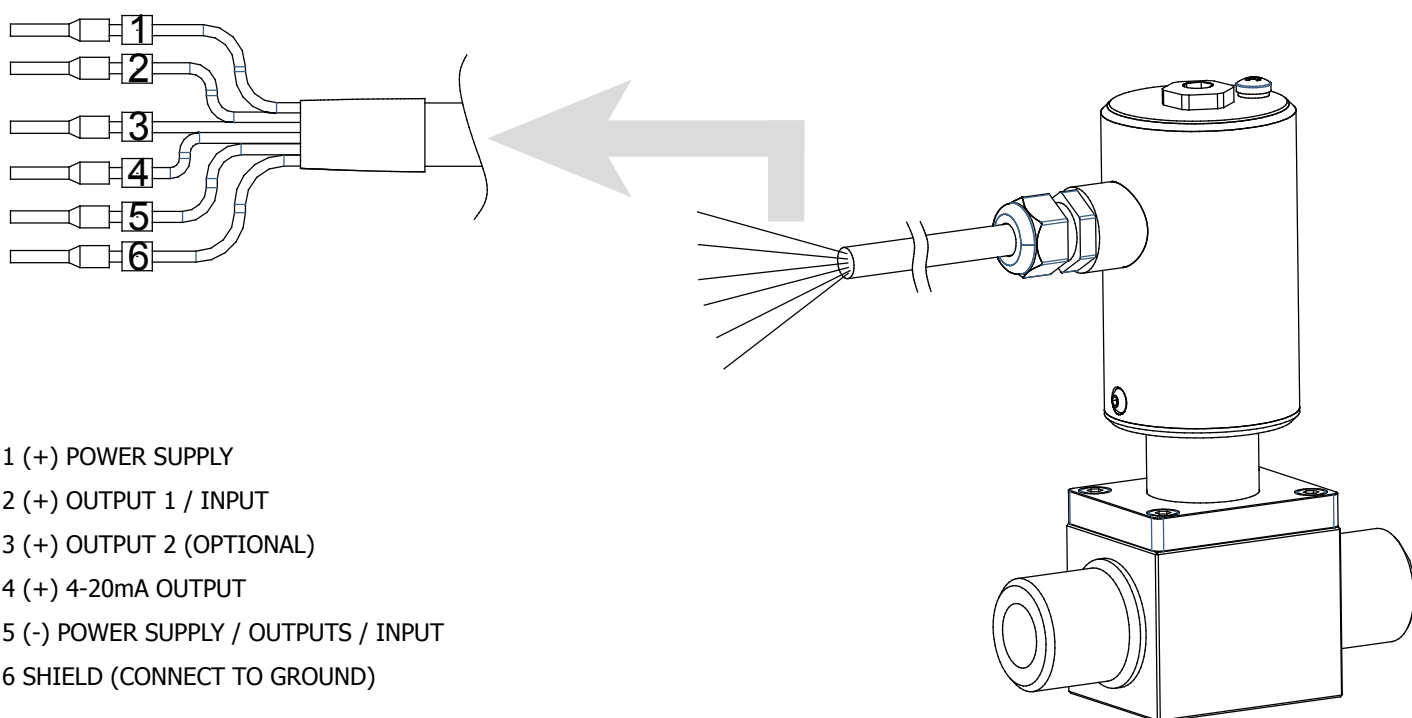
TORQUES	
PG7 plug	4Nm
5 poles plug	4Nm
M4 screws	3Nm

ELECTRICAL CONNECTIONS

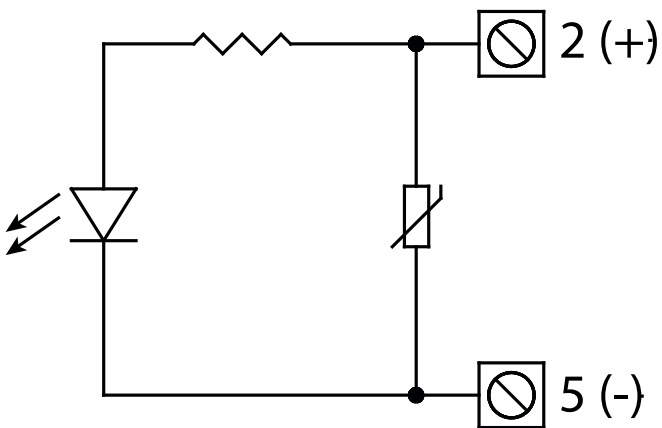
INPUT/OUTPUTS (CONNECTOR)



