CPT

Capacitive pressure transmitters
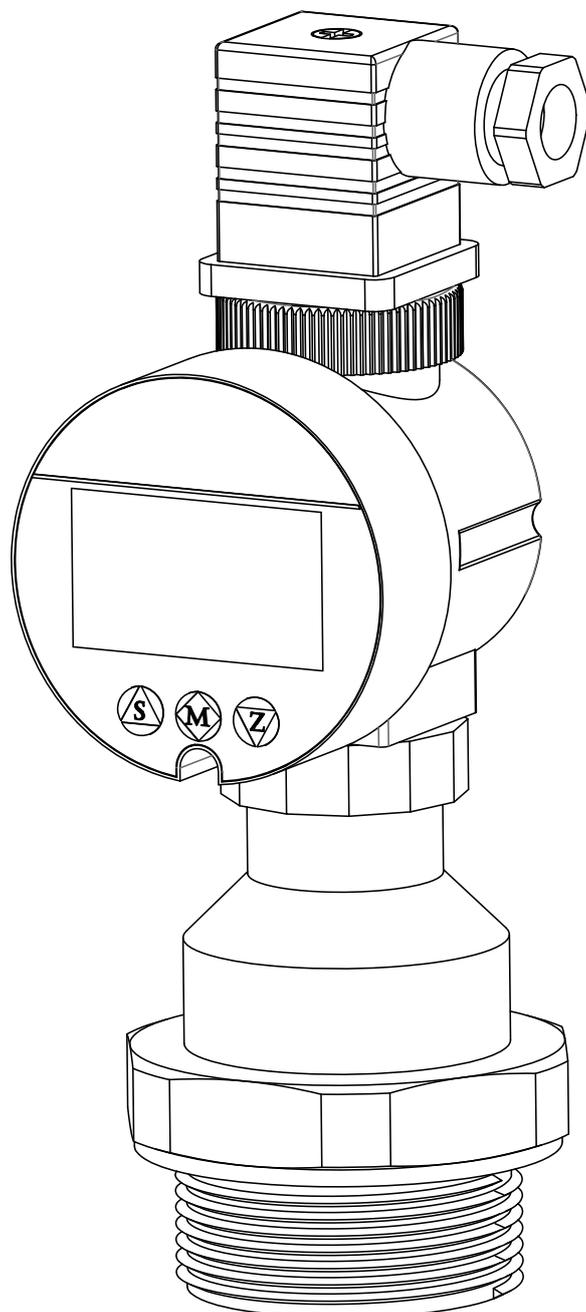
technical documentation EN Rev. of 13/07/2022

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CONTENTS

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1-WARRANTY

Products supplied by SGM LEKTRA are guaranteed for a period of 12 (twelve) months from delivery date according to the conditions specified in our sale conditions document.

SGM LEKTRA can choose to repair or replace the Product.

If the Product is repaired it will maintain the original term of guarantee, whereas if the Product is replaced it will have 12 (twelve) months of guarantee.

The warranty will be null if the Client modifies, repair or uses the Products for other purposes than the normal conditions foreseen by instructions or Contract.

In no circumstances shall SGM LEKTRA be liable for direct, indirect or consequential or other loss or damage whether caused by negligence on the part of the company or its employees or otherwise howsoever arising out of defective goods.
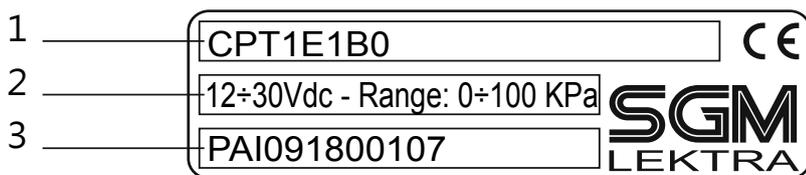
2- PRODUCT
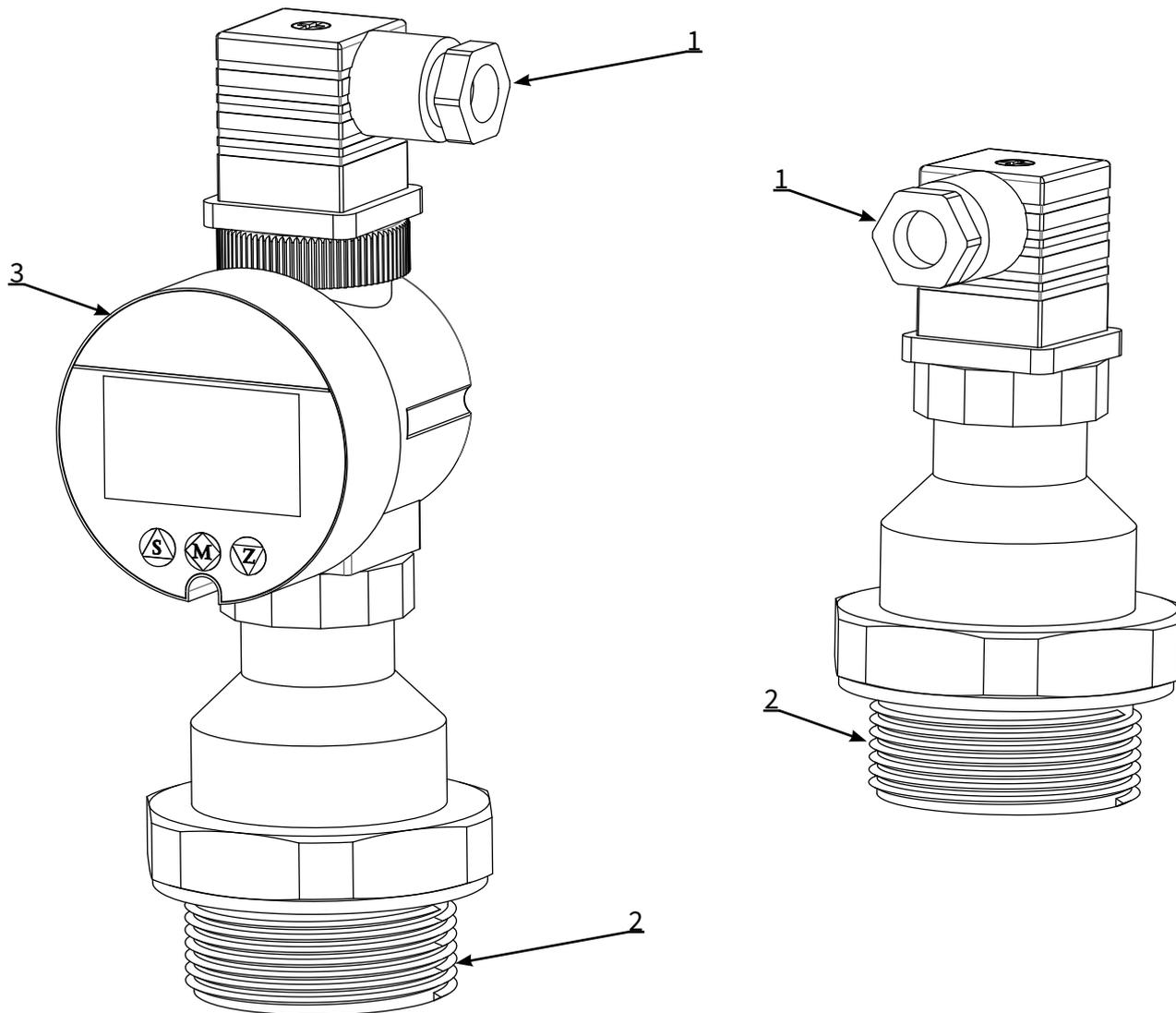
1. Skintop PG9
2. Process connection
3. Display (optional)

2.1   IDENTIFICATION

Each meter has an adhesive identifi cation plate on which are the meter main data.
The following picture describes theinformation and data on the identifi cation plate.

1. Product code
2. Power supply - Range
3. Serial number

3-FEATURES

Measurement range
Relative Pr.: Max. 0÷40bar (0÷4Mpa) Min. 0÷50mbar (0÷5kPa)

Power Supply
12÷30Vdc (2 wires); 16,5÷55Vdc (2 wires HART)

Output
4÷20mA

Max. accuracy
±0.2%FS

Typical stability
±0.1%FS for 1 year

Ambient temperature
-40° ÷ +85°C

Medium temperature
-30° ÷ +80°C

Storage temperature
-40° ÷ +100°C

Electrical connection
Connector Type A EN 175301-803 (DIN 43650)

Connector protection
IP65

Wet part potection
IP68

Diaphragm material
Ceramic

**Process connection material**
AISI 316

Sensor housing material
AISI 316

Overload pressure:

Range Code	Range	Overload P.
A	0÷50mbar G.	4bar
B	0÷100mbar G.	4bar
C	0÷200mbar G.	6bar
D	0÷400mbar G.	6bar
E	0÷1bar G.	10bar
F	0÷2bar G.	18bar
G	0÷4bar G.	25bar
H	0÷10bar G.	40bar
I	0÷20bar G.	40bar
L	0÷40bar G.	60bar
G. = Gauge Pressure		

4-DIMENSIONS

4.1 MECHANICAL DIMENSIONS

125

20

1"½ G

187

20

1"½ G

20

G1/2"
EN837
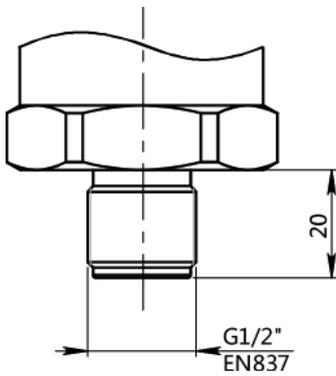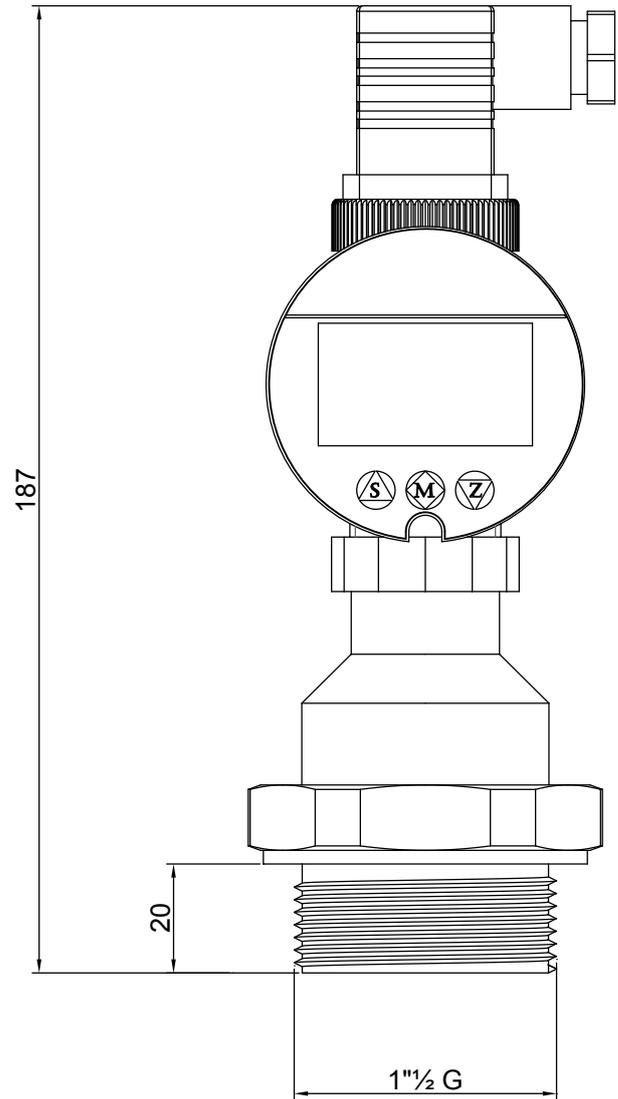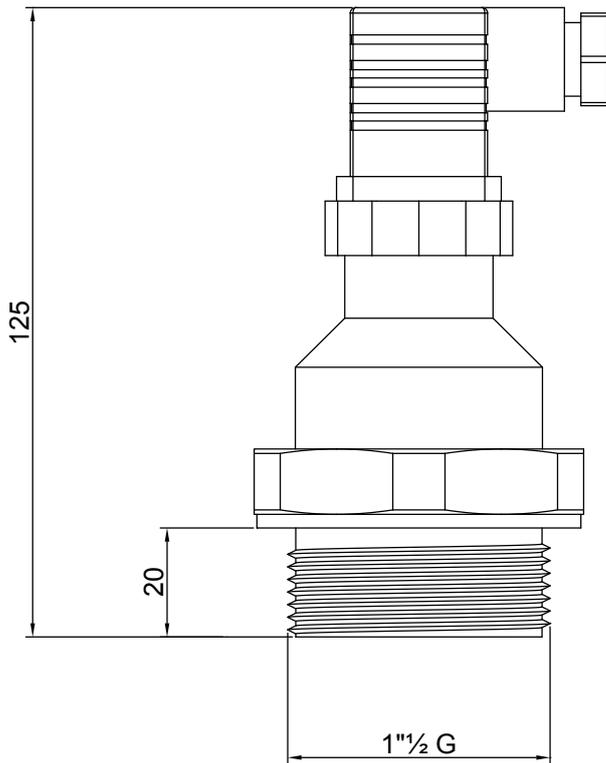
5-ELECTRICAL CONNECTIONS

5.1 4 ÷ 20mA two-wire connection

Type A EN 175301-803 (DIN 43650) connector
Terminals for wires up to 1.5mm2
PG9 4.5 ÷ 7mm cable gland
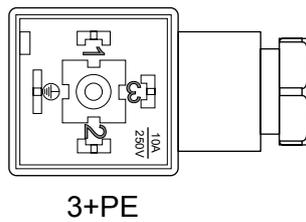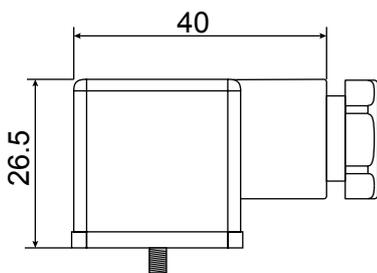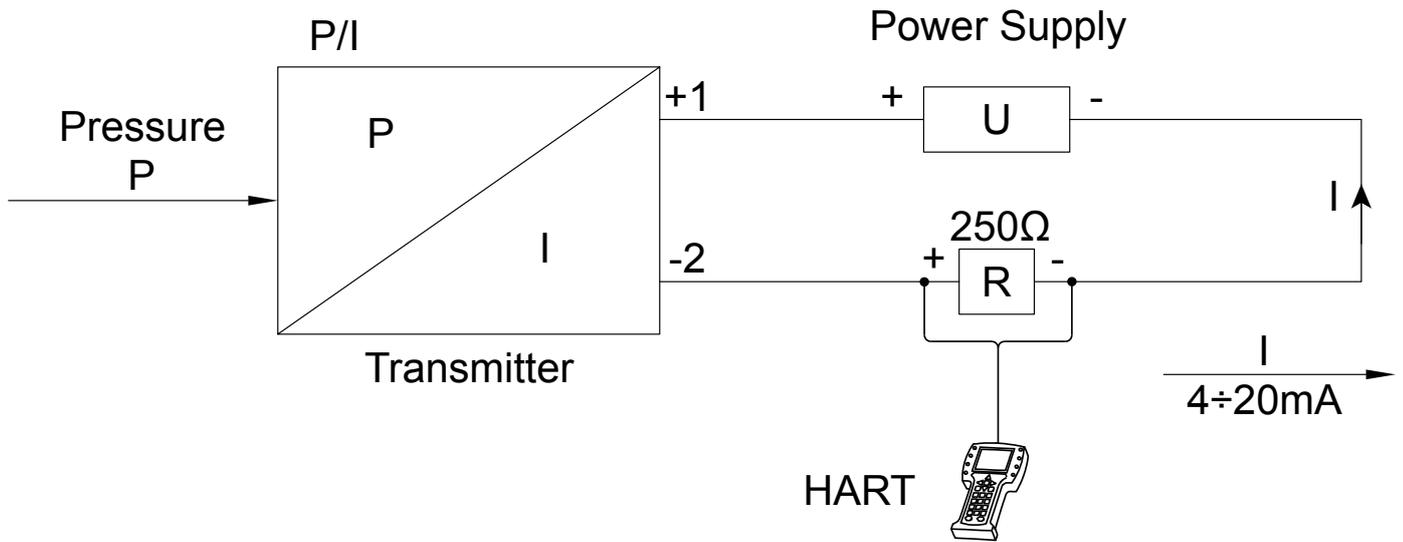
Connector pinouts	
PINS	**Function**
1	Power + = +V
2	Power - = 0V
3	Key-z

5.2 LCD Display, 2 way PNP output
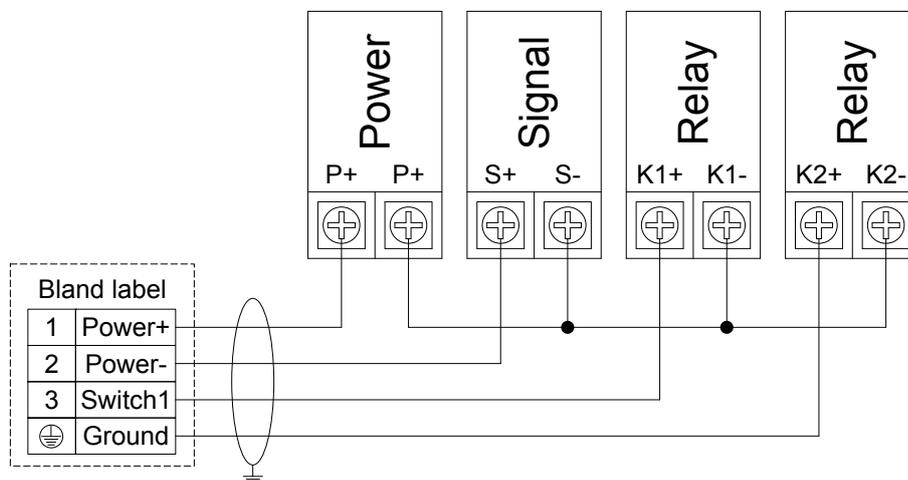
6-Zero Connection

It is possible for CPT transmitters to correct the zero offset, normally caused by the mounting position.

To perform the zero correction proceed as followa:

1) Make sure that the process is in the Zero condition: eg: empty tank or piping under atmospheric pressure.
2) Power up the CPT pressure transmitter.
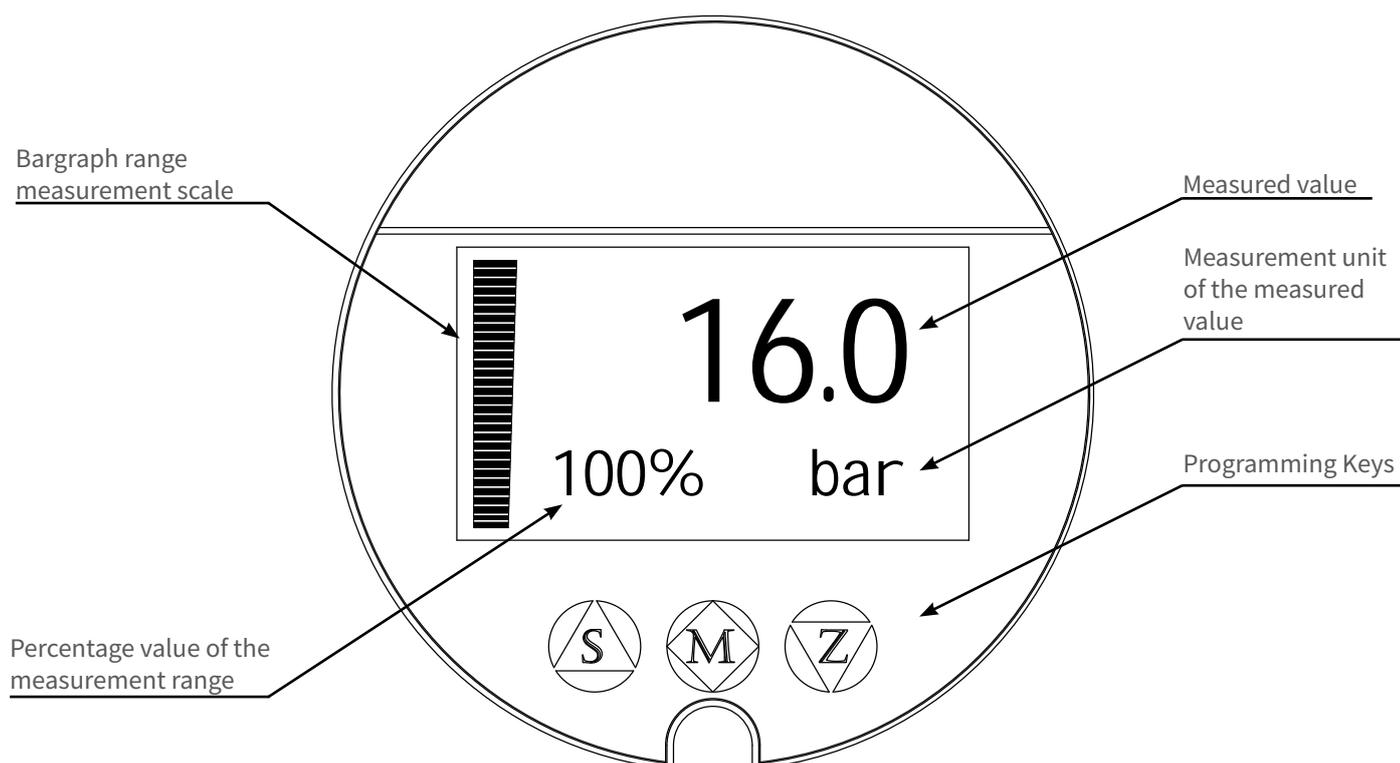3) Put pin 3 (Key-z) in contact with pin 2 (0V), of the supplied connector, for at least 5 seconds.
4) Remove the contact between pin 3 and 2.
5) Check that the value of the analog signal transmitted is 4mA; otherwise, repeat the steps from point 3.

7-Display (optional accessory)

CPT pressure transmitters can be connected to a configurable backlight LCD display directly on the connector (code CPTS-X). The display is available for the entire CPT range.
The main features of the display are:
- dimensions 39x24
- blue backlight
- 9x5 easy-to-read characters for displaying the measured value
- programmable pressure measurement unit
- programmable displayed pressure scale
- access code-protected programming
- display with 35° rotation
- 2 alarm thresholds, PNP OUT (optional)

Bargraph range measurement scale

Measured value

Measurement unit of the measured value

Programming Keys

16.0

100%   bar

Percentage value of the measurement range

Ⓩ   parameter programming access or digit selection to be modified.

Ⓢ   changes the selected digit or option.

Ⓜ   stores changes or moves to the next parameter.

To access the parameter configuration press the "M" key.

7.1   ASSEMBLY

To mount the CPT on-board display, proceed as follows:
- unscrew the screw and remove the female connector.
- insert the display's female connector into the male CPT connector.
- unscrew the plastic ring, holding the male connector in place to avoid damaging the internal connections.
- gently lift the male connector to prevent damages to the internal connection wires.
- tighten the internal screw.
- screw the plastic ring, holding the male connector in place to avoid damaging the internal connections
- insert the female connector and lock it by tightening the screw.

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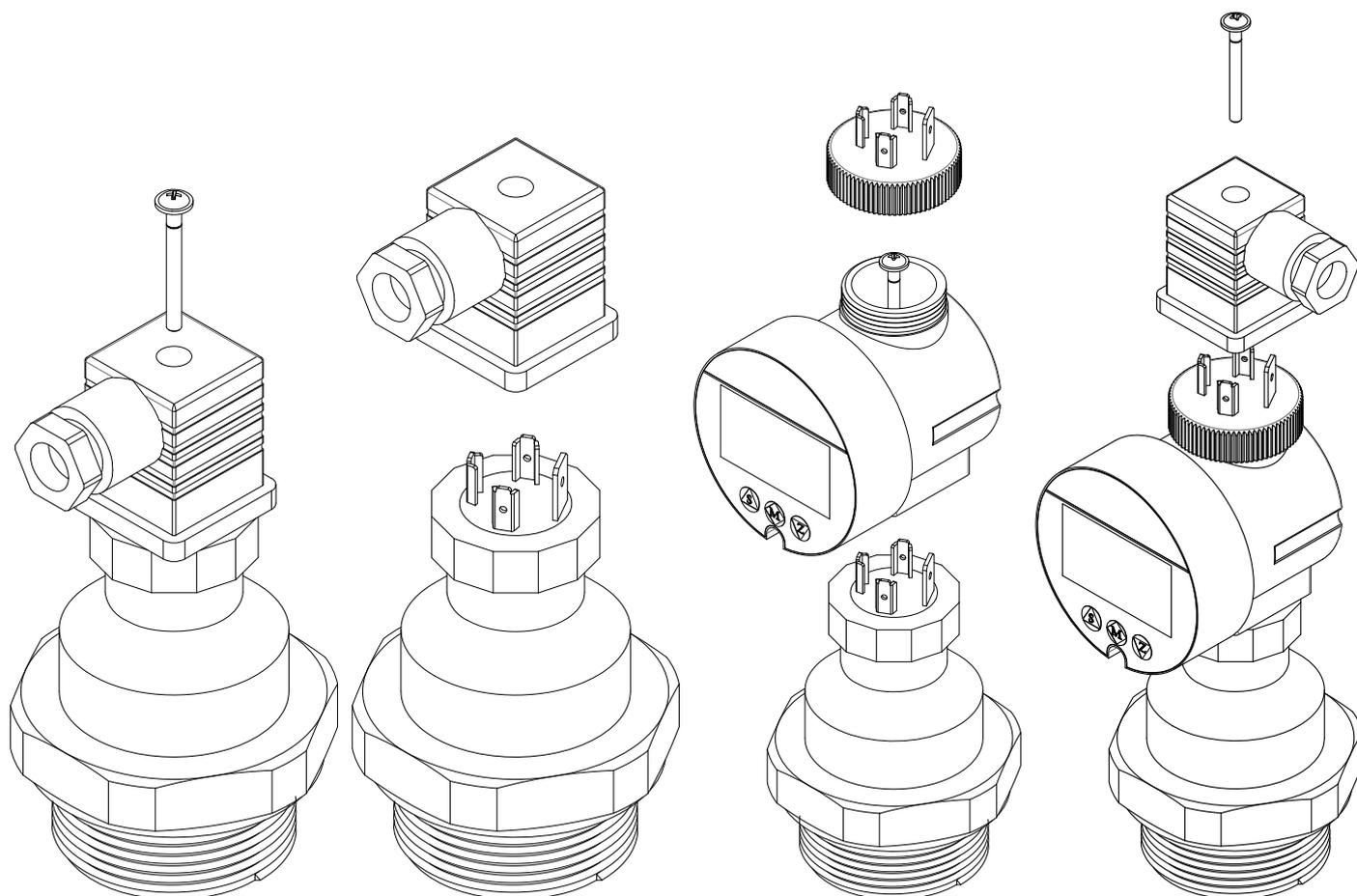
8-Programming via display (optional accessory)

8.1   CLK - ACCESS CODE

To access the next parameters, enter the access code 132.
Press "Z" to select the digit and "S" to edit it.
Press "M" to confirm and move on to the next parameter.

132
CLK

8.2   SLL - LOWER SCALE VALUE OF MEASUREMENT
RANGE SCALE

To access the next parameter without editing, press "M".
Set the value to be shown on the display when the analog signal is 4mA.
Press "Z" to select the digit and "S" to edit it.
Press "M" to confirm and move on to the next parameter
.

0.0
SLL

8.3   SLH - UPPER SCALE VALUE OF MEASUREMENT
RANGE SCALE

To access the next parameter without editing, press "M".
Set the value to be shown on the display when the analog signal is 20mA.
Press "Z" to select the digit and "S" to edit it.
Press "M" to confirm and move on to the next parameter
.

16.0
SLH

8.4   UNI - MEASUREMENT UNIT

To access the next parameter without editing, press "M".
The measurement units available are:
   01 - kPa; chiloPascal
   02 - MPa; megaPascal
   03 - Pa; Pascal
   04 - bar
   05 - mbar; millibar
   06 - psi; pounds per square inch
   07 - mH2O; meters of water column
   08 - mmH2O; millimeters water column
   09 - cmH2O; centimeters water column
   10 - mmHg; millimeters mercury column
   11 - tor; torr
   12 - atm; atmospheres

4
BAR UNI

To select the desired measurement unit, the corresponding number must
be set, e.g.: to select bar, set number 4.
Press "Z" to select the digit and "S" to edit it.
Press "M" to confirm and move on to the next parameter.

8.5   DISP - DISPLAY OF THE "MEASURED VALUE"

To access the next parameter without editing, press "M".
Set the measured value to be displayed.
The following options are available:

0
MA   DISP

0 - display, with three digits to the right of the decimal point of the value of
  the 4 ÷ 20mA analog transmitted by the CPT sensor.
1 - display of the pressure value measured by the CPT sensor; the
   measurement unit displayed depends on the programming in step 5.6
2 - display, with two digits to the right of the decimal point of the
   percentage range of the pressure measured by the CPT sensor.

Press "Z" to select the digit and "S" to edit it. Press "M" to confirm and move on
to the next parameter.

8.6 DECP - DECIMAL POINT

To access the next parameter without editing, press "M". Set the fixed position of the decimal point to display the measured pressure.
This parameter is only active when option 1 (display of the measured pressure value) is set in point 7.5; if not, the position of the decimal point cannot be changed.
The following options are available:
00 - no decimal point, e.g.: 160
01 - one digit to the right of the decimal point, e.g.: 16.0
02 - two digits to the right of the decimal point, e.g.: 1.60
03 - three digits to the right of the decimal point, e.g.: 0.160
Press "Z" to select the digit and "S" to edit it.
Press "M" to confirm and move on to the next parameter.

Display: 2 — DECP
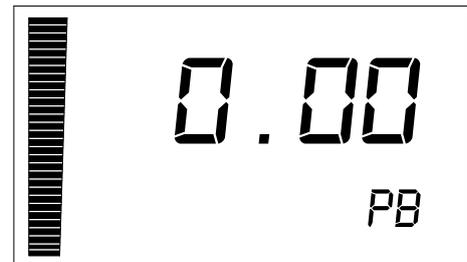
8.7 PB - ZERO POINT CORRECTION

To access the next parameter without editing, press "M".
Set the Zero point correction value.
This parameter is only active when option 1 (display of the measured pressure value) is set in point 7.5.
Press "Z" to select the digit and "S" to edit it.
Press "M" to confirm and move on to the next parameter
.

Display: 0.00 — PB

8.8 KK - CORRECTION FACTOR

To access the next parameter without editing, press "M".
Set the correction factor value.
This parameter is only active when option 1 (display of the measured pressure value) is set in point 7.5.
Press "Z" to select the digit and "S" to edit it.
Press "M" to confirm and move on to the next parameter
.

Display: 1.000 — KK

8.9 AOLC - LOWER LIMIT OF ALARMED ANALOG OUTPUT (3.5MA ÷ 3.8MA)

To access the next parameter press "M", otherwise:
press "Z" to edit the parameter; the least significant digit can be edited by pressing "S".
To confirm the change and move to the next digit press "Z";
to confirm and go to the next menu press "M"
.

Display: 3.500 — AOLC

8.10 AOHC - UPPER LIMIT OF ALARMED ANALOG OUTPUT (20.8MA ÷ 24.0MA)

To go back to the user interface, press "M", otherwise:
press "Z" to edit the parameter; the least significant digit can be edited by pressing "S".
To confirm the change and move to the next digit press "Z";
to confirm and go to the operational interface press "M".

Display: 23.000 — AOHC
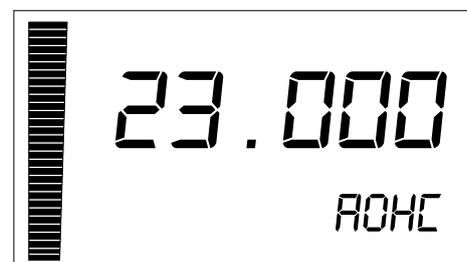
8.11 THRESHOLD N ° 1 SETTINGS

From the operational interface, press "M" + "Z" simultaneously for at least 5 seconds.

8.11.1 SP1: threshold 1 upper limit

To move to the next parameter press "M", otherwise:
press "Z" to edit the parameter; the least significant digit can
be edited by pressing "S".
To confirm the change and move to the next digit press "Z";
to confirm and go to the next menu press "M".

```
0.000
            SP1
```
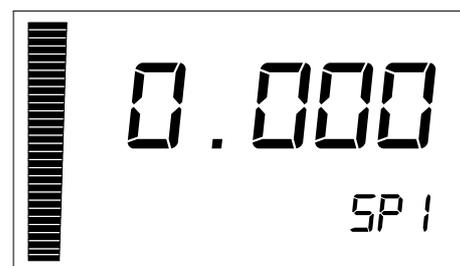
8.11.2 RP1: threshold 1 lower limit

To move to the next parameter press "M", otherwise:
press "Z" to edit the parameter; the least significant digit can
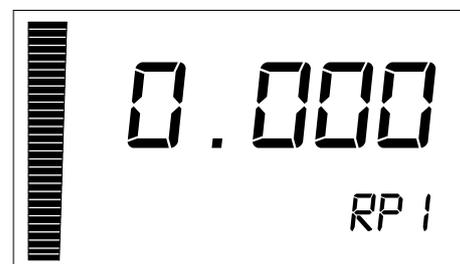be edited by pressing "S".
To confirm the change and move to the next digit press "Z";
to confirm and go to the next menu press "M".

```
0.000
            RP1
```

8.11.3 SPDT1: threshold 1 activation delay (0.0 ÷ 60.0 sec.)

To move to the next parameter press "M", otherwise:
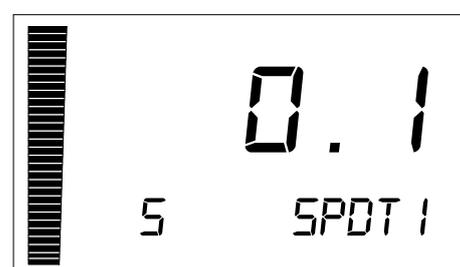press "Z" to edit the parameter; the least significant digit can
be edited by pressing "S".
To confirm the change and move to the next digit press "Z";
to confirm and go to the next menu press "M".

```
       0.1
  S       SPDT1
```

8.11.4 RPDT1: threshold 1 de-activation delay (0.0 ÷ 60.0 sec.)

To move to the next parameter press "M", otherwise:
press "Z" to edit the parameter; the least significant digit can
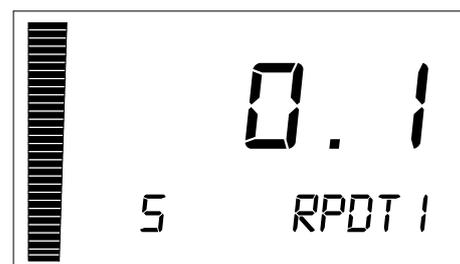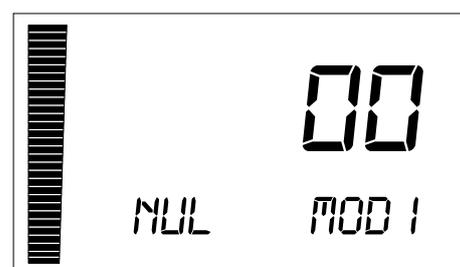be edited by pressing "S".
To confirm the change and move to the next digit press "Z";
to confirm and go to the next menu press "M".

```
       0.1
  S       RPDT1
```

8.11.5 MOD1: setting the intervention mode of threshold1

To go back to the operational interface press "M", otherwise:
press "Z" to edit the parameter; the indicative digit of the activation
mode can be edited by pressing "S".
To confirm the change and move to the operational interface press "M".

```
       00
  NUL     MOD1
```

8.12   IMPOSTAZIONI SOGLIA N°2

From the operational interface, press "M" + "S" simultaneously for at least 5 seconds.

8.12.1 SP2: threshold 2 upper limit

To move to the next parameter press "M", otherwise:
press "Z" to edit the parameter; the least significant digit can
be edited by pressing "S".
To confirm the change and move to the next digit press "Z";
to confirm and go to the next menu press "M".

$$0.000$$
SP2
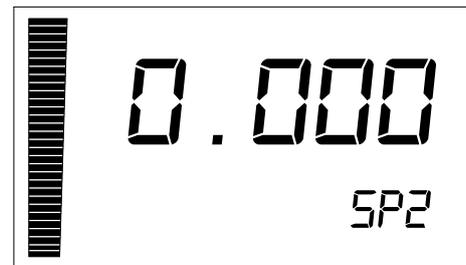
8.12.2 RP2: threshold 2 lower limit

To move to the next parameter press "M", otherwise:
press "Z" to edit the parameter; the least significant digit can
be edited by pressing "S".
To confirm the change and move to the next digit press "Z";
to confirm and go to the next menu press "M".

$$0.000$$
RP2

8.12.3 SPDT2: threshold 2 activation delay (0.0 ÷ 60.0 sec.)

To move to the next parameter press "M", otherwise:
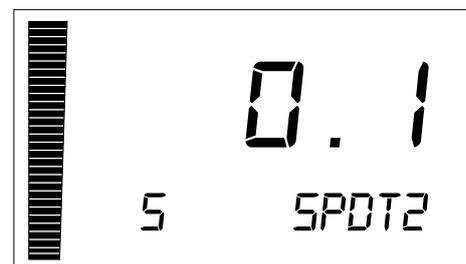press "Z" to edit the parameter; the least significant digit can
be edited by pressing "S".
To confirm the change and move to the next digit press "Z";
to confirm and go to the next menu press "M".

$$0.1$$
S   SPDT2

8.12.4 RPDT2: threshold 2 de-activation delay (0.0 ÷ 60.0 sec.)

To move to the next parameter press "M", otherwise:
Press "Z" to edit the parameter; the least significant digit can
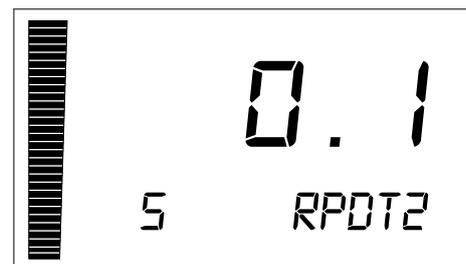be edited by pressing "S".
To confirm the change and move to the next digit press "Z";
to confirm and go to the next menu press "M".

$$0.1$$
S   RPDT2

8.12.5 MOD2: setting the intervention mode of threshold 2

To go back to the operational interface press "M", otherwise:
press "Z" to edit the parameter; the indicative digit of the activation
mode can be edited by pressing "S".
To confirm the change and move to the operational interface press "M".

$$00$$
NUL   MOD2
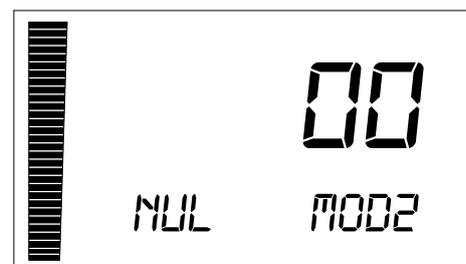
8.13   MEANING OF INTERVENTION MODES:

MODx	Activation mode
0	No output, threshold not active.
1	Active threshold (with SPDTx delay) when the measured value exceeds the SPx value; threshold not active (with RPDTx delay) when the measured value falls below RPx
2	Threshold not active (with RPDTx delay) when the measured value falls below RPx; active threshold (with SPDX delay) when the measured value falls below RPx
3	Active threshold (with SPDTx delay) when the measured value is between RPx and SPx; threshold not active (with RPDTx delay) when the measured value is not included between the RPx ÷ SPx interval
4	Active threshold (with SPDTx delay) when the measured value is outside of interval RPx ÷ SPx; threshold not active (with RPDTx delay) when the measured value is within the interval RPx ÷ SPx

9-FACTORY TEST AND QUALITY CERTIFICATE

CE

In conformity to the company and check procedures I certify that the equipment:

is conform to the technical requirements on Technical Data and it is made in conformity to the procedure

Quality Control Manager: .... Production and check date: ....

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