ISOMAG®

The friendly magmeter

DATA SHEET

MV155

CE

ISOIL
INDUSTRIA

INDEX

ISOIL
INDUSTRIA

TECHNICAL DATA

OVERALL FEATURES	
Altitude	❑ -200 m up to 4000 m
Ambient Temperature	❑ -10... +60°C / +14...+140 °F
Humidity Range	❑ 0÷100%

STANDARD FEATURES	
Housing materials	❑ Nylon reinforced with 15% of fiber glass
Protection Rate	❑ IP 68
Power Supply/Consumption	❑ max 2,5 W
Electrical Connections	❑ MIL connectors (poles and size depending from instrument's configuration)
Data Storage	❑ Values storing system in case of power failure
Programming Plug In	❑ USB port for the connection to PC (USB cable type A/USB MINI B is required for the programmation)
Communication Gateway	❑ 4G communication module
Data Logger	❑ MicroSD Memory 4 GB : Data Logger + RTC (Real Time Clock)
Diagnostic Funct.	❑ Yes
CE Certification	❑ Yes

OPTIONAL FEATURES (CHECK HOW TO ORDER, AT LAST PAGE, FOR MORE DETAILS)	
Power Supply	❑ 4 Lithium thionyl chloride batteries ❑ 4 Alkaline or NiMh batteries SIZE D ❑ Board set for Lithium (Batteries NOT Supplied) ❑ Board set for Alkaline (Batteries NOT Supplied) ❑ 4 Lithium thionyl chloride batteries + power supply from Solar Panel ❑ 4 Alkaline or NiMh batteries SIZE D + power supply from Solar Panel ❑ Board set for Lithium (Batteries NOT Supplied) power supply from + LOW VOLTAGE 9-36 VDC (i.e. Solar Panel) ❑ Board set for Alkaline (Batteries NOT Supplied) + power supply from + LOW VOLTAGE 9-36 VDC (i.e. Solar Panel)
Analog Input	❑ N° 2 (Voltage) ❑ N° 1 (Current) ❑ N° 2 (Pressure) ❑ N° 2 (Temperature)
Digital Input	❑ N° 4 Counter (pulses) ❑ N° 2 Alarm (Status)
Digital Output	❑ N° 2 programmable (AC-DC)
Inputs: Pulses/Frequence/Alarms	❑ Until n° 4 Digital Inputs as Counter (Pulses) + until n° 2 Digital Input as Alarm (Status) ❑ Up To N°2 Programmable Analog Inputs
Communication Gateway	❑ 4G communication module with DNP3 Protocol

ACCURACY	
Measurements tolerance	❑ Flow rate (volume) = ±0,5% c.r ❑ Out 4/20 mA = ± 0,5 % c.r ❑ Frequency Out = ± 0,5% c.r

MV155 OVERALL DIMENSIONS
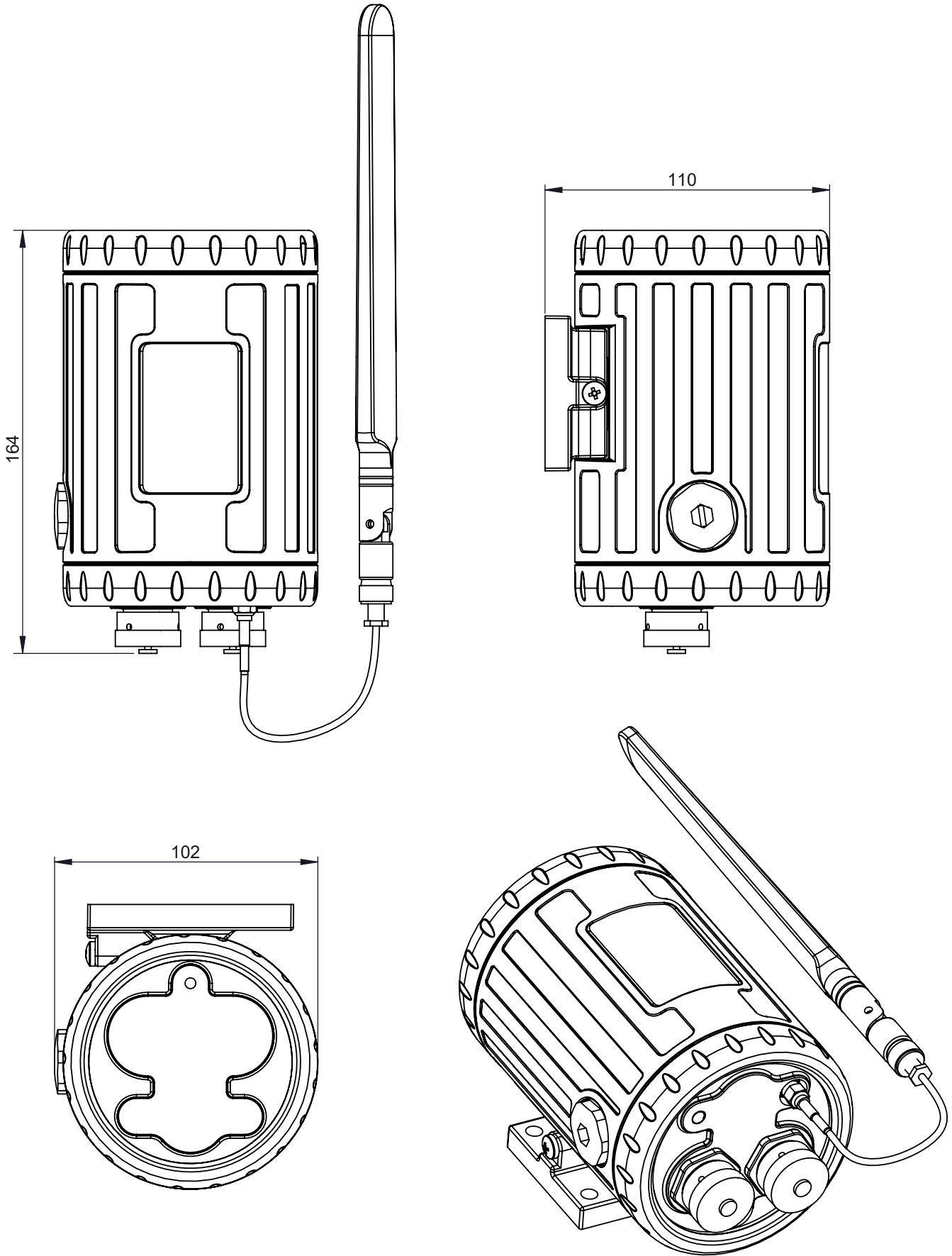
164

110

102

MV155_IT_EN_DS065REV00

MV155 LAYOUT
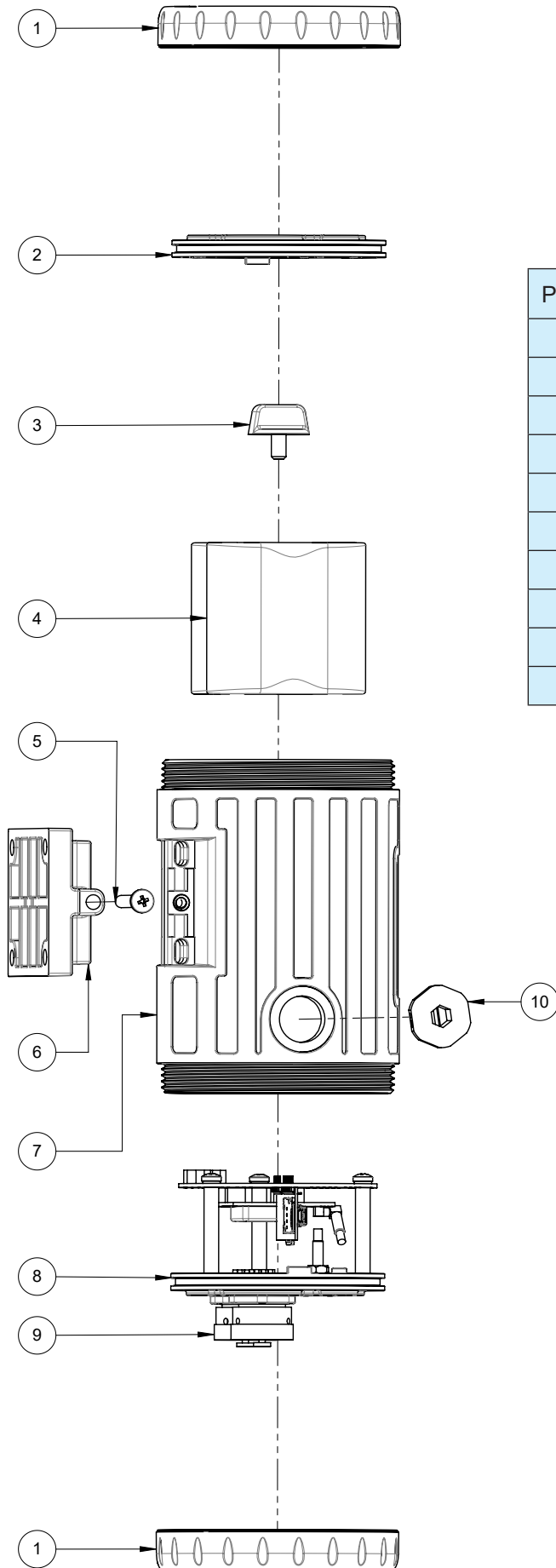
POS.	DESCRIPTION
1	MAIN THREADED RING
2	CLOSING DISK
3	BATTERY FIXING SCREW
4	BATTERY
5	SCREW M5 x 40 TC INOX
6	WALL FIXING BRACKET
7	MAIN CASE
8	MV155-PCB ASSEMBLED
9	CONNECTORS
10	CAP PG13.5

