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71521431
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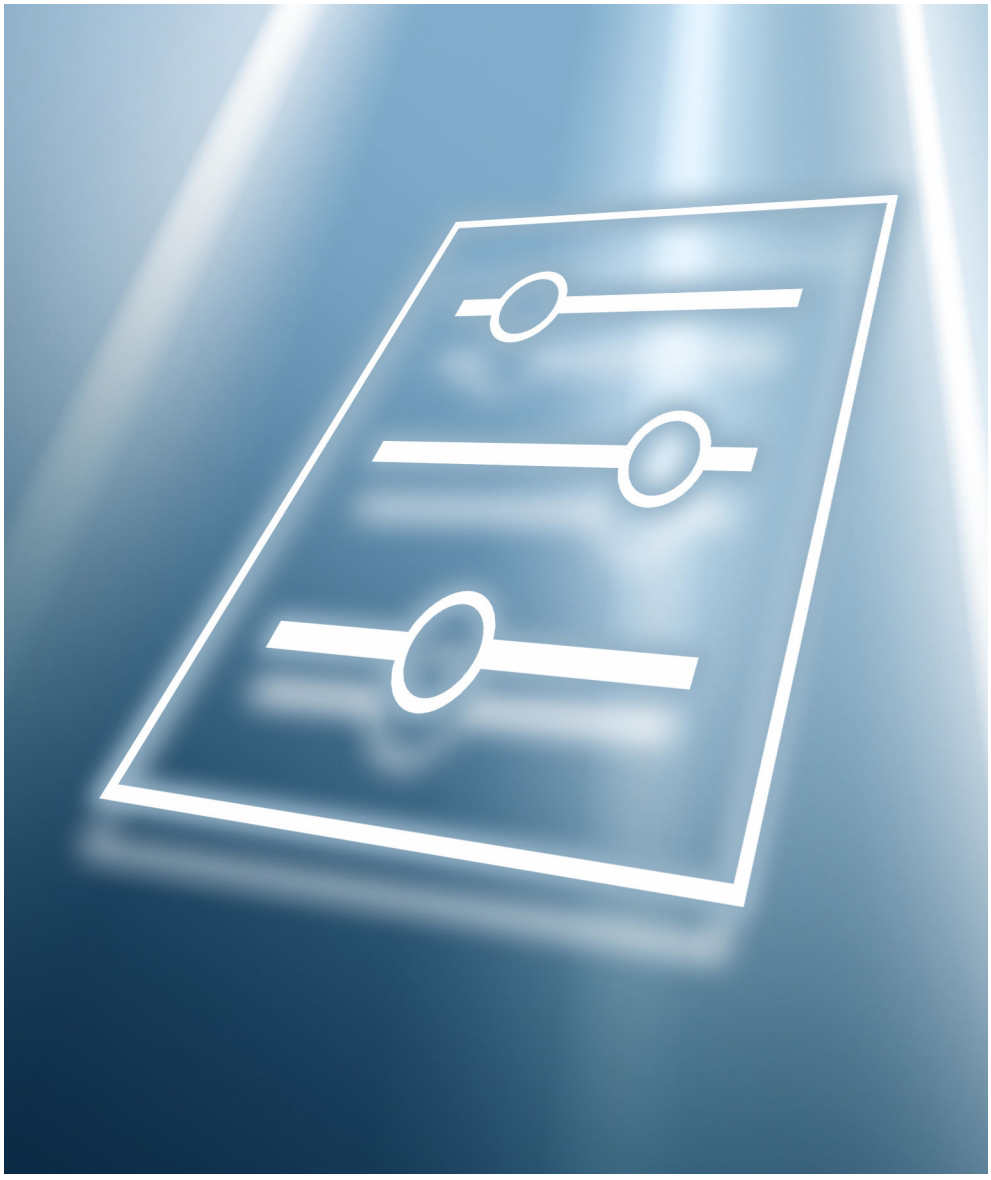
01.00.zz (Device firmware)

Description of Device Parameters
Deltabar PMD78B

Differential pressure measurement
HART



Endress+Hauser
People for Process Automation

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1 About this document

1.1 Document function

The document is part of the Operating Instructions and serves as a reference for parameters. The document provides a detailed explanation of each individual parameter.

Performance of tasks that require detailed knowledge of the functioning of the device:
- Commissioning measurements under difficult conditions
- Optimal adaptation of the measurement to difficult conditions
- Detailed configuration of the communication interface
- Error diagnostics in difficult cases

1.2 Target audience

The document is aimed at specialists who work with the device over the entire life cycle and perform specific configurations.

1.3 Using this document

1.3.1 Information on the document structure

This document lists the submenus and their parameters that are available when the **"Maintenance" option** user role is activated.

For the operating concept of the operating menus, see the Operating Instructions.

1.3.2 Structure of a parameter description

The individual parts of a parameter description are described in the following section:

- Navigation: Navigation path to the parameter via the local display
- Prerequisite: The parameter is only available under these specific conditions
- Description: Description of the parameter function
- Selection: List of the individual options for the parameter
- User entry: Input range for the parameter
- User interface: Display value/data of the parameter
- Factory setting: Default setting on leaving the factory
- Additional information:
  - On individual options
  - On display values/data
  - On the input range
  - On the factory setting
  - On the parameter function

1.4 Symbols used

1.4.1 Symbols for certain types of information

Additional information:

Reference to documentation:

Operation via local display:

Operation via operating tool:

Write-protected parameter:

1.5 Documentation

1.5.1 Standard documentation

Operating Instructions

The Operating Instructions are available on the Internet at: www.endress.com → Download

1.5.2 Supplementary device-dependent documentation

Special Documentation

The Special Documentation is available on the Internet at: www.endress.com → Download

2 Overview of the operating menu

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3 Description of device parameters

In the following section, the parameters are listed according to the menu structure of the local display.

The operating menu is dynamic and adapts the choice of parameters to the selected options.

The parameter description of the operating tool is contained in the operating tool.

Navigation System → Display

Language

Navigation System → Display → Language

Prerequisite A local display is provided.

Description Use this function to select the configured language on the local display.

Selection
- English
- Deutsch
- Français
- Español
- Italiano
- Nederlands
- Portuguesa
- Polski
- русский язык (Russian)
- Svenska
- Türkçe
- 中文 (Chinese)
- 日本語 (Japanese)
- 한국어 (Korean)
- Bahasa Indonesia
- tiếng Việt (Vietnamese)
- čeština (Czech)

Factory setting English (alternatively, the ordered language is preset in the device)

Access status display

Navigation System → Display → Access stat.disp

Prerequisite A local display is provided.

Description Displays the access authorization to the parameters via the local display.

User interface
- Operator
- Maintenance

Additional information

Description

If the 🔒-symbol appears in front of a parameter, the parameter cannot be modified via the local display with the current access authorization.

Access authorization can be modified via the **Enter access code** parameter.

For the **Enter access code** parameter: See the "Disabling write protection via the access code" section of the Operating Instructions for the device.

If additional write protection is active, this restricts the current access authorization even further.

User interface

Detailed information on access authorization is provided in the "User roles and associated access authorization" and "Operating concept" sections of the Operations Instructions for the device.

3.1 "Guidance" menu

Navigation Guidance

3.1.1 "Commissioning" wizard

Navigation Guidance → Commissioning

Device tag

Navigation Guidance → Commissioning → Device tag

Description Enter a unique name for the measuring point to identify the device quickly within the plant.

User entry Character string comprising numbers, letters and special characters (#32)

Assign PV

Navigation Guidance → Commissioning → Assign PV

Description Use this function to select a measured variable (HART device variable) for the primary dynamic variable (PV).

Selection
- Pressure
- Scaled variable

Assign SV

Navigation Guidance → Commissioning → Assign SV

Description Use this function to select a measured variable (HART device variable) for the secondary dynamic variable (SV).

Selection
- Pressure
- Scaled variable
- Sensor temperature
- Sensor pressure
- Electronics temperature
- Terminal current *
- Terminal voltage 1 *
- Median of pressure signal *

* Visibility depends on order options or device settings

- Noise of pressure signal *
- Percent of range
- Loop current
- Not used

Additional information *Selection*

- **Sensor pressure** option
  Sensor Pressure is the raw signal from sensor before damping and position adjustment.
- **Terminal current** option
  The terminal current is the read-back current on terminal block.
- **Loop current** option
  The loop current is the output current set by the applied pressure.

Damping

Navigation Guidance → Commissioning → Damping

Description Enter damping constant.
The damping constant affects the speed at which the measured value reacts to pressure changes.

User entry 0 to 999.0 s

Pressure unit

Navigation Guidance → Commissioning → Pressure unit

Description Use this function to select the unit for the pipe pressure.

Selection

SI units	*US units*	*Other units*
▪ MPa	psi	▪ inH2O
▪ kPa		▪ inH2O (4°C)
▪ Pa		▪ mmH2O
▪ bar		▪ mmH2O (4°C)
▪ mbar a		▪ mH2O
▪ torr		▪ mH2O (4°C)
▪ atm		▪ ftH2O
▪ kgf/cm²		▪ inHg
▪ gf/cm²		▪ mmHg

Temperature unit

Navigation Guidance → Commissioning → Temperature unit

Description Use this function to select the unit for the temperature.

* Visibility depends on order options or device settings

Selection

SI units
- °C
- K

US units
°F

Factory setting

Country-specific:
- °C
- °F

Additional information

Selection

Zero adjustment

Navigation

Guidance → Commissioning → Zero adjustment

Description

Due to the mounting position of the measuring instrument, a pressure shift may occur. The pressure shift can be corrected with the zero adjustment.

Selection

- No
- Confirm

Pressure

Navigation

Guidance → Commissioning → Pressure

Output current transfer function

Navigation

Guidance → Commissioning → Curr. trans.func

Description

'Linear'
The linear pressure signal is used for the current output. The flow must be calculated in the evaluation unit.

'Square root - differential pressure only'
The root flow signal is used for the current output. The 'Flow (square root)' current signal is indicated on the on-site display with a root symbol.

Selection

- Linear
- Square root *

Additional information

Selection

"Square root" option
Is used when a linear output porportional to the flow is required. The flow calcualtion is done internally in the transmitter.

* Visibility depends on order options or device settings

Low flow cut off

Navigation Guidance → Commissioning → Low flow cut off

Description When activated, this function suppresses small flows which can lead to large fluctuations in the measured value.

User entry 0.0 to 50.0 %

Scaled variable unit

Navigation Guidance → Commissioning → SV unit

Description Use 'Free text', first selection, if the desired unit is not available in the selection list. It is possible to define a customer specific unit with another parameter.

Selection

SI units
- %
- mm
- cm
- m
- l
- hl
- m^3
- g
- kg
- t
- g/s
- kg/s
- kg/min
- kg/h
- t/min
- t/h
- t/d
- m^3/s
- m^3/min
- m^3/h
- m^3/d
- l/s
- l/min
- l/h
- Nm^3/h
- Nl/h
- Sm^3/s
- Sm^3/min
- Sm^3/h
- Sm^3/d
- Nm^3/s
- g/cm^3
- kg/m^3

US units
- ft
- in
- ft^3
- gal (us)
- bbl (us;oil)
- oz
- lb
- STon
- lb/s
- lb/min
- lb/h
- STon/min
- STon/h
- STon/d
- ft^3/s
- ft^3/min
- ft^3/h
- ft^3/d
- gal/s (us)
- gal/min (us)
- gal/h (us)
- gal/d (us)
- bbl/s (us;oil)
- bbl/min (us;oil)
- bbl/h (us;oil)
- bbl/d (us;oil)
- Sft^3/min
- Sft^3/h
- Sft^3/d

Imperial units
- gal (imp)
- gal/s (imp)
- gal/min (imp)
- gal/h (imp)

Custom-specific units
Free text

Free text

Navigation Guidance → Commissioning → Free text

User entry Character string comprising numbers, letters and special characters (#32)

Scaled variable transfer function

Navigation Guidance → Commissioning → Scal. v. trans.

Description

'Linear'
The linear pressure signal is used for the current output. The flow must be calculated in the evaluation unit. Deviating from the bar graph (current output), the digital value on the display shows continues to be the eradicated value.

'Square root'
The root flow signal is used for the current output. The 'Flow (square root)' current signal is indicated on the on-site display with a root symbol.

'Table'
The output ist defined according to the scaled variable / pressure table entered.

Selection

- Linear
- Square root *
- Table

Additional information

Selection

"Square root" option
Is used when a linear output porportional to the flow is required. The flow calcualtion is done internally in the transmitter.

Table not available

Navigation Guidance → Commissioning → Table not avail.

User interface Character string comprising numbers, letters and special characters (#2)

Pressure value 1

Navigation Guidance → Commissioning → P. value 1

Description Enter pressure for the first scaling point. 'Scaled variable value 1' will be allocated to this pressure.

* Visibility depends on order options or device settings

User entry Signed floating-point number

Scaled variable value 1

Navigation Guidance → Commissioning → Sc. var.value 1

Description Enter value for the first scaling point. This value is allocated to 'Pressure value 1'.

User entry Signed floating-point number

Pressure value 2

Navigation Guidance → Commissioning → P. value 2

Description If Span is confirmed, the applied pressure is transferred to the field "Pressure value 2" and set to 20mA. The "Pressure value 2" is assigned to the Scaled variable value 2.

User entry Signed floating-point number

Scaled variable value 2

Navigation Guidance → Commissioning → Sc. var.value 2

Description Assignment of Pressure Value 2 to Scaled Variable value 2.

User entry Signed floating-point number

Lower range value output

Navigation Guidance → Commissioning → Low.range outp

Description Depending of which variable has been selected as PV, define the related lower and upper range values.
Assignment PV value to 4 mA and 20 mA.

User entry Signed floating-point number

Pressure

Navigation Guidance → Commissioning → Pressure

Upper range value output

Navigation Guidance → Commissioning → Upp.range outp

Description Depending of which variable has been selected as PV, define the related lower and upper range values.
Assignment PV value to 4 mA and 20 mA.

User entry Signed floating-point number

Scaled variable

Navigation Guidance → Commissioning → Scaled variable

User interface Signed floating-point number

Current range output

Navigation Guidance → Commissioning → Cur.range outp

Description Define the current range used to transmit the measured or calculated value.
In brackets are indicated the “low saturation value” and the “high saturation value”.
If Measured value <= “low saturation”, the output current is set to “low saturation”.
If Measured value >= “high saturation”, the output current is set to “”high saturation”.

Note:
Currents below 3.6 mA or above 21.5 mA can be used to signal an alarm.

Selection
- 4...20 mA (4... 20.5 mA)
- 4...20 mA NE (3.8...20.5 mA)
- 4...20 mA US (3.9...20.8 mA)

Failure behavior current output

Navigation Guidance → Commissioning → Fail.behav.out

Description Defines which current the output assumes in the case of an error.
Min: < 3.6 mA
Max: >21.5 mA

Selection
- Min.
- Max.

3.1.2 "SIL confirmation" wizard

Navigation Guidance → SIL confirmation

Proof test via Bluetooth allowed?

Navigation Guidance → SIL confirmation → Bluetooth

Description
After completition of the SIL activation/deactivation wizard, the device will be write protected via software lock.

To use the proof test wizard (optional) where alarm currents are simulated, the device does not have to be unlocked.

It must be defined, if the proof test wizard via Bluetooth is allowed.

Selection
- No
- Yes

Enter SIL locking code

Navigation Guidance → SIL confirmation → SIL locking code

Description
Enter the locking code to start the SIL/WHG locking sequence.

User entry
0 to 65 535

Additional information
Locking codes
- WHG: 7450
- SIL: 7452
- SIL and WHG: 7454

SIL status

Navigation Guidance → SIL confirmation → SIL status

User interface
- Not active
- SIL sequence active
- Active
- Failed
- Finished

Character test string

Navigation Guidance → SIL confirmation → Char.test string

Description Check the shown character string for correct representations of the characters and digits.

User interface Character string comprising numbers, letters and special characters (#14)

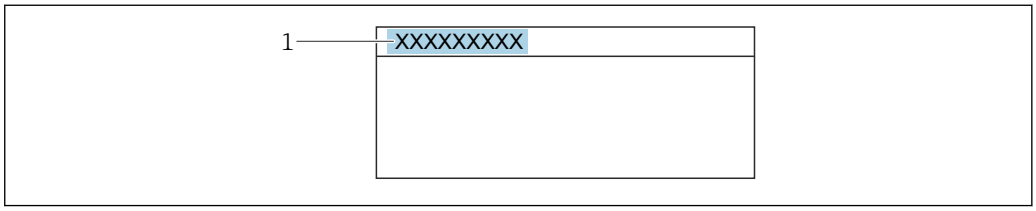
Device tag

Navigation Guidance → SIL confirmation → Device tag

Description Displays a unique name for the measuring point so it can be identified quickly within the plant. The name is displayed in the header.

User interface Max. 32 characters, such as letters, numbers or special characters (e.g. @, %, /).

Additional information *User interface*



1 Position of the header text on the display

The number of characters displayed depends on the characters used.

Device name

Navigation Guidance → SIL confirmation → Device name

Description Displays the name of the transmitter. It can also be found on the nameplate of the transmitter.

User interface Max. 32 characters such as letters or numbers.

Serial number

Navigation Guidance → SIL confirmation → Serial number

Description Displays the serial number of the measuring device.

The number can be found on the nameplate of the sensor and transmitter.

User interface Max. 11-digit character string comprising letters and numbers.

Additional information *Description*

Uses of the serial number
- To identify the measuring device quickly, e.g. when contacting Endress+Hauser.
- To obtain specific information on the measuring device using the Device Viewer: www.endress.com/deviceviewer

CRC device configuration

Navigation Guidance → SIL confirmation → CRC device conf.

Description CRC device configuration based on current settings of safety relevant parameters. The CRC device configuration is unique and can be used to detect changes in safety relevant parameter settings.

User interface 0 to 65 535

Stored CRC device configuration

Navigation Guidance → SIL confirmation → Stored CRC conf.

Description Stored CRC after the last SIL lock. Factory delivery is 65535 means that the device has not yet been SIL locked.

User interface 0 to 65 535

Timestamp stored CRC device config.

Navigation Guidance → SIL confirmation → TS stored CRC

Description Gives the time stamp when the CRC was last stored following completion of the SIL-Mode Wizard.

User interface Character string comprising numbers, letters and special characters (#20)

Operating time

Navigation Guidance → SIL confirmation → Operating time

Description Indicates how long the device has been in operation.

Additional information Maximum time: 9 999 d (≈ 27 years)

Configuration counter

Navigation Guidance → SIL confirmation → Config. counter

Description Displays the counter for changes to the device parameters.

Additional information:
- If the value for a static parameter is changed when optimizing or configuring the parameter, the counter is incremented by 1. This is to enable tracking different parameter versions.
- When multiple parameters are changed simultaneously, e.g. when loading parameters into the device from an external source such as FieldCare, the counter may display a higher value. The counter cannot be reset, nor is it reset to a default value on performing a device reset.
- Once the counter has reached the value 65535, it restarts at 0.

User interface 0 to 65 535

Zero adjustment offset

Navigation Guidance → SIL confirmation → Zero adj. offset

Description Assigned value of zero adjustment due to mounting position.

User interface Character string comprising numbers, letters and special characters (#20)

HP/LP swap

Navigation Guidance → SIL confirmation → HP/LP swap

Description Assigned setting high pressure / low pressure.

User interface
- No
- Yes

Damping

Navigation Guidance → SIL confirmation → Damping

Description Assigned damping value.

User interface Character string comprising numbers, letters and special characters (#20)

Sensor pressure range behavior

Navigation Guidance → SIL confirmation → P-range behavior

Description Assigned event behavior in case of over/under pressure outside of measuring range.

User interface
- Alarm
- Warning
- Remark
- Special

Output current transfer function

Navigation Guidance → SIL confirmation → Curr. trans.func

Description Assigned transfer function for current output.

User interface
- Linear
- Square root

Low cutoff

Navigation Guidance → SIL confirmation → Low cutoff

User interface Character string comprising numbers, letters and special characters (#20)

Failure behavior current output

Navigation Guidance → SIL confirmation → Fail.behav.out

Description Assigned value of current output in case of an error.

User interface
- Min.
- Max.

Current range output

Navigation Guidance → SIL confirmation → Cur.range outp

Description Assigned current range used to transmit the measured value.

User interface
- 4...20 mA (4... 20.5 mA)
- 4...20 mA NE (3.8...20.5 mA)
- 4...20 mA US (3.9...20.8 mA)
- Customer specific

Measuring mode current output

Navigation Guidance → SIL confirmation → Meas.mode outp

Description Assigned setting of curve form of current output.

User interface
- Standard
- Inverse
- Bi-directional

Lower range value output

Navigation Guidance → SIL confirmation → Low.range outp

Description Assigned value 4 mA.

User interface Character string comprising numbers, letters and special characters (#20)

Upper range value output

Navigation Guidance → SIL confirmation → Upp.range outp

Description Assigned value 20 mA.

User interface Character string comprising numbers, letters and special characters (#20)

Assign PV

Navigation Guidance → SIL confirmation → Assign PV

Description Identifies the process variable linked with the primary variable. Primary variable is used in HART as current output.

User interface
- Pressure
- Scaled variable

Enter SIL locking code

Navigation Guidance → SIL confirmation → SIL locking code

Description Enter the locking code to start the SIL/WHG locking sequence.

User entry 0 to 65 535

Additional information **Locking codes**
- WHG: 7450
- SIL: 7452
- SIL and WHG: 7454

Code incorrect

Navigation Guidance → SIL confirmation → Code incorrect

Description Abort SIL confirmation sequence or reenter SIL locking code.

Selection
- Reenter code
- Abort sequence

Locking status

Navigation Guidance → SIL confirmation → Locking status

Description Displays the active write protection.

User interface
- Hardware locked
- SIL locked
- Temporarily locked

Additional information

User interface

If two or more types of write protection are active, the write protection with the highest priority is shown on the local display. In the operating tool all active types of write protection are displayed.

Detailed information on access authorization is provided in the "User roles and associated access authorization" and "Operating concept" sections of the Operations Instructions for the device.

Selection

Function scope of the "Locking status" parameter

Options	Description
None	The access status displayed in the **Access status display** parameter (→ 15) applies. Only appears on local display.
Hardware locked	The DIP switch for hardware locking is activated on the main electronics module. This prevents write access to the parameters (e.g. via the local display or operating tool).
Temporarily locked	Write access to the parameters is temporarily locked due to device-internal processing (e.g. data upload/download, reset). Once the internal processing has been completed, the parameters can be changed once again.

3.1.3 "Deactivate SIL" wizard

Navigation Guidance → Deactivate SIL

Enter SIL unlocking code

Navigation Guidance → Deactivate SIL → SIL unlock. code

Description The SIL locking/unlocking code can be found in the corresponding safety manual.

User entry 0 to 65 535

Code incorrect

Navigation Guidance → Deactivate SIL → Code incorrect

Description Abort SIL confirmation sequence or reenter SIL locking code.

Selection
- Reenter code
- Abort sequence

Locking status

Navigation Guidance → Deactivate SIL → Locking status

Description Displays the active write protection.

User interface
- Hardware locked
- SIL locked
- Temporarily locked

Additional information

User interface

If two or more types of write protection are active, the write protection with the highest priority is shown on the local display. In the operating tool all active types of write protection are displayed.

Detailed information on access authorization is provided in the "User roles and associated access authorization" and "Operating concept" sections of the Operations Instructions for the device.

Selection

Function scope of the "Locking status" parameter

Options	Description
None	The access status displayed in the **Access status display** parameter (→ 15) applies. Only appears on local display.
Hardware locked	The DIP switch for hardware locking is activated on the main electronics module. This prevents write access to the parameters (e.g. via the local display or operating tool).
Temporarily locked	Write access to the parameters is temporarily locked due to device-internal processing (e.g. data upload/download, reset). Once the internal processing has been completed, the parameters can be changed once again.

3.2 "Diagnostics" menu

Navigation Diagnostics

3.2.1 "Active diagnostics" submenu

Navigation Diagnostics → Active diagnos.

Active diagnostics

Navigation Diagnostics → Active diagnos. → Active diagnos.

Prerequisite A diagnostic event has occurred.

Description Displays the current diagnostic message. If two or more messages occur simultaneously, the message with the highest priority is shown on the display.

User interface Symbol for diagnostic behavior, diagnostic code and short message.

Additional information *User interface*

Additional pending diagnostic messages can be viewed in the **Diagnostic list** submenu.

Example

For the display format:
⊗F271 Main electronic failure

Timestamp

Navigation Diagnostics → Active diagnos. → Timestamp

Description Displays the operating time when the current diagnostic message occurred.

User interface Days (d), hours (h), minutes (m) and seconds (s)

Additional information *User interface*

The diagnostic message can be viewed via the **Actual diagnostics** parameter (→ 33).

Example

For the display format:
24d12h13m00s

Previous diagnostics

Navigation Diagnostics → Active diagnos. → Prev.diagnostics

Prerequisite Two diagnostic events have already occurred.

Description Displays the diagnostic message that occurred before the current message.

User interface Symbol for diagnostic behavior, diagnostic code and short message.

Additional information *User interface*

Via the local display: the time stamp and corrective measures referring to the cause of the diagnostic message can be accessed via the E key.

Example

For the display format:
⊗F271 Main electronic failure

Timestamp

Navigation Diagnostics → Active diagnos. → Timestamp

Description Displays the operating time when the last diagnostic message before the current message occurred.

User interface Days (d), hours (h), minutes (m) and seconds (s)

Additional information *User interface*

The diagnostic message can be viewed via the **Previous diagnostics** parameter (→ 34).

Example

For the display format:
24d12h13m00s

Operating time from restart

Navigation Diagnostics → Active diagnos. → Time fr. restart

Description Shows the time the device has been in operation since the last device restart.

User interface Days (d), hours (h), minutes (m), seconds (s)

Operating time

Navigation Diagnostics → Active diagnos. → Operating time

Description Indicates how long the device has been in operation.

Additional information Maximum time: 9 999 d (≈ 27 years)

3.2.2 "Minimum/maximum values" submenu

Navigation Diagnostics → Min/max val.

Pressure min

Navigation Diagnostics → Min/max val. → Pressure min

User interface Signed floating-point number

Pressure max

Navigation Diagnostics → Min/max val. → Pressure max

User interface Signed floating-point number

Counter limit underruns sensor Pmin

Navigation Diagnostics → Min/max val. → Counter P < Pmin

User interface 0 to 65 535

Counter limit overruns sensor Pmax

Navigation Diagnostics → Min/max val. → Counter P > Pmax

User interface 0 to 65 535

Counter underruns of user limit Pmin

Navigation Diagnostics → Min/max val. → Counter < P user

User interface 0 to 65 535

Counter overruns of user limit Pmax

Navigation Diagnostics → Min/max val. → Counter > P user

User interface 0 to 65 535

Reset user defined counters P and T

Navigation Diagnostics → Min/max val. → Reset count. P T

Selection
- Cancel
- Confirm

Minimum sensor temperature

Navigation Diagnostics → Min/max val. → Min. sensor temp

User interface −273.15 to 9 726.85 °C

Maximum sensor temperature

Navigation Diagnostics → Min/max val. → Max. Sensor temp

User interface −273.15 to 9 726.85 °C

Counter limit overruns sensor Tmax

Navigation Diagnostics → Min/max val. → Counter T > Tmax

User interface 0 to 65 535

Counter limit underruns sensor Tmin

Navigation Diagnostics → Min/max val. → Counter T < Tmin

User interface 0 to 65 535

Counter underruns of user limit Tmin

Navigation Diagnostics → Min/max val. → Counter < T user

User interface 0 to 65 535

Counter overruns of user limit Tmax

Navigation Diagnostics → Min/max val. → Counter > T user

User interface 0 to 65 535

Minimum terminal voltage

Navigation Diagnostics → Min/max val. → Min.term.volt.

User interface 0.0 to 50.0 V

Maximum terminal voltage

Navigation Diagnostics → Min/max val. → Max.term.voltage

User interface 0.0 to 50.0 V

Minimum electronics temperature

Navigation Diagnostics → Min/max val. → Min.electr.temp.

User interface Signed floating-point number

Maximum electronics temperature

Navigation Diagnostics → Min/max val. → Max.electr.temp.

User interface Signed floating-point number

3.2.3 "Simulation" submenu

Navigation Diagnostics → Simulation

Simulation

Navigation Diagnostics → Simulation → Simulation

Selection
- Off
- Pressure
- Current output
- Diagnostic event simulation

Value pressure simulation

Navigation Diagnostics → Simulation → Value pressure

User entry Signed floating-point number

Value current output

Navigation Diagnostics → Simulation → Val. curr.outp

Description Defines the value of the simulated output current.

User entry 3.59 to 23 mA

Diagnostic event category

Navigation Diagnostics → Simulation → Event category

Description Use this function to select the category of the diagnostic events that are displayed for the simulation in the **Diagnostic event simulation** parameter (→ 39).

Selection
- Sensor
- Electronics
- Configuration
- Process

Diagnostic event simulation

Navigation Diagnostics → Simulation → Diag. event sim.

Description Use this function to select a diagnostic event for the simulation process that is activated.

Selection
- Off
- Diagnostic event picklist (depends on the category selected)

Additional information *Description*

For the simulation, you can choose from the diagnostic events of the category selected in the **Diagnostic event category** parameter (→ 38).

3.2.4 "Heartbeat Technology" submenu

Navigation Diagnostics → HBT

"Heartbeat Verification" submenu

Navigation Diagnostics → HBT → HBT Verification

Start verification

Navigation Diagnostics → HBT → HBT Verification → Start verificat.

Description Start verification.

To carry out a complete verification, select the selection parameters individually. Once the external measured values have been recorded, verification is started using the **Start** option.

Selection

or

- Cancel
- Start

Additional information

Operating time (Verification)

Navigation Diagnostics → HBT → HBT Verification → Operating time

Description Indicates how long the device has been in operation.

User interface Days (d), hours (h), minutes (m), seconds (s)

Verification result

Navigation Diagnostics → HBT → HBT Verification → Verific. result

User interface
- Not done
- Passed
- Not done
- Failed

Status

Navigation Diagnostics → HBT → HBT Verification → Status

Description Displays the current status of the verification.

User interface
- Done
- Busy
- Failed
- Not done

"Loop diagnostics" submenu

Navigation Diagnostics → HBT → Loop diagn.

Rebuild baseline

Navigation Diagnostics → HBT → Loop diagn. → Reb. baseline

Description Notice
The current output is simulated.
Bridge the PLC or take other appropriate measures to prevent an erroneous triggering of alarm messages or changes in the control loop behavior.

The baseline should be rebuilt if planned changes have been made in the loop.

Selection
- No
- Yes

Tolerated deviation +/-

Navigation Diagnostics → HBT → Loop diagn. → Toler. deviation

Description
A value should be chosen to ensure that normal voltage deviations do not lead to unwanted messages.

Default
1.5 V DC

User entry 0.5 to 3.0 V

806 Alarm delay

Navigation Diagnostics → HBT → Loop diagn. → 806 Alarm delay

User entry 0 to 60 s

Baseline status

Navigation Diagnostics → HBT → Loop diagn. → Baseline status

Description
'Failed'
Means, baseline is not available or creation not possible.

'Passed'
Baseline is available.

User interface
- Failed
- Success

Loop diagnostics

Navigation Diagnostics → HBT → Loop diagn. → Loop diagn.

Selection
- Disable
- Enable

Terminal voltage 1

Navigation Diagnostics → HBT → Loop diagn. → Terminal volt. 1

Description Shows the current terminal voltage that is applied at the output.

User interface 0.0 to 50.0 V

Clamping voltage lower threshold

Navigation Diagnostics → HBT → Loop diagn. → Lower threshold

User interface 0.0 to 50.0 V

Clamping voltage upper threshold

Navigation Diagnostics → HBT → Loop diagn. → Upper threshold

User interface 0.0 to 50.0 V

"Statistical Sensor Diagnostics" submenu

Navigation Diagnostics → HBT → SSD

SSD: Statistical Sensor Diagnostics

Navigation Diagnostics → HBT → SSD → Stat. Sens. Diag

Description Enable or disable SSD.

After selecting 'Disable', no statistical sensor diagnosis takes place. No diagnostic messages are output.

Selection
- Disable
- Enable

System status

Navigation Diagnostics → HBT → SSD → System status

User interface
- Idle
- No sufficient signal noise
- Stable
- Not stable
- Verify System Dynamics

Signal status

Navigation Diagnostics → HBT → SSD → Signal status

User interface
- Idle
- Building Baseline
- Verifying Baseline
- Verifying baseline failed
- Monitoring
- Out of range
- Monitoring inactive

Signal noise status

Navigation Diagnostics → HBT → SSD → Noise status

User interface
- Idle
- Building Baseline
- Verifying Baseline
- Verifying baseline failed
- Monitoring
- Out of range
- Monitoring inactive

Counter Baseline creation SSD

Navigation Diagnostics → HBT → SSD → Counter Baseline

Description Specifies how often the baseline has been rebuilt.

User interface Positive integer

3.3 "Application" menu

Navigation Application

3.3.1 "Measured values" submenu

Navigation Application → Measured values

Terminal voltage 1

Navigation Application → Measured values → Terminal volt. 1

Description Shows the current terminal voltage that is applied at the output.

User interface 0.0 to 50.0 V

Terminal current

Navigation Application → Measured values → Terminal curr.

Description Shows the current value of the current output which is currently measured.

User interface 0 to 30 mA

Electronics temperature

Navigation Application → Measured values → Electronics temp

User interface Signed floating-point number

Pressure

Navigation Application → Measured values → Pressure

Scaled variable

Navigation Application → Measured values → Scaled variable

User interface Signed floating-point number

Sensor temperature

Navigation Application → Measured values → Sensor temp.

User interface −273.15 to 9 726.85 °C

3.3.2 "Sensor" submenu

Navigation Application → Sensor

"Sensor calibration" submenu

Navigation Application → Sensor → Sensor cal.

Zero adjustment

Navigation Application → Sensor → Sensor cal. → Zero adjustment

Description Due to the mounting position of the measuring instrument, a pressure shift may occur. The pressure shift can be corrected with the zero adjustment.

Selection
- No
- Confirm

Calibration offset

Navigation Application → Sensor → Sensor cal. → Calibr offset

Prerequisite Absolute pressure sensor

User entry Signed floating-point number

Zero adjustment offset

Navigation Application → Sensor → Sensor cal. → Zero adj. offset

User entry Signed floating-point number

Sensor Trim Reset

Navigation Application → Sensor → Sensor cal. → Sen. Trim Reset

Selection
- No
- Confirm

Lower sensor trim

Navigation Application → Sensor → Sensor cal. → LowerSensor trim

User entry Signed floating-point number

Upper sensor trim

Navigation Application → Sensor → Sensor cal. → UpperSensor trim

User entry Signed floating-point number

"Sensor configuration" submenu

Navigation Application → Sensor → Sensor conf.

Output current transfer function

Navigation Application → Sensor → Sensor conf. → Curr. trans.func

Description

'Linear'
The linear pressure signal is used for the current output. The flow must be calculated in the evaluation unit.

'Square root - differential pressure only'
The root flow signal is used for the current output. The 'Flow (square root)' current signal is indicated on the on-site display with a root symbol.

Selection

- Linear
- Square root *

Additional information *Selection*

"Square root" option
Is used when a linear output porportional to the flow is required. The flow calcualtion is done internally in the transmitter.

Damping

Navigation Application → Sensor → Sensor conf. → Damping

Description

Enter damping constant.
The damping constant affects the speed at which the measured value reacts to pressure changes.

User entry

0 to 999.0 s

HP/LP swap

Navigation Application → Sensor → Sensor conf. → HP/LP swap

Description

With this parameter the high and low pressure side of the differential pressure transmitter can be interchanged.

Selection

- No
- Yes

* Visibility depends on order options or device settings

Low flow cut off

Navigation Application → Sensor → Sensor conf. → Low flow cut off

Description When activated, this function suppresses small flows which can lead to large fluctuations in the measured value.

User entry 0.0 to 50.0 %

"Wet calibration" submenu

Navigation Application → Sensor → Wet calibration

"Zero" wizard

Navigation Application → Sensor → Wet calibration → Zero

Zero

Navigation Application → Sensor → Wet calibration → Zero → Zero

Selection
- No
- Confirm

Pressure

Navigation Application → Sensor → Wet calibration → Zero → Pressure

Pressure value 1

Navigation Application → Sensor → Wet calibration → Zero → P. value 1

Description Enter pressure for the first scaling point. 'Scaled variable value 1' will be allocated to this pressure.

User entry Signed floating-point number

Lower range value output

Navigation Application → Sensor → Wet calibration → Zero → Low.range outp

Description Depending of which variable has been selected as PV, define the related lower and upper range values.
Assignment PV value to 4 mA and 20 mA.

User entry Signed floating-point number

"Span" wizard

Navigation Application → Sensor → Wet calibration → Span

Span

Navigation Application → Sensor → Wet calibration → Span → Span

Selection
- No
- Confirm

Pressure

Navigation Application → Sensor → Wet calibration → Span → Pressure

Pressure value 2

Navigation Application → Sensor → Wet calibration → Span → P. value 2

Description If Span is confirmed, the applied pressure is transferred to the field "Pressure value 2" and set to 20mA. The "Pressure value 2" is assigned to the Scaled variable value 2.

User entry Signed floating-point number

Upper range value output

Navigation Application → Sensor → Wet calibration → Span → Upp.range outp

Description Depending of which variable has been selected as PV, define the related lower and upper range values.
Assignment PV value to 4 mA and 20 mA.

User entry Signed floating-point number

3.3.3 "HART output" submenu

Navigation Application → HART output

"Configuration" submenu

Navigation Application → HART output → Configuration

HART address

Navigation Application → HART output → Configuration → HART address

Description Define the HART address of the device.

User entry 0 to 63

Additional information
- The measured value can only be transmitted via the current value if the address is set to "0". The current is fixed at 4.0 mA for all other addresses (Multidrop mode).
- Only addresses in the range 0 to 15 are permitted for a system according to HART 5.0.
- All addresses in the range 0 to 63 are permitted for a system with HART 6.0 and higher.

HART short tag

Navigation Application → HART output → Configuration → HART short tag

Description Defines the short tag for the measuring point.

Maximum length: 8 characters
Allowed characters: A-Z, 0-9, certain special characters

User entry Max. 8 characters: A to Z, 0 to 9 and certain special characters (e.g. punctuation marks, @, %).

Device tag

Navigation Application → HART output → Configuration → Device tag

Description Enter a unique name for the measuring point to identify the device quickly within the plant.

User entry Character string comprising numbers, letters and special characters (#32)

No. of preambles

Navigation Application → HART output → Configuration → No. of preambles

Description Defines the number of preambles in the HART telegram.

User entry 5 to 20

Loop current mode

Navigation Application → HART output → Configuration → Loop curr mode

Description If Loop current mode is disabled, Multi-drop communication mode is activated. Multi-drop is a HART digital communication mode where multiple devices may share the same pair of wires for power and communications.
In this mode the output current is fixed.

Selection
- Disable
- Enable

3.4 "System" menu

Navigation System

3.4.1 "Device management" submenu

Navigation System → Device manag.

Device tag

Navigation System → Device manag. → Device tag

Description Enter a unique name for the measuring point to identify the device quickly within the plant.

User entry Character string comprising numbers, letters and special characters (#32)

Locking status

Navigation System → Device manag. → Locking status

Description Displays the active write protection.

User interface
- Hardware locked
- SIL locked
- Temporarily locked

Additional information *User interface*

If two or more types of write protection are active, the write protection with the highest priority is shown on the local display. In the operating tool all active types of write protection are displayed.

Detailed information on access authorization is provided in the "User roles and associated access authorization" and "Operating concept" sections of the Operations Instructions for the device.

Selection

Function scope of the "Locking status" parameter

Options	Description
None	The access status displayed in the **Access status display** parameter (→ 15) applies. Only appears on local display.
Hardware locked	The DIP switch for hardware locking is activated on the main electronics module. This prevents write access to the parameters (e.g. via the local display or operating tool).
Temporarily locked	Write access to the parameters is temporarily locked due to device-internal processing (e.g. data upload/download, reset). Once the internal processing has been completed, the parameters can be changed once again.

Configuration counter

Navigation System → Device manag. → Config. counter

Description Displays the counter for changes to the device parameters.

Additional information:
- If the value for a static parameter is changed when optimizing or configuring the parameter, the counter is incremented by 1. This is to enable tracking different parameter versions.
- When multiple parameters are changed simultaneously, e.g. when loading parameters into the device from an external source such as FieldCare, the counter may display a higher value. The counter cannot be reset, nor is it reset to a default value on performing a device reset.
- Once the counter has reached the value 65535, it restarts at 0.

User interface 0 to 65 535

Reset device

Navigation System → Device manag. → Reset device

Description Use this function to choose whether to reset the device configuration - either entirely or in part - to a defined state.

Selection
- Cancel
- To factory defaults *
- To delivery settings *
- Restart device

Additional information *Selection*

Options	Description
Cancel	No action is executed and the user exits the parameter.
To factory defaults	Every parameter is reset to its factory setting.
To delivery settings	Every parameter for which a customer-specific default setting was ordered is reset to this customer-specific value. All other parameters are reset to the factory setting. This option is not visible if no customer-specific settings have been ordered.
Restart device	The restart resets every parameter whose data are in the volatile memory (RAM) to the factory setting (e.g. measured value data). The device configuration remains unchanged.

* Visibility depends on order options or device settings

3.4.2 "User management" submenu

Navigation System → User manag.

User role

Navigation System → User manag. → User role

Description Displays the access authorization to the parameters via the operating tool.

User interface
- Operator
- Maintenance
- Expert

Additional information *Description*

Access authorization can be modified via the **Enter access code** parameter.

If additional write protection is active, this restricts the current access authorization even further.

User interface

Detailed information on access authorization is provided in the "User roles and associated access authorization" and "Operating concept" sections of the Operations Instructions for the device.

"Change user role" wizard

Navigation System → User manag. → Change user role

Enter access code

Navigation System → User manag. → Change user role → Ent. access code

Description Use this function to enter the user-specific release code to remove parameter write protection in the operating tool.

User entry 0 to 9 999

"Change user role" wizard

Navigation System → User manag. → Change user role

Start

Navigation System → User manag. → Change user role → Start

User interface Character string comprising numbers, letters and special characters (#14)

Password

Navigation System → User manag. → Change user role → Password

Description Enter the password for the 'Maintenance' user role to get access to the functionality of this role.

User entry Character string comprising numbers, letters and special characters (#16)

Status password entry

Navigation System → User manag. → Change user role → Status pw entry

Description Use this function to display the status of the password verification.

User interface
- --------
- Wrong password
- Password rule violated
- Password accepted
- Permission denied
- Confirm PW mismatch
- Reset password accepted
- Invalid user role
- Wrong sequence of entry

"Define password" wizard

Navigation System → User manag. → Define password

Start

Navigation System → User manag. → Define password → Start

User interface Character string comprising numbers, letters and special characters (#14)

New password

Navigation System → User manag. → Define password → New password

Description If the factory setting is not changed, the device works without write-protection, using userrole 'Maintenance'. The configuration data of the device can always be modified.
Once the password has been defined, write-protected devices can only be set to maintenance mode if a correct password is entered in the parameter 'Password'.
A new password is valid, after it has been confirmed within the parameter 'Confirm new password'.
Any new password must consist of at least 4 and a maximum of 16 characters and can contain letters and numbers.

User entry Character string comprising numbers, letters and special characters (#16)

Status password entry

Navigation System → User manag. → Define password → Status pw entry

Description Use this function to display the status of the password verification.

User interface
- --------
- Wrong password
- Password rule violated
- Password accepted
- Permission denied
- Confirm PW mismatch
- Reset password accepted
- Invalid user role
- Wrong sequence of entry

Confirm new password

Navigation System → User manag. → Define password → Conf. new passw.

Description Enter the new password again to confirm.

User entry Character string comprising numbers, letters and special characters (#16)

"Change password" wizard

Navigation System → User manag. → Change password

Start

Navigation System → User manag. → Change password → Start

User interface Character string comprising numbers, letters and special characters (#14)

Old password

Navigation System → User manag. → Change password → Old password

Description Enter the current password, to subsequently change the existing password.

User entry Character string comprising numbers, letters and special characters (#16)

Status password entry

Navigation System → User manag. → Change password → Status pw entry

Description Use this function to display the status of the password verification.

User interface
- --------
- Wrong password
- Password rule violated
- Password accepted
- Permission denied
- Confirm PW mismatch
- Reset password accepted
- Invalid user role
- Wrong sequence of entry

New password

Navigation System → User manag. → Change password → New password

Description If the factory setting is not changed, the device works without write-protection, using userrole 'Maintenance'. The configuration data of the device can always be modified.
Once the password has been defined, write-protected devices can only be set to maintenance mode if a correct password is entered in the parameter 'Password'.
A new password is valid, after it has been confirmed within the parameter 'Confirm new password'.
Any new password must consist of at least 4 and a maximum of 16 characters and can contain letters and numbers.

User entry Character string comprising numbers, letters and special characters (#16)

Confirm new password

Navigation System → User manag. → Change password → Conf. new passw.

Description Enter the new password again to confirm.

User entry Character string comprising numbers, letters and special characters (#16)

"Delete password" wizard

Navigation System → User manag. → Delete password

Start

Navigation System → User manag. → Delete password → Start

User interface Character string comprising numbers, letters and special characters (#14)

Old password

Navigation System → User manag. → Delete password → Old password

Description Enter the current password, to subsequently change the existing password.

User entry Character string comprising numbers, letters and special characters (#16)

Status password entry

Navigation System → User manag. → Delete password → Status pw entry

Description Use this function to display the status of the password verification.

User interface
- --------
- Wrong password
- Password rule violated
- Password accepted
- Permission denied
- Confirm PW mismatch
- Reset password accepted
- Invalid user role
- Wrong sequence of entry

"Reset password" wizard

Navigation System → User manag. → Reset password

Start

Navigation System → User manag. → Reset password → Start

User interface Character string comprising numbers, letters and special characters (#14)

Reset password

Navigation System → User manag. → Reset password → Reset password

Description Enter a code to reset the current password.
CAUTION: Use this function only if the current password is lost. Contact your Endress +Hauser Sales Center.

User entry Character string comprising numbers, letters and special characters (#16)

Status password entry

Navigation System → User manag. → Reset password → Status pw entry

Description Use this function to display the status of the password verification.

User interface

- --------
- Wrong password
- Password rule violated
- Password accepted
- Permission denied
- Confirm PW mismatch
- Reset password accepted
- Invalid user role
- Wrong sequence of entry

"Logout" wizard

Navigation System → User manag. → Logout

Start

Navigation System → User manag. → Logout → Start

User interface Character string comprising numbers, letters and special characters (#14)

User role

Navigation System → User manag. → Logout → User role

Description Displays the access authorization to the parameters via the operating tool.

User interface

- Operator
- Maintenance
- Expert

Additional information *Description*

Access authorization can be modified via the **Enter access code** parameter.

If additional write protection is active, this restricts the current access authorization even further.

User interface

Detailed information on access authorization is provided in the "User roles and associated access authorization" and "Operating concept" sections of the Operations Instructions for the device.

3.4.3 "Bluetooth configuration" submenu

Navigation System → Bluetooth conf.

Bluetooth activation

Navigation System → Bluetooth conf. → Bluetooth active

Selection
- Disable
- Enable

3.4.4 "Display" submenu

Navigation System → Display

Language

Navigation System → