

ISOMAG ™

The friendly magmeter

DATA SHEET

MV255



CE

ISOIL 
INDUSTRIA

INDEX

| | |
|--|----|
| TECHNICAL DATA | 3 |
| OVERALL DIMENSIONS | 5 |
| OVERALL DIMENSIONS | 8 |
| MV255 LAYOUT | 11 |
| CONVERTER ACCESS | 13 |
| POWER SUPPLY | 15 |
| MAIN PAGES VISUALIZATION | 17 |
| 3G NETWORK CONNECTION | 18 |
| ELECTRICAL CONNECTIONS | 19 |
| DIGITAL INPUT | 21 |
| DIGITAL OUTPUTS | 21 |
| AUXILIARY MODULE ANALOG INPUTS | 22 |
| OUTPUTS 4÷20 MA | 24 |
| AUXILIARY MODULE DIGITAL INPUTS/ OUTPUTS | 25 |
| FUNCTIONS MENU | 26 |
| MEASUREMENT SETTINGS | 32 |
| USER INTERFACE | 33 |
| DATA LOGGER | 34 |
| ACCURACY | 35 |
| MI-001 OIML R49 CLASS1: MV255 | 36 |
| MI-001 OIML R49 CLASS2: MV255 | 37 |
| HOW TO ORDER | 40 |

TECHNICAL DATA

| OVERALL FEATURES | |
|-----------------------------|---|
| Suitable For | <input type="checkbox"/> All the ISOMAG® sensors |
| Minimum Conductivity | <input type="checkbox"/> 5 µS/cm |
| Altitude | <input type="checkbox"/> -200 m up to 4000 m |
| Ambient Temperature | <input type="checkbox"/> -20... +60°C / -4... +140 °F - Aluminium housing <input type="checkbox"/> -10... +50°C / -4... +104 °F - Reinforced Nylon |
| Humidity Range | <input type="checkbox"/> 0÷100% |

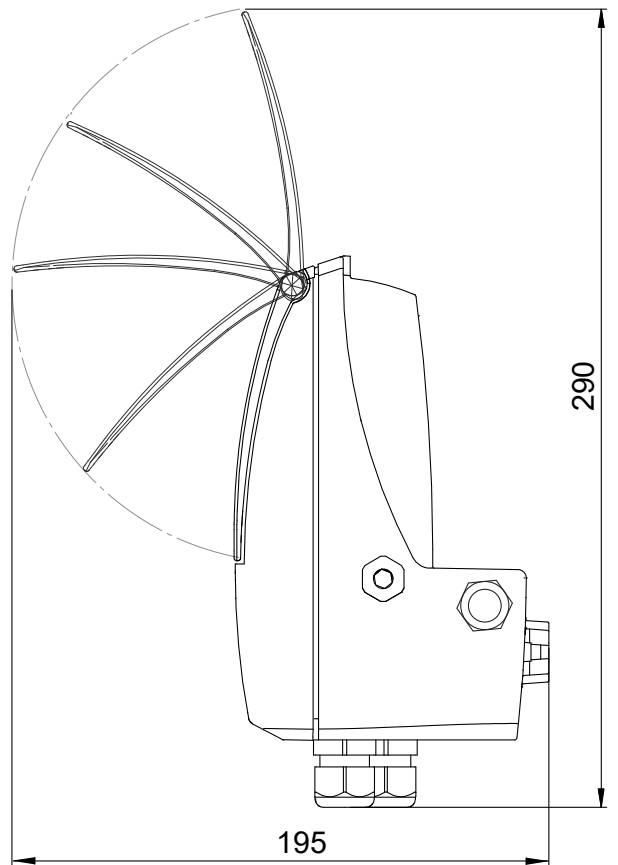
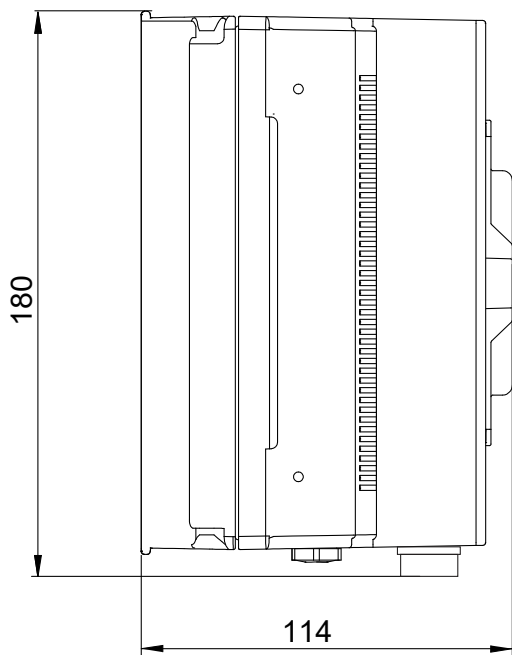
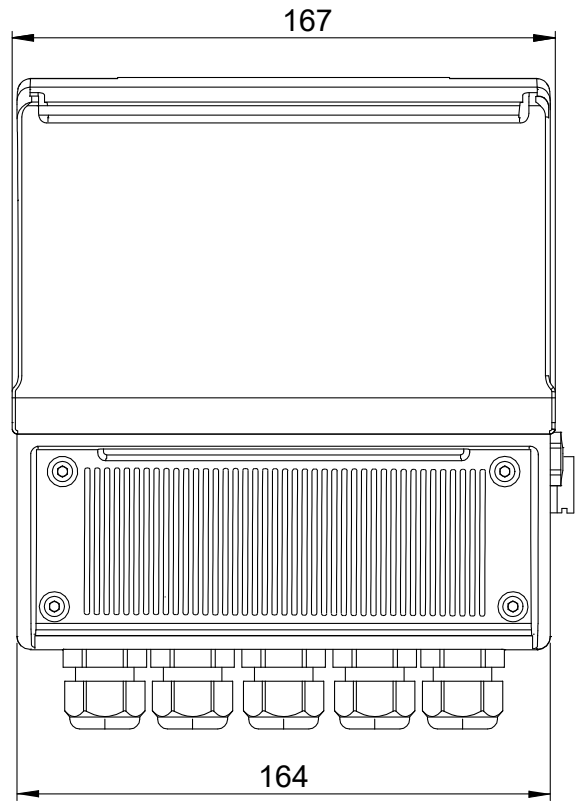
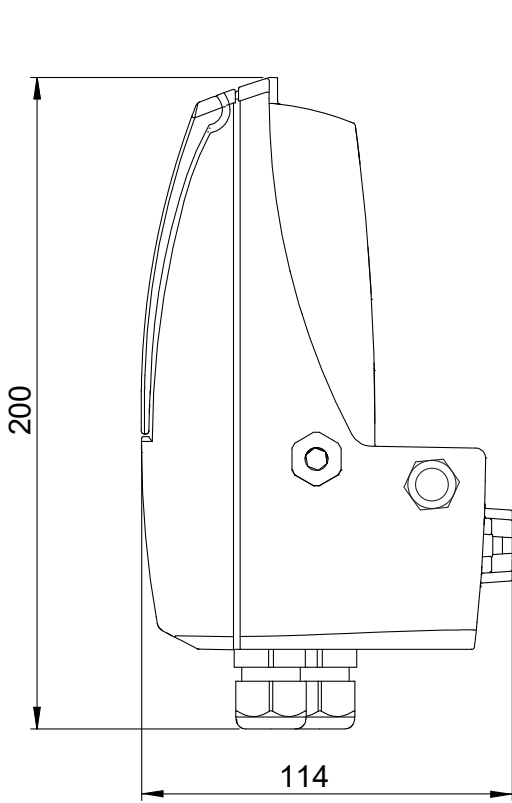
| STANDARD FEATURES | |
|-----------------------------------|---|
| Version | <input type="checkbox"/> Compact <input type="checkbox"/> Separate |
| Housing materials | <input type="checkbox"/> Painted Aluminium die casting <input type="checkbox"/> Nylon reinforced with 15% of fiber glass |
| Protection Rate | <input type="checkbox"/> IP 67 |
| Power supply / consumption | <input type="checkbox"/> Network/Rechargeable Battery / Primary Lithium Batteries / Alkaline Batteries (50mW ... 4W) |
| Cable Gland | <input type="checkbox"/> N° 5 cable gland PG 11 |
| Full Scale Value | <input type="checkbox"/> 0,4...10m/s |
| Dig. Input | <input type="checkbox"/> N ° 1, programmable (for example reset totalizers) |
| Data Storage | <input type="checkbox"/> F-Ram |
| Galvanic Isolation | <input type="checkbox"/> All analog / digital inputs / outputs are galvanically isolated (500V); |
| Programming Plug In | <input type="checkbox"/> PC connection via USB (A/ USB MINI B type cable must be used) |
| Bidirectional | <input type="checkbox"/> YES |
| Diagnostic Funct. | <input type="checkbox"/> YES |
| Empty Pipe Detect. | <input type="checkbox"/> YES |
| Communication Ports | <input type="checkbox"/> Modem 3G <input type="checkbox"/> Modem 4G |
| Data Logger | <input type="checkbox"/> MicroSD Memory Card 4 GBytes and RTC (Real Time Clock) |
| CE Certificate | <input type="checkbox"/> YES |

| OPTIONAL FEATURES (CHECK HOW TO ORDER, AT LAST PAGE, FOR MORE DETAILS) | |
|---|---|
| Protection Rate | |
| Conn. Sensor Cable | <input type="checkbox"/> CABLE C015-C016 |
| LCD Display | <input type="checkbox"/> 128x64 pixel backlit graphic display (Main power version only), with 3 keys for programming |
| Outputs: Pulses/ Alarm | <input type="checkbox"/> N°2...4 DIGITAL OUTPUT, Max 50 Hz, 100mA, 30 V (AC/DC) <input type="checkbox"/> N°1...3 DIGITAL INPUT |
| Analog Outputs | <input type="checkbox"/> N ° 1 Analog Output 4 ... 20 mA |
| Pressure Input | <input type="checkbox"/> N ° 1 ... 2 Input from Pressure Sensor / N ° 1 ... 2 Temperature Input (PT100 / 500/1000) |
| Data Logger | <input type="checkbox"/> MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) + BIV (Built In Verificator) <input type="checkbox"/> MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) + Meter Data (Real Time Converter & Sensor Data on SD Memory) <input type="checkbox"/> MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) + BIV + Meter Data <input type="checkbox"/> MicroSD Memory Card 4 GBytes |
| Protocols | <input type="checkbox"/> ModBus RTU (speed ranges that can be set bps: 4800 /9600 / 19200/ 22800/ 38400/ 57600) |

| ACCURACY | |
|---|---|
| Measurements Tolerance | <ul style="list-style-type: none"><input type="checkbox"/> Flow rate (volume) = $\pm 0,1\%$ c.r.<input type="checkbox"/> Out 4/20 mA = $\pm 0,2\%$ c.r.<input type="checkbox"/> Frequency Out = $\pm 0,2\%$ c.r. |
| Accuracy (Whole System Converter+Sensor) | <ul style="list-style-type: none"><input type="checkbox"/> See table below |

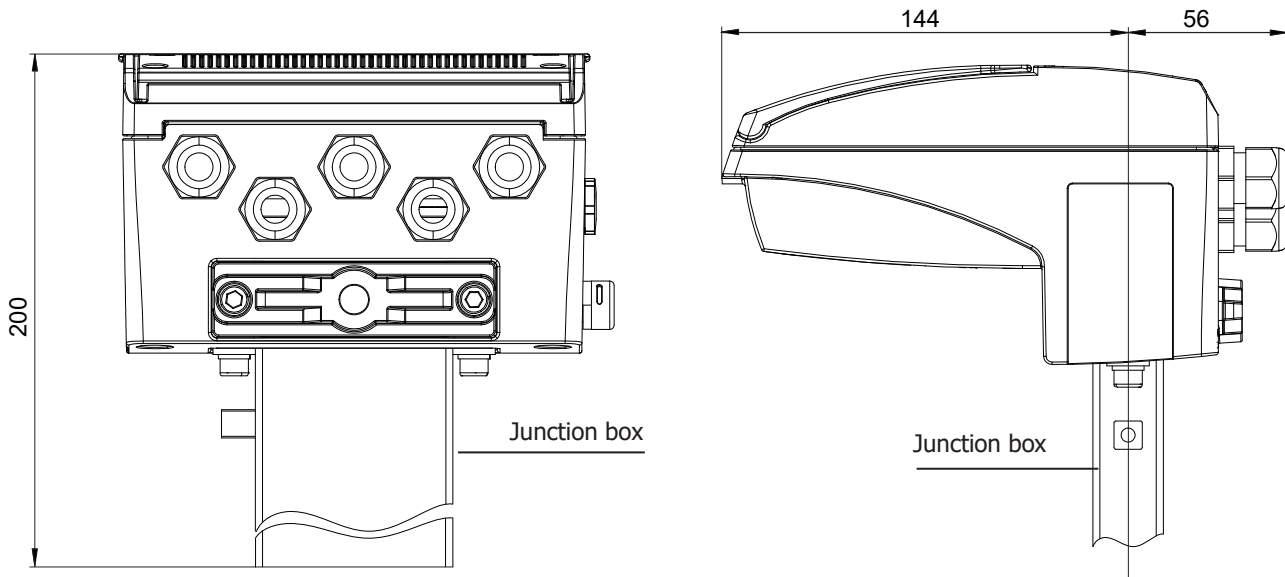
OVERALL DIMENSIONS

Without battery pack

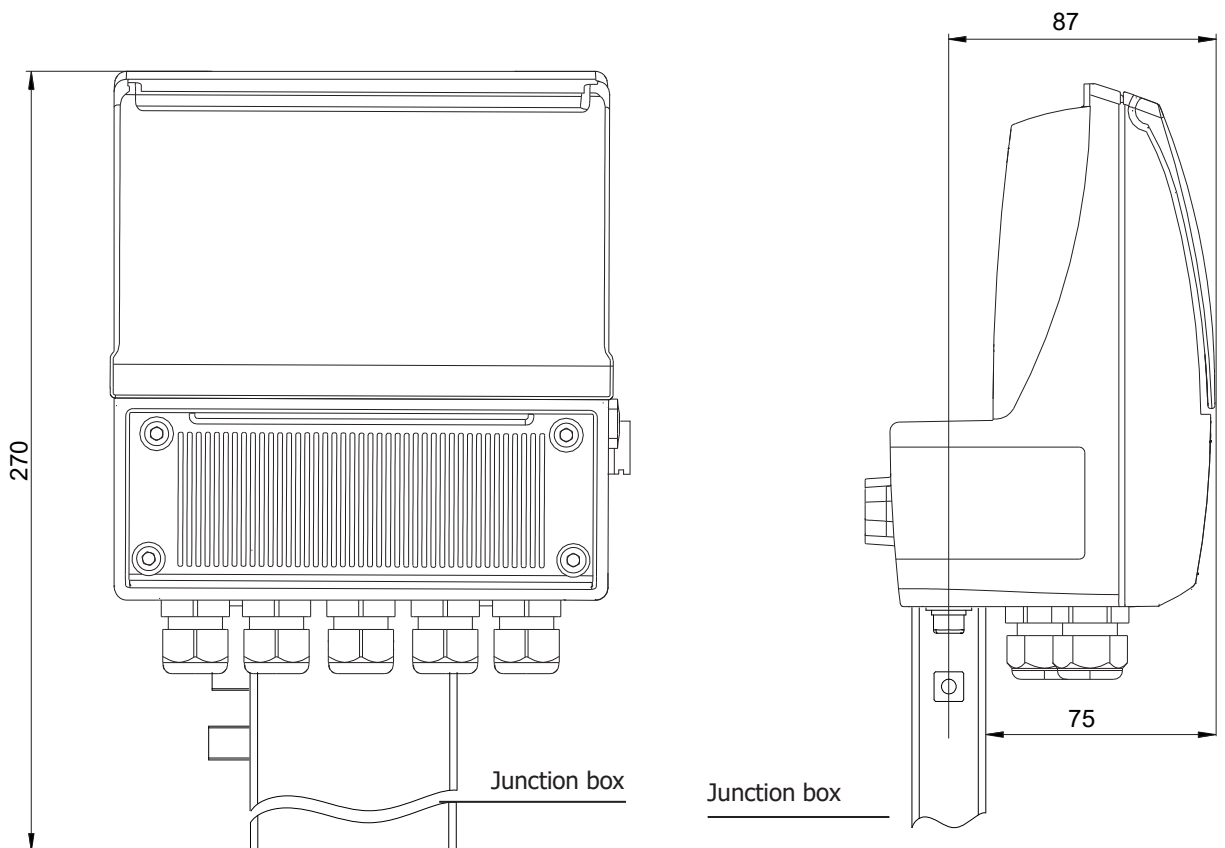


The manufacturer guarantees only English text available on our web site www.isoil.com

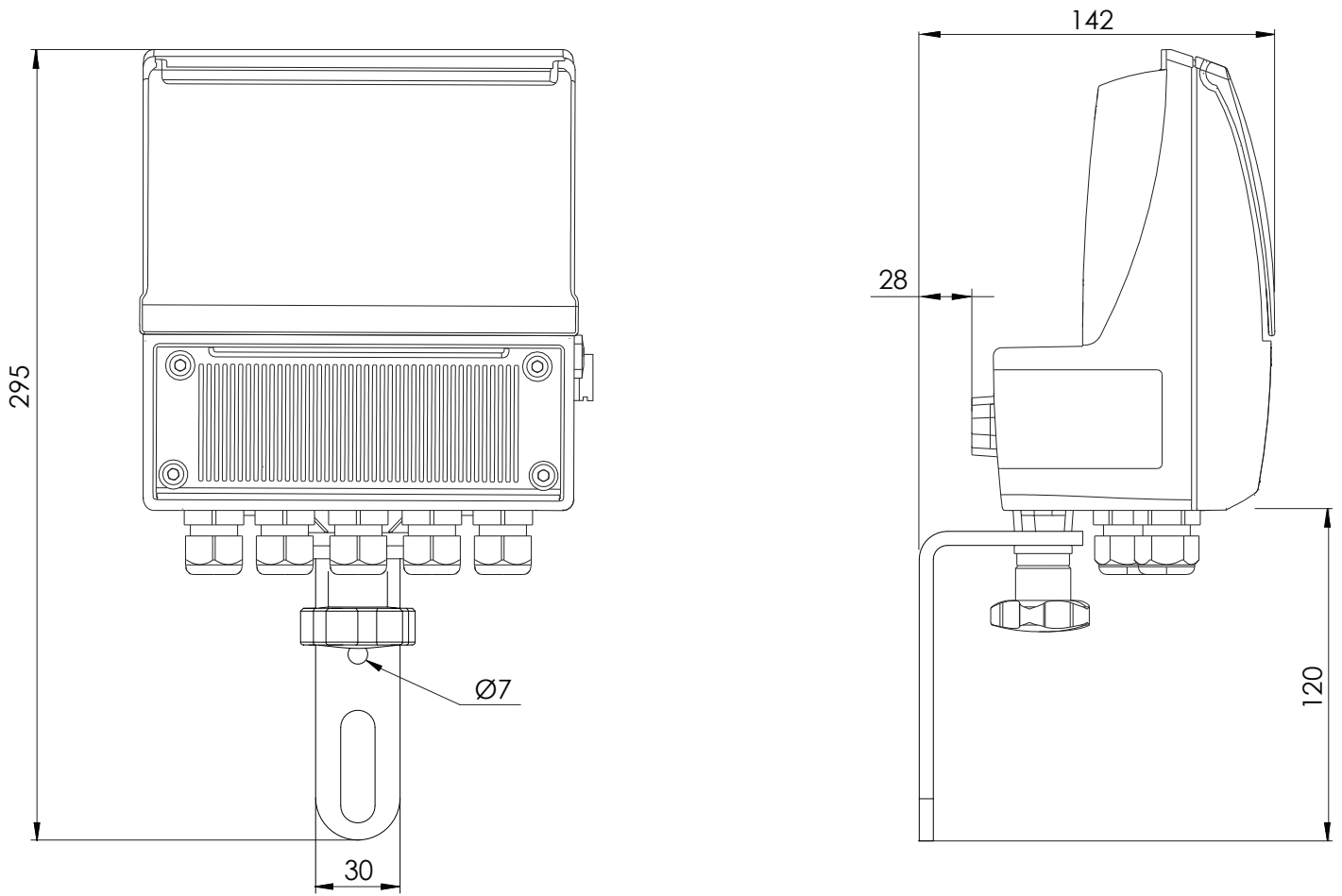
Horizontal compact version



Vertical compact version

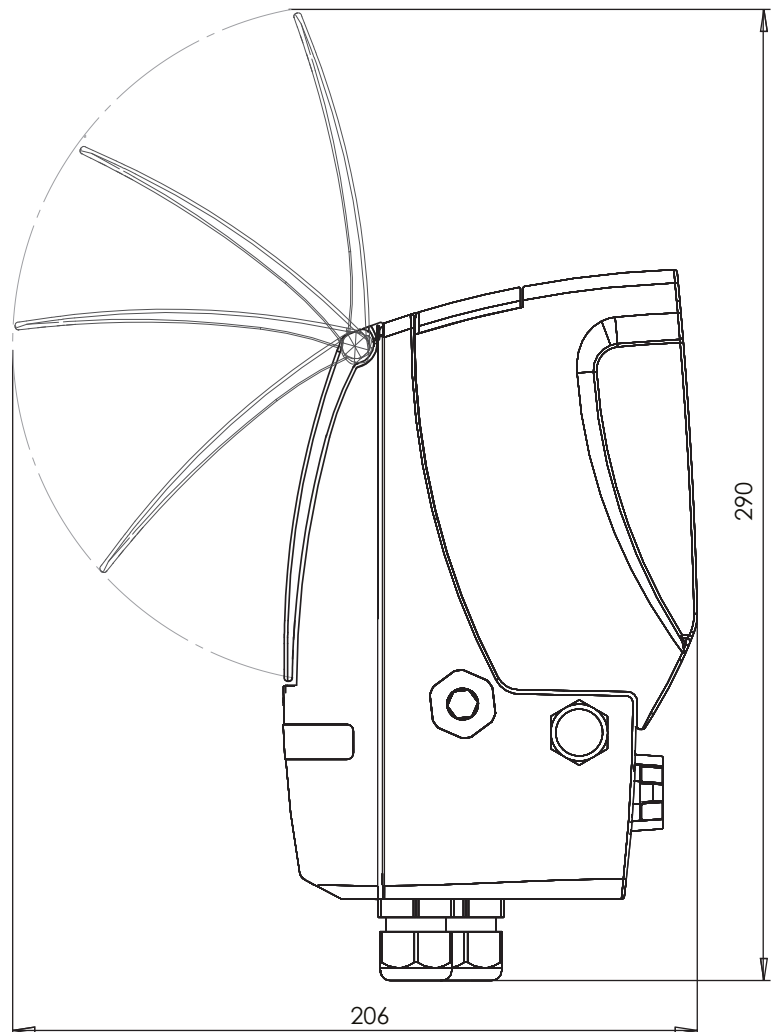
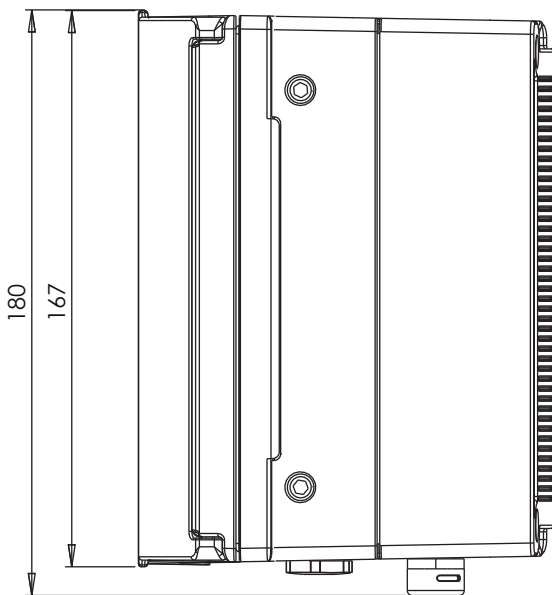
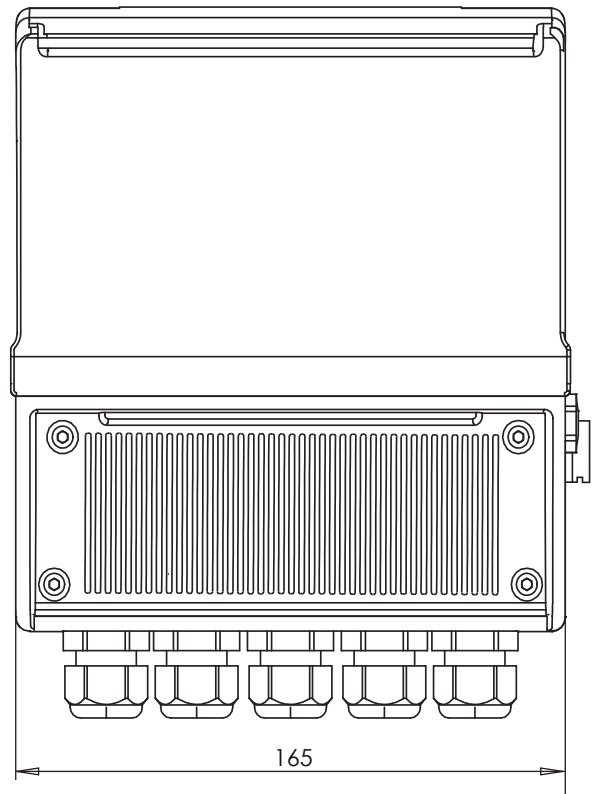
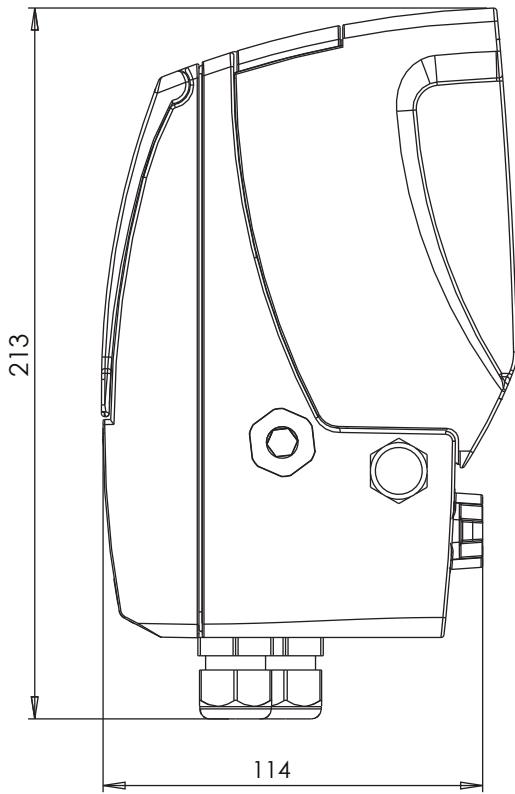


Separate (wall) version

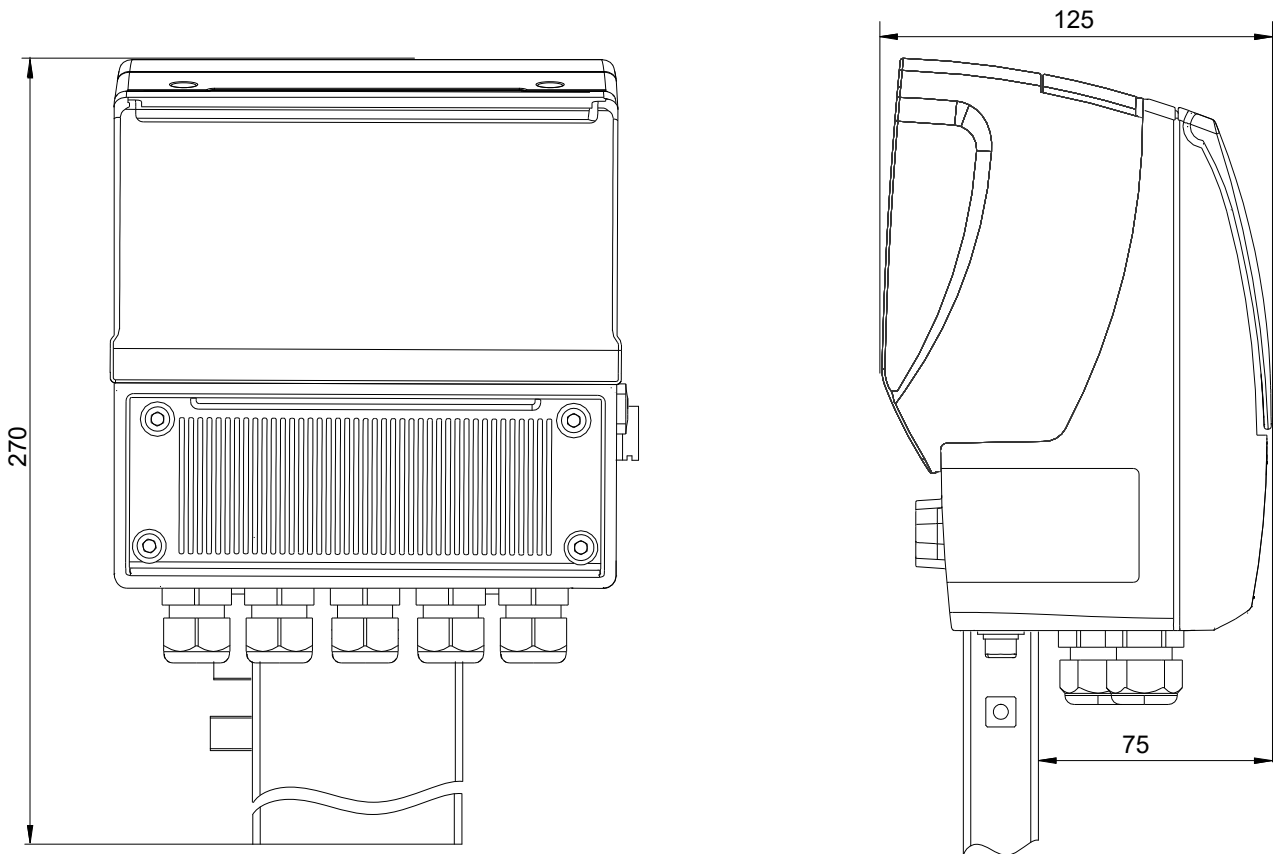


OVERALL DIMENSIONS

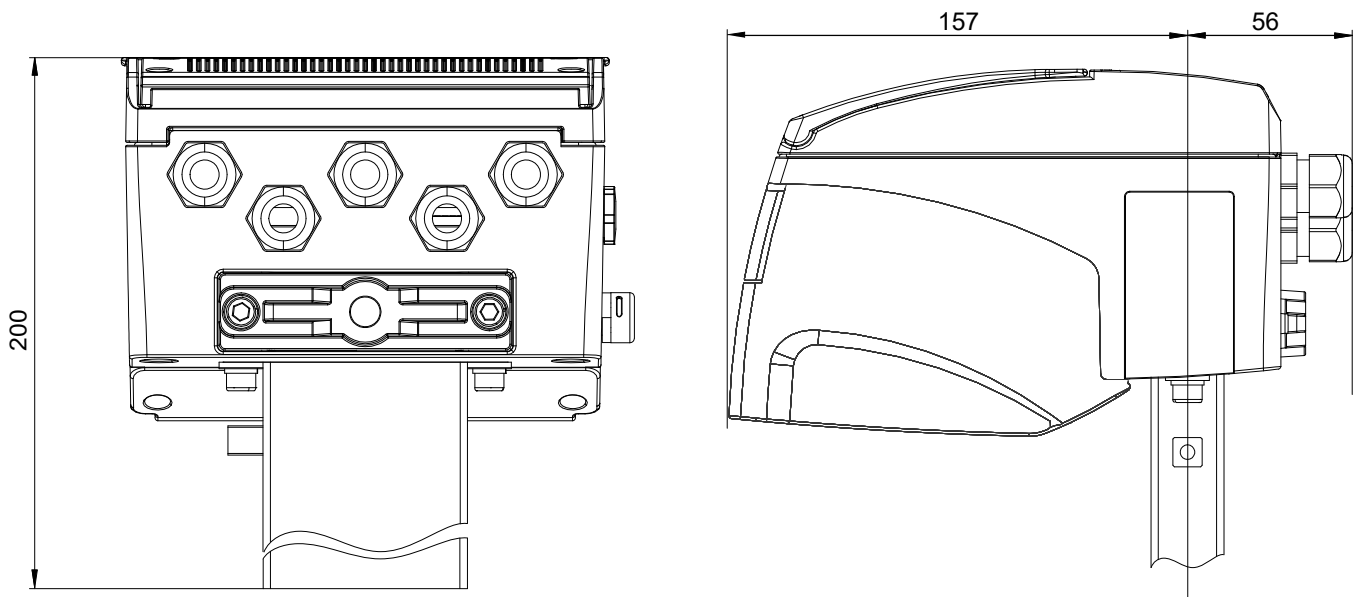
With battery pack



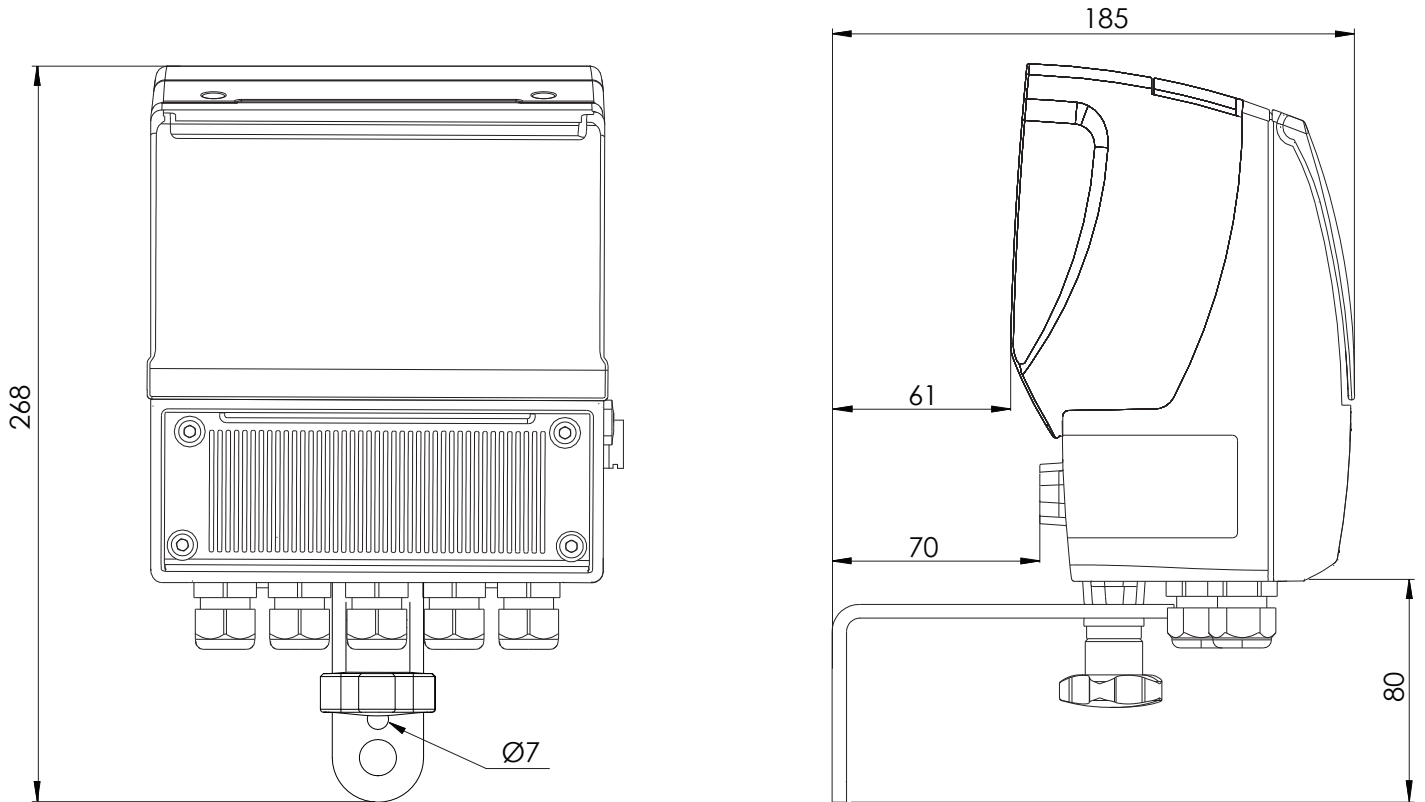
Horizontal compact version



Vertical compact version



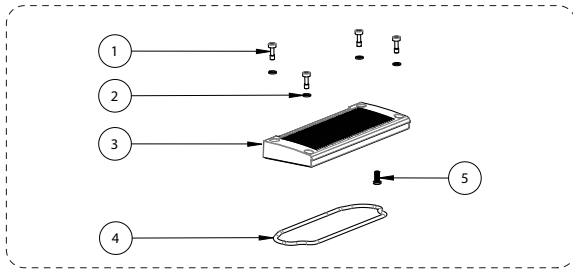
Separate (wall) version



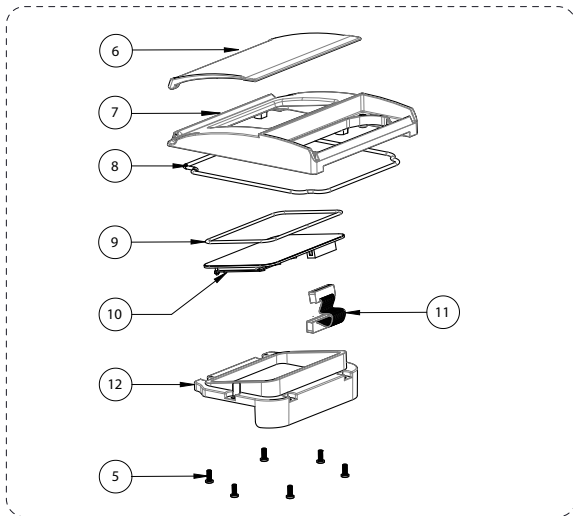
The manufacturer guarantees only English text available on our web site www.isoli.com

MV255 LAYOUT

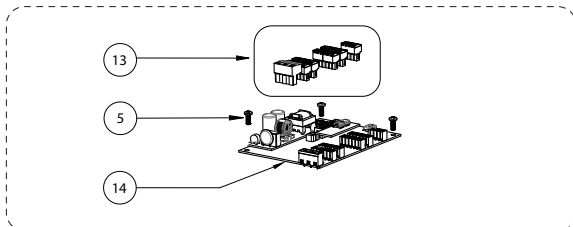
TERMINAL BLOCK COVER



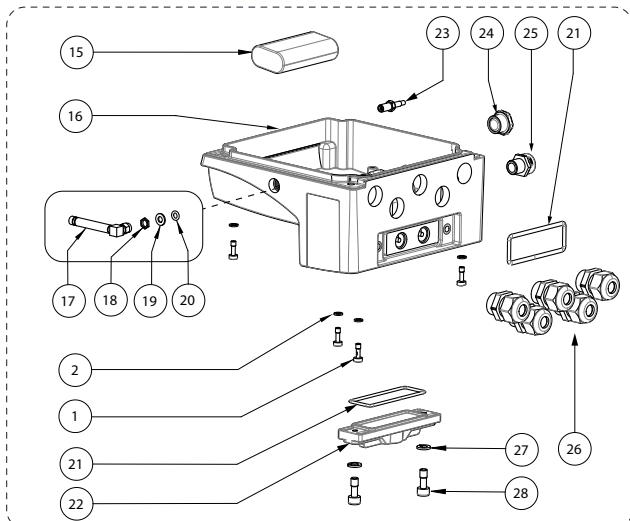
MAIN HOUSING COVER



PCB MV255

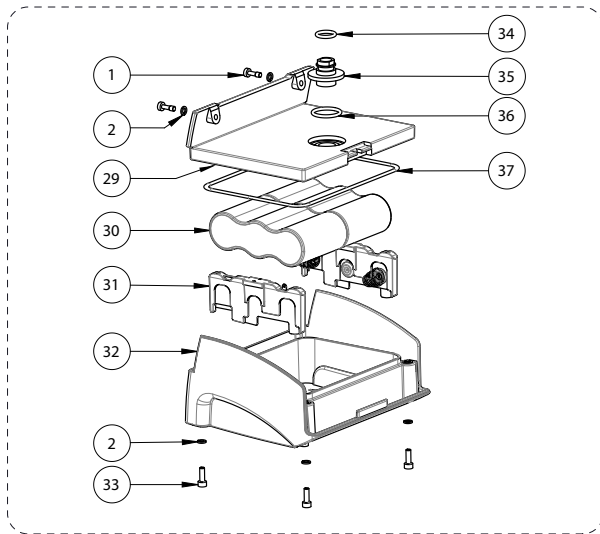


MAIN HOUSING



| POS. | DESCRIPTION | |
|------|--|----------------------|
| | PA6 VERSION | ALUMINIUM VERSION |
| 1 | SCREW M4x12 | SCREW M5x12 |
| 2 | GROWER WASHER Ø4 | GROWER WASHER Ø5 |
| 3 | TERMINAL BLOCK COVER | TERMINAL BLOCK COVER |
| 4 | O-RING-4400 | |
| 5 | SELF-TAPPING SCREW 4x10 | TRILOBO SCREW 4x10 |
| 6 | PROTECTION COVER | |
| 7 | HOUSING COVER | HOUSING COVER |
| 8 | ORING-4700 | |
| 9 | ORING-117x3 | |
| 10 | DISPLAY | |
| 11 | FLAT CABLE DISPLAY | |
| 12 | FIXING DISPLAY FRAME (MATERIAL PA06) | |
| 13 | TERMINAL BLOCK SOLID WIRE: 26-16 AWG / 0.129-1.31 mm ² STRANDED WIRE: 26-16 AWG / 0.129-1.31 mm ² TORQUE: 3.0 Lb.In / 0.34 Nm | |
| 14 | PCB MV255 | |
| 15 | RECHARGEABLE LITHIUM BATTERY | |
| 16 | MAIN HOUSING | MAIN HOUSING |
| 17 | 3G/4G ANTENNA 3G/4G ANTENNA WITH CABLE OF 3m | |
| 18 | LOCKING DICE | |
| 19 | WASHER Ø 6 | |
| 20 | O-RING 2018 VITON | |
| 21 | O-RING-155 | |
| 22 | VERSION CAP (MATERIAL PA06)) | |
| 23 | CABLE ANTENNA 15cm | |
| 24 | PG9 CAP | |
| 25 | ANTICONDESE CAP | |
| 26 | PG11 CABLE GLAND CABLE DIAMETER: Ø5-Ø10mm | |
| 27 | GROWER WASHER Ø6 | |
| 28 | SCREW M6x16 | |

BATTERIES HOUSING

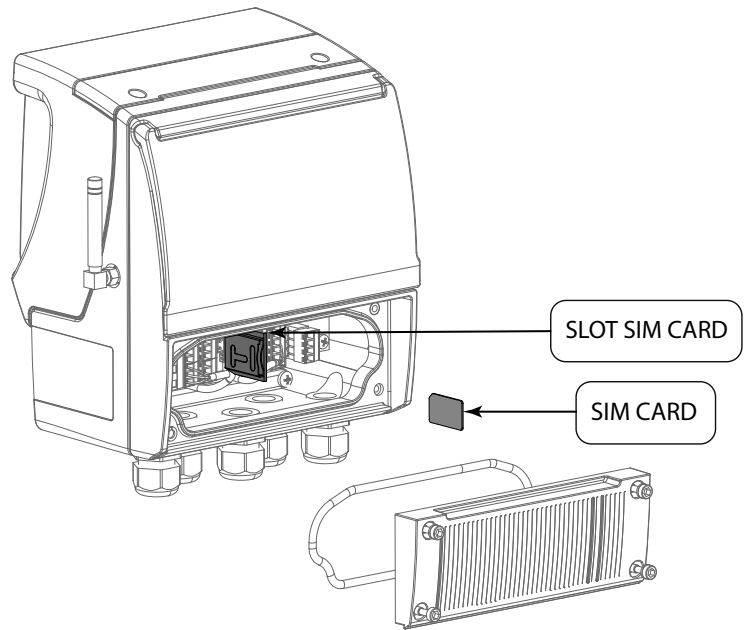


| POS. | DESCRIPTION | |
|------|--|-------------------|
| | PA6 VERSION | ALUMINIUM VERSION |
| 29 | BATTERY HOUSING COVER IN PA6 | |
| 30 | LITHIUM BATTERY OR ALKALINE | |
| 31 | SUPPORT CONTACTS ALKALINE BATTERIES MV | |
| 32 | BATTERY HOUSING PA6 | |
| 33 | SCREW M4X12 | |
| 34 | O-RING 3050 | |
| 35 | SEAL BUSH | |
| 36 | O-RING 3081 | |
| 37 | O-RING 4575 | |

CONVERTER ACCESS

Slot SIM 3G

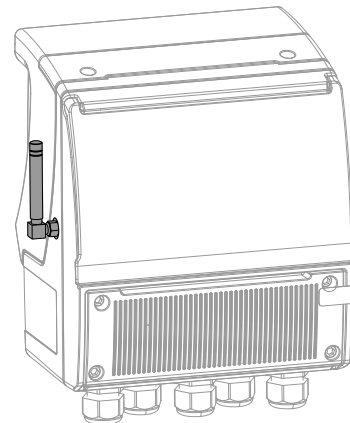
- ❑ MV255 is equipped with a modem for 3G/4G wireless communication. Utilizing GPRS technology and data packets transmitted through various layers of protocols and hardware devices.



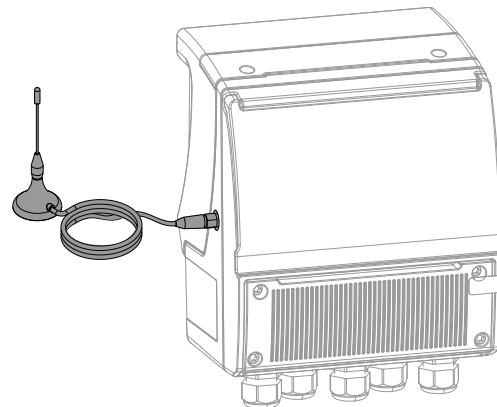
Antenna types

- ❑ It is possible to use two types of antennas depending on the place of installation of the instrument:

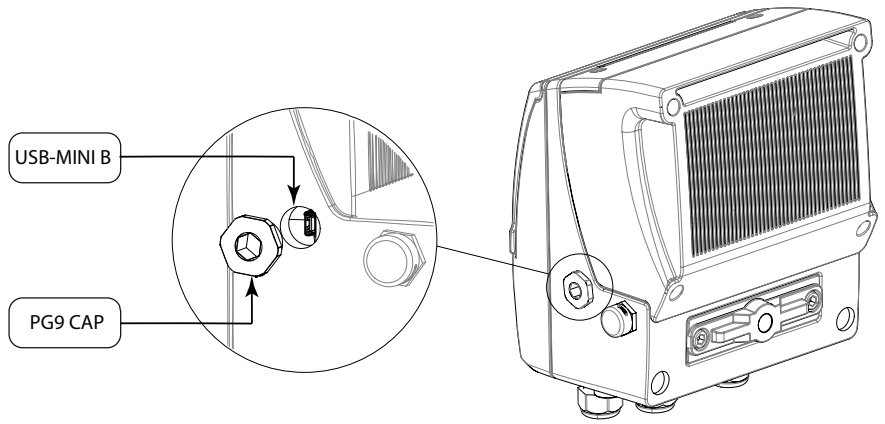
- ❑ 3G/4G antenna installed directly on the housing;



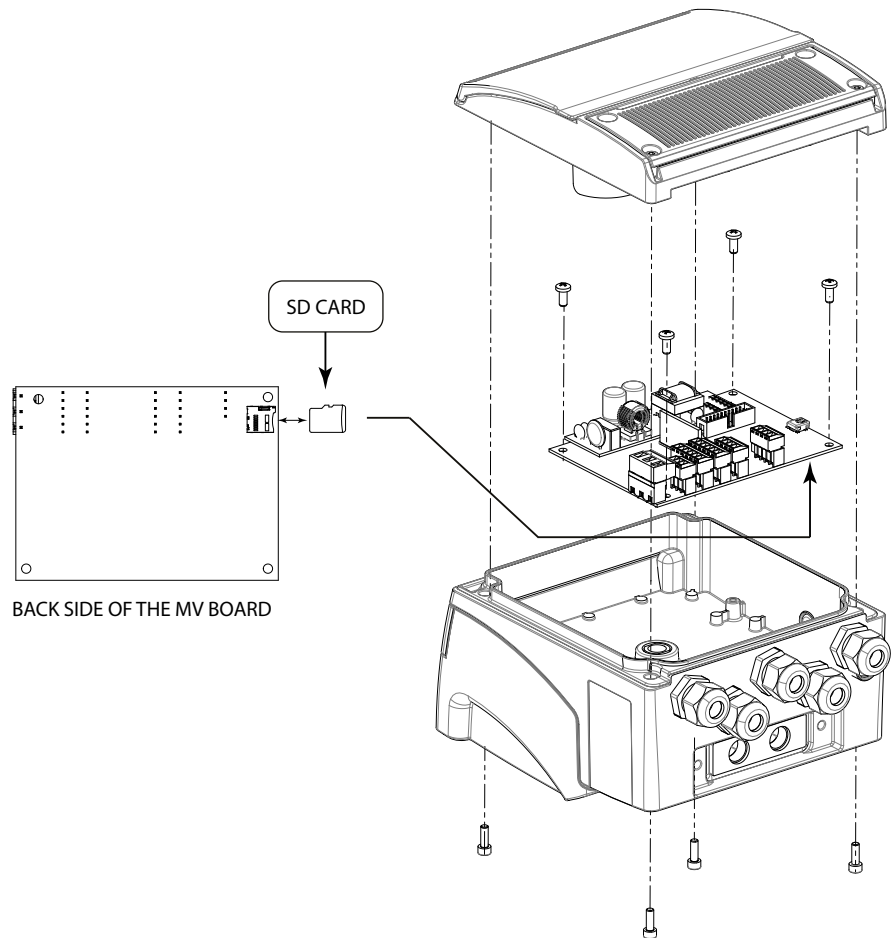
- ❑ 3G/4G Antenna with magnetic support connected to the converter housing with cable L= 3 meters.



Connessione USB

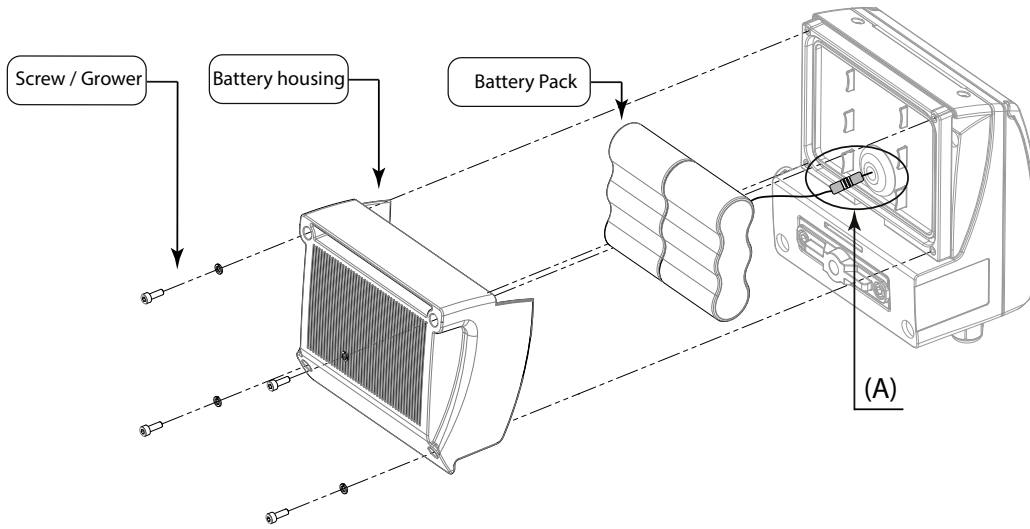


SD card

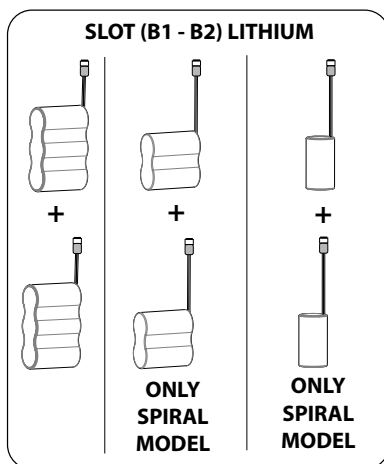


POWER SUPPLY

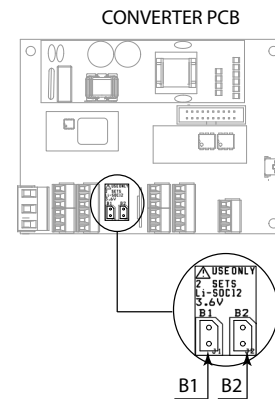
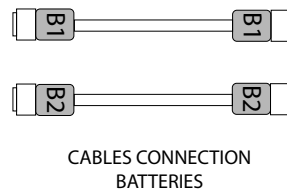
Batteries configuration



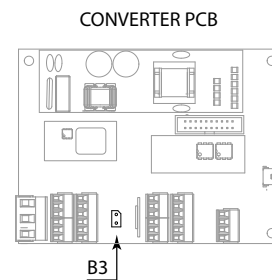
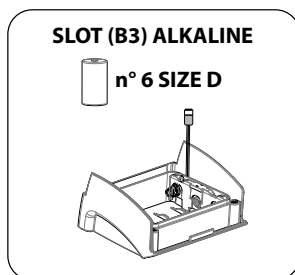
DETAIL (A) BATTERY CONNECTIONS CONVERTER PCB



LITHIUM BATTERIES

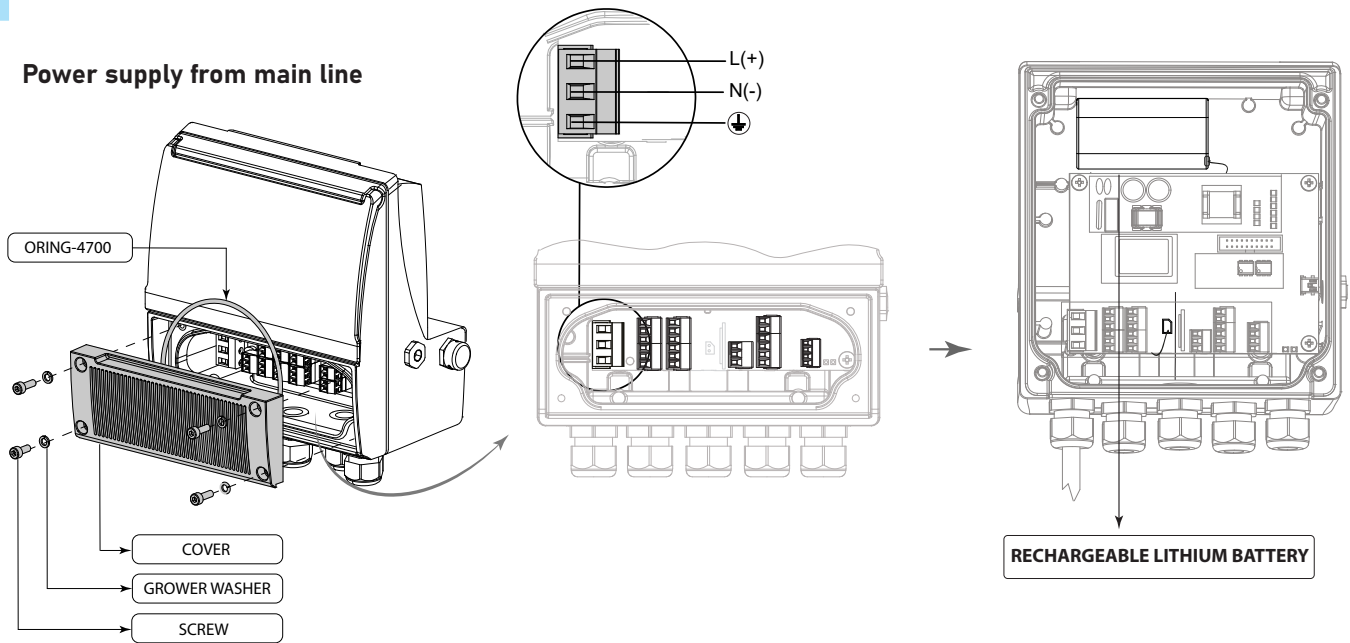


ALKALINE BATTERIES

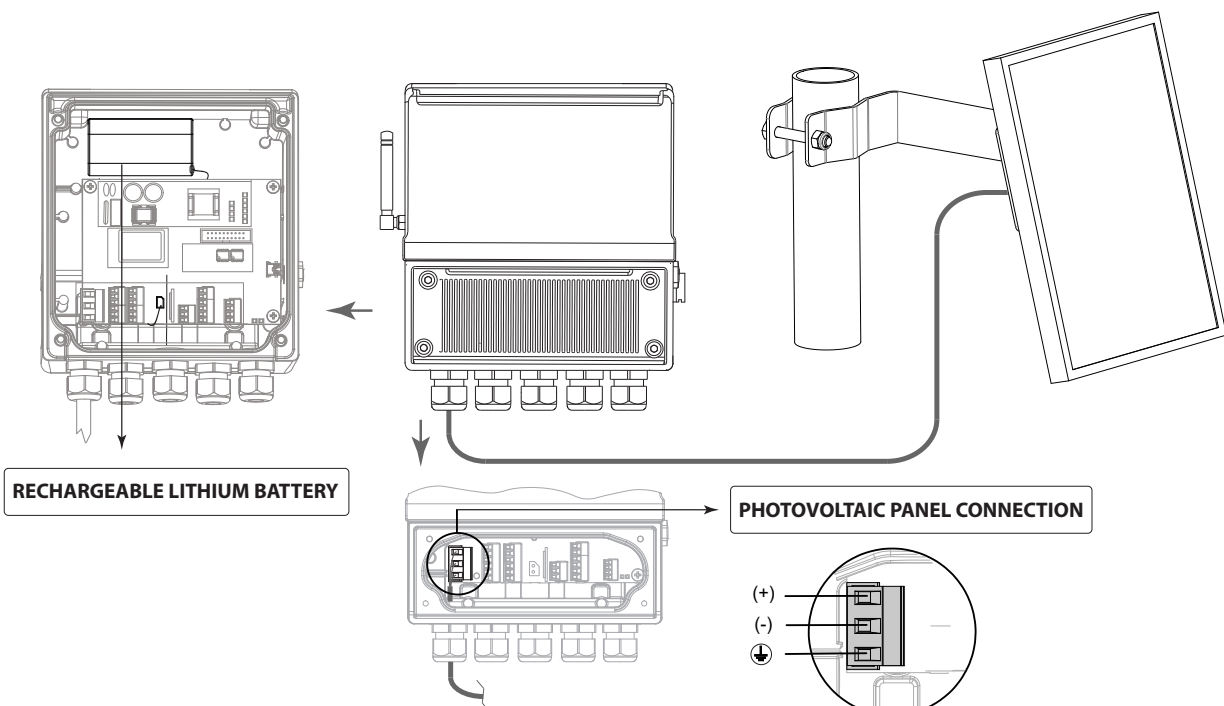


- ❑ The maximum number of batteries allowed in the various configurations is 6 size D batteries
- ❑ Alkaline batteries can also be purchased separately from third parties
- ❑ Lithium batteries are supplied exclusively by the manufacturer and can not be purchased separately from third parties. Furthermore, they are subject to special transport regulations based on the “Dangerous Goods Regulations, UN3090 and UN 3091”. Special documentation is required to observe the regulations.

Power supply from main line

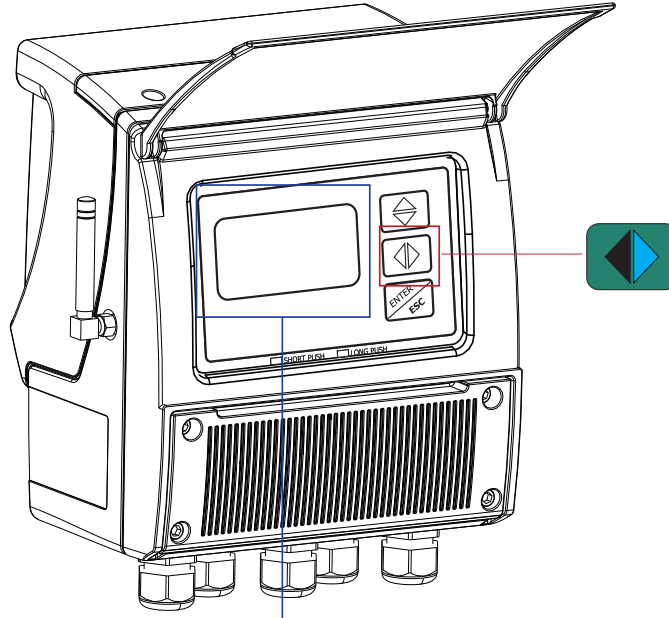


- The mains-powered converter is not supplied with the external battery housing.
- The connections are made with approved cables with flame retardant properties, whose section varies from 0.25mm² to 2.50 mm², based on distance / power.
- The wiring can be checked by unscrewing the 4 screws on the terminal cover.
- When the lid is raised, the terminal block is visible. The terminal block shows the wired connection of the converter to external devices, sensor included.
- The rechargeable battery is always present inside the converter with mains power supply.
- It is possible to connect a photovoltaic panel that can be used as an alternative source of mains power supply (LLV power supply) After connecting the photovoltaic panel cable to the MV255 converter connector, the module is recognized and the sampling automatically switches to continuous mode whatever the profile set previously; this mode guarantees accurate measurements (flow rate / pressure) even with continuous and sudden variations.
- For installation consult the manual of the photovoltaic panel. Not supplied by ISOIL.



MAIN PAGES VISUALIZATION

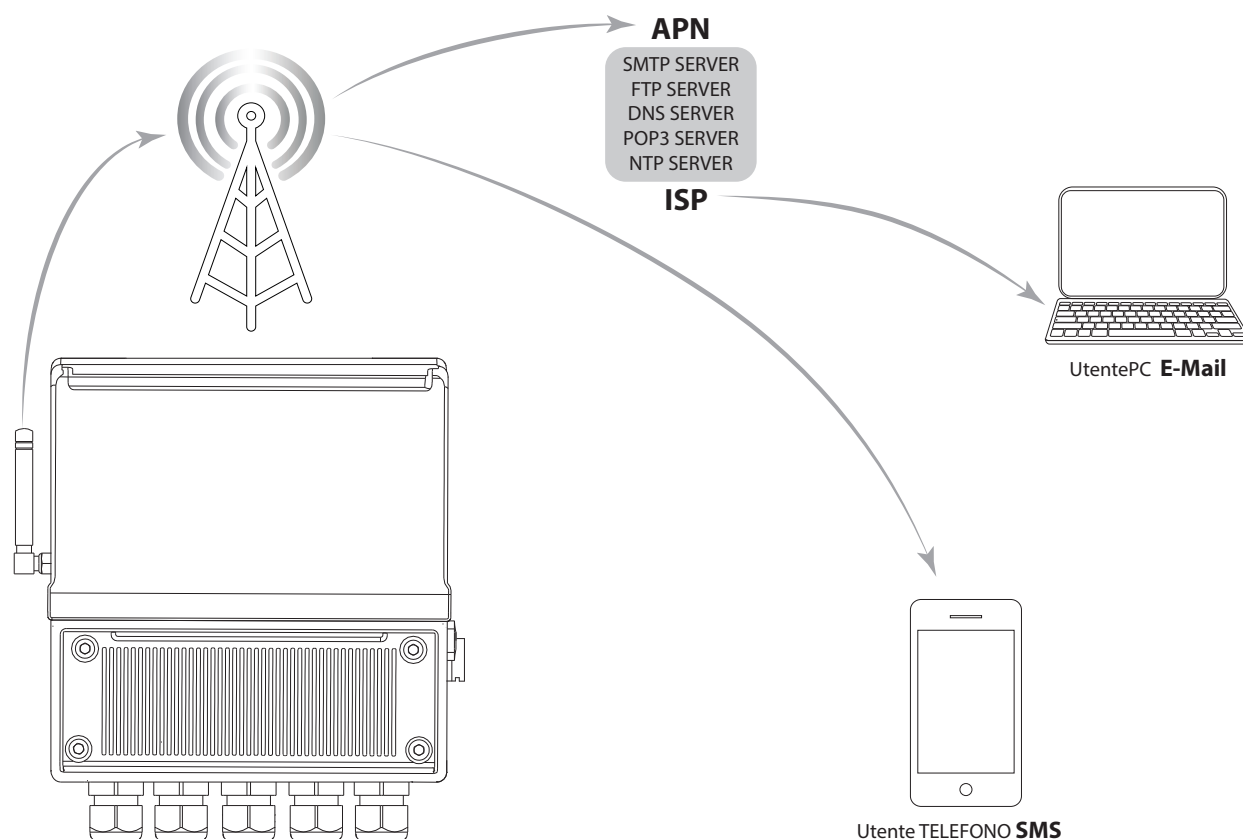
Possible views by simply pressing the button



| | | |
|---|---|---|
| $\frac{dm^3}{s}$ +10.000 400 75 25 % 0 M/s +1.273+ | $\frac{dm^3}{s}$ 0.0000 T+dm ³ 0.000 P+dm ³ 0.000 T-dm ³ 0.000 P-dm ³ 0.000 4 ALARM(S) | |
| $\frac{dm^3}{s}$ 0.0000 dm ³ /s +0.00% 5 ALARM(S) | $\frac{dm^3}{s}$ 0.0000 T+dm ³ 0.000 P+dm ³ 0.000 T-dm ³ 0.000 P-dm ³ 0.000 4 ALARM(S) | $\frac{dm^3}{s}$ P+dm ³ 233633.381 |
| $\frac{dm^3}{s}$ 0.0000 T+dm ³ 0.000 P+dm ³ 0.000 5 ALARM(S) | 4 ALARM(S) CLOCK NOT SET EXCITATION ERROR SIGNAL ERROR FL. SENSOR ERROR 2006/01/01-01:14 | $\frac{dm^3}{s}$ T-dm ³ 14617.888 |
| $\frac{dm^3}{s}$ 0.0000 T-dm ³ 0.000 P-dm ³ 0.000 5 ALARM(S) | $\frac{dm^3}{s}$ E1 U 0.001 E2 U 0.001 E1R kΩ 9.6 E2R kΩ 9.6 1 ALARM(S) | $\frac{dm^3}{s}$ P-dm ³ 14617.888 |
| $\frac{dm^3}{s}$ 0.0000 T+dm ³ +0.000 P+dm ³ +0.000 5 ALARM(S) | $\frac{dm^3}{s}$ T+dm ³ 233627.258 | |

The manufacturer guarantees only English text available on our web site www.isoil.com

3G NETWORK CONNECTION



- ❑ With the 3G connection it is possible to perform remote checks on the status of the device and the saved loggers.
- ❑ The MV255 converter can send processed and stored data to different devices via SMS and / or email
- ❑ Communication takes place via UMTS / GPRS technology, using data packets conveyed through various layers of protocols and hardware devices, as described below:
- ❑ Data -> Compression (ZIP) -> SMTP/POP3/FTP -> SSL -> TCP/IP -> PPP -> UMTS/GPRS -> RADIO LINK
- ❑ Data compression allows the volume to be reduced to values close to 1% compared to the original size (1000kb can be reduced to 10kb). Compressed files can be read by any operating system without any additional software.

SMTP and POP3 are protocols for transferring data via email between a client and a server

FTP is a protocol for the direct transfer of files between a client (meter) and a server

SSL is an intermediate layer dedicated to security that deals with encrypting and authenticating the flow of data so as to make it uneditable and unreadable by a third party who may be listening.

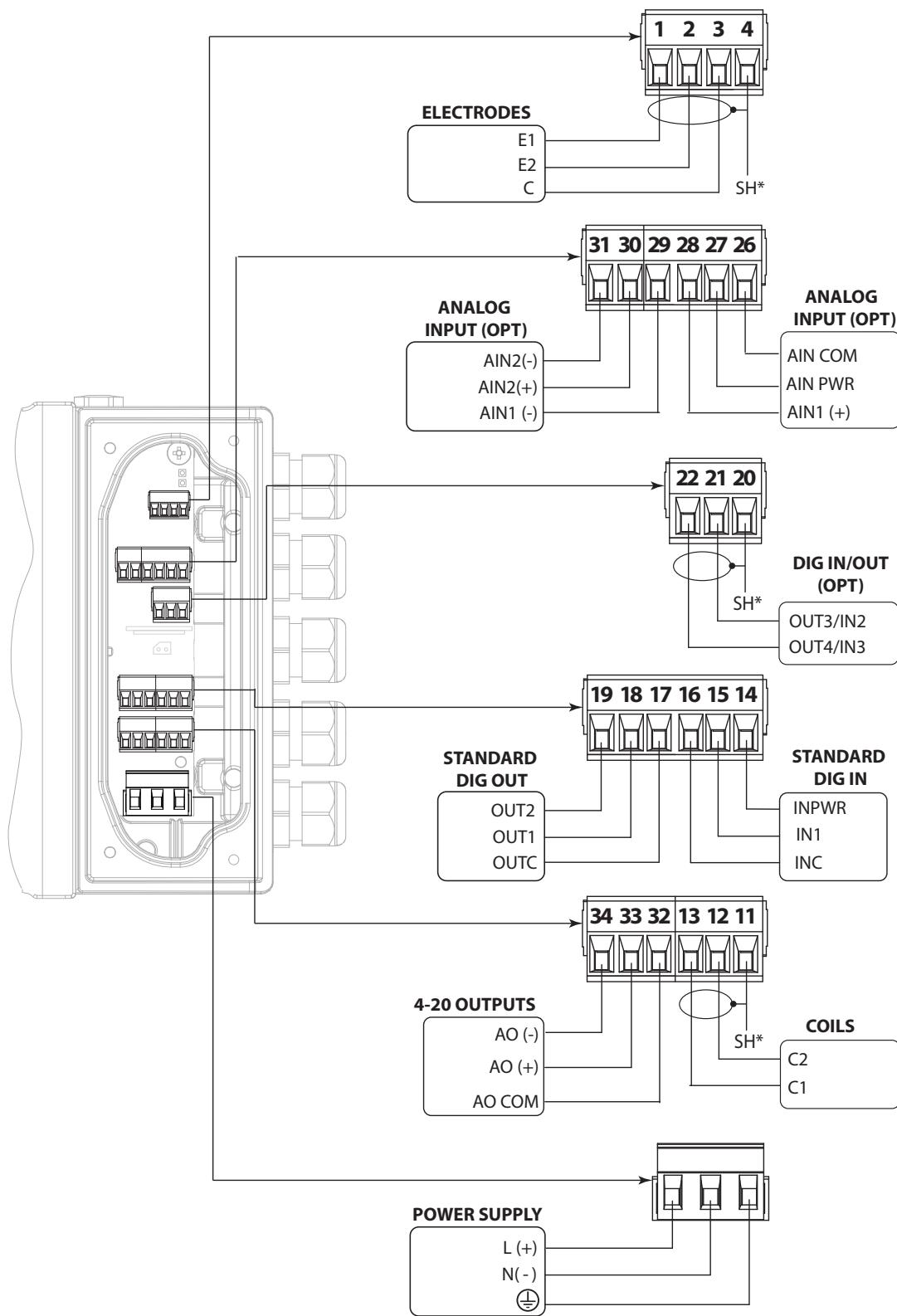
TCP / IP is a protocol that guarantees the transport of data with algorithms that control its flow, error control and integrity.

PPP is a protocol that allows the transfer of data packets between two points connected with a serial line, guaranteeing their integrity and correct timing.

UMTS / GPRS is a technology that allows the exchange of serious data in a multi-user wireless network

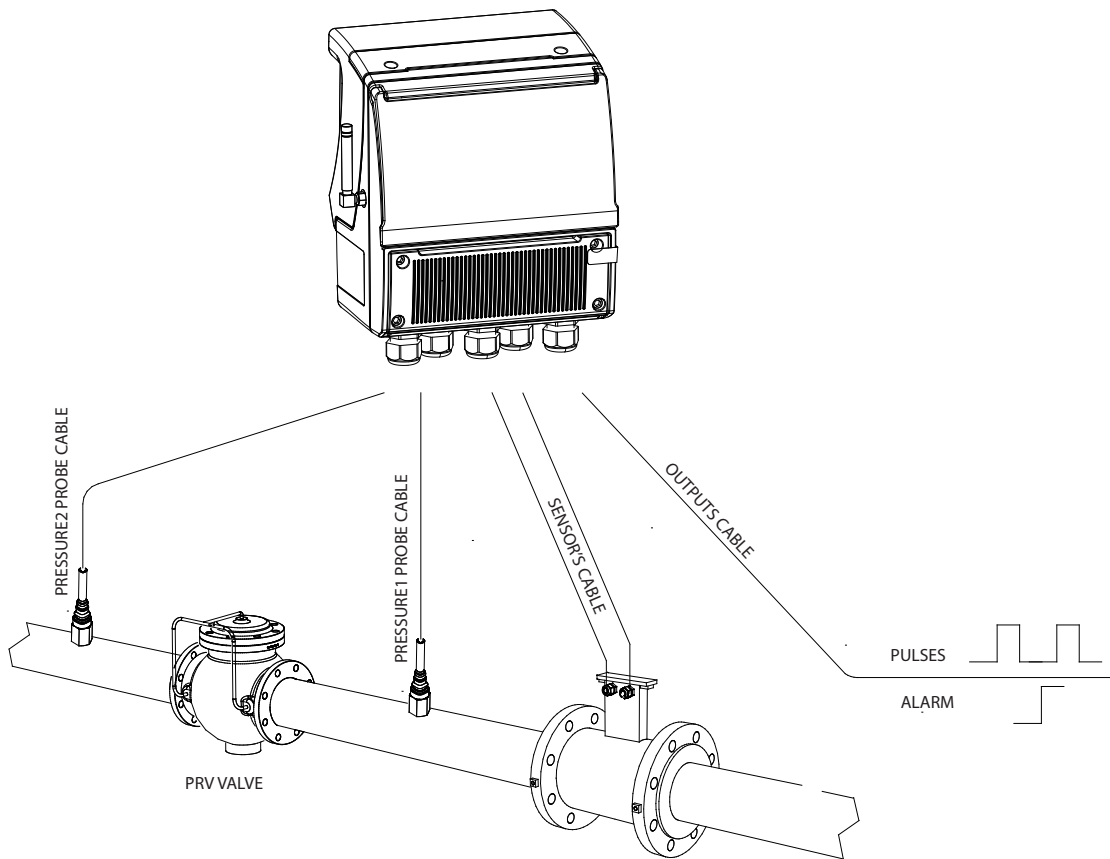
RADIO LINK is a hardware data transport system based on wireless transmission and reception

ELECTRICAL CONNECTIONS

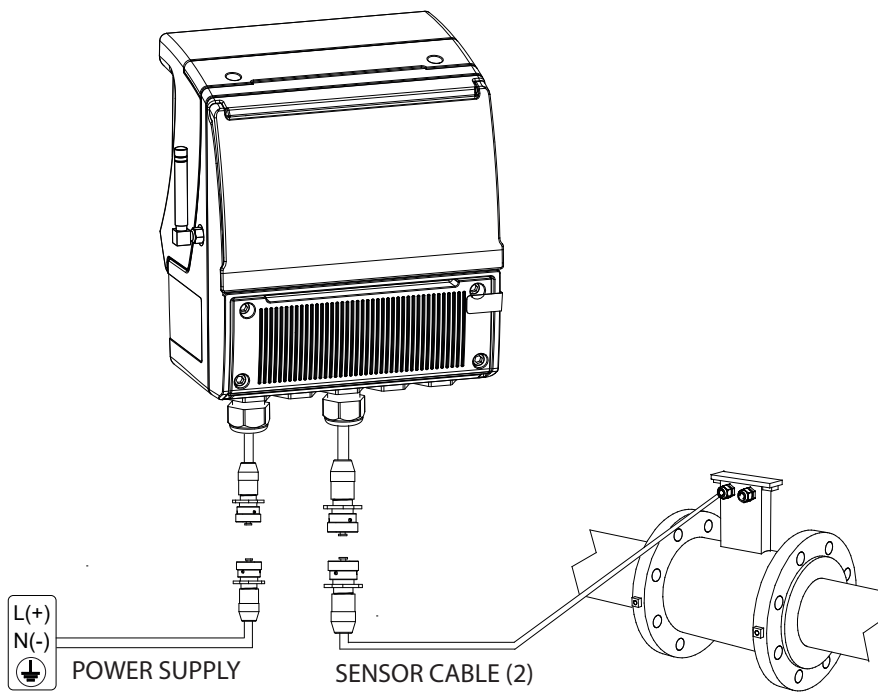


The manufacturer guarantees only English text available on our web site www.isoil.com

Pressure / temperature probes

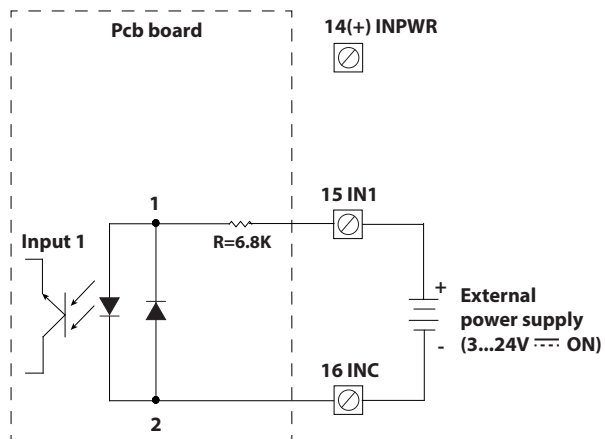


IP68 connection (example installation)

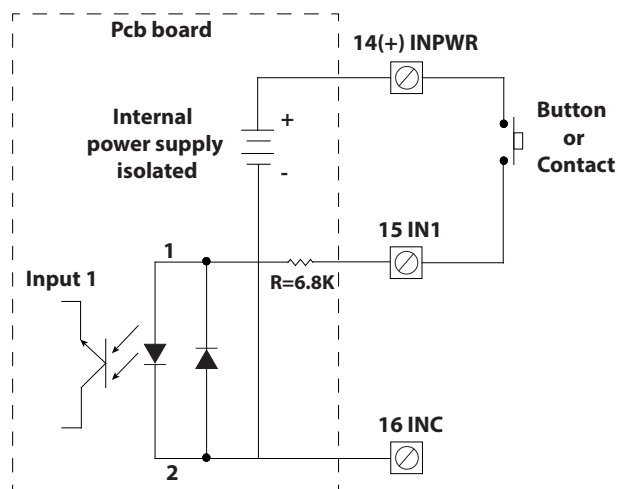


DIGITAL INPUT

On/off input (external power supply)

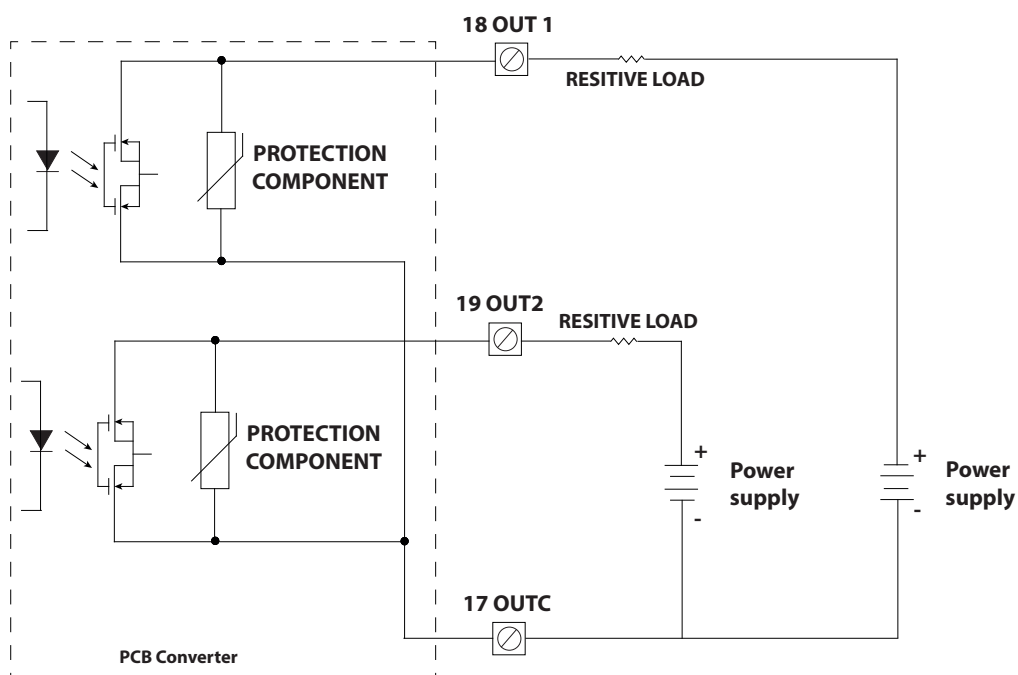


on/off input (internal power supply)



DIGITAL OUTPUTS

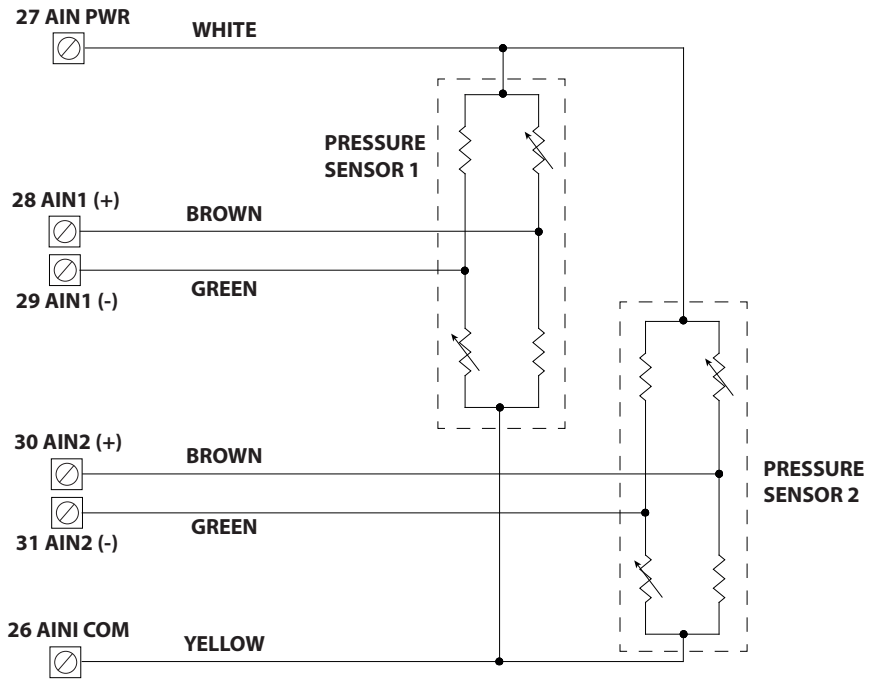
NOTE: the outputs are not polarized, so you can adopt schemes for connection to positive or common negative, as in the following electrical scheme.



AUXILIARY MODULE ANALOG INPUTS

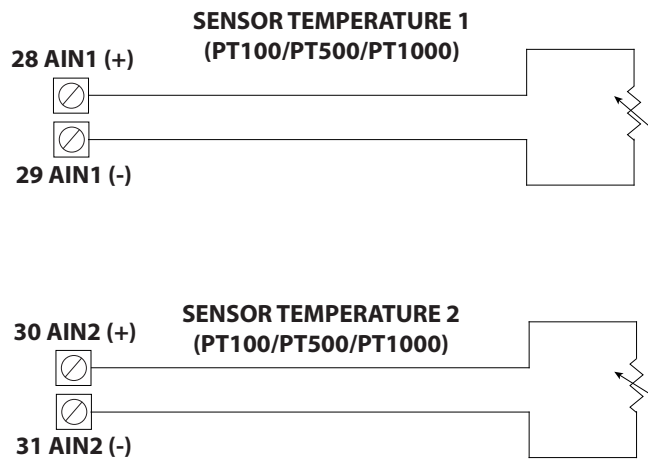
NOTE: Two different types of sensors can be connected, for example a pressure sensor connected to input 1 and a temperature sensor connected to input 2, or contrary.

Connection of pressure sensors



Connection of Temperature sensors

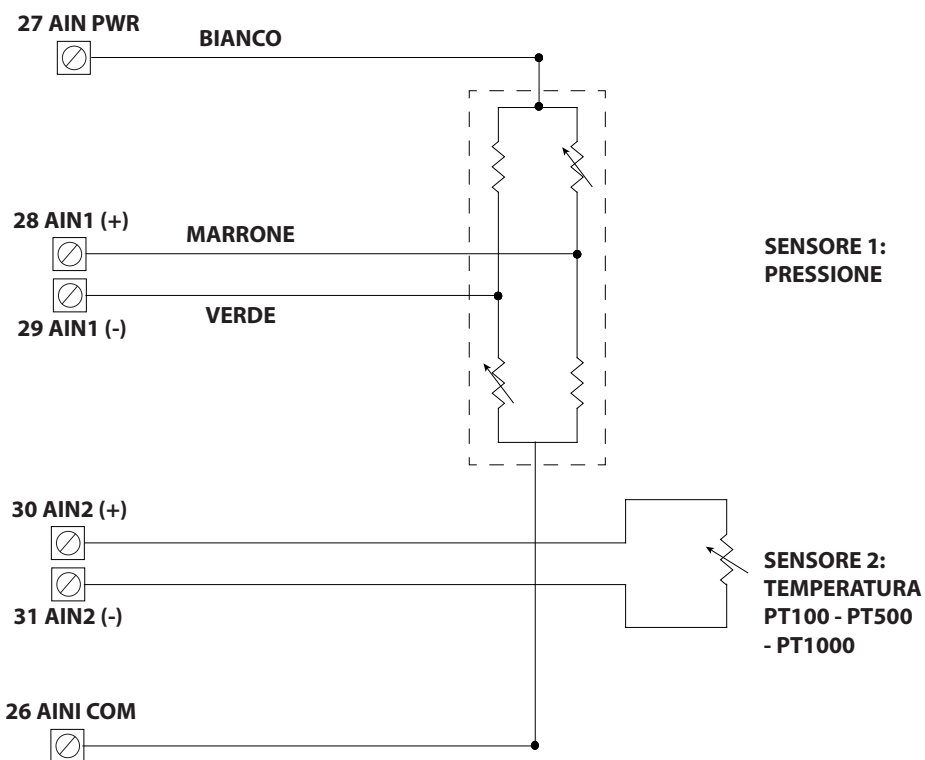
There is no compensation of cable resistance, we recommend the use of PT500 or PT1000 sensors if the cable length is more than one meter. The recognition of the sensor type (PT100 / 500/1000) is automatic.



Connection of a pressure/temperature sensor

Two different types of sensors can be connected, a pressure sensor and a temperature sensor.

For the temperature sensor, because there is no compensation of cable resistance, we recommend the use of PT500 or PT1000 sensors if the cable length is more than one meter. The recognition of the sensor type (PT100 / 500/1000) is automatic.



N.B: the pressure sensor MUST BE connected to input 1 and the temperature sensor MUST BE connected to Input 2!

OUTPUTS 4÷20 MA

Digital input / output terminal block of the add-on module. (22-OUT4 22-IN2, 21-OUT3 21-IN3, GND):

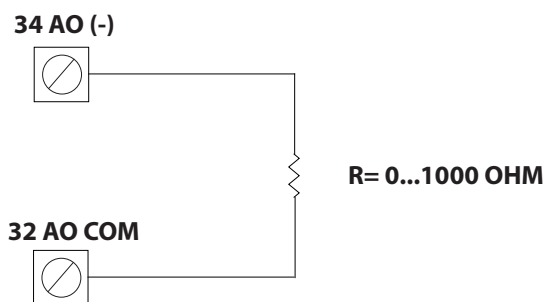
Passive mode: power is supplied from an external source.

- Connect the POSITIVE of the external source to the AO + terminal
- Connect the LOAD to the AO- terminal

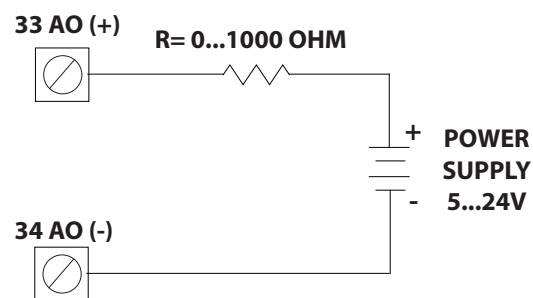
Active mode: power is supplied from the board power supply (if fitted).

- Connect the LOAD to the AO- terminal
- Connect the RETURN to the AOC terminal.

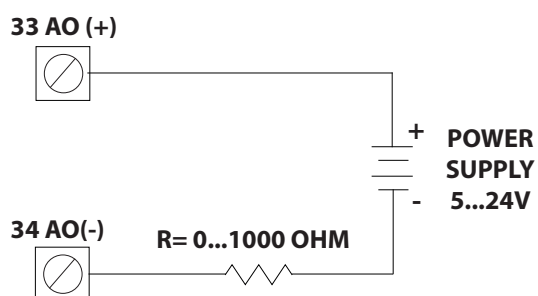
Active connection



Passive connection 1



Passive connection 2



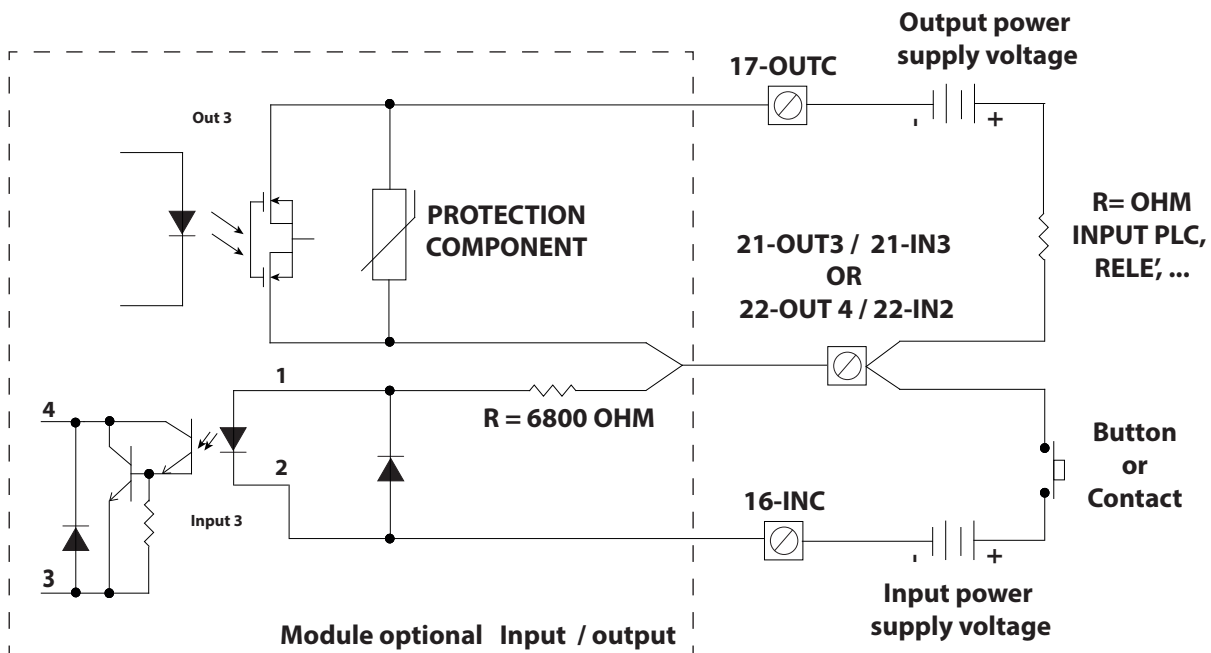
AUXILIARY MODULE DIGITAL INPUTS/ OUTPUTS

Digital inputs / outputs terminal block of the add-on module (22-OUT4 22-IN2, 21-OUT3 21-IN3, GND):

- ❑ 21-OUT3 21-IN3: digital output OUT 3 / digital input INPUT 3
- ❑ 22-OUT4 22-IN2: digital output OUT 4 / digital input INPUT 2
- ❑ GND: terminal connected to the protective earth (chassis) for connecting cable screens

NOTE:

- ❑ The digital outputs OUT4 and OUT3 use the 17-OUTC terminal as common.
- ❑ The digital inputs IN2 and IN3 use the 16-INC terminal as common.
- ❑ The digital output OUT4 and the digital input IN2 as well as the digital output OUT3 and the digital input IN3 share the same terminal but have different common, so the input and output circuits can be realized independently on the other hand, as indicated in the following diagram for OUT3 / IN3 (OUT4 / IN2 are equivalent).



FUNCTIONS MENU

SENSOR

| MAIN MENU | |
|-----------------|------------|
| 1-Sensor | |
| 2-Units | |
| 3-Scales | |
| 4-Measure | |
| 5-About | |
| 6-Factory | |
| 7-Exit | |
| SENSOR | |
| S.model | 0 |
| Lining | UNSPEC. |
| S.type | FULLBORE |
| U.type | METRIC |
| Diam. | 700 |
| KA | +00.9637 |
| KA- | -44.904 |
| KZ | -18852 |
| KD | +00.4014 |
| Ins.position | 0 |
| KP dynamic | OFF |
| Ki | 10.000 |
| Kp | 10.000 |
| KC | 100.000 |
| C.Curr. | mA025.0 |
| S.timeI | ms03 |
| Reg.C.T | stp 005 |
| C.R.time | ms03 |
| E.P.Detect | ON |
| Z max | Hohm 0500 |
| S.err.delay | 10 |
| Sens.verify | OFF |
| KL | 00.+000000 |
| Zero point cal. | |

- 1.1 Sensors model: Enter the first two characters of the serial number of the sensor
- 1.2 Flow sensor lining material type
- 1.3 Type of sensor: fullbore or insertion
- 1.4 Type of measure units for sensor parameter: metric or imperial
- 1.5 Sensor's nominal/real diameter DN (0-2500)
- 1.6 Sensor coefficient KZ (zero point)
- 1.7 Calibration data of sensor for negative flow
- 1.8 Sensor coefficient KZ (zero point)
- 1.9 Sensor coefficient KD
- 1.10 Insertion position
- 1.11 KP dynamic, coefficient for insertion
- 1.12 Sensor coefficient Ki
- 1.13 Sensor coefficient Kp
- 1.14 Sensor coefficient KC
- 1.15 Sensor excitation current
- 1.16 Current regulator proportional band
- 1.17 Current regulator derivation constant
- 1.18 Measure sampling frequency
- 1.19 Enables the empty pipe detection feature
- 1.20 Empty pipe detection threshold
- 1.21 Signal error delay (n. sample)
- 1.22 Automatic sensor verify enable
- 1.23 Linearization coefficient
- 1.24 Pipe hydraulic zero calibration

UNITS

| MAIN MENU | |
|------------|-----------|
| 1-Sensor | |
| 2-Units | |
| 3-Scales | |
| 4-Measure | |
| 5-About | |
| 6-Factory | |
| 7-Exit | |
| UNITS | |
| Diam. | mm |
| S.cable | m |
| FR.unit | METRIC |
| Pls1 u. | METRIC |
| Pls2 u. | METRIC |
| T+ unit | METRIC |
| T+ unit | (m3) |
| T+ D.P. | 4 |
| P+ unit | METRIC |
| P+ unit | (m3) |
| P+ D.P. | 4 |
| T- unit | METRIC |
| T- unit | (m3) |
| T- D.P. | 4 |
| P- unit | METRIC |
| P- unit | (m3) |
| P- D.P. | 4 |
| Temp.unit | °C |
| Mass units | ON |
| Sg | (kg/dm3) |
| AIN1 m.u. | 1.107MCPI |
| AIN2 m.u. | 1.107MCPI |

- 1.1 Nominal diameter measure unit
- 1.2 Cable length on separate version
- 1.3 Flow rate type measure unit: metric or imperial
- 1.4 Pulse 1 type measure unit: metric or not metric
- 1.5 Pulse 2 type measure unit: metric or not metric
- 1.6 Total direct totalizer measure unit type: metric or imperial
- 1.7 Total direct totalizer measure unit
- 1.8 Total direct totalizer decimal point position
- 1.9 Partial direct totalizer measure unit type: metric or not metric
- 1.10 Partial direct totalizer measure unit
- 1.11 Partial direct totalizer decimal point position
- 1.12 Total reverse totalizer measure unit type: metric or not metric
- 1.13 Total reverse totalizer measure unit
- 1.14 Total reverse totalizer decimal point position
- 1.15 Partial reverse totalizer measure unit type: metric or not metric
- 1.16 Partial reverse totalizer measure unit
- 1.17 Partial reverse totalizer decimal point position
- 1.18 Temperature measure
- 1.19 Enable/disable the selection of mass units on full scale set
- 1.20 Specific gravity coefficient
- 1.21 Unit of measurement for analogue input 1
- 1.22 Unit of measurement for analogue input 2

SCALES

| | |
|-----------|-------------------------|
| MAIN MENU | |
| 1-Sensor | |
| 2-Units | |
| 3-Scales | |
| 4-Measure | |
| 5-Alarms | |
| 6-Inputs | |
| SCALES | |
| FS1 | dm ³ /s 5.00 |
| Pls1 | dm ³ 0.15 |
| Tpls1 | (ms) |
| Pls2 | dm ³ 0.15 |
| Tpls2 | 15*(ms) |
| IAN1 | 1.107MCPI |
| IAN2 | 1.107MCPI |

| | |
|-----|--|
| 3.1 | Full scale flow rate 1 |
| 3.2 | Full scale flow rate 2 |
| 3.3 | Duration of the pulse generated on channel 1 |
| 3.4 | Pulse value on channel 2 |
| 3.5 | Duration of the pulse generated on channel 2 |
| 3.6 | Analog input scale 1 |
| 3.7 | Analog input scale 2 |

MEASURE

| | |
|---------------|---------|
| MAIN MENU | |
| 1-Sensor | |
| 2-Units | |
| 3-Scales | |
| 4-Measure | |
| 5-Alarms | |
| 6-Inputs | |
| MEASURE | |
| M.Prop. | SMART1 |
| Filt.bypass | ON |
| Cut-off | 00.0(%) |
| LP Cycle sim. | ON |
| Cal.verify | ON |
| H.imm.inp. | ON |
| Netw. Freq | 50 HZ |

| | |
|-----|-------------------------------|
| 4.1 | Measure power profile |
| 4.2 | Measure filter bypass |
| 4.3 | Measure cut-off threshold |
| 4.4 | Low power m.cycle simulation |
| 4.5 | Automatic calibration verify |
| 4.6 | High immunity inputs |
| 4.7 | Network Frequency environment |

ALARMS

| | |
|--------------|--------------------|
| MAIN MENU | |
| 1-Sensor | |
| 2-Units | |
| 3-Scales | |
| 4-Measure | |
| 5-Alarms | |
| 6-Inputs | |
| 7-Outputs | |
| ALARMS | |
| Max+ | dm ³ /s |
| Max- | dm ³ /s |
| Min+ | dm ³ /s |
| Min- | dm ³ /s |
| A1Mx | () |
| A1Mn | () |
| A2Mx | () |
| A2Mn | () |
| Hysteresis | % |
| V.all HZ | % |
| Cfg.ac.al | ON |
| All. alimen. | ON |

| | |
|------|--|
| 5.1 | Max.pos.flow r.alarm threshold MAX+ |
| 5.2 | Max.neg.flow r.alarm threshold MAX- |
| 5.3 | Min.pos.flow r.alarm threshold MIN+ |
| 5.4 | Min.neg.flow r.alarm threshold MIN- |
| 5.5 | MAX alarm threshold for analog input 1 |
| 5.6 | MIN alarm threshold for analog input 1 |
| 5.7 | MAX alarm threshold for analog input 2 |
| 5.8 | MIN alarm threshold for analog input 2 |
| 5.9 | Hysteresis on alarm thresholds |
| 5.10 | Output frequency value in alarm |
| 5.11 | Configuration Access Alarm Enable |
| 5.12 | Power Supply Loss Alarm Enable |

INPUTS

```

MAIN MENU
1-Sensor
2-Units
3-Scales
4-Measure
5-Alarms
6-Inputs
7-Outputs
8-Communication
    
```

| INPUTS | |
|--------------|----------|
| T+ reset | OFF |
| P+ reset | OFF |
| T- reset | OFF |
| P- reset | OFF |
| Count lock | OFF |
| Meas.lock | OFF |
| Calibration | OFF |
| Sys.v.detect | ON |
| D.In2 | SYS.MDL. |
| D.In3 | OFF |
| D.in p.sup. | ON |

| | |
|------|--|
| 6.1 | Total direct (positive) flow totalizer reset enable |
| 6.2 | Partial direct (positive) flow totalizer reset enable |
| 6.3 | Total reverse (negative) flow totalizer reset enable |
| 6.4 | Partial reverse (negative) flow totalizer reset enable |
| 6.5 | Totalizer counting lock command |
| 6.6 | Measure zero lock command |
| 6.7 | Calibration external command |
| 6.8 | System violation detect |
| 6.9 | Digital input 2 function |
| 6.10 | Digital input 3 function |
| 6.11 | Aux.digital inputs power supply |

OUTPUTS

```

MAIN MENU
1-Sensor
2-Units
3-Scales
4-Measure
5-Alarms
6-Inputs
7-Outputs
8-Communication
    
```

| OUTPUTS | |
|-----------|-----------|
| Out1 | F.R.SIGN |
| Out1 inv. | ON |
| Out1 pls. | ON |
| Out2 | AM1.MH/MN |
| Out2 inv. | ON |
| Out2 pls. | ON |
| Out3 | MAH.AL+ |
| Out3 inv. | ON |
| Out3 pls. | ON |
| Out4 | MAH.AL+ |
| Out4 inv. | ON |
| Out4 pls. | ON |
| Out mA1 | Apr-20 |
| A1S | dm3/s |

| | |
|------|----------------------------------|
| 7.1 | Output 1 function selection |
| 7.2 | Output 1 inverted status |
| 7.3 | Output 1 pulsed status |
| 7.4 | Output 2 function selection |
| 7.5 | Output 2 inverted status |
| 7.6 | Output 2 pulsed status |
| 7.7 | Output 3 function selection |
| 7.8 | Output 3 inverted status |
| 7.9 | Output 3 pulsed status |
| 7.10 | Output 4 function selection |
| 7.11 | Output 4 inverted status |
| 7.12 | Output 4 pulsed status |
| 7.13 | Analog current output 1 range |
| 7.14 | Full scale value for analog out1 |



COMMUNICATIONS

COMMUNICATIONS

| | | | |
|-----------------|-------------|------|----------------------------------|
| Comm.proc.abort | | 8.1 | Communication process abort |
| Send status | | 8.2 | Send device status information |
| Send DL Format | | 8.3 | Send data logger fields format |
| Send ST Format | | 8.4 | Send s.test data fields format] |
| Send proc.data | | 8.5 | Send instantaneous process data |
| Send events | | 8.6 | Send last system logged events |
| Send alarms | | 8.7 | Send system alarms information |
| Send l.data | | 8.8 | Send last logged process data |
| Send s.test | | 8.9 | Send last sensor test data |
| Send config. | | 8.10 | Send parameters config.data |
| Send Fn.enable | | 8.11 | Send functions enable status |
| Send qs.list | | 8.12 | Send quick start func.list] |
| RTC sync.req. | | 8.13 | Request a RTC synchronization |
| Check m.box | | 8.14 | Check mail box for new mails |
| FTP download | ON | 8.15 | FTP download execute command |
| Mail send | ON | 8.16 | Mail send function enable |
| Mail rec. | ON | 8.17 | Mail receive function enable |
| FTP upload | ON | 8.18 | FTP upload function enable |
| FTP download | ON | 8.19 | FTP download function enable |
| Rmt.op.acl | 1 | 8.20 | Remote operations access level |
| File compr. | ON | 8.21 | File compression enable status |
| ZIP password | XXXXXXXX | 8.22 | Compressed archive password |
| Conn.test | ON | 8.23 | Connection test enable |
| Auto Ev.snd | ON | 8.24 | Automatic events send on alarms |
| Access p.name | XXXXXXXX | 8.25 | Access point name |
| Auth.type | OFF | 8.26 | Access point authentication type |
| User name | XXXXXXXX | 8.27 | Access point user name |
| User password | XXXXXXXX | 8.28 | Access point password |
| SMTP User | XXXXXXXX | 8.29 | User name for SMTP service |
| SMTP psw. | XXXXXXXX | 8.30 | Password for SMTP email service |
| POP3 User | XXXXXXXX | 8.31 | User name for POP3 service |
| POP3 psw. | XXXXXXXX | 8.32 | Password for POP3 email service |
| FTP User | XXXXXXXX | 8.33 | User name for FTP service |
| FTP password | XXXXXXXX | 8.34 | Password for FTP service |
| Min.sig.thr | ON | 8.35 | Min.antenna signal threshold |
| Primary DNS | 000.000.000 | 8.36 | Primary Domain Name Server |
| Secondary DNS | 000.000.000 | 8.37 | Secondary Domain Name Server |
| Retries | 3 | 8.38 | Max.number of session retries |
| Instr.ID | XXXXXXXX | 8.39 | Instrument identifier string |
| HELO string | XXXXXXXX | 8.40 | HELO identification string |
| Sender addr. | XXXXXXXX | 8.41 | Email address of sender |
| Receiver 1 | XXXXXXXX | 8.42 | Email address of receiver 1 |
| Receiver 2 | XXXXXXXX | 8.43 | Email address of receiver 2 |
| SMTP server | XXXXXXXX | 8.44 | SMTP mail send server name |
| SMTP sl | OFF | 8.45 | SMTP secure connection layer |
| SMTP port | 25 | 8.46 | SMTP mail send server port num. |
| POP3 server | XXXXXXXX | 8.47 | POP3 mail receive server name |
| POP3 sl | SSL/TLS | 8.48 | POP3 Secure connection layer |
| POP3 port | 995 | 8.49 | POP3 mail receive serv.port num. |
| FTP server | XXXXXXXX | 8.50 | FTP server name or address |
| FTP port | 21 | 8.51 | FTP server port number |
| FTP secure | ON | 8.52 | FTP secure connection enable |
| FTP data | XXXXXXXX | 8.53 | FTP root directory for data |
| FTP events | XXXXXXXX | 8.54 | FTP root directory for events |
| FTP commands | XXXXXXXX | 8.55 | FTP root directory for commands |
| Cert.check | ON | 8.56 | Server identity certiff.check |
| NTP server | XXXXXXXX | 8.57 | NTP time server name |
| T.ref | WWW/MM/DD | 8.58 | Data send time reference |
| InMsTm | 0:00 | 8.59 | Incoming message check time |
| ProcST | 0:00 | 8.60 | Process data send time |
| LogDST | 0:00 | 8.61 | Logger data send time |
| S.Compl.File | ON | 8.62 | Send only complete file |
| Alarm time | 0:00 | 8.63 | Alarm minimum send time interval |
| SMS F.en | ON | 8.64 | SMS functions global enable |
| Auth.number | 1234 | 8.65 | Authorized incoming phone number |
| Mess.recv.1 | 1234 | 8.66 | Short messages receiver 1 |
| Mess.recv.2 | 1234 | 8.67 | Short messages receiver 2 |
| Mess.recv.3 | 1234 | 8.68 | Short messages receiver 3 |

DISPLAY

| DISPLAY | |
|-------------|-----|
| Language | EN |
| Disp.time | S |
| Disp.Fn. | 1 |
| Disp.lock | OFF |
| Part.tot. | ON |
| Neg.tot. | ON |
| Net tot. | ON |
| Disp.date | ON |
| Quick start | OFF |

| |
|-----------------|
| 7-Outputs |
| 8-Communication |
| 9-Display |
| 10-Data logger |
| 11-Functions |
| 12-Diagnostic |
| 13-System |

| | |
|-----|-------------------------------------|
| 9.1 | Impostazione lingua interfaccia |
| 9.2 | Tempo visualizz./inattività |
| 9.3 | Numero funz.di visualizzazione |
| 9.4 | Blocco funzioni visualizzazione |
| 9.5 | Abilitazione totalizz.parziali |
| 9.6 | Abilitazione totalizzatori negativi |
| 9.7 | Abilitazione visual.totalizz.netti |
| 9.8 | Abilitazione visualizz.data/ora |
| 9.9 | Abilitazione menu quick start |

DATA
LOGGER

| DATA LOGGER | |
|--------------|---------|
| D.logger en. | ON |
| Meas.units | ON |
| Field separ. | ; |
| Decim.separ. | . |
| Interv. | 0:01:00 |
| Log T+ | OFF |
| Log P+ | OFF |
| Log T- | OFF |
| Log P- | OFF |
| Log TN | OFF |
| Log PNI | OFF |
| Log Q(UM) | OFF |
| Log Q(%) | OFF |
| Log AL.EU | OFF |
| Log ADM | OFF |
| Log STR | OFF |
| Log BTS | OFF |
| Log IBV | OFF |
| Log EDC | OFF |
| Log EAC | OFF |
| Log EIZ | OFF |
| Log SCV | OFF |

| |
|-----------------|
| 7-Outputs |
| 8-Communication |
| 9-Display |
| 10-Data logger |
| 11-Functions |
| 12-Diagnostic |
| 13-System |

| | |
|------|--------------------------------------|
| 9.1 | Data logger enabling |
| 9.2 | Measure unit recording enable |
| 9.3 | Field separator character |
| 9.4 | Decimal separator character |
| 9.5 | Sampling interval |
| 9.6 | Totalizer Total Positive Enable T+ |
| 9.7 | Totalizer Partial Positive Enable P+ |
| 9.8 | Totalizer Total Negative Enable T- |
| 9.9 | Totalizer Partial Net Enable P- |
| 9.10 | Totalizer Total Net Enable |
| 9.11 | Totalizer Partial Net Enable |
| 9.12 | Flow rate in Technical Units Enable |
| 9.13 | Flow rate in Percentage Enable |
| 9.14 | Alarm Events Enable |
| 9.15 | Additional Measures Enable |
| 9.16 | Sensor Test Results Enable |
| 9.17 | Board TemperatureS Enable |
| 9.18 | Internal Board Voltages |
| 9.19 | Electrodes DC Voltages Enable |
| 9.20 | Electrodes AC voltages Enable |
| 9.21 | Electrodes Source Impedance Enable |
| 9.22 | Sensor Coils Values Enable |

FUNCTION

| FUNCTION | |
|-----------------|---------|
| T+ reset | ON |
| P+ reset | ON |
| T- reset | ; |
| P- reset | . |
| Load Sens.F.def | 0:01:00 |
| Load Conv.F.def | OFF |
| Save Sens.F.def | OFF |
| Save Conv.F.def | OFF |
| Calibration | OFF |

| |
|-----------------|
| 7-Outputs |
| 8-Communication |
| 9-Display |
| 10-Data logger |
| 11-Functions |
| 12-Diagnostic |
| 13-System |

| | |
|------|---|
| 10.1 | Volume Totalizer Total Positive Reset |
| 10.2 | Volume Totalizer Partial Positive Reset |
| 10.3 | Volume Totalizer Total Negative Reset |
| 10.4 | Volume Totalizer Partial Negative Reset |
| 10.5 | Load Factory Default Sensor Data |
| 10.6 | Load Factory Default Converter Data |
| 10.7 | Save Factory Default Sensor Data |
| 10.8 | Save Factory Default Converter Data |
| 10.9 | CALibration Immediate Command |

DIAGNOSTIC

DIAGNOSTIC

```

Self test
Sens.verify
Flow sim. OFF
Display measures
Disp.comm.vars
SMS test
SMTP conn test
POP3 conn.test
FTP conn.test
Display graphs
SD card info
Firmware info
S/N 0
WT 000:00:00:00
TC 0
  
```

```

MP
7-Outputs
8-Communication
9-Display
10-Data logger
11-Functions
12-Diagnostic
13-System
  
```

```

11.1 Auto test Immediate Command
11.2 Sensor Verify Command
11.3 Measure Simulation Enable
11.4 Diagnostic Measure VaLues
11.5 Diagnostic Communication VaLues
11.6 Short Message Test
11.7 SMTP Connection Test
11.8 POP3 Connection Test
11.9 FTP Connection Test
11.10 Oscilloscope function
11.11 SD memory Status
11.12 Model and Software Version
11.13 Serial Number
11.14 Total Working Time
11.15 Total Measure Cycles
  
```

SYSTEM

SYSTEM

```

Dayl.saving ON
Time zone +00.00
Date/time ///00:00:00
L1 code xxxxxxxx
L2 code xxxxxxxx
L3 code xxxxxxxx
L4 code xxxxxxxx
L5 code xxxxxxxx
L6 code xxxxxxxx
Restr.access OFF
Device IP addr 63015504
Client IP addr 11.012.012
Network mask 255.255.254
RT 0.97882
KS 100.000
KR 100.000
DAC1 4mA 2460
DAC1 20mA 11050
AIN1 SS 0
AIN1 FS 20000
AIN2 SS 0
AIN2 FS 20000
Stand-by
FW update
  
```

```

MP
7-Outputs
8-Communication
9-Display
10-Data logger
11-Functions
12-Diagnostic
13-System
  
```

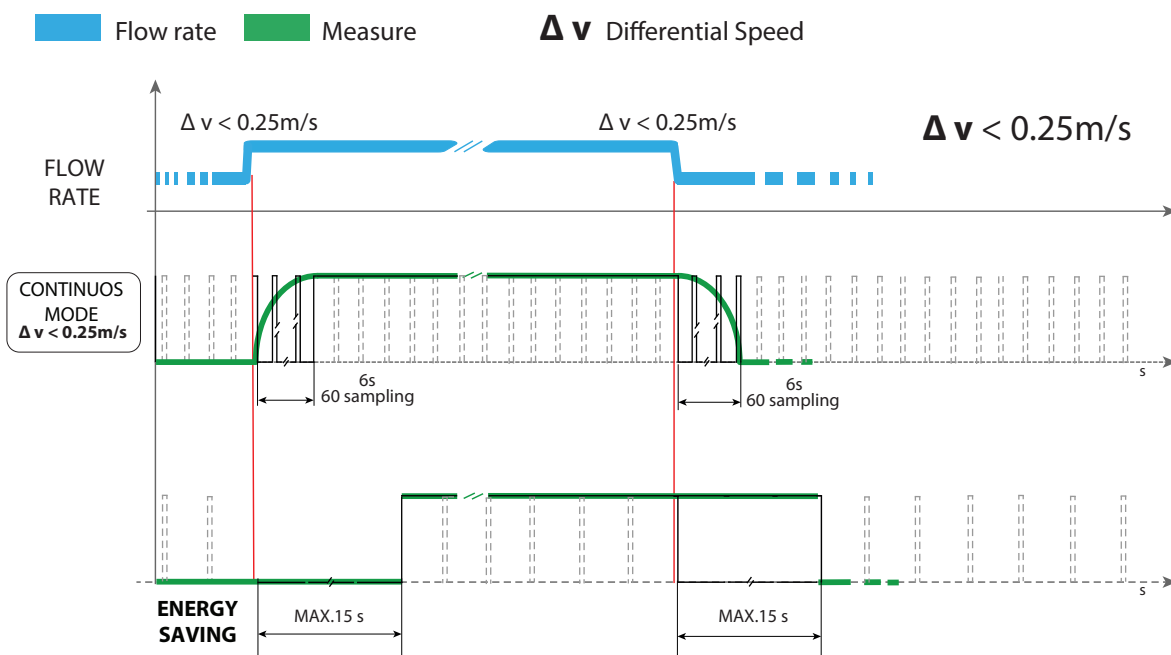
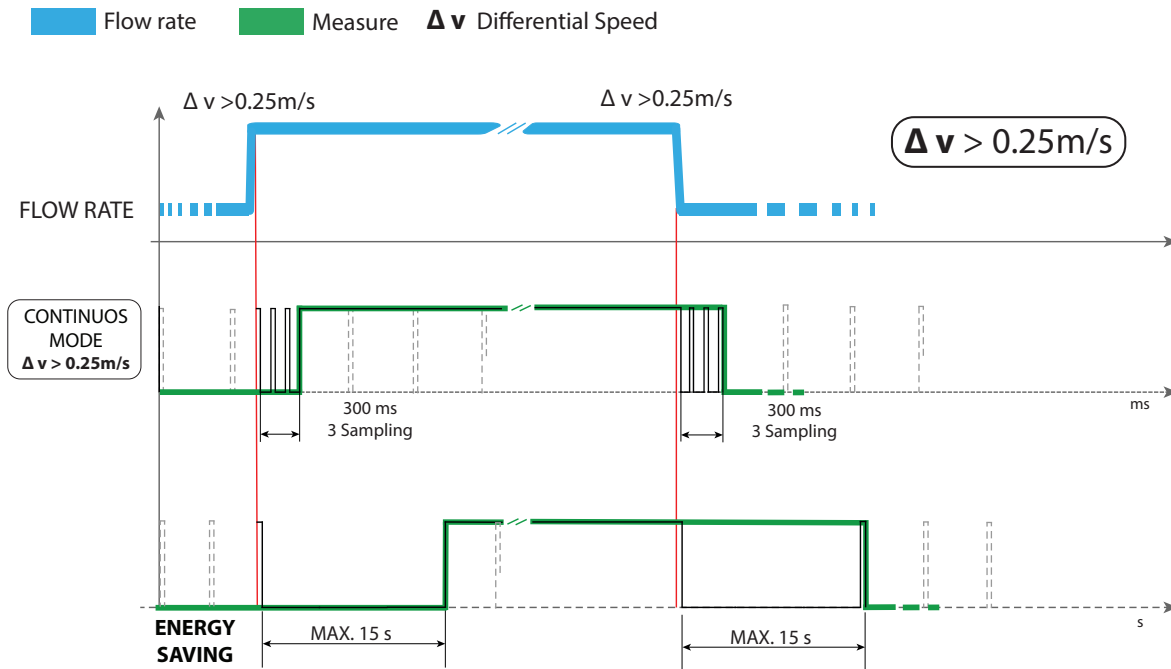
```

13.1 Daylight Saving Time Enable
13.2 Time zone
13.3 Date and Time
13.4 Level 1 Access CoDe
13.5 Level 2 Access CoDe
13.6 Level 3 Access CoDe
13.7 Level 4 Access CoDe
13.8 Level 5 Access CoDe
13.9 Level 6 Access CoDe
13.10 ReStricted Access Rule Enable
13.11 Device IP Address
13.12 Client IP Address
13.13 Network MaSk
13.14 Coefficient KT
13.15 Coefficient KS
13.16 Coefficient KR
13.17 Current output 1 Calibration Point 1
13.18 Current output 1 Calibration Point 2
13.19 Analog input 1 Calibration Point 1
13.20 Analog input 1 Calibration Point 2
13.21 Analog input 2 Calibration Point 1
13.22 Analog input 2 Calibration Point 2
13.23 System StandbY
13.24 Firmware update
  
```

MEASUREMENT SETTINGS

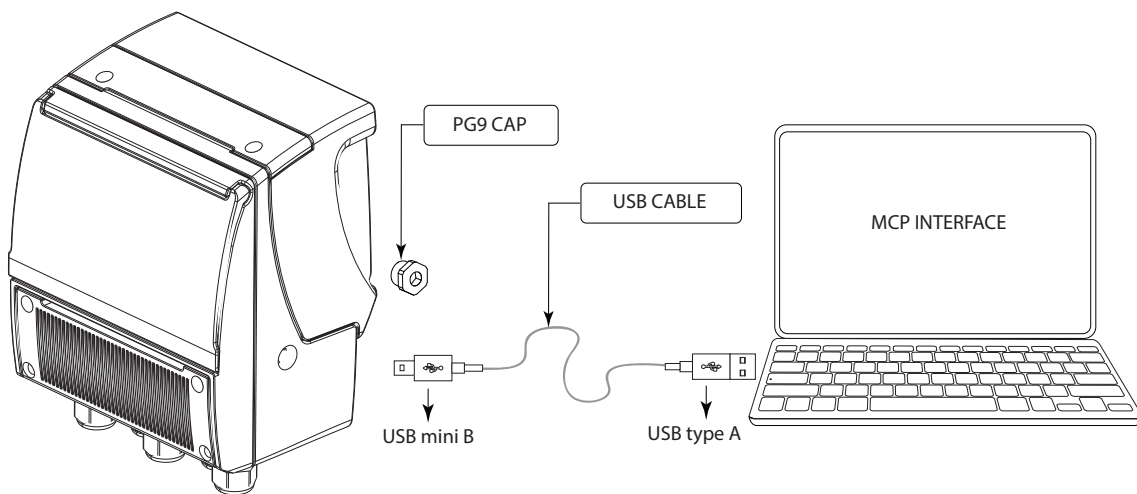
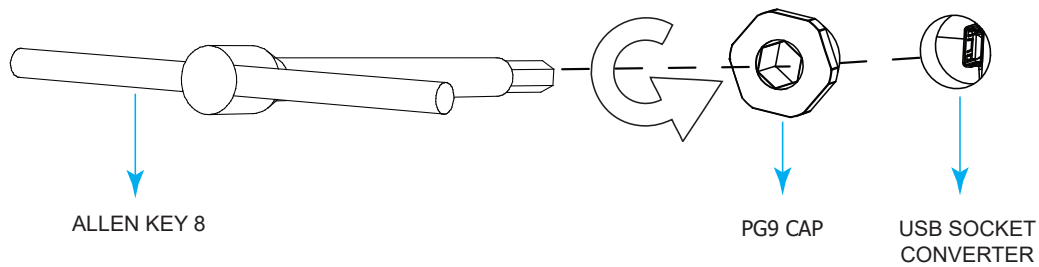
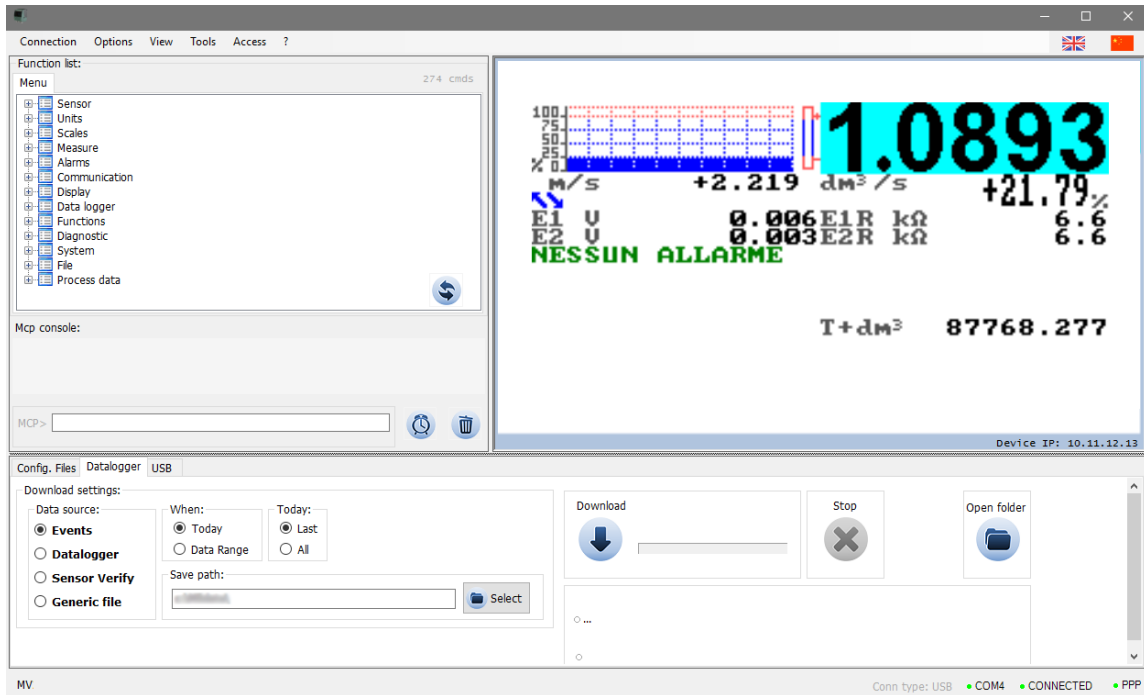
MV255 can be programmed to acquire the measurement in two different ways:

- ENERGY SAVING MODE: Sampling every 15 s.
- CONT. PWR: Continuous power sampling.



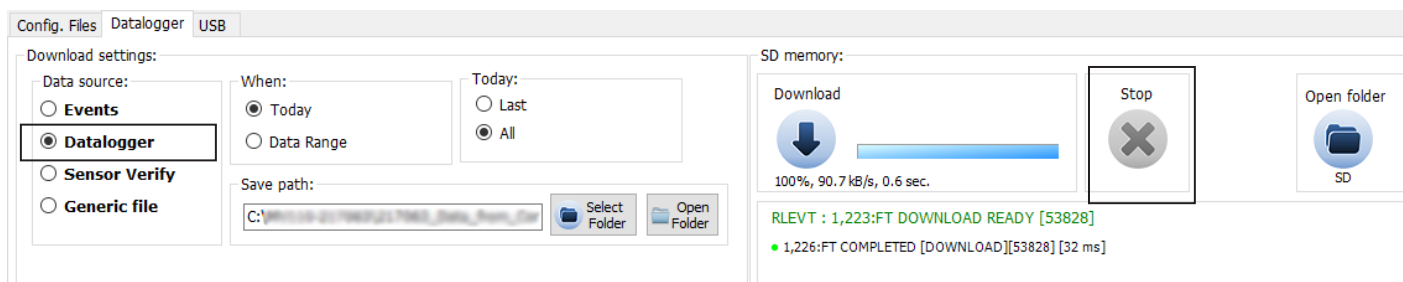
USER INTERFACE

Besides the keyboard, the converter can be programmed by MCP INTERFACE: a real time interface between converter and PC.



DATA LOGGER

Data is stored on micro SD card; the recorded data or the events, can be easily downloaded by the MCP INTERFACE, pressing the relevant key as shown below.

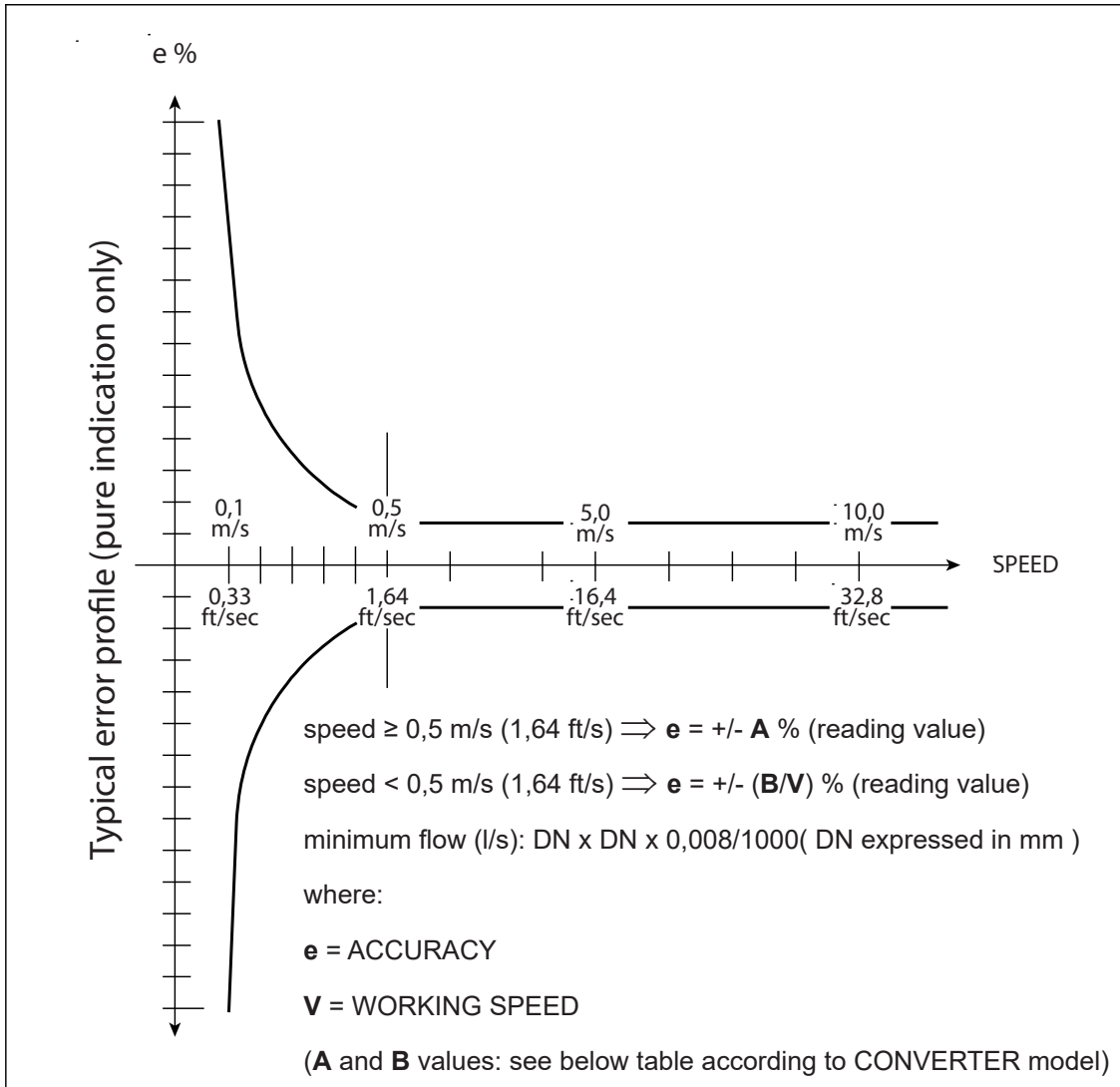


Note: to record correctly the data, the date and time shall be properly set.

Example of extrapolation of the data logger file:

| | | | |
|---|-----------|---|---|
| K | P- | 0 0 0 0 0 0 | TOT_P-: value of the partial negative totalizer. Fields present when the sending flag of the P-totalizer is active |
| J | UM | dm3 dm3 dm3 dm3 dm3 | U=xxx: unit of measurement used for the partial negative totalizer. Fields present when the sending flag of the P-totalizer is active |
| I | T- | 0 0 0 0 0 0 | TOT_T-: total negative totalizer value. Fields present when the sending flag of the T-totalizer is active |
| H | UM | dm3 dm3 dm3 dm3 dm3 | U=xxx: unit of measurement used for total negative totalizer. Fields present when the sending flag of the T-totalizer is active |
| G | P+ | 0 0 0 0 0 0 | TOT_P+: value of the positive partial totalizer. Fields present when the sending flag of the totalizer P is active |
| F | UM | dm3 dm3 dm3 dm3 dm3 | U = xxx: unit of measurement used for the positive partial totalizer. Fields present when the sending flag of the P + totalizer is active |
| E | T+ | 0 0 0 0 0 0 | TOT_T +: total positive totalizer value. Fields present when the sending flag of the T + totalizer is active |
| D | UM | dm3 dm3 dm3 dm3 dm3 | U = xxx: unit of measurement used for total positive totalizer. Fields present when the sending flag of the T + totalizer is active |
| C | ORA | 00:00:00 00:00:00 00:00:00 00:00:00 00:00:00 00:00:00 | TIME: Viewing the recording time for each record |
| B | DATA | dd/mm/yy dd/mm/yy dd/mm/yy dd/mm/yy dd/mm/yy dd/mm/yy | DATE: Display of the recording date for each record. |
| A | N° RECORD | rr rr rr rr rr rr | RNUM: record number. View the number of recorded records in progression. |

ACCURACY



Fullbore Sensor

| MS501/MS600/MS1000/MS2410/MS2500 | | | MS5000 | | |
|----------------------------------|--------|---------|--------|--------|---------|
| A | B(m/s) | B(ft/s) | A | B(m/s) | B(ft/s) |
| 0,4* | 0,20 | 0,66 | 2 | 1 | 3,28 |

* = 0,25 (special velocity > 1 m/s)

Insertion sensor

See Sensor DATA SHEET.

Reference conditions below and as per internal testing procedures:

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

MI-001 OIML R49 CLASS1: MV255

The **MS2500** sensor's diameters listed below, coupled with **MV255**, are certified according to European Directive 2014/32/EU category MI-001 (OIML R49)

| SIZE | | Q3 | Q2 | Q1 | R |
|------|------|---------|------|-------|-----------|
| mm | inch | m3/h | | | Q3/Q1 |
| 25 | 1 | 16 | 0,32 | 0,20 | 80 |
| 32 | 1 ¼ | 25 | 0,50 | 0,31 | |
| 40 | 1 ½ | 40 | 0,80 | 0,50 | |
| 50 | 2 | 63 | 1,3 | 0,79 | |
| 65 | 2 ½ | 100 | 2 | 1,25 | |
| 80 | 3 | 160 | 3,2 | 2 | |
| 100 | 4 | 250 | 5,0 | 3,13 | |
| 125 | 5 | 400 | 8,0 | 5,0 | |
| 150 | 6 | 630 | 13 | 7,88 | |
| 200 | 8 | 1000 | 20 | 12,50 | |
| 250 | 10 | 1600*** | 32 | 20 | |
| 300 | 12 | 2500** | 50 | 31,25 | |
| 350 | 14 | 2500** | 50 | 31,25 | |
| 400 | 16 | 4000** | 80 | 50 | |
| 450 | 18 | 4000** | 80 | 50 | |
| 500 | 20 | 6300 | 126 | 78,75 | |
| 600 | 24 | 10000 | 200 | 125 | |
| 700 | 28 | 10000 | 200 | 125 | |
| 800 | 32 | 16000* | 320 | 200 | |
| 900 | 36 | 16000* | 320 | 200 | |
| 1000 | 42 | 25000* | 500 | 312,5 | |

| SIZE | | Q3 | Q2 | Q1 | R |
|------|------|------|------|-------|------------|
| mm | inch | m3/h | | | Q3/Q1 |
| 25 | 1 | 16 | 0,26 | 0,16 | 100 |
| 32 | 1 ¼ | 25 | 0,40 | 0,25 | |
| 40 | 1 ½ | 40 | 0,64 | 0,40 | |
| 50 | 2 | 63 | 1,0 | 0,63 | |
| 65 | 2 ½ | 100 | 1,6 | 1,00 | |
| 80 | 3 | 160 | 2,6 | 1,60 | |
| 100 | 4 | 250 | 4,0 | 2,50 | |
| 125 | 5 | 400 | 6,4 | 4,00 | |
| 150 | 6 | 630 | 10 | 6,30 | |
| 200 | 8 | 1000 | 16 | 10,00 | |

(*) : Calibration flowrate 14000 m3/h - as for max rig flowrate L8

(**) : Calibration flowrate 1400 m3/h - as for max test rig flowrate L7

(***) Calibration flowrate 1100 m3/h - as for max test rig flowrate L6

MI-001 OIML R49 CLASS2: MV255

The **MS2500** sensor's diameters listed below, coupled with **MV255**, are certified according to European Directive 2014/32/EU category MI-001 (OIML R49)

| SIZE | | Q3 | Q2 | Q1 | R |
|------|------|---------|------|------|------------|
| mm | inch | m3/h | | | Q3/Q1 |
| 25 | 1 | 16 | 0,16 | 0,10 | 160 |
| 32 | 1 ¼ | 25 | 0,25 | 0,16 | |
| 40 | 1 ½ | 40 | 0,40 | 0,25 | |
| 50 | 2 | 63 | 0,63 | 0,39 | |
| 65 | 2 ½ | 100 | 1,0 | 0,63 | |
| 80 | 3 | 160 | 1,6 | 1,0 | |
| 100 | 4 | 250 | 2,5 | 1,6 | |
| 125 | 5 | 400 | 4,0 | 2,5 | |
| 150 | 6 | 630 | 6,3 | 3,9 | |
| 200 | 8 | 1000 | 10 | 6,3 | |
| 250 | 10 | 1600*** | 16 | 10 | |
| 300 | 12 | 2500** | 25 | 16 | |
| 350 | 14 | 2500** | 25 | 16 | |
| 400 | 16 | 4000** | 40 | 25 | |
| 450 | 18 | 4000** | 40 | 25 | |
| 500 | 20 | 6300 | 63 | 39 | |
| 600 | 24 | 10000 | 100 | 63 | |
| 700 | 28 | 10000 | 100 | 63 | |
| 800 | 32 | 16000* | 160 | 100 | |
| 900 | 36 | 16000* | 160 | 100 | |
| 1000 | 42 | 25000* | 250 | 156 | |

| SIZE | | Q3 | Q2 | Q1 | R |
|------|------|---------|------|------|------------|
| mm | inch | m3/h | | | Q3/Q1 |
| 25 | 1 | 16 | 0,10 | 0,06 | 250 |
| 32 | 1 ¼ | 25 | 0,16 | 0,10 | |
| 40 | 1 ½ | 40 | 0,26 | 0,16 | |
| 50 | 2 | 63 | 0,40 | 0,25 | |
| 65 | 2 ½ | 100 | 0,64 | 0,40 | |
| 80 | 3 | 160 | 1,0 | 0,64 | |
| 100 | 4 | 250 | 1,6 | 1,0 | |
| 125 | 5 | 400 | 2,6 | 1,6 | |
| 150 | 6 | 630 | 4,0 | 2,5 | |
| 200 | 8 | 1000 | 6,4 | 4,0 | |
| 250 | 10 | 1600*** | 10 | 6,4 | |
| 300 | 12 | 2500** | 16 | 10 | |
| 350 | 14 | 2500** | 16 | 10 | |
| 400 | 16 | 4000** | 26 | 16 | |
| 450 | 18 | 4000** | 26 | 16 | |
| 500 | 20 | 6300 | 40 | 25 | |
| 600 | 24 | 10000 | 64 | 40 | |
| 700 | 28 | 10000 | 54 | 40 | |
| 800 | 32 | 16000* | 102 | 64 | |
| 900 | 36 | 16000* | 102 | 64 | |
| 1000 | 42 | 25000* | 160 | 100 | |

(*) : Calibration flowrate 14000 m3/h - as for max rig flowrate L8

(**) : Calibration flowrate 1400 m3/h - as for max test rig flowrate L7

(***) Calibration flowrate 1100 m3/h - as for max test rig flowrate L6

| SIZE | | Q3 | Q2 | Q1 | R |
|------|------|---------------------|------|-------|------------|
| mm | inch | m3/h | | | Q3/Q1 |
| 25 | 1 | 16 | 0,06 | 0,04 | 400 |
| 32 | 1 ¼ | 25 | 0,10 | 0,063 | |
| 40 | 1 ½ | 40 | 0,16 | 0,10 | |
| 50 | 2 | 63 | 0,25 | 0,16 | |
| 65 | 2 ½ | 100 | 0,40 | 0,25 | |
| 80 | 3 | 160 | 0,64 | 0,40 | |
| 100 | 4 | 250 | 1,0 | 0,63 | |
| 125 | 5 | 400 | 1,6 | 1,0 | |
| 150 | 6 | 630 | 2,5 | 1,6 | |
| 200 | 8 | 1000 | 4,0 | 2,5 | |
| 250 | 10 | 1600 ^{***} | 6,4 | 4,0 | |
| 300 | 12 | 2500 ^{**} | 10 | 6,3 | |
| 350 | 14 | 2500 ^{**} | 10 | 6,3 | |
| 400 | 16 | 4000 ^{**} | 16 | 10 | |
| 450 | 18 | 4000 ^{**} | 16 | 10 | |
| 500 | 20 | 6300 | 25 | 16 | |
| 600 | 24 | 10000 | 40 | 25 | |
| 700 | 28 | 10000 | 40 | 25 | |
| 800 | 32 | 16000 [*] | 64 | 40 | |
| 900 | 36 | 16000 [*] | 64 | 40 | |
| 1000 | 42 | 25000 [*] | 100 | 63 | |

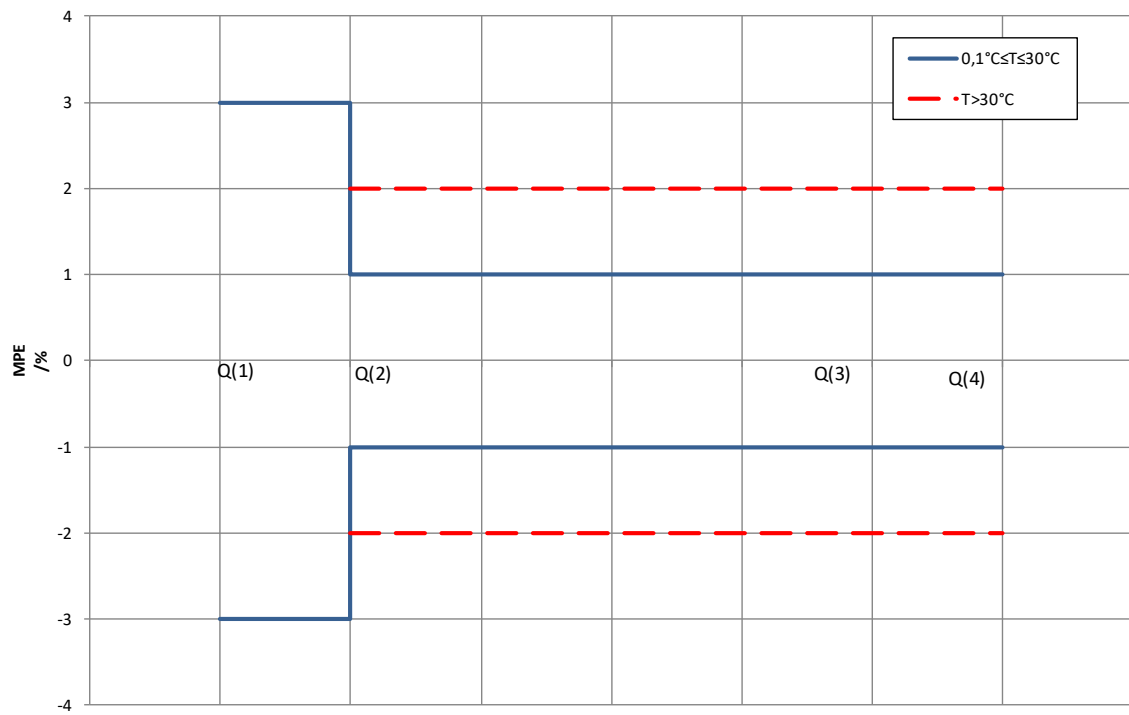
(*) : Calibration flowrate 14000 m3/h - as for max rig flowrate L8

(**) : Calibration flowrate 1400 m3/h - as for max test rig flowrate L7

(***) Calibration flowrate 1100 m3/h - as for max test rig flowrate L6

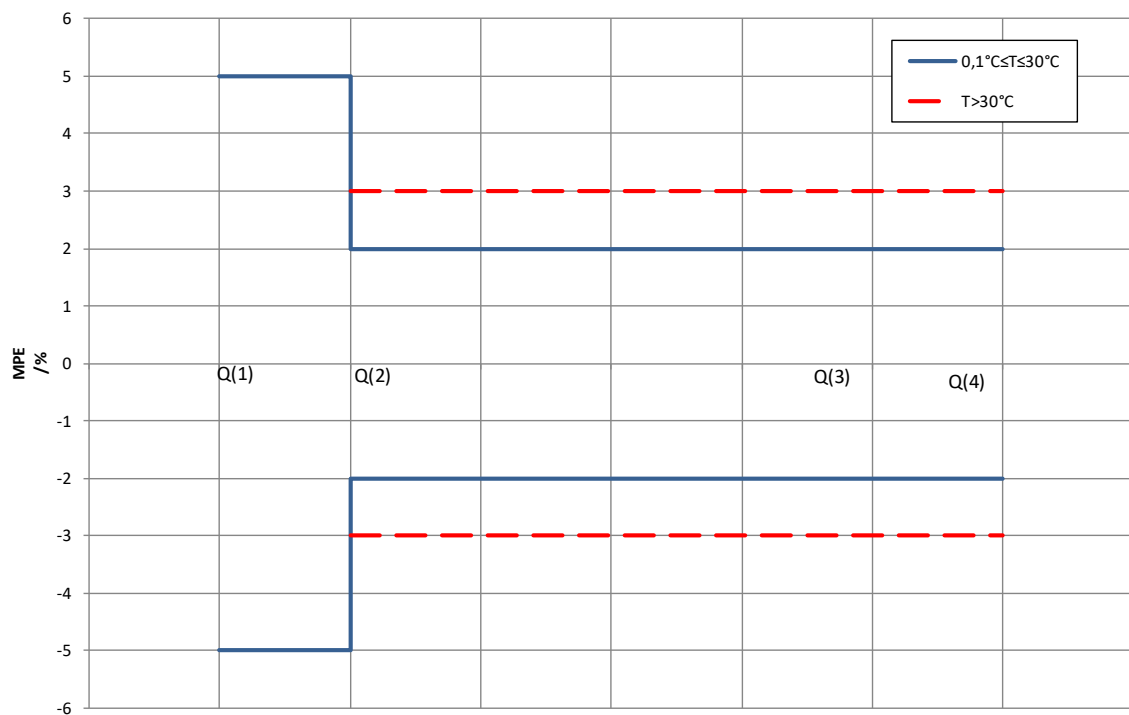
MPE - MI 001 - OIML R49 ACCURACY CLASS 1

(OIML R 49-1:2013 (E) - ISO4064-1:2017)



MPE - MI 001 - OIML R49 ACCURACY CLASS 2

(OIML R 49-1:2013 (E) - ISO4064-1:2017)



HOW TO ORDER

| CODE/ EXAMPLE | CODE/DESCRIPTION | |
|---|------------------|--|
| Display | | |
| B | A | Blind version (without display and programming keys, USB cable type A / USB Mini B is Required for programming) |
| | B | Graphic LCD WSTN - B/W-matrix points 128 x 64, 8 line/16 characters and 3 programming keys (mandatory for MI001) |
| Housing material | | |
| 0 | 0 | Nylon PA6 with fiber glass, (IP67 only) |
| | 1 | Painted aluminium die casting |
| Version / Protection rate | | |
| A | A | Compact version with sensor MS - IP67 |
| | B | Separate version for wall monting, complete with Aluminium mounting accessories, (use C015/C016 cable max length 20 m) - IP67 |
| | C | Compact version with display visible from the top -IP67 |
| | D | Compact version - IP68 1,5 meters - ONLY aluminium housing |
| | E | Compact version with display visible from the top - IP68 1,5 meters - ONLY aluminium housing |
| | F | Separate version with sensor MS - IP68 1,5 meters - ONLY aluminium housing |
| Main Power supply (FOR Option 2 is Included the possibility Solar Panel 12-24 VDC) | | |
| 0 | 0 | Without Main Power Supply (MANDATORY IF BATTERY ALCALYNE OR LITHIUM ARE SELECTED) |
| | 1 | Power supply : 100 ... 240 VAC 45/66 Hz + Rechargeable Battery 3,7 V - 5200 mAh (NOT ALLOWED WITH ALKALINE OR LITHIUM BATTERIES) |
| | 2 | Power supply : 12...48 VDC + Rechargeable Battery 3,7 V - 5200 mAh (NOT ALLOWED WITH ALKALINE OR LITHIUM BATTERIES) ALSO FOR SOLAR PANEL |
| Batteries (THE USE IS NOT ALLOWED IF THE MAIN POWER IS SELECTED) | | |
| A | A | Whithout Batteries (MANDATORY IF MAIN POWER SUPPLY IS SELECTED) |
| | B | 2 Lithium thionyl chloride batteries (n° 1 on slot 1 - n° 1 on slot 2) - ONLY SPIRAL MODEL |
| | C | 4 Lithium thionyl chloride batteries (n° 2 on slot 1 - n° 2 on slot 2) - ONLY SPIRAL MODEL |
| | D | 6 Lithium thionyl chloride batteries (n° 3 on slot 1 - n° 3 on slot 2) |
| | E | 6 Alkaline or NiMh batteries SIZE D (on slot 3) |
| | F | Board set for Lithium (slot 1-2) (Batteries NOT Supplied) |
| | G | Board set for Alkaline (slot 3) (Batteries NOT Supplied) |
| Analog Input/Output | | |
| 0 | 0 | Without Analog Input/Output |
| | 1 | N° 1 Input for n° 1 pressure sensor (pressure sensor to be ordered separately) |
| | 2 | N° 2 Inputs for n° 2 pressure sensors (pressure sensors to be ordered separately) |
| | 3 | N° 1 Input for n° 1 PT 100/500/1000 THERMAL PROBE (probe to be ordered separately) |
| | 4 | N° 2 Inputs for n° 2 PT 100/500/1000 THERMAL PROBE (probes to be ordered separately) |
| | 5 | N° 1 Analog Output (4/20 mA) - Active or Passive (by wiring) if the Main Power is SELECTED ; ONLY PASSIVE if powered by BATTERIES |
| | 6 | Option 1 + 5 |
| | 7 | Option 2 + 5 |
| | 8 | Option 3 + 5 |
| | 9 | Option 4 + 5 |
| | a | Option 1 + 3 |
| Digital Input/Output | | |
| A | A | Without Digital Input/Output |
| | B | N° 2 ON/OFF output (max 50 Hz - max 100 mA) + N° 1 ON/OFF input |
| | C | N° 4 ON/OFF output (max 50 Hz - max 100 mA) + N° 3 ON/OFF input |

| Communication Gateway& Protocol | | |
|--|---|---|
| 0 | 0 | 3G communication module with antenna on the housing |
| | 1 | 3G communication module with 3 meters cable antenna |
| | 2 | 3G communication module with antenna on the housing with DNP3 protocol |
| | 3 | 3G communication module with 3 meters cable antenna with DNP3 protocol |
| | 5 | 4G communication module with antenna on the housing |
| | 6 | 4G communication module with 3 meters cable antenna |
| | 7 | 4G communication module with antenna on the housing with DNP3 protocol |
| | 8 | 4G communication module with 3 meters cable antenna with DNP3 protocol |
| | 9 | Others |
| Data Logger | | |
| A | A | MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) |
| | B | MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) + BIV (Built In Verificator) |
| | C | MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) + Meter Data (Real Time Converter & Sensor Data on SD Memory) |
| | D | MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock) + BIV + Meter Data |
| Special Features | | |
| 0 | 0 | None |
| | 1 | WITH ANTICONDENSE CAP |
| Connectors for POWER SUPPLY and CABLES FROM SENSOR (Separate Version) (Maximum 5 connectors including IN/OUT connectors) | | |
| A | A | NO CONNECTORS |
| | B | POWER SUPPLY (n° 1 connector) |
| | C | SEPARATE VERSION (n° 2 connectors) |
| | D | POWER SUPPLY (n° 1 connector)+ SEPARATE VERSION (n° 2 connectors) |
| Connectors FOR INPUTS/OUTPUTS | | |
| 0 | 0 | NO CONNECTORS |
| | 1 | n.1 Pressure or n.1 Temperature (n.1 connector) |
| | 2 | n.2 Pressure or n.2 Temperature (n. 2 connector) |
| | 3 | n.2 Digital Outputs - n.1 Digital Input (n.1 connector) |
| | 5 | n. 2 DIGITAL OUTPUT - n. 1 DIGITAL INPUT (n.1 connector) + n. 1 PRESSURE or N° 1 TEMPERATURE (n.1 connector) |
| | 6 | n.2 Digital Outputs + n.1 Output 4-20 mA (n.1 connector) |
| | 7 | n.1 Pressure and n.1 Temperature (n. 2 connectors) + n.2 Digital Outputs - n.1 Digital Input (n.1 connector) |
| MID Approval | | |
| A | A | NONE |
| | B | MI-001/OIMLR49-CLASS 1 |
| | C | MI-001/OIMLR49-CLASS 2 |

Example of complete code to order



MV255-B0A0A0A0A0A0

ISOIL INDUSTRIA S.p.A.

| HEAD OFFICE | SERVICE |
|--|------------------------|
| Via Fratelli Gracchi, 27 20092 Cinisello Balsamo (MI) Tel +39 02 66027.1 Fax +39 02 6123202 sales@isoil.it | isomagservice@isoil.it |

If you want to find the complete list of our distributors access at the following link:
<http://www.isoil.it/en>



Due to the constant technical development and improvement of its products, the manufacturer reserves the right to make changes and/or modify the information contained in this document without notice.