MV155_IT_EN_DS065REV00

DIGITAL INPUTS STATUS (ALARMS)

**On/off input
(external power supply)**

**on/off input
(internal power supply)**

Pcb board

JP6(+) INPWR

JP8(+) INPWR

Input 1

R=6.8K

1

JP9 (In 1)
JP10 (In 2)

Button
or
Contact

+
External
power supply
- (3...24V ⎓ ON)

2

JP12 (C in 1-2)

Pcb board

Internal
power supply

+

-

JP6(+) INPWR

JP8(-) INPWR

Button
or
Contact

Input 1

1

R=6.8K

JP9 (In 1)
JP10 (In 2)

2

JP12 (C in 1-2)
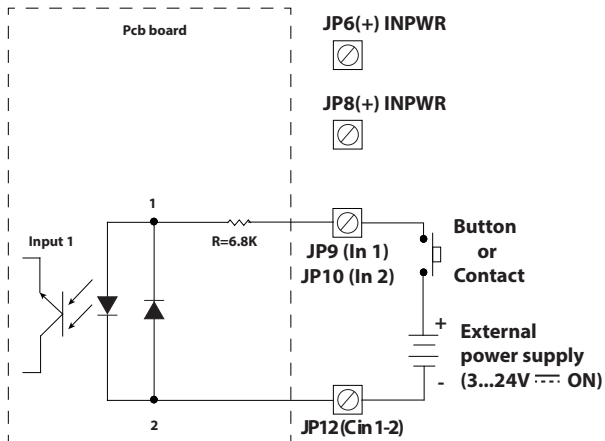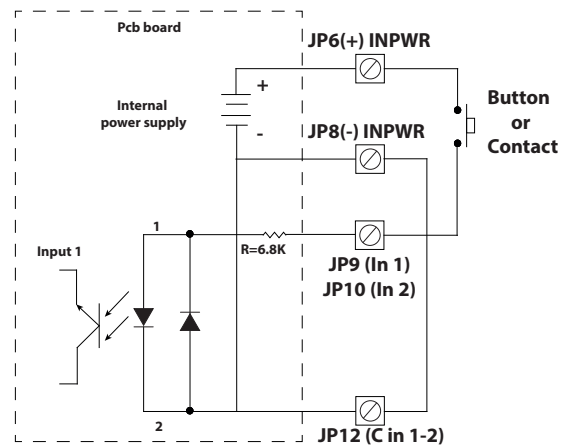
DIGITAL INPUTS COUNTER

**On/off input
(external power supply)**

**on/off input
(internal power supply)**

Pcb board

Counter In 1-2

1MΩ   10kΩ

JP16 (In1)
JP17 (In2)

Botton
or
contact

+
External power supply
(2...30V ⎓ ON)
- (1...0V ⎓ OFF)

Low pass
filter (50Hz)

JP18 (C in 1-2)

Pcb board

Internal
Power supply

+

-

Counter In 1-2

100kΩ

1MΩ   10kΩ

JP16 (In1)
JP17 (In2)

Botton
or
contact

Low pass
filter (50Hz)

JP18 (C in 1-2)
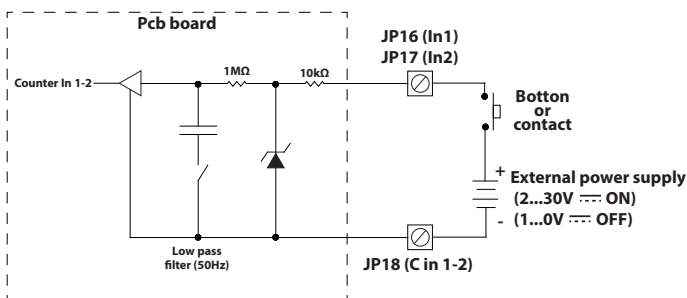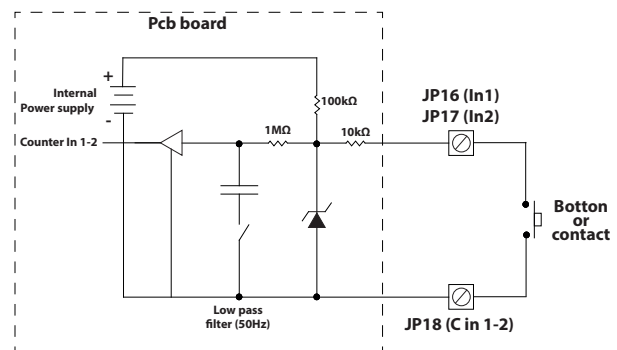
DIGITAL OUTPUTS

NOTE: the outputs are not polarized, so you can adopt schemes for connection to positive or common negative, as in the following electrical scheme.
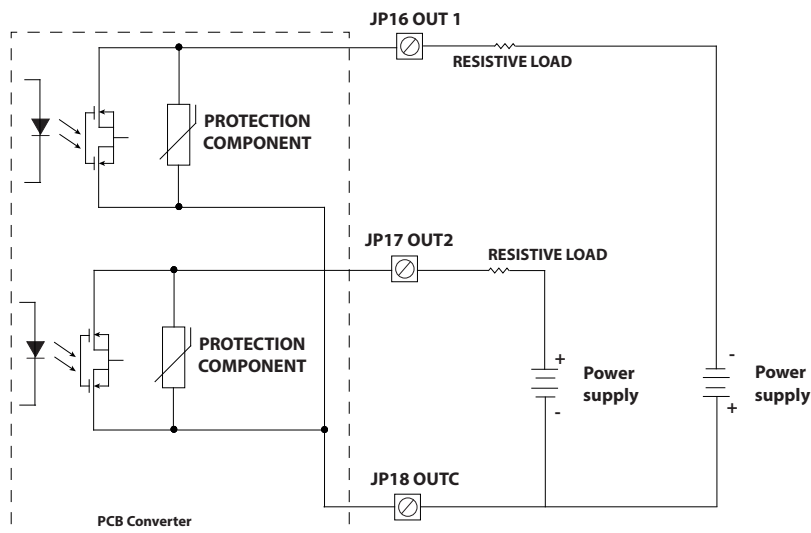
JP16 OUT 1

RESISTIVE LOAD

PROTECTION
COMPONENT

JP17 OUT2

RESISTIVE LOAD

PROTECTION
COMPONENT

+
Power
supply
-

-
Power
supply
+

JP18 OUTC

PCB Converter

MV155_IT_EN_DS065REV00

ISOIL
INDUSTRIA

ANALOG VOLTAGE INPUTS

JP28 (+ Voltage In analog1)
JP30 (+ Voltage In analog2)

V IN + —110kΩ—

V IN -

JP29 (- Voltage In analog1)
JP31 (- Voltage In analog2)

ANALOG 4÷20mA INPUTS

JP32 (+ 4÷20mA In analog1)

mA IN + —10Ω— —100Ω—

mA IN -

JP26 (- 4÷20mA In analog1)

MV155_IT_EN_DS065REV00
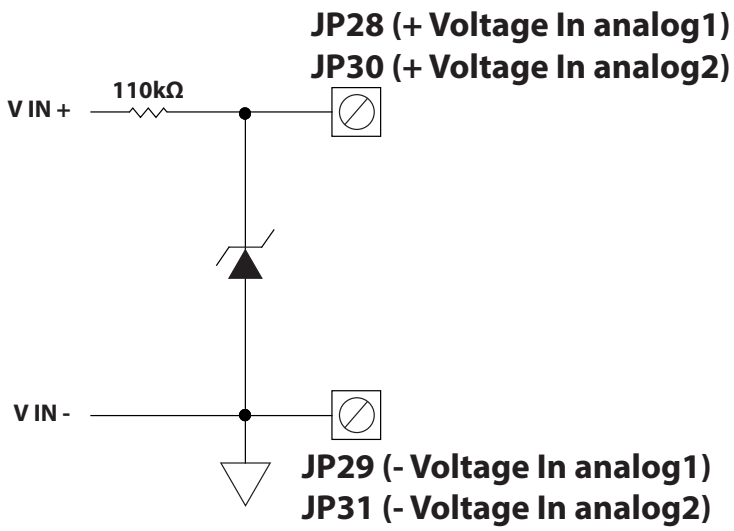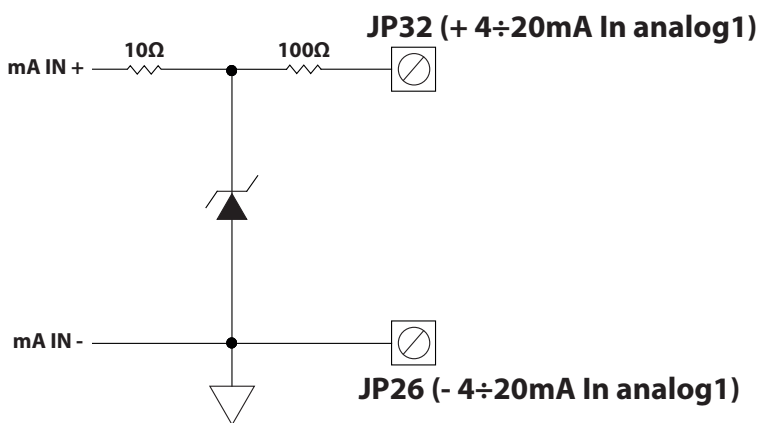
PRESSURE AND TEMPERATURE ANALOG INPUTS

NOTE: Two different types of sensors can be connected: pressure sensor connected and temperature sensor

Connection of pressure sensors (transducer Only)

JP19 PS PWR +   WHITE

PRESSURE SENSOR 1

JP21 PS1 (+)   BROWN

JP23 PS1 (-)   GREEN

JP25 PS2 (+)   BROWN

JP27 PS2 (-)   GREEN

PRESSURE SENSOR 2

JP20 PS PWR -   YELLOW
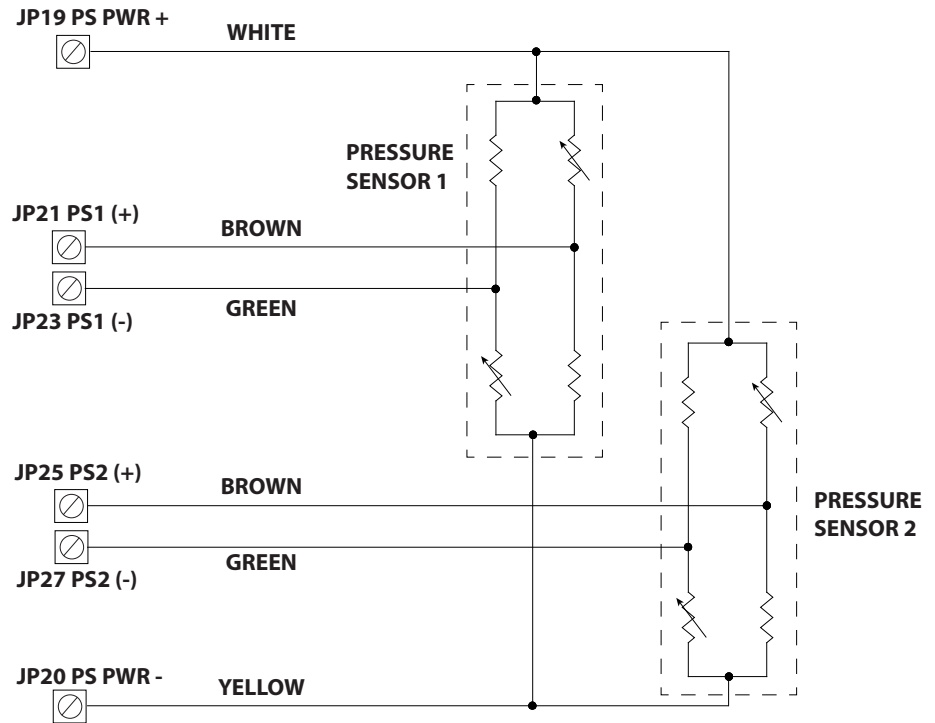
Connection of Temperature sensors

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.

SENSOR TEMPERATURE 1
(PT100/PT500/PT1000)

JP11 PT1 (+)

JP13 PT1 (-)

SENSOR TEMPERATURE 2
(PT100/PT500/PT1000)

JP14 PT2 (+)

JP15 PT2 (-)

MV155_IT_EN_DS065REV00

ISOIL
INDUSTRIA
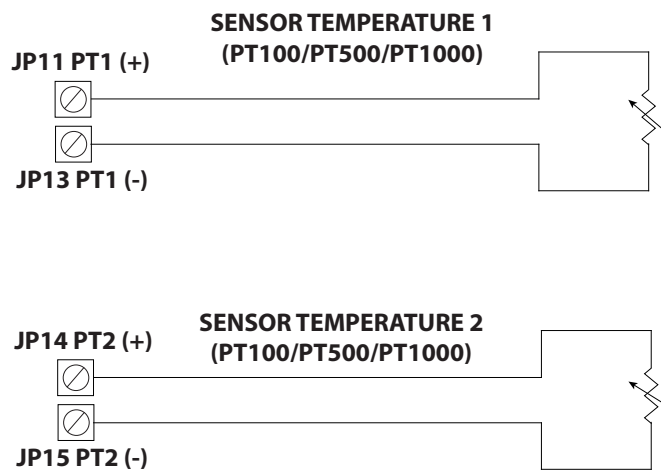
Connection of a pressure/ temperature sensor

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.

JP19 PS PWR +

WHITE

JP21 PS1 (+)

BROWN

PRESSURE 1

JP23 PS1 (-)

GREEN

JP11 PT1 (+)

TEMPERATURE 1
PT100 - PT500 - PT1000

JP13 PT1 (-)

JP20 PS PWR -

MV155_IT_EN_DS065REV00
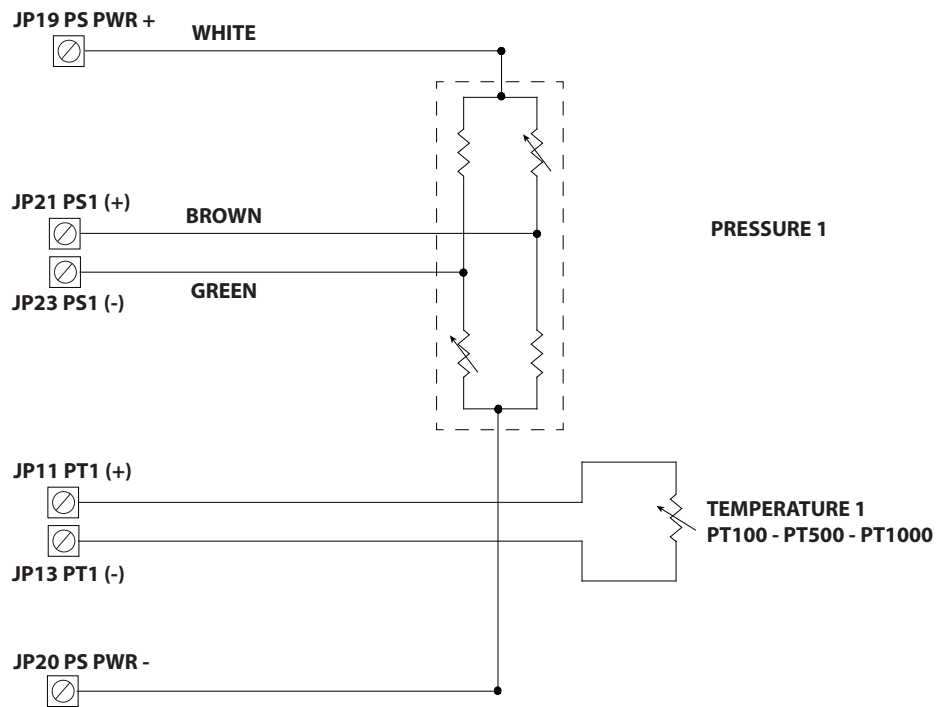
CONVERTER ACCESS

ACCESS TO SIM-USB PORT
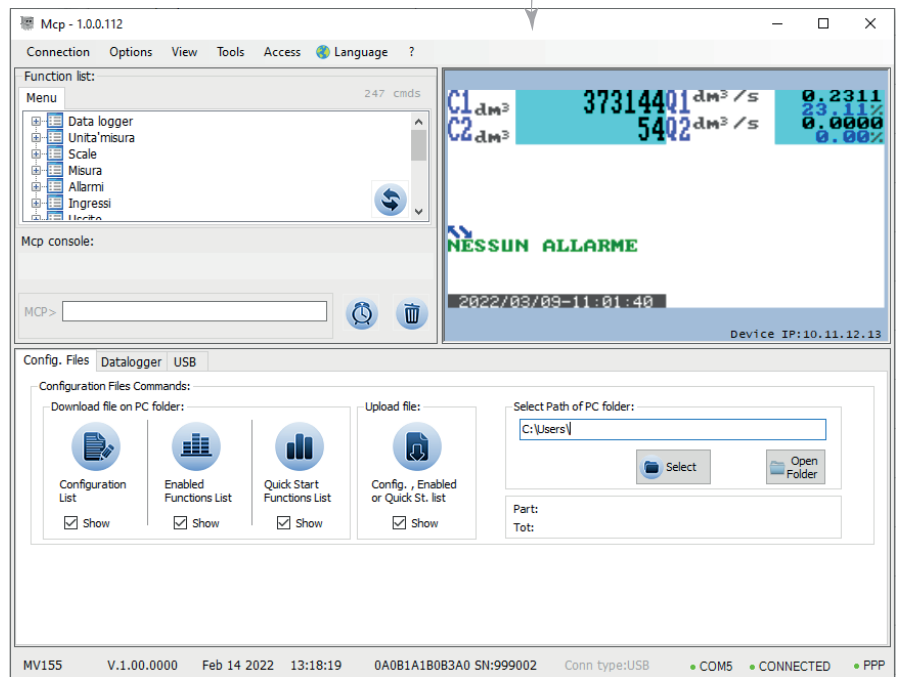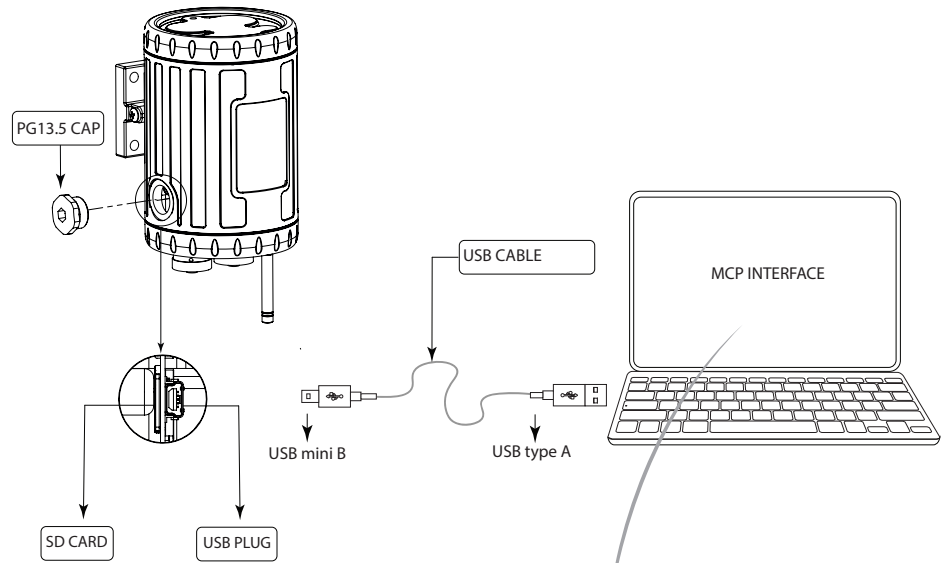
The converter can be programmed by MCP INTERFACE: a real time interface between converter and PC.

