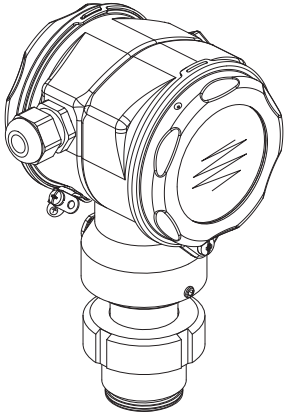
Level Pressure Flow Temperature Liquid Analysis Registration Systems Components Services Solutions

Brief Operating Instructions

Deltapilot S

FMB70

Hydrostatic level measurement



These Instructions are Brief Operating Instructions; they are not a substitute for the Operating Instructions pertaining to the device.
Detailed information about the device can be found in the Operating Instructions and the other documentation:

Available for all device versions via:
– Internet: www.endress.com/deviceviewer
– Smart phone/tablet: *Endress+Hauser Operations App*

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Endress+Hauser

People for Process Automation

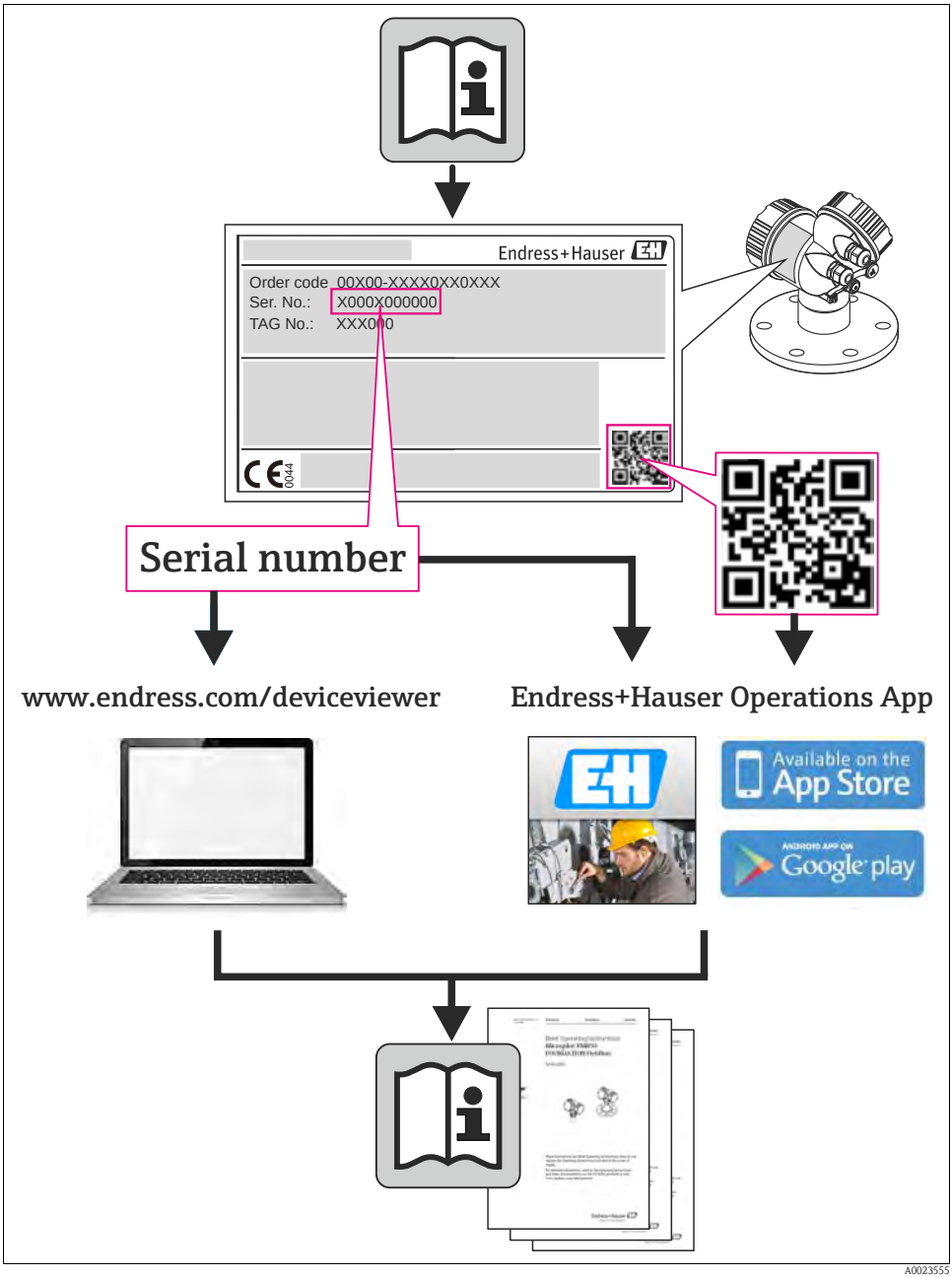
Endress+Hauser
Order code 00X00-XXXX0XX0XXX
Ser. No.: X000X000000
TAG No.: XXX000
0044
Serial number
www.endress.com/deviceviewer
Endress+Hauser Operations App
Available on the App Store
Google play

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Table of contents

1 Safety instructions

1.1 Designated use

The Deltapilot S is a hydrostatic pressure transmitter for measuring level and pressure.

The manufacturer accepts no liability for damages resulting from incorrect use or use other than that designated.

1.2 Installation, commissioning and operation

- The device must only be installed, connected, commissioned and maintained by qualified and authorized specialists (e.g. electrical technicians) in full compliance with the instructions in this manual, the applicable norms, legal regulations and certificates (depending on the application).
- The specialist must have read and understood this manual and must follow the instructions it contains. If you are unclear on anything in these Brief Operating Instructions, you must read the Operating Instructions. The Operating Instructions provide detailed information on the device/measuring system.
- The device may only be modified or repaired if such work is expressly permitted in the Operating Instructions.
- If faults cannot be rectified, the device must be taken out of service and secured against unintentional commissioning.
- Do not operate damaged devices. Mark them as defective.

1.3 Operational safety and process safety

- Alternative monitoring measures must be taken to ensure operational safety and process safety during configuration, testing and maintenance work on the device.
- The device is safely built and tested according to state-of-the-art technology and has left the factory in perfect condition as regards technical safety. The applicable regulations and European standards have been taken into account.
- Pay particular attention to the technical data on the nameplate.
- Devices for use in hazardous areas are fitted with an additional nameplate. If the device is to be installed in an explosion hazardous area, then the specifications in the certificate as well as all national and local regulations must be observed. The device is accompanied by separate "Ex documentation", which is an integral part of this Operating Instructions. The installation regulations, connection values and Safety Instructions listed in this Ex document must be observed. The documentation number of the related Safety Instructions is also indicated on the additional nameplate.

1.4 Return

Follow the instructions on returning the device as outlined in the Operating Instructions.

1.5 Safety icons

Symbol	Meaning
	**Warning!** A warning highlights actions or procedures which, if not performed correctly, will lead to personal injury, a safety hazard or destruction of the instrument.
	**Caution!** Caution highlights actions or procedures which, if not performed correctly, may lead to personal injury or incorrect functioning of the instrument.
	**Note!** A note highlights actions or procedures which, if not performed correctly, may indirectly affect operation or may lead to an instrument response which is not planned.

2 Product identification

The following options are available for identification of the measuring device:
- Nameplate specifications
- Order code with breakdown of the device features on the delivery note
- Enter serial numbers from nameplates in W@M Device Viewer (www.endress.com/deviceviewer): All information about the measuring device is displayed.

For an overview of the technical documentation provided, enter the serial number from the nameplates in the W@M Device Viewer (www.endress.com/deviceviewer).

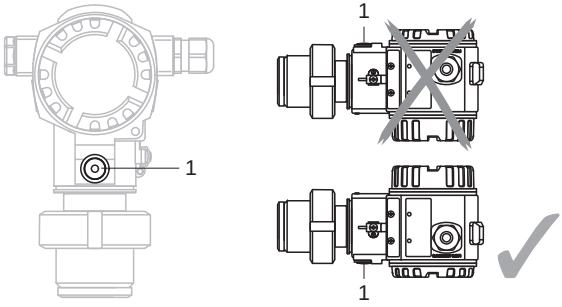
3 Installation

3.1 General installation instructions

Warning!
The seal is not allowed to press on the process isolating diaphragm as this could affect the measurement result.

Note!

- If a heated Deltapilot S is cooled during the cleaning (e.g. by cold water), a vacuum develops for a short time, whereby water can penetrate the sensor through the pressure compensation (1). If this is the case, mount the sensor with the pressure compensation (1) pointing downwards.



- Keep the pressure compensation and GORE-TEX® filter (1) free from contaminations.
- Do not use sharp or hard objects to handle or clean the process isolating diaphragm.
- Due to the orientation of the Deltapilot S, there may be a shift in the measured value, i.e. when the container is empty, the measured value does not display zero. You can correct this zero point shift either via the "zero" key on the electronic insert, or on the outside of the device or via the on-site display. → See Page 14, Section 4.2.1 "Position of operating elements", Page 15, Section 4.2.2 "Function of the operating elements" and Page 24, Section 5.1 "Position adjustment".
- To ensure optimal readability of the on-site display, it is possible to rotate the housing up to 380°.
- The on-site display can be rotated in 90° stages.
- Endress+Hauser offers a mounting bracket for installing on pipes or walls.

3.2 Measuring arrangement

3.2.1 Level measurement

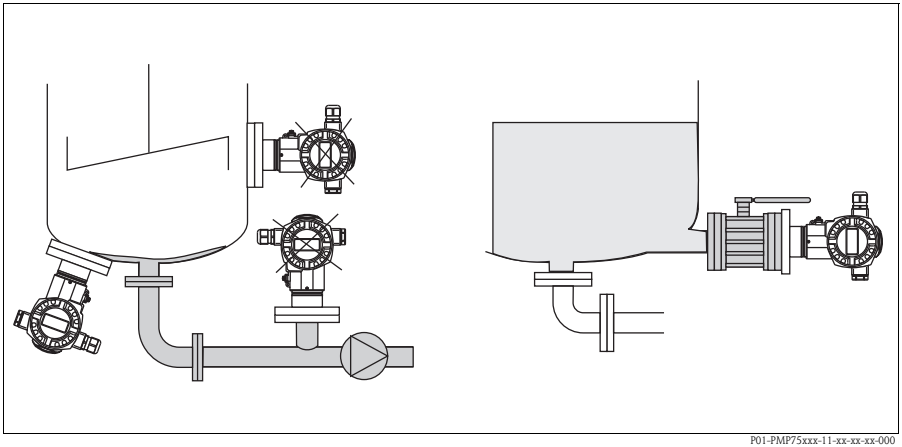


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Fig. 1: Measuring arrangement for level

- Always install the device below the lowest measuring point.
- Do not install the device at the following positions:
  – in the filling curtain
  – in the tank outflow
  – in the suction area of a pump
  – or at a point in the tank that can be affected by pressure pulses from the agitator
- The calibration and functional test can be carried out more easily if you mount the device downstream of a shutoff device.
- Deltapilot S must be included in the insulation for media that can harden when cold.

3.2.2 Pressure measurement in gases

- Mount Deltapilot S with shutoff device above the tapping point so that any condensate can flow into the process.

3.2.3 Pressure measurement in steams

- Mount Deltapilot S with siphon above the tapping point.
- Fill the siphon with liquid before commissioning.
  The siphon reduces the temperature to almost the ambient temperature.

3.2.4 Pressure measurement in liquids

- Mount Deltapilot S with the shutoff device below or at the same level as the tapping point.

3.3 Assembling and mounting the "separate housing" version

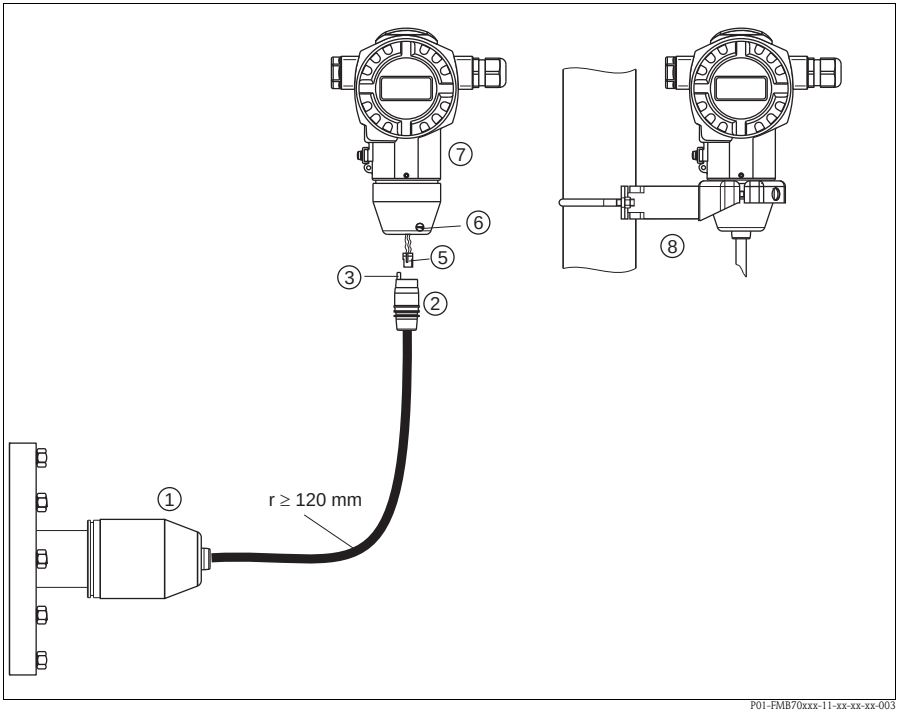


Fig. 2: "Separate housing" version

1 In the "separate housing" version, the sensor is supplied with process connection and cable fitted.
2 Cable with connection jack
3 Pressure compensation
5 Plug
6 Locking screw
7 Housing fitted with housing adapter, included
8 Mounting bracket suitable for wall and pipe mounting, included

Assembly and mounting

1. Connect plug (item 5) into the corresponding connection jack of the cable (item 2).
2. Plug the cable into the housing adapter (item 7).
3. Tighten the locking screw (item 6).
4. Mount the housing on a wall or pipe using the mounting bracket (item 8). When mounting on a pipe, tighten the nuts on the bracket uniformly with a torque of at least 5 Nm.
   Mount the cable with a bending radius (r) ≥ 120 mm.

4 Wiring

4.1 Connecting the device

⚠ Warning!
Risk of electric shock!
If the operating voltage is > 35 VDC: Dangerous contact voltage at terminals.
In a wet environment, do not open the cover if voltage is present.

⚠ Warning!
Limitation of electrical safety due to incorrect connection!

- Risk of electric shock and/or explosion in hazardous areas! In a wet environment, do not open the cover if voltage is present.
- When using the measuring device in hazardous areas, installation must comply with the corresponding national standards and regulations and the Safety Instructions or Installation or Control Drawings.
- Devices with integrated overvoltage protection must be earthed.
- Protective circuits against reverse polarity, HF influences and overvoltage peaks are installed.
- The supply voltage must match the supply voltage on the nameplate.
- Switch off the supply voltage before connecting the device.
- Remove housing cover of the terminal compartment.
- Guide cable through the gland. Preferably use twisted, screened two-wire cable.
- Connect device in accordance with the following diagram.
- Screw down housing cover.
- Switch on supply voltage.

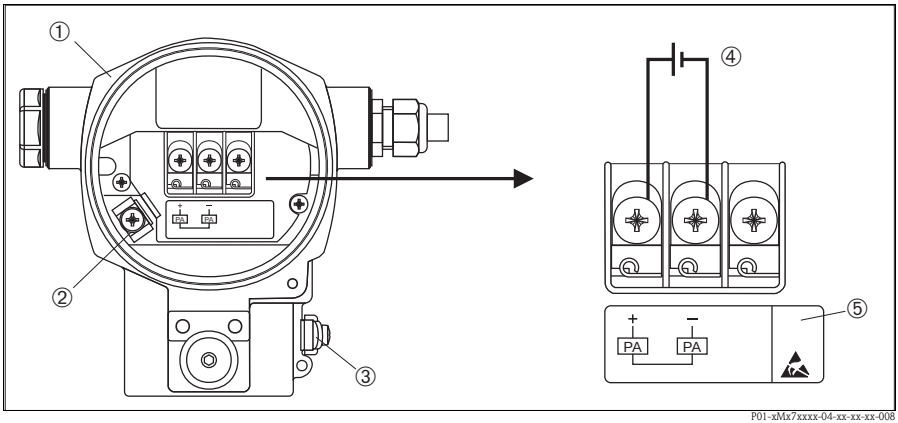


Fig. 3: Electrical connection PROFIBUS PA → Observe also the following section. For devices with plug see Operating Instructions.

1 Housing
2 Internal earth terminal
3 External earth terminal
4 Supply voltage, for version in non-hazardous area = 9...32 V DC
5 Devices with integrated overvoltage protection are labelled OVP (overvoltage protection) here.

4.2 Connecting the measuring unit

4.2.1 Supply voltage

- Version for non-hazardous area: 9...32 V DC

4.2.2 Current consumption

Up to HW Version 1.10:
11 mA ±1 mA, switch-on current corresponds to IEC 61158-2, Clause 21.

As of HW Version 02.00:
13 mA ±1 mA, switch-on current corresponds to IEC 61158-2, Clause 21.

As of Hardware Version 1.10, you will find a label in the device on the electronic insert.

4.2.3 Cable specification

- Use a twisted, screened two-wire cable, preferably cable type A.
- Terminals for wire cross-sections: 0.5...2.5 mm^2
- Outer cable diameter: 5...9 mm

Note!
For further information on the cable specifications, see Operating Instructions BA00034S "Guidelines for planning and commissioning PROFIBUS DP/PA", PNO Guideline 2.092 "PROFIBUS PA User and Installation Guideline" and IEC 61158-2 (MBP).

4.2.4 Earthing and screening

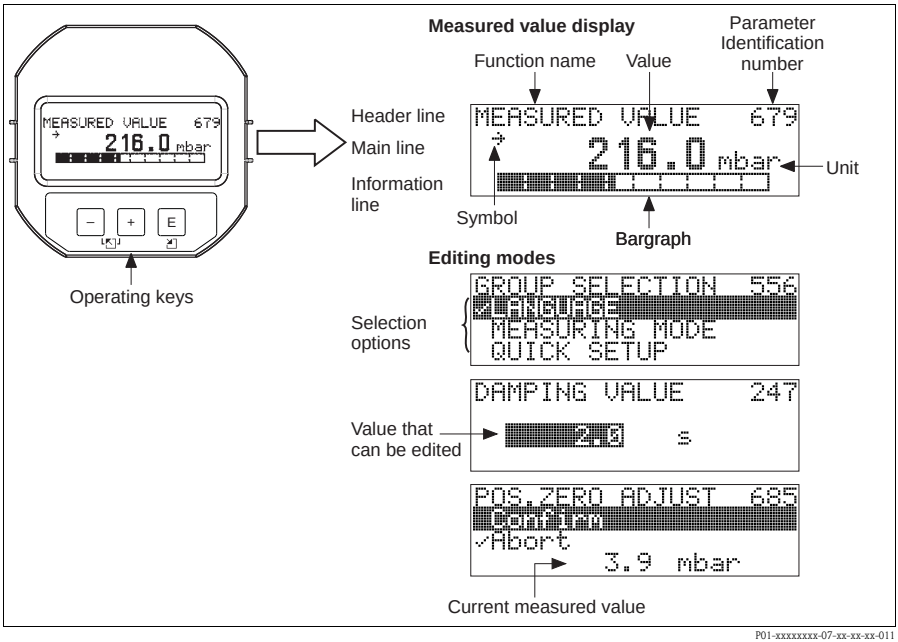
Deltapilot S must be earthed, for example by means of the external earth terminal.

Different earthing and screening installation methods are available for PROFIBUS PA networks such as:
- Isolated installation (see also IEC 61158-2)
- Installation with multiple earthing
- Capacitive installation

5 Operation

5.1 On-site display (optional)

A 4-line liquid crystal display (LCD) is used for display and operation. The on-site display shows measured values, dialog texts, fault messages and notice messages.
The display of the device can be turned in 90° steps.
Depending on the installation position of the device, this makes it easy to operate the device and read the measured values.


Measured value display
Parameter Identification number
Function name
Value
Header line
Main line
Information line
MEASURED VALUE 679
216.0 mbar
Unit
Symbol
Bargraph
Operating keys
Editing modes
Selection options
GROUP SELECTION 556
LANGUAGE
MEASURING MODE
QUICK SETUP
DAMPING VALUE 247
Value that can be edited
2.0 s
POS. ZERO ADJUST 685
Confirm
Abort
3.9 mbar
Current measured value
P01-xxxxxxxx-07-xx-xx-xx-011

The following table illustrates the symbols that can appear on the on-site display. Four symbols can occur at one time.

Symbol	Meaning
	**Alarm symbol** – Symbol flashing: warning, device continues measuring. – Symbol permanently lit: error, device does not continue measuring. *Note:* The alarm symbol may overlie the tendency symbol.
	**Lock symbol** The operation of the device is locked. Unlock device, → see Page 22, Section 4.5.
	**Communication symbol** Data transfer via communication
	**Tendency symbol (increasing)** The primary value of the Transducer Block is increasing.
	**Tendency symbol (decreasing)** The primary value of the Transducer Block is decreasing.
	**Tendency symbol (constant)** The primary value of the Transducer Block has remained constant over the past few minutes.

5.2 Operating elements

5.2.1 Position of operating elements

With regard to aluminium housings and stainless steel housing (T14/T15), the operating key is located either outside the device under the protection cap or inside on the electronic insert. In hygenic stainless housings (T17), the operating key is always located inside on the electronic insert. Additionally, three operating keys are located on the optional on-site display.

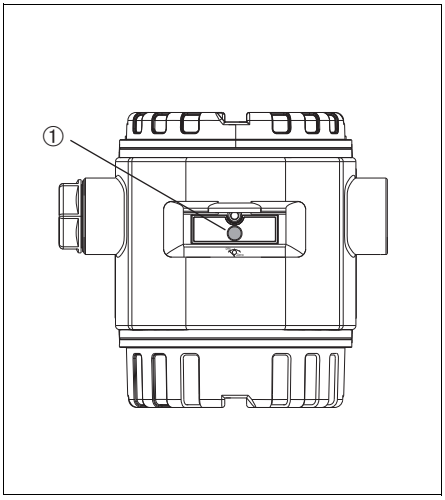


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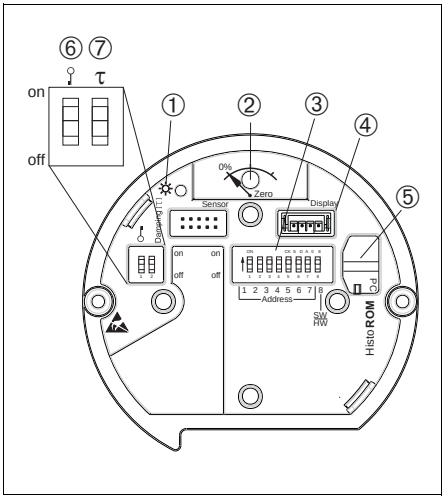
Fig. 4: Operating key, external under the protective flap

1 Operating key or position adjustment (zero point-correction) or total reset

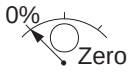
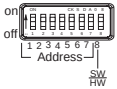
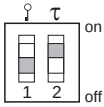


P01-xxxxxxxx-19-xx-xx-xx-105

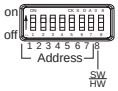
Fig. 5: Operating key and operating elements, internal

1 Green LED to indicate value is accepted
2 Operating key for position adjustment (zero point-correction) or total reset
3 DIP switch for hardware address
4 Slot for optional display
5 Slot for optional HistoROM® /M-DAT
6 DIP-switch for locking/unlocking measured-value-relevant parameters
7 DIP-switch for damping on/off

5.2.2 Function of the operating elements – on-site display not connected

Operating key(s)	Meaning
 P02-xxxxxxxx-19-xx-xx-xx-107	– Position adjustment (zero point correction): Press key for at least 3 seconds. If the LED on the electronic insert lights up briefly, the pressure applied has been accepted for position adjustment. → See also Page 27 (Level measuring mode) or Page 29 (Pressure measuring mode). – Total reset: Press key for at least 12 seconds. If the LED on the electronic insert lights up briefly, the reset is being carried out.
 P01-xxxxxxxx-19-xx-xx-xx-109	Set address in the bus. → See also Page 21, Section 4.4 "Configuring the device address".
 P01-xxxxxxxx-19-xx-xx-xx-108	– DIP-switch 1: for locking/unlocking measured-value-relevant parameters Factory setting: off (unlocked) – DIP switch 2: damping on/off Factory setting: on (damping on)

5.2.3 Function of the operating elements – on-site display connected

Operating key(s)	Meaning
+	– Navigate upwards in the picklist – Edit the numerical values and characters within a function
−	– Navigate downwards in the picklist – Edit the numerical values and characters within a function
E	– Confirm entry – Jump to the next item
+ and E	Contrast setting of on-site display: darker
− and E	Contrast setting of on-site display: brighter
+ and −	ESC functions: – Exit edit mode without saving the changed value. – You are in a menu within a function group. The first time you press the keys simultaneously, you go back a parameter within the function group. Each time you press the keys simultaneously after that, you go up a level in the menu. – You are in a menu at a selection level. Each time you press the keys simultaneously, you go up a level in the menu. *Note:* The terms function group, level and selection level are explained in Section 4.3.1, Page 17.
	Set address in the bus. → See also Page 21, Section 4.4 "Configuring the device address".

5.3 On-site operation via on-site display

5.3.1 Structure of the operating menu

The menu is split into four levels. The three upper levels are used to navigate while you use the bottom level to enter numerical values, select options and save settings.
→ For the entire menu see CD-ROM, Operating Instructions BA00356P.
The structure of the OPERATING MENU depends on the measuring mode selected, e.g. if the "Pressure" measuring mode is selected, only the functions necessary for this mode are displayed.

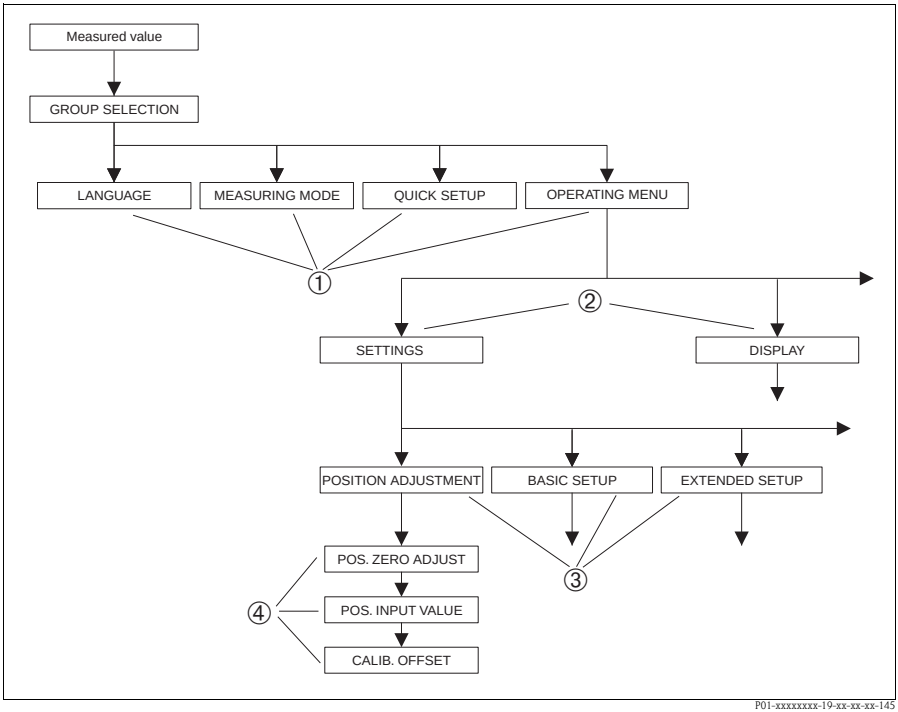
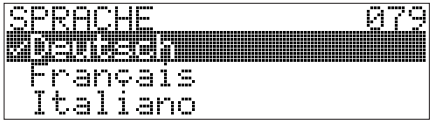
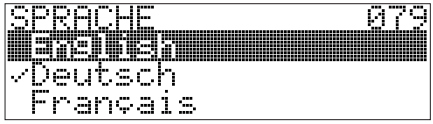
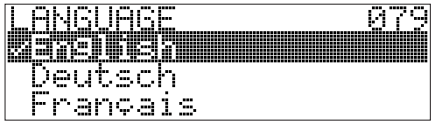


Fig. 6: Structure of the operating menu

1 1. Selection level
2 2. Selection level
3 Function groups
4 Parameter

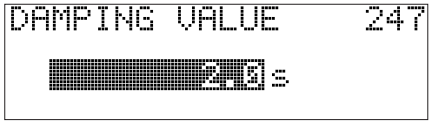
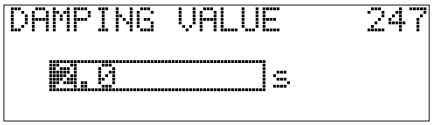
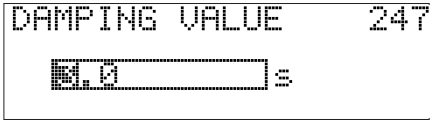
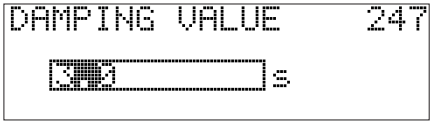
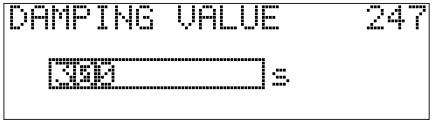
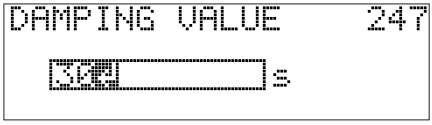
5.3.2 Selecting an option

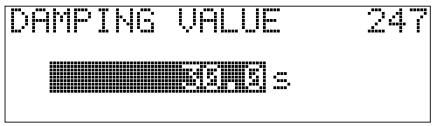
Example: select "English" as the language of the menu.