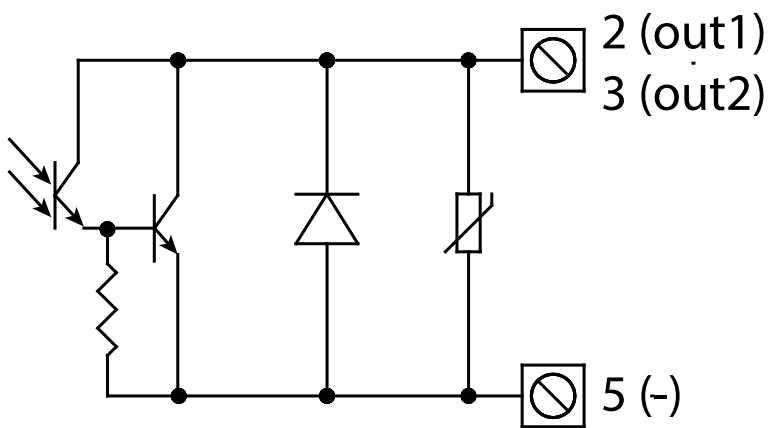
INPUT/OUTPUTS (CABLE)



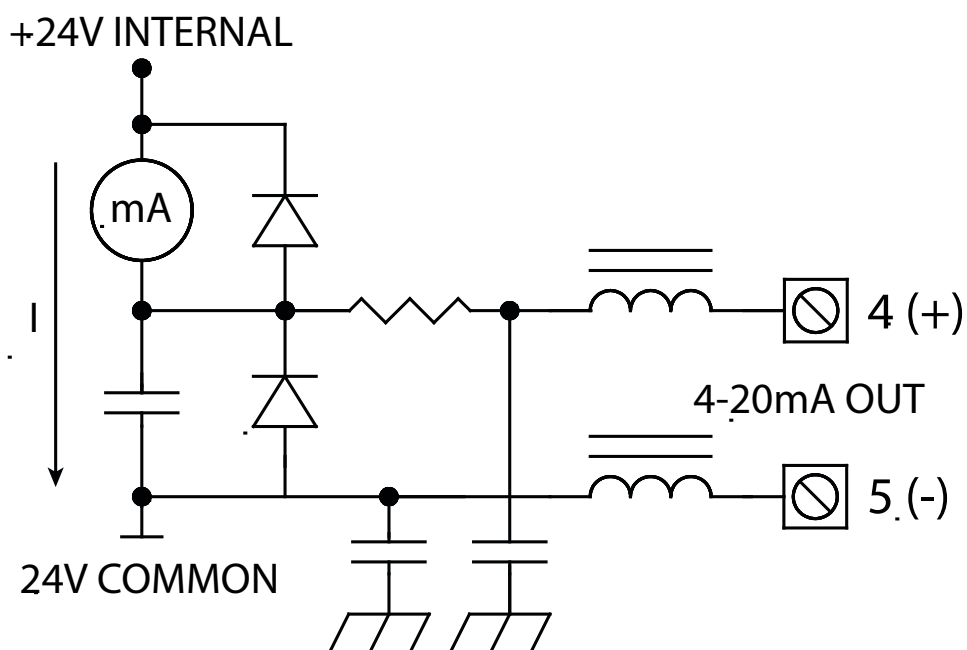
INPUT/OUTPUTS: SCHEMATICS



DIGITAL INPUT

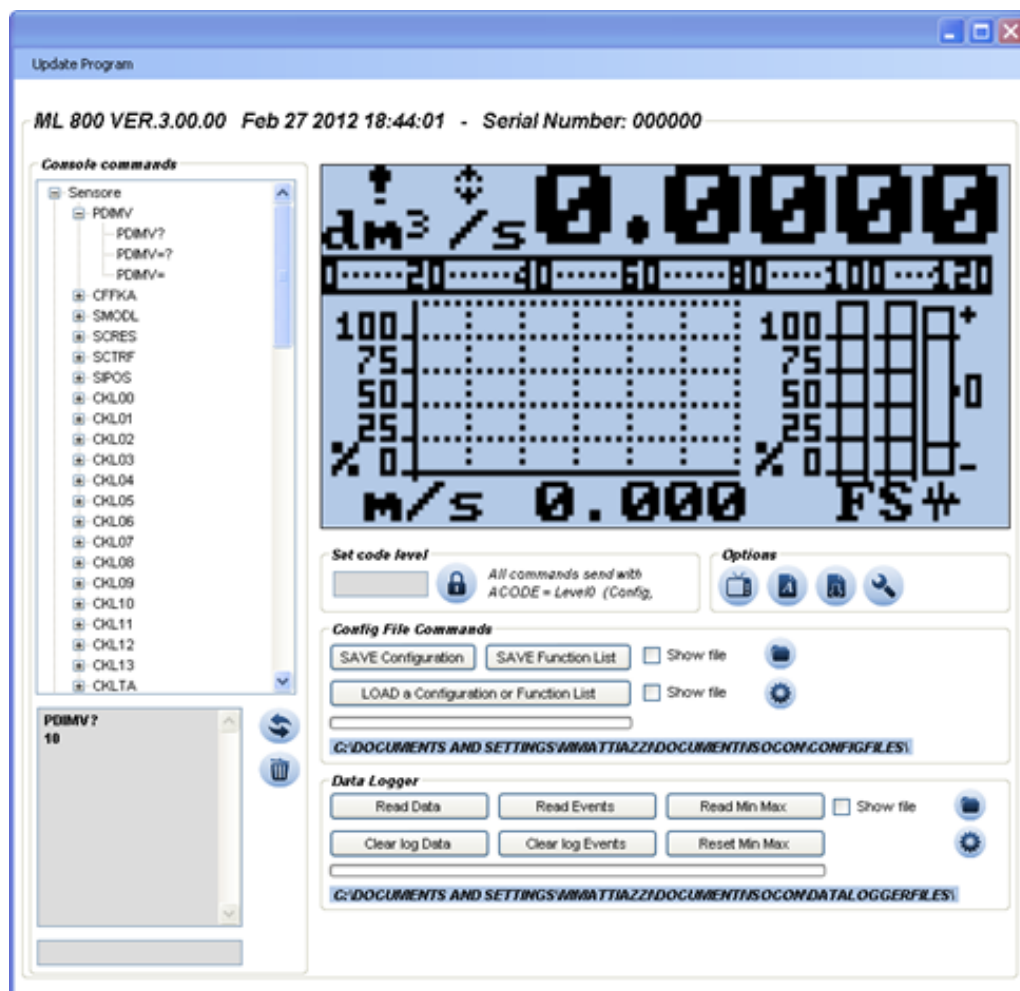


DIGITAL OUTPUTS

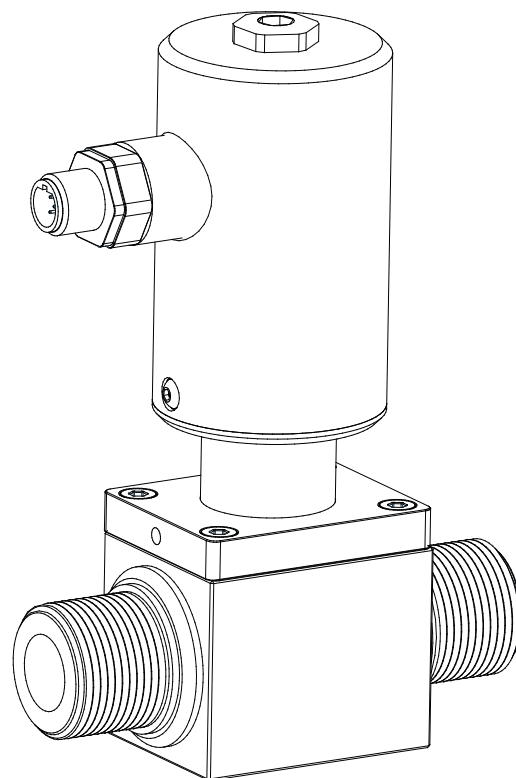
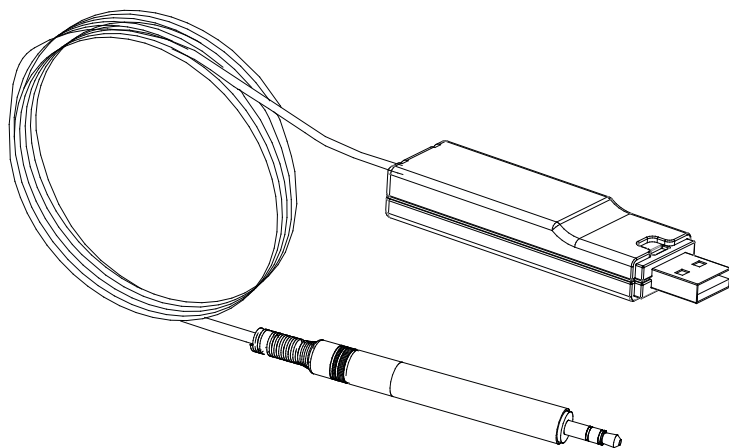


ANALOG OUTPUT

USER INTERFACE



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



AVAILABLE FUNCTIONS

```

MAIN MENU
1-Sensor
2-Scales
1-SENSORS
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= 1/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 (see page 10)
- 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 (only for Isocon interface)

8.3 Quick start menu visualization (only for Isocon interface)

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)

HOW TO ORDER

CODE EXAMPLE	Size	
1	1	10 mm (thread 1/2")
	2	15 mm (thread 3/4")
	3	20 mm (thread 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"))
	8	65 mm (thread 2"1/2)
	9	80 mm (thread 3")
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
	B	Materials : PTFE coated SS AISI 304 body (UP to 1"), Sensor body in AISI304 (head in PTFE), electrodes in AISI316 , gasket in FKM
	Z	Sensor material: to be specified
Mounting		
0	0	UNI 338 (GAS)Thread Male
	1	NPT-Thread Male
	9	Special connection (i.e. Flanges DIN,JIS,BS ...)
Electronic board / Electrical Connections		
A	A	SB 800 (Complete of n° 1 Freely programmable digital I/O) Electrical Connections : 5 poles connectors
	B	SB 800 (Complete of n° 1 Freely programmable digital I/O) Electrical Connections: factory wired 5-poles cable, 2 meters
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)

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