MV155_IT_EN_DS065REV00

ACCESS TO BATTERY SIDE

PCB MAIN PARTS

Socket for alkaline batteries

Socket for lithium batteries

SD-Card
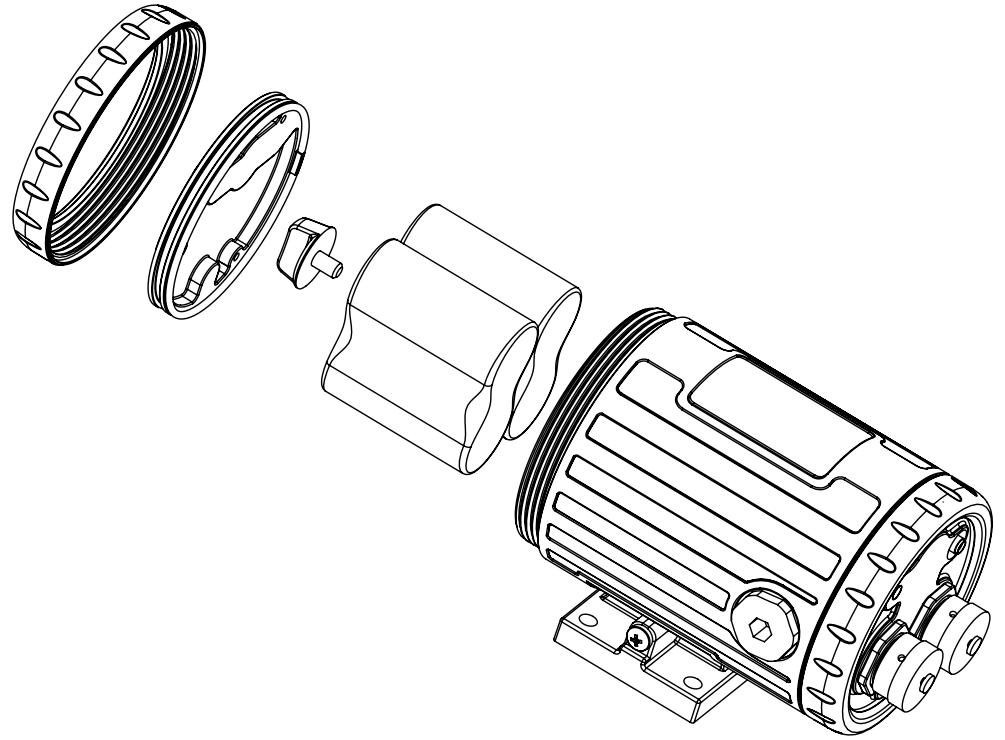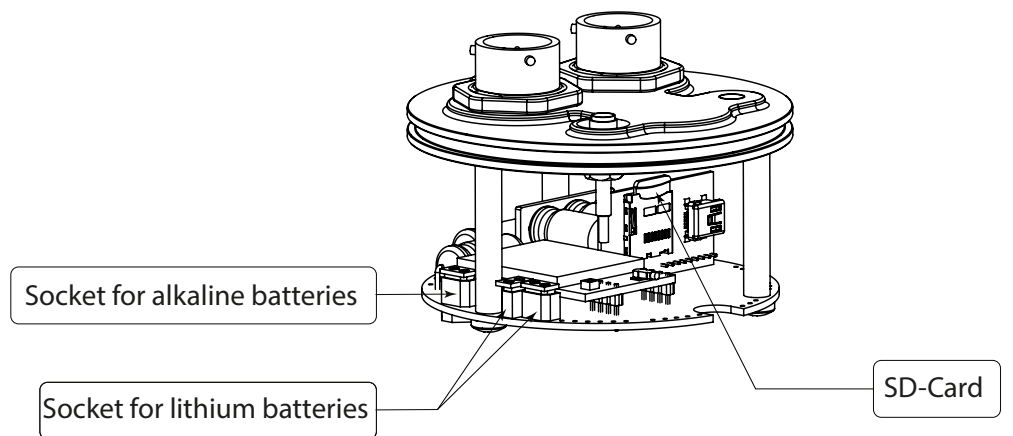
POWER SUPPLY

Batteries configuration

COLLEGAMENTI BATTERIE AL LITIO
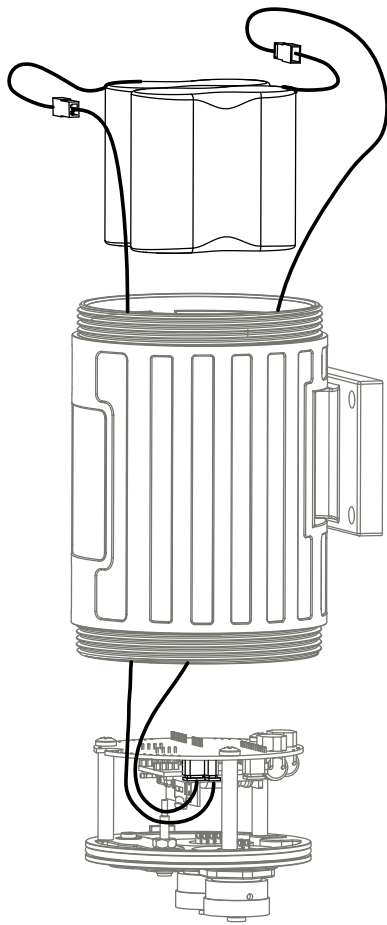
COLLEGAMENTI BATTERIE ALCALINE
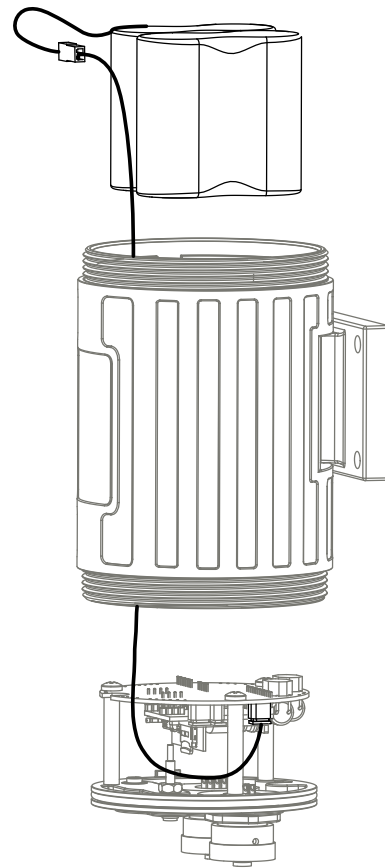
Power supply by photovoltaic panel
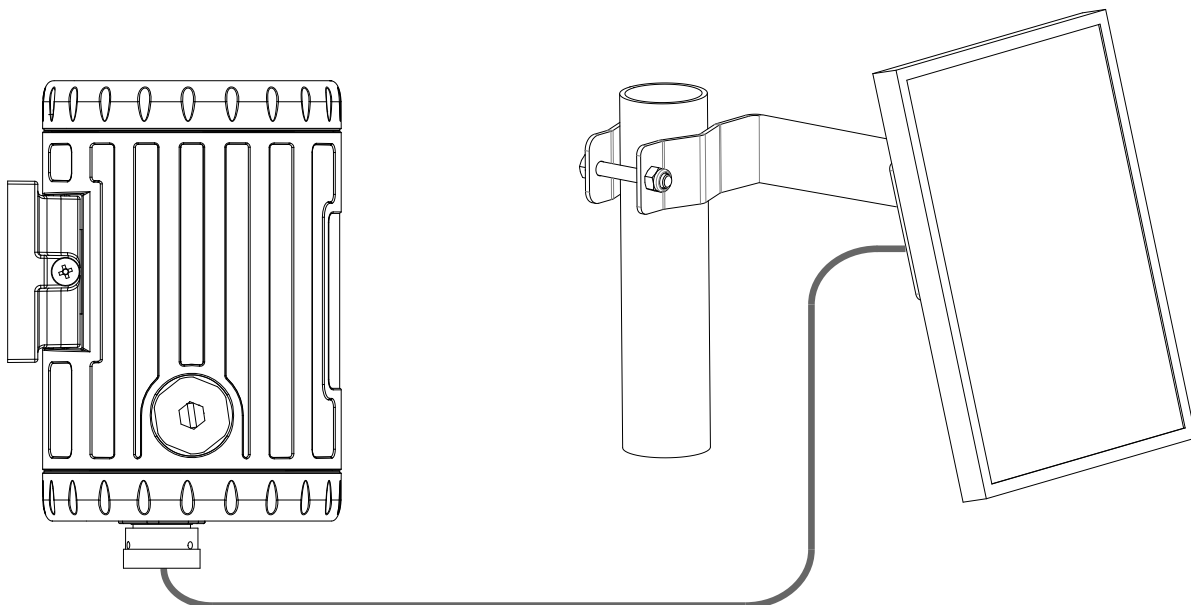
MV155_IT_EN_DS065REV00

APN

SMTP SERVER
FTP SERVER
DNS SERVER
POP3 SERVER
NTP SERVER

ISP

UtentePC **E-Mail**

Utente TELEFONO **SMS**

164
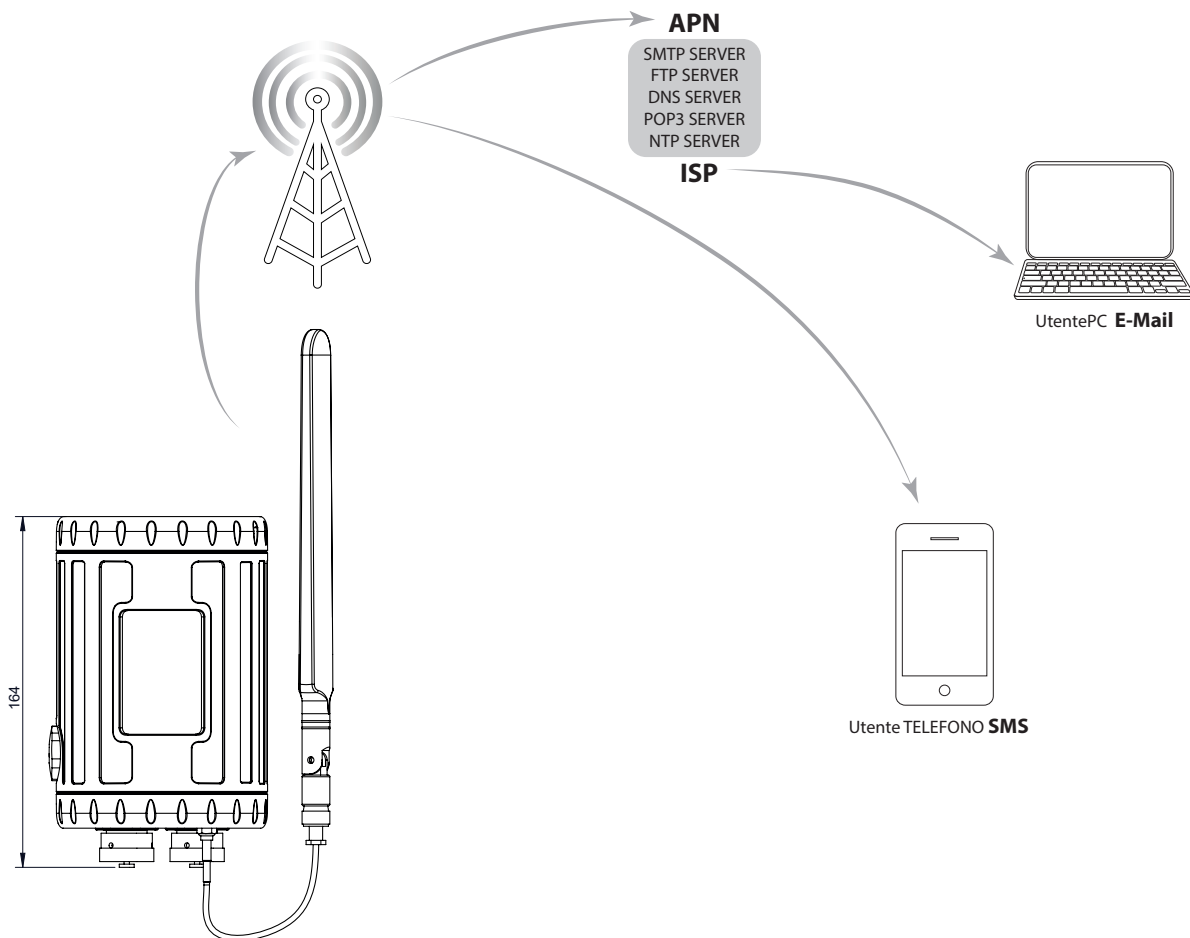
❑ With the 4G connection it is possible to perform remote checks on the status of the device and the saved loggers.

❑ The MV155 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 data in a multi-user wireless network

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

MV155_IT_EN_DS065REV00

FUNCTIONS MENU

DATA LOGGER

```
MAIN MENU
1-Data logger
2-Units
3-Scales
4-Measure
5-A
6-I  DATA LOGGER
7-O
8-C  D.logger en.        ON
9-D  Meas.units          ON
10-F Field separ.         ;
11-D Decim.separ.         .
12-S Log %              OFF
     Interv.        0:01:00
     Log C1            OFF
     Log C2            OFF
     Log C3            OFF
     Log C4            OFF
     Log Q1            OFF
     Log Q2            OFF
     Log Q3            OFF
     Log Q4            OFF
     Log P1            OFF
     Log P2            OFF
     Log T1            OFF
     Log T2            OFF
     Log M1            OFF
     Log M2            OFF
     Log M3            OFF
     Log AL.EV         OFF
     Log DIAG          OFF
```

Ref	Description
1.1	Data logger sampling enable
1.2	Measure units recording enable
1.3	Field separator character
1.4	Decimal separator character
1.5	Percentage values logging enable
1.6	Sampling interval
1.7	Counter C1 logging enable
1.8	Counter C2 logging enable
1.9	Counter C3 logging enable
1.10	Counter C4 logging enable
1.11	Flow rate Q1 logging enable
1.12	Flow rate Q2 logging enable
1.13	Flow rate Q3 logging enable
1.14	Flow rate Q4 logging enable
1.15	Pressure P1 logging enable
1.16	Pressure P2 logging enable
1.17	Temperature T1 logging enable
1.18	Temperature T2 logging enable
1.19	Measure M1 logging enable
1.20	Measure 2 logging enable
1.21	Measure 3 logging enable
1.22	Alarm events logging enable
1.23	Diagnostic values logging enable

UNITS

```
MAIN MENU
1-Data logger
2-Units
3-Scales
4-Measure
5-A
6-I  UNITA' DI MISURA
7-O  PIs1              METRIC
8-C  PIs1         dm3,1.00000
9-D  C1 unit          METRIC
10-F C1 unit            (dm3)
11-D C1 D.P.              0
12-S PIs2              METRIC
     PIs2         dm3,1.00000
     C2 unit          METRIC
     C2 unit            (dm3)
     C2 D.P.              0
     PIs3              METRIC
     PIs3         dm3,1.00000
     C3 unit          METRIC
     C3 unit            (dm3)
     C3 D.P.              0
     PIs4              METRIC
     PIs4         dm3,1.00000
     C4 unit          METRIC
     C4 unit            (dm3)
     C4 D.P.              0
     Temp.unit            °C
     M1 unit
     M2 unit
     M3 unit
```

Ref	Description
1.1	Pulse C1 unit of measure type
1.2	Pulse counter C1 volume value
1.3	Counter C1 unit of measure type
1.4	Counter C1 unit of measure
1.5	Count.C1 Decimal point position
1.6	Pulse C2 unit of measure type
1.7	Pulse counter C2 volume value
1.8	Counter C2 unit of measure type
1.9	Counter C2 unit of measure
1.10	Count.C2 Decimal point position
1.11	Pulse C3 unit of measure type
1.12	Pulse counter C3 volume value
1.13	Counter C3 unit of measure type
1.14	Counter C3 unit of measure
1.15	Count.C3 Decimal point position
1.16	Pulse C4 unit of measure type
1.17	Pulse counter C4 volume value
1.18	Counter C4 unit of measure type
1.19	Counter C4 unit of measure
1.20	Count.C4 Decimal point position
1.21	Temperature unit of measure
1.22	Measure M1 prog.unit of meas.
1.23	Measure M2 prog.unit of meas.
1.24	Measure M3 prog.unit of meas.

MV155_IT_EN_DS065REV00

![ISOMAG]

SCALES

```
MAIN MENU
 1-Data logger
 2-Units
 3-Scales
 4-Measure
 5-Alarms
 6-I
 7-O
 8-C
 9-D
10-F
11-D
12-S
```

SCALE		
Q1	dm3/s,1.000000	3.1 Flow rate Q1 full scale
Q2	dm3/s,1.000000	3.2 Flow rate Q2 full scale
Q3	dm3/s,1.000000	3.3 Flow rate Q3 full scale
Q4	dm3/s,1.000000	3.4 Flow rate Q4 full scale
P1	kPa,1.0000	3.5 Pressure P1 full scale
P2	kPa,1.0000	3.6 Pressure P2 full scale
M1	,1.0000	3.7 Measure M1 full scale
M2	,1.0000	3.8 Measure M2 full scale
M3	,1.0000	3.9 Measure M3 full scale

MEASURE

```
MAIN MENU
 1-Data logger
 2-Units
 3-Scales
 4-Measure
 5-Alarms
 6-Inputs
 7-O
 8-C
 9-D
10-F
11-D
12-S
```

MEASURE		
C1 mode	ACTIVE	4.1 Counter C1 trigger mode
C1 freq	LOW	4.2 Counter C1 frequency range
C1 time	10(s)	4.3 Counter C1 integration time
C2 mode	ACTIVE	4.4 Counter C2 trigger mode
C2 freq	LOW	4.5 Counter C2 frequency range
C2 time	10(s)	4.6 Counter C2 integration time
C3 mode	ACTIVE	4.7 Counter C3 trigger mode
C3 freq	LOW	4.8 Counter C3 frequency range
C3 time	10(s)	4.9 Counter C3 integration time
C4 mode	ACTIVE	4.10 Counter C4 trigger mode
C4 freq	LOW	4.11 Counter C4 frequency range
C4 time	10(s)	4.12 Counter C4 integration time
Pr.c.off	(%)	4.13 Press.inputs P1 P2 cut-off value
WH.det.tm	(s)	4.14 W.hammer det.acquisition time
WH1	(kPa)	4.15 Water hammer detection thresh.1
WH2	(kPa)	4.16 Water hammer detection thresh.2
M1 range	0..1(V)	4.17 Voltage input M1 range
M1 c.off	(%)	4.18 Voltage input M1 cut-off value
M2 range	0..1(V)	4.19 Voltage input M2 range
M2 c.off	(%)	4.20 Voltage input M2 cut-off value
M3 range	4..20(mA)	4.21 Current input range M3
M3.c.off	(%)	4.22 Current input M3 cut-off value
Q1 in	PULSES	4.23 Flow rate Q1 input channel
Q2 in	PULSES	4.24 Flow rate Q2 input channel
Q3 in	PULSES	4.25 Flow rate Q3 input channel

MV155_IT_EN_DS065REV00

ALARMS

Q1M	(dm3/s)	5.1	Flow Rate q1 Alarm maX
Q1m	(dm3/s)	5.2	Flow Rate q1 Alarm miN
Q1h	(dm3/s)	5.3	Flow Rate q1 HYsteresis
Q2M	(dm3/s)	5.4	Flow Rate q2 Alarm maX
Q2m	(dm3/s)	5.5	Flow Rate q2 Alarm miN
Q2h	(dm3/s)	5.6	Flow Rate q2 HYsteresis
Q3M	(dm3/s)	5.7	Flow Rate q3 Alarm maX
Q3m	(dm3/s)	5.8	Flow Rate q3 Alarm miN
Q3h	(dm3/s)	5.9	Flow Rate q3 HYsteresis
Q4M	(dm3/s)	5.10	Flow Rate q4 Alarm maX
Q4m	(dm3/s)	5.11	Flow Rate q4 Alarm miN
Q4h	(dm3/s)	5.12	Flow Rate q4 HYsteresis
P1M	(kPa)	5.13	Pressure p1 alarm MAX
P1m	(kPa)	5.14	Pressure p1 alarm MIN
P1h	(kPa)	5.15	Pressure p1 HYSteresis
P2M	(kPa)	5.16	Pressure p2 alarm MAX
P2m	(kPa)	5.17	Pressure p2 alarm MIN
P2h	(kPa)	5.18	Pressure p2 HYSteresis
PDM+	(kPa)	5.19	Pressure Delta pd Positive alarm MAX
PDm+	(kPa)	5.20	Pressure Delta pd Positive alarm MIN
PDM-	(kPa)	5.21	Pressure Delta pd Negative alarm MAX
PDm-	(kPa)	5.22	Pressure Delta pd Negative alarm MIN
PDh	(kPa)	5.23	Pressure Delta pd HYSteresis
M1M	()	5.24	Measure m1 alarm MAX
M1m	()	5.25	Measure m1 alarm MIN
M1h	()	5.26	Measure m1 HYSteresis
M2M	()	5.27	Measure m2 alarm MAX
M2m	()	5.28	Measure m2 alarm MIN
M2h	()	5.29	Measure m2 HYSteresis
M3M	()	5.30	Measure m3 alarm MAX
M3m	()	5.31	Measure m3 alarm MIN
M3h	()	5.32	Measure m3 HYSteresis
T1M	(°C)	5.33	Temperature t1 alarm MAX
T1m	(°C)	5.34	Temperature t1 alarm MIN
T2M	(°C)	5.35	Temperature t2 alarm MAX
T2m	(°C)	5.36	Temperature t2 alarm MIN
Th	(°C)	5.37	Temperature HYSTeresis
Ac.cfg.al	OFF	5.38	ConFiguration Access Alarm Enable
All.alimen.	OFF	5.39	Power Supply Loss Alarm Enable
Al.c.ar.	OFF	5.40	Water Hammer Detection Alarm Enable
T.reset	(s)	5.41	Water Hammer Alarm Reset Time

INPUTS

C1 reset	OFF	6.1	CounTer c1 Reset Enable
C2 reset	OFF	6.2	CounTer c2 Reset Enable
C3 reset	OFF	6.3	CounTer c3 Reset Enable
C4 reset	OFF	6.4	CounTer c4 Reset Enable
sys.v.detect	OFF	6.5	SYStem Violation Detect
Flooding det	OFF	6.6	FLOOding Detect
D.In2	OFF	6.7	Digital INput 2 Function
D.in p.sup.	OFF	6.8	Digital INputs Power Supply

ALARMS

INPUTS

MV155_IT_EN_DS065REV00

OUTPUTS

OUTPUTS

Out1	OFF	7.1	OUTput 1 Function
Out1 inv.	OFF	7.2	OUtput 1 INVerted status
Out2	OFF	7.3	OUTput 2 Function
Out2 inv.	OFF	7.4	OUtput 2 INVerted status
Aux.p.s	OFF	7.5	AUXiliary Power Supply
Act.time	(s)	7.6	AUXiliary power supply Activation Time

```
MAIN
 1-D
 2-U
 3-S
 4-Measure
 5-Alarms
 6-Inputs
 7-Outputs
 8-Communication
 9-Display
10-Functions
11-Diagnostic
12-System
```

COMMUNICATION

COMMUNICATION

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 WH format		8.4	Send w.hammer 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 w.hamm		8.9	Send last water hammer 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		8.15	FTP download execute command
Mail send	OFF	8.16	Mail send function enable
Mail rec.	OFF	8.17	Mail receive function enable
FTP upload	OFF	8.18	FTP upload function enable
FTP download	OFF	8.19	FTP download function enable
DNP3 enable	OFF	8.20	DNP3 protocol enable
Rmt.op.acl	4	8.21	Remote operations access level
File compr.	OFF	8.22	File compression enable status
ZIP password		8.23	Compressed archive password
Conn.test	OFF	8.24	Connection test enable
Auto Ev.snd	OFF	8.25	Automatic events send on alarms
Access p.name		8.26	Access point name
Auth.type	OFF	8.27	Access point authentication type
User name		8.28	Access point user name
User password		8.29	Access point password
SMTP User		8.30	User name for SMTP service
SMTP psw.		8.31	Password for SMTP email service
POP3 User		8.32	User name for POP3 service
POP3 psw.		8.33	Password for POP3 email service
FTP User		8.34	User name for FTP service
FTP password		8.35	Password for FTP service
Min.sig.thr	OFF	8.36	Min.antenna signal threshold
Primary DNS	000.000.000.000	8.37	Primary Domain Name Server
Secondary DNS	000.000.000.000	8.38	Secondary Domain Name Server
Retries	3	8.39	Max.number of session retries
Instr.ID		8.40	Instrument identifier string
HELO string		8.41	HELO identification string
Sender addr.		8.42	Email address of sender
Receiver 1		8.43	Email address of receiver 1
Receiver 2		8.44	Email address of receiver 2
SMTP server		8.45	SMTP mail send server name
SMTP sl	OFF	8.46	SMTP secure connection layer
SMTP port	25	8.47	SMTP mail send server port num.
POP3 server		8.48	POP3 mail receive server name
POP3 sl	OFF	8.49	POP3 Secure connection layer
POP3 port	110	8.50	POP3 mail receive serv.port num.
FTP server		8.51	FTP server name or address
FTP port	21	8.52	FTP server port number

MV155_IT_EN_DS065REV00

COMMUNICATION

FTP secure	OFF	8.53	FTP secure connection enable
FTP data		8.54	FTP root directory for data
FTP events		8.55	FTP root directory for events
FTP commands		8.56	FTP root directory for commands
DNP3 server		8.57	DNP3 server name or address
DNP3 l.src	1	8.58	DNP3 local source address
DNP3 r.dest	0	8.59	DNP3 remote destination address
DNP3 rem.p	20000	8.60	DNP3 remote network port number
DNP3 i.time	3	8.61	DNP3 max.line inactivity time
Cert.check	OFF	8.62	Server identity certif.check
NTP server		8.63	NTP time server name
T.ref	04/03/2022	8.64	Data send time reference
T.DNP	04/03/2022	8.65	DNP3 Data send time reference
InMsTm	OFF,00	8.66	Incoming message check time
ProcST	OFF,00	8.67	Process data send time
LogDST	OFF,00	8.68	Logger data send time
S.Compl.file	OFF	8.69	Send only complete file
Alarm time	OFF	8.70	Alarm minimum send time interval
SMS f.en	OFF	8.71	SMS functions global enable
Auth.number		8.72	Authorized incoming phone number
Mess.recv.1		8.73	Short messages receiver 1
Mess.recv.2		8.74	Short messages receiver 2
Mess.recv.3		8.75	Short messages receiver 3

```
MAIN
 1-D
 2-U
 3-S
 4-Measure
 5-Alarms
 6-Inputs
 7-Outputs
 8-Communication
 9-Display
10-Functions
11-Diagnostic
12-System
```

DISPLAY

```
MAIN
 1-D
 2-U
 3-S
 4-M
 5-Alarms
 6-Inputs
 7-Outputs
 8-Communication
 9-Display
10-Functions
11-Diagnostic
12-System
```

DISPLAY

Language	GB	9.1	Layout LANGuage
Quick start	OFF	9.2	Quick STart Menu Enable

FUNCTIONS

FUNCTIONS

C1 reset	10.1	CouNTer c1 Reset
C2 reset	10.2	CouNTer c2 Reset
C3 reset	10.3	CouNTer c3 Reset
C4 reset	10.4	CouNTer c4 Reset
Load f.default	10.5	Load Factory Default Data
Save f.default	10.6	Save Factory Default Data

```
MAIN
 1-D
 2-U
 3-S
 4-M
 5-Alarms
 6-Inputs
 7-Outputs
 8-Communication
 9-Display
10-Functions
11-Diagnostic
12-System
```

MV155_IT_EN_DS065REV00

DIAGNOSTIC

```
DIAGNOSTIC
Self test
Diag.sys.val.
Display measures
Disp.comm.vars
SMS test
SMTP conn test
POP3 conn.test
FTP conn.test
DNP3 conn.test
SD card info      3972.0 MB,Free
Firmware info              24
S/N                    999999
WT                          0
TC                        285
MAIN
  1-D
  2-U
  3-S
  4-M
  5-A
  6-I
  7-Outputs
  8-Communication
  9-Display
10-Functions
11-Diagnostic
12-System
```

11.1	AutoTeSt Immediate Command
11.2	Diagnostic System VaLueS
11.3	Diagnostic Measure VaLueS
11.4	Diagnostic Communication VaLueS
11.5	Short MesSage TeSt
11.6	SMtP Connection Test
11.7	POP3 Connection Test
11.8	FTP Connection Test
11.9	DNP3 connection Test
11.10	SD memory STAtus
11.11	MODel and Software Version
11.12	SeRial NUMber
11.13	Total WorKing TiMe
11.14	Total Measure CYCles

SYSTEM

```
SYSTEM
Dayl.saving              OFF
Time zone                (h)
Date/time                 41
L1 code             10000000
L2 code             20000000
L3 code             30000000
L4 code             40000000
L5 code             57291624
L6 code                    0
Restr.access             OFF
Device IP addr   10.011.012.013
Client IP addr   10.011.012.012
Network mask     255.255.255.254
Stand-by
FW update
MAIN
  1-D
  2-U
  3-S
  4-M
  5-A
  6-I
  7-Outputs
  8-Communication
  9-Display
10-Functions
11-Diagnostic
12-System
```

12.1	Daylight Saving Time Enable
12.2	Time ZONE
12.3	Date and TIME
12.4	Level 1 Access CoDe
12.5	Level 2 Access CoDe
12.6	Level 3 Access CoDe
12.7	Level 4 Access CoDe
12.8	Level 5 Access CoDe
12.9	Level 6 Access CoDe
12.10	ReStricted Access Rule Enable
12.11	Device IP ADdress
12.12	Client IP ADdress
12.13	NETwork MaSk
12.14	System STanDBY
12.15	FirmWare UPDate

GENERAL DESCRIPTIONS

The instruments is designed to acquire and register varius measures on Data Logger:

• n. 4 Pulses Counter	n. 2 Outputs for Alarm or External Command
• n. 2 for Voltage Input	n° 1 Output for analog sensor supply
• n. 1 for Current Input	
• n 2 for Pressure Input (from external transducer)	
• n. 2 for Temperature Input (from external transducer)	

The counters C1, C2, C3 and C4 and the relative flow rates Q1, Q2, Q3 and Q4 are linked: activating C1 activates the visualization of the data also for Q1 and vice versa;

C1 / Q1; C2 / Q2; C3 / Q3 are functions that can have a double source: pulses or analog signal.

The source is selected through the functions of the "4-MEASURE" menu 4.23-4.24-4.25.

These functions allows to set the input channel for the flow rates Q1, Q2 and Q3 and for the relative volume counters C1-C2 and C3.

To set the digital input as source, choose PULSE value; to set the analogue input as source, CHOOSE VOLTAGE / CURRENT value.

M1; M2; M3 can be activated with an analog source ONLY when the Q1, Q2 and Q3 flow rates and the relative volume counters C1-C2 and C3 have the digital input (PULSE value) as source.

The counter C4 and the relative flow rate Q4 always has the pulses as a source.

Below are the guide tables for configuring and managing the instrument's functions.

For the complete list of functions and more info see pag. 13
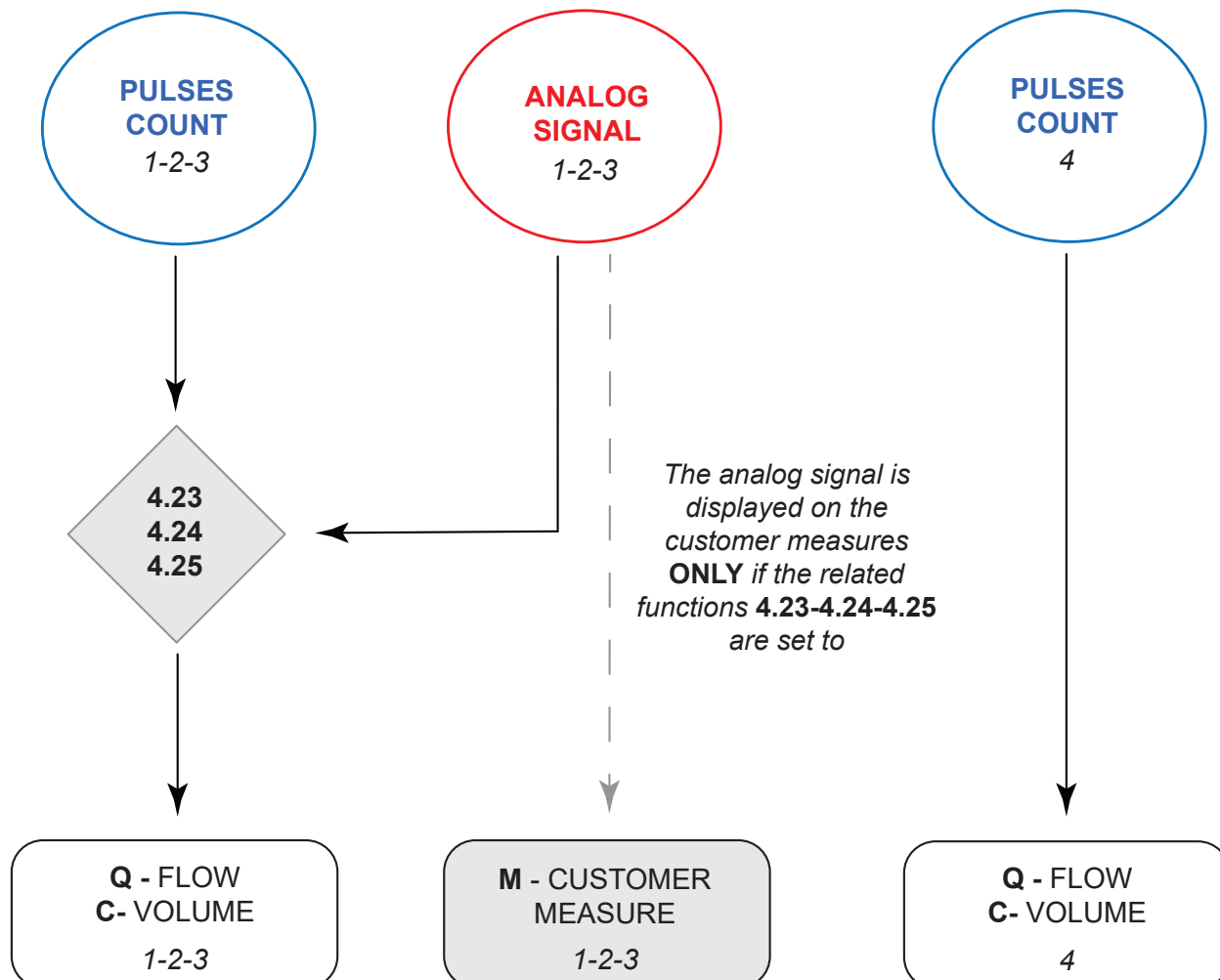
MV155_IT_EN_DS065REV00

PULSES COUNTER				
Action description	**Function N°**			
	C/Q1	**C/Q2**	**C/Q3**	**C/Q4**
Enable volume counter	1.7	1.8	1.9	1.10
Enable flow measurement	1.11	1.12	1.13	1.14
Pulse units type	2.1	2.6	2.11	2.16
Units and Pulse factor	2.2	2.7	2.12	2.17
Type Unit Counter Volume	2.3	2.8	2.13	2.18
Volume Counter Unit	2.4	2.9	2.14	2.19
Number Decimals Volume Counter	2.5	2.10	2.15	2.20
Unit and Full Scale Flow	3.1	3.2	3.3	3.4
Counting Input Mode	4.1	4.4	4.7	4.10
Frequency Input Counting	4.2	4.5	4.8	4.11
TimeOut Counting input	4.3	4.6	4.9	4.12
Flow/Volume Input Channel	4.23	4.24	4.25	-
Alarm Max Measure	5.1	5.4	5.7	5.10
Alarm Min Measure	5.2	5.5	5.8	5.11
Flow Alarm Hysteresis	5.3	5.6	5.9	5.12
Reset from IN1	6.1	6.2	6.3	6.4

SET **PULSE**

ANALOG SIGNAL - Analog Input (Voltage) / Analog Input (Current)			
Action description	**Function N°**		
	C/Q1	**C/Q2**	**C/Q3**
Enable volume counter	1.7	1.8	1.9
Enable flow measurement	1.11	1.12	1.13
Volume unit counter type	2.3	2.8	2.13
Units and Volume Full Scale Measure	2.4	2.9	2.14
Volume Counter Number of Decimals	2.5	2.10	2.15
Flow Units and Full Scale	3.1	3.2	3.3
Measure Input Field	4.17	4.19	4.21
CutOff Input Measure	4.18	4.20	4.22
Flow/Volume Input Channel	4.23	4.24	4.25
Alarm Max Measure	5.1	5.4	5.7
Alarm Min Measure	5.2	5.5	5.8
Flow Alarm Hysteresis	5.3	5.6	5.9
Reset from IN1	6.1	6.2	6.3

SET **PULSE**

CUSTOMER MEASURES- Analog Input (Voltage) / Analog Input (Current)			
Action description	**Function N°**		
	M1	**M2**	**M3**
Enable Measure	1.19	1.20	1.21
"Custom" unit of measure	2.22	2.23	2.24
Units and Measure Full Scale	3.7	3.8	3.9
Measure Input Field	4.17	4.19	4.21
CutOff Input Measure	4.18	4.20	4.22
Flow / Volume Input Channel	4.23	4.24	4.25
Alarm Max Measure	5.24	5.27	5.30
Alarm Min Measure	5.25	5.28	5.31
Measure Alarm Hysteresis	5.26	5.29	5.32

SET **VOLTAGE/CURRENT**

T1-T2 functions are for Temperature Input

P1-P2 are for Pressure Input.
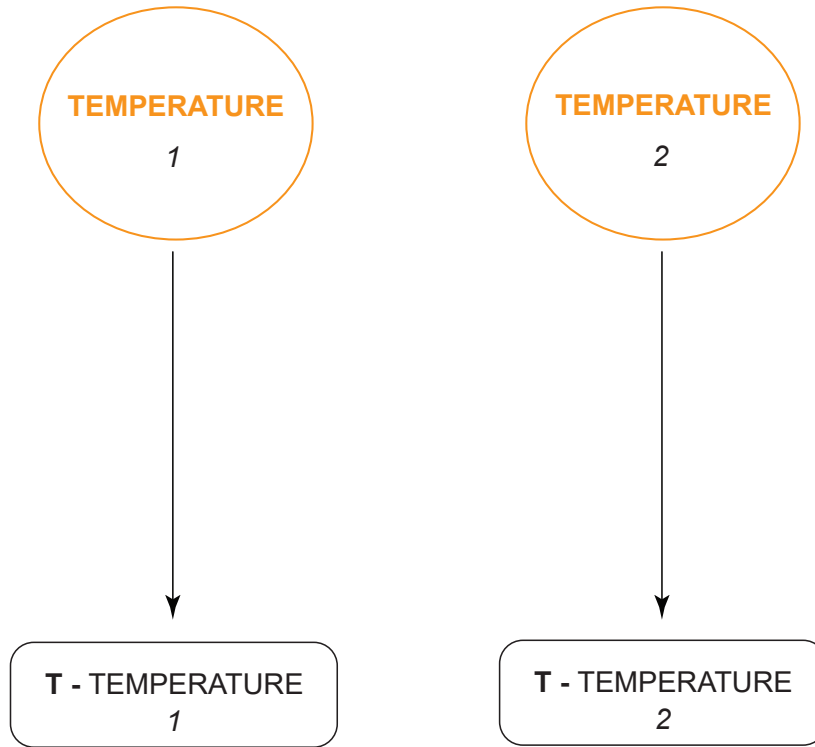
```
      ( TEMPERATURE          ( TEMPERATURE
             1 )                    2 )
             |                      |
             v                      v
  +---------------------+  +---------------------+
  | T - TEMPERATURE     |  | T - TEMPERATURE     |
  |        1            |  |        2            |
  +---------------------+  +---------------------+
```

Below is the guide table for configuring and managing the functions of the instrument.

For the complete list of functions and more info see "function menu""functions menu" a pagina 13

TEMPERATURE: Analog Input (Temperature)		
Action description	**Function N°**	
	T1	**T2**
Enable Temperature Measurement	1.17	1.18
Temperature Unit of Measurement	2.21	2.21
Max Temperature Alarm	5.33	5.35
Min temperature alarm	5.34	5.36
Temperature Hysteresis Alarm	5.37	5.37
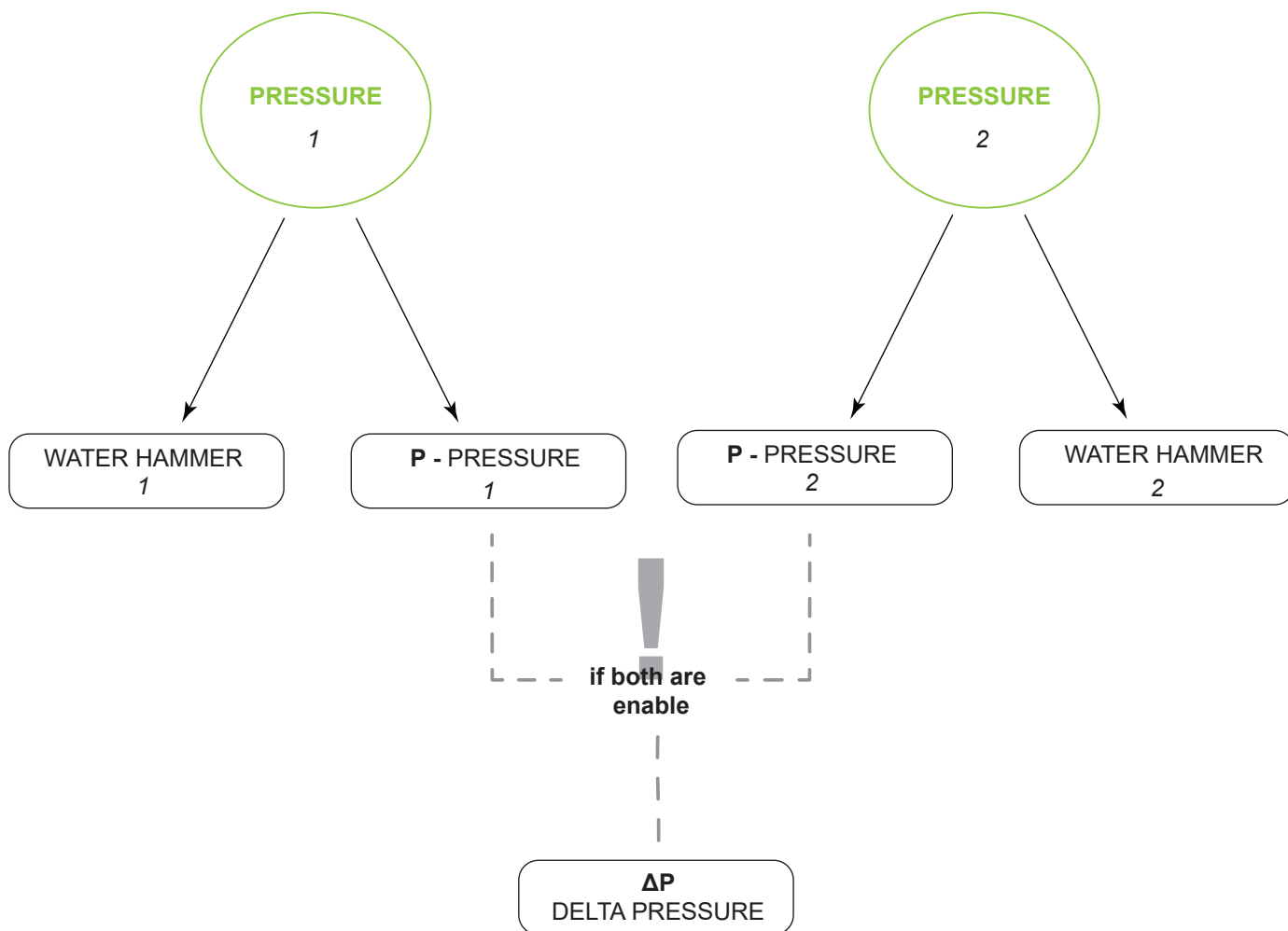
MV155_IT_EN_DS065REV00

Below is the guide table for configuring and managing the functions of the instrument.

For the complete list of functions and more info see"functions menu" a pagina 13

Pressure and Water Hummer: Analog Input (Pressure)				
Action description	**Function N°**			
	P1	**P2**	**ΔP**	**WH**
Enable measurement for pressure	1.15	1.16	1.15 - 1.16	1.15 - 1.16
Enable water hammer				1.22
Pressure Unit and Full Scale	3.5	3.6	3.5 - 3.6	3.5 - 3.6
Pressure CutOff	4.13	4.13	4.13	4.13
Acquisition time of water hammer				4.14
Water hammer detection threshold				4.15 - 4.16
Max Pressure Alarm	5.13	5.16		
Min Pressure Alarm	5.14	5.17		
Pressure Alarm Hysteresis	5.15	5.18		
Max Difference alarm Positive pressure			5.19	
Min Difference alarm Positive pressure			5.20	
Max Difference alarm Negative pressure			5.21	
Min Difference alarm Negative pressure			5.22	
Hysteresis Pressure difference alarm			5.23	
Water hammer alarm				5.40
Water hammer reset time				5.41

MV155_IT_EN_DS065REV00

ISOMAG

ISOIL
INDUSTRIA

MV155_IT_EN_DS065REV00

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 vendite@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.

ISOIL
INDUSTRIA
The solutions that count