On-site display	Operation
 P01-xxxxxxxx-19-xx-xx-xx-017	German is selected as the language. A ✓in front of the menu text indicates the active option.
 P01-xxxxxxxx-19-xx-xx-xx-033	Select English with "+" or "–".
 P01-xxxxxxxx-19-xx-xx-xx-034	1. Confirm your choice with "E". A ✓ in front of the menu text indicates the active option. (English is now selected as the menu language.) 2. Jump to the next item with "E".

5.3.3 Editing a value

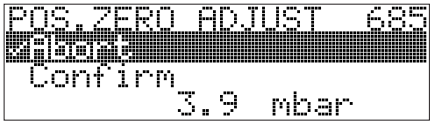
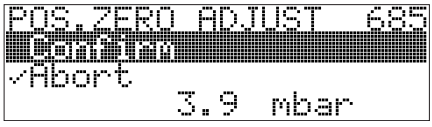
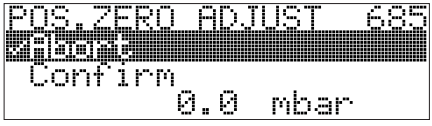
Example: adjusting DAMPING VALUE function from 2.0 s to 30.0 s. → See also Page 16, Section 4.2.3 "Function of the operating elements".

On-site display	Operation
 P01-xxxxxxxx-19-xx-xx-xx-023	The on-site display shows the parameter to be changed. The value highlighted in black can be changed. The "s" unit is fixed and cannot be changed.
 P01-xxxxxxxx-19-xx-xx-xx-027	1. Press "+" or "–" to get to the editing mode. 2. The first digit is highlighted in black.
 P01-xxxxxxxx-19-xx-xx-xx-028	1. Use "+" to change "2" to "3". 2. Confirm "3" with "E". The cursor jumps to the next position (highlighted in black).
 P01-xxxxxxxx-19-xx-xx-xx-029	The decimal point is highlighted in black, i.e. you can now edit it.
 P01-xxxxxxxx-19-xx-xx-xx-030	1. Keep pressing "+" or "–" until "0" is displayed. 2. Confirm "0" with "E". The cursor jumps to the next position. ↵ is displayed and is highlighted in black. → See next graphic.
 P01-xxxxxxxx-19-xx-xx-xx-031	Use "E" to save the new value and exit the editing mode. → See next graphic.

On-site display	Operation
 P01-xxxxxxxx-19-xx-xx-xx-032	The new value for the damping is now 30.0 s. – Jump to the next parameter with "E". – You can get back to the editing mode with "+" or "–".

5.3.4 Taking pressure applied at device as value

Example: performing position adjustment.

On-site display	Operation
 P01-xxxxxxxx-19-xx-xx-xx-158	The bottom line on the on-site display displays the pressure present, here 3.9 mbar.
 P01-xxxxxxxx-19-xx-xx-xx-159	Use "+" or "–" to switch to the "Confirm" option. The active selection is highlighted in black.
 P01-xxxxxxxx-19-xx-xx-xx-037	Use "E" to assign the value (3.9 mbar) to the POS. ZERO ADJUST parameter. The device confirms the calibration and jumps back to the parameter, here POS. ZERO ADJUST (see next graphic).
 P01-xxxxxxxx-19-xx-xx-xx-160	Switch to the next parameter with "E".

5.4 Configuring the device address

Note the following points:
- An address must be assigned to every PROFIBUS PA device. Only when the address is configured correctly will the device be recognised by the control system/master.
- Each address may only be assigned once in each PROFIBUS PA network.
- Valid device addresses are in the range from 0 to 125.
- The address 126 set at the factory can be used to check the function of the device and to connect to a PROFIBUS PA network already in operation. This address then has to be changed in order to integrate additional devices.
- All devices have the address 126 and software addressing on leaving the factory.
- The FieldCare operating program is delivered with the address 0 (default setting).

There are two ways of assigning the device address to Deltapilot S:
- Using a DP Class 2 master operating program, such as FieldCare or
- On site using the DIP switches

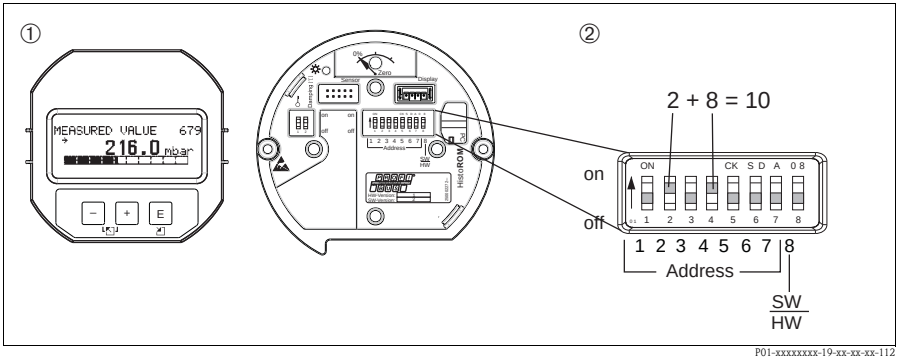


Fig. 7: Configuring the device address using the DIP switches

1 If necessary, remove on-site display (optional)
2 Set the hardware address via the DIP switches

5.4.1 Hardware addressing

Hardware addressing is configured as follows:

1. Set DIP switch 8 (SW/HW) to "Off".
2. Configure the address with DIP switches 1 to 7.
3. You have to wait 10 seconds for a change in address to take effect. The device is restarted.

DIP switch	1	2	3	4	5	6	7
Weighting in Position "On"	1	2	4	8	16	32	64
Weighting in Position "Off"	0	0	0	0	0	0	0

5.5 Locking/unlocking operation

Once you have entered all the parameters, you can lock your entries against unauthorised and undesired access.

You have the following possibilities for locking/unlocking the operation:
- Via a DIP-switch on the electronic insert, locally on the display (→ see Page 14, Fig. 4).
- Via the on-site display (optional)
- Via digital communication.

The -symbol on the on-site display indicates that operation is locked. Parameters which refer to how the display appears, e.g. LANGUAGE and DISPLAY CONTRAST can still be altered.

Note!
- If operation is locked by means of the DIP-switch, you can only unlock operation again by means of the DIP-switch. If operation is locked by means of remote operation e.g. FieldCare, you can only unlock operation again by means of remote operation.

The table provides an overview of the locking functions:

Locking via	**View/ read parameter**	**Modify/write via**[1]		**Unlocking via**		
		On-site display	**Remote operation**	**DIP-Switch**	**On-site display**	**Remote operation**
DIP-Switch	yes	no	no	yes	no	no
On-site display	yes	no	no	no	yes	yes
Remote operation	yes	no	no	no	yes	yes

1) Parameters which refer to how the display appears, e.g. LANGUAGE and DISPLAY CONTRAST can still be altered.

	Locking/Unlocking operation via on-site display or remote operation
Locking operation	1. Select INSERT PIN NO. parameter, Menu path: GROUP SELECTION → OPERATING MENU → OPERATION → INSERT PIN NO. 2. To lock operation, enter "0" for this parameter.
Unlocking operation	1. Select INSERT PIN NO. parameter. 2. To unlock operation, enter "2457" for the parameter.

6 Commissioning

⚠ Warning!

- If a pressure smaller than the minimum permitted pressure is present at the device, the messages "E120 Sensor low pressure" and "E727 Sensor pressure error – overrange" are output in succession.
- If a pressure greater than the maximum permitted pressure is present at the device, the messages "E115 Sensor overpressure" and "E727 Sensor pressure error – overrange" are output in succession.
- Messages E727, E115 and E120 are "Error"-type messages and can be configured as a "Warning" or an "Alarm". These messages are configured as "Warning" messages at the factory. These messages are configured as "Warning" messages at the factory. In applications where the user is consciously aware of the fact that the sensor range can be exceeded (e.g. cascade measurement), this setting prevents the transference of status BAD.
- We recommend setting messages E727, E115 and E120 to "Alarm" in the following instances (→ see Operating Instructions BA00356P):
  - The sensor range does not have to be exceeded for the measuring application.
  - Position adjustment has to be carried out that has to correct a large measured error as a result of the orientation of the device.

✎ Note!
By default, the device is set up for the Level measuring mode, "Level Easy Pressure" level selection and "%" as the unit.

6.1 Position adjustment

Due to the orientation of the device, there may be a shift in the measured value, i.e. when the container is empty, the measured value parameter does not display zero. There are three options to choose from when performing position adjustment.
(Menu path: GROUP SELECTION → OPERATING MENU → SETTINGS → POSITION ADJUSTMENT)

Parameter name	Description
POS. ZERO ADJUST (685) Entry	Position adjustment – the pressure difference between zero (set point) and the measured pressure need not be known. (A reference pressure is present at the device.) **Example:** – MEASURED VALUE = 2.2 mbar – Correct the MEASURED VALUE via the POS. ZERO ADJUST parameter with the "Confirm" option. This means that you are assigning the value 0.0 to the pressure present. – MEASURED VALUE (after pos. zero adjust) = 0.0 mbar The CALIB. OFFSET parameter displays the resulting pressure difference (offset) by which the MEASURED VALUE was corrected. **Factory setting:** 0
POS. INPUT VALUE (563) Entry	Position adjustment – the pressure difference between zero (set point) and the measured pressure need not be known. (A reference pressure is present at the device.) **Example:** – MEASURED VALUE = 0.5 mbar – For the POS. INPUT VALUE parameter, specify the desired set point for the MEASURED VALUE, e.g. 2 mbar. (MEASURED $VALUE_{new}$ = POS. INPUT VALUE) – MEASURED VALUE (after entry for POS. INPUT VALUE) = 2.0 mbar – The CALIB. OFFSET parameter displays the resulting pressure difference (offset) by which the MEASURED VALUE was corrected. CALIB. OFFSET = MEASURED $VALUE_{old}$ – POS. INPUT VALUE, here: CALIB. OFFSET = 0.5 mbar – 2.0 mbar = – 1.5 mbar) **Factory setting:** 0
CALIB. OFFSET (319) Entry	Position adjustment – the pressure difference between zero (set point) and the measured pressure is known. **Example:** – MEASURED VALUE = 2.2 mbar – Via the CALIB. OFFSET parameter, enter the value by which the MEASURED VALUE should be corrected. To correct the MEASURED VALUE to 0.0 mbar, you must enter the value 2.2 here. (MEASURED $VALUE_{new}$ = MEASURED $VALUE_{old}$ – CALIB. OFFSET) – MEASURED VALUE (after entry for calib. offset) = 0.0 mbar **Factory setting:** 0

6.2 Level measurement

6.2.1 Quick Setup menu for Level measuring mode – on-site display

Note!

- Some parameters are only displayed if other parameters are appropriately configured (see the following table).
- The following parameters are set to the following values in the factory:
  - LEVEL SELETION: Level Easy Pressure
  - CALIBRATION MODE: Wet
  - OUTPUT UNIT or LIN. MEASURAND: %
  - EMPTY CALIB.: 0.0
  - FULL CALIB.: 100.0
- → For parameter description see CD-ROM, Operating Instructions BA00296P.
- The quick setup is suitable for simple and quick commissioning. If you wish to make more complex settings, e.g. change the unit from "%" to "m", you will have to calibrate using the BASIC SETTINGS group.
- See also Page 16, Section 4.2.3 "Function of the operating elements" and Page 17, 4.3 "On-site operation via on-site display".

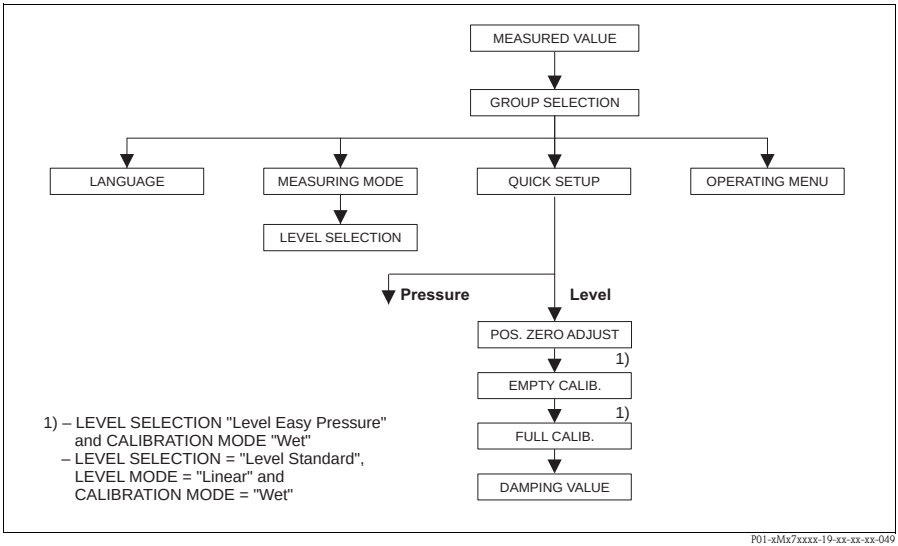


Fig. 8: Quick Setup menu for the Level measuring mode

On-site operation
Measured value display On-site display: Switch from the measured value display to GROUP SELECTION with E.
GROUP SELECTION Select MEASURING MODE.
MEASURING MODE Select "Level" option.
LEVEL SELECTION Select level mode.
GROUP SELECTION Select QUICK SETUP menu.
POS. ZERO ADJUST Due to orientation of the device, there may be a shift in the measured value. You correct the MEASURED VALUE via the POS. ZERO ADJUST parameter with the "Confirm" option, i. e. you assign the value 0.0 to the pressure present.
EMPTY CALIB. 1) Enter level for the lower calibration point. For this parameter, enter a level value which is assigned to the pressure present at the device.
FULL CALIB. 1) Enter level for the upper calibration point. For this parameter, enter a level value which is assigned to the pressure present at the device.
DAMPING TIME Enter damping time (time constant τ). The damping affects the speed at which all subsequent elements, such as the on-site display, measured value and OUT value of the Analog Input Block react to a change in the pressure.

1) – LEVEL SELECTION "Level Easy Pressure" and CALIBRATION MODE "Wet"
– LEVEL SELECTION "Level Standard", LEVEL MODE "Linear" and CALIBRATION MODE "Wet"
(Menu path for CALIBRATION MODE: GROUP SELECTION → OPERATING MENU → SETTINGS → BASIC SETTINGS)

6.2.2 On-site operation – on-site display not connected

If no on-site display is connected, the following functions are possible by means of the key on the electronic insert or on the exterior of the device:
- Position adjustment (zero point correction)
- Device reset, → see also Page 15, Section 4.2.2 "Function of the operating elements", Table.

Note!
- The operation must be unlocked. → See page 22, Section 4.5 "Locking/unlocking operation".
- The pressure applied must be within the nominal pressure limits of the sensor. See information on the nameplate.

Carry out position adjustment:

1. Pressure is present at device.
2. Press key for at least 3 seconds. → See Page 14, Section 4.2.1 "Position of operating elements".
3. If the LED on the electronic insert lights up briefly, the pressure applied has been accepted for position adjustment.
   If the LED does not light up, the pressure applied was not accepted. Observe the input limits.

6.3 Pressure measurement

6.3.1 Quick Setup menu for Pressure measuring mode – on-site display

Note!
See also Page 16, Section 4.2.3 "Function of the operating elements" and Page 17, 4.3 "On-site operation via on-site display".

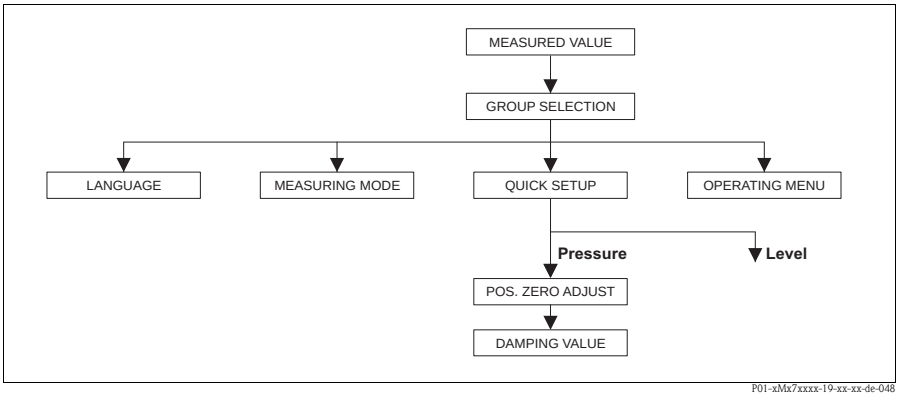


Fig. 9: Quick Setup menu for Pressure measuring mode

On-site operation
Measured value display On-site display: Switch from the measured value display to GROUP SELECTION with E.
GROUP SELECTION Select MEASURING MODE.
MEASURING MODE Select "Pressure" option.
GROUP SELECTION Select QUICK SETUP menu.
POS. ZERO ADJUST Due to orientation of the device, there may be a shift in the measured value. You correct the MEASURED VALUE via the POS. ZERO ADJUST parameter with the "Confirm" option, i. e. you assign the value 0.0 to the pressure present.
DAMPING TIME Enter damping time (time constant τ). The damping affects the speed at which all subsequent elements, such as the on-site display, measured value and OUT value of the Analog Input Block react to a change in the pressure.

6.3.2 On-site operation – on-site display not connected

If no on-site display is connected, the following functions are possible by means of the key on the electronic insert or on the exterior of the device:
- Position adjustment (zero point correction)
- Device reset, → see also Page 15, Section 4.2.2 "Function of the operating elements", Table.

Note!
- The operation must be unlocked. → See page 22, Section 4.5 "Locking/unlocking operation".
- The pressure applied must be within the nominal pressure limits of the sensor. See information on the nameplate.

Carry out position adjustment:

1. Pressure is present at device.
2. Press key for at least 3 seconds. → See Page 14, Section 4.2.1 "Position of operating elements".
3. If the LED on the electronic insert lights up briefly, the pressure applied has been accepted for position adjustment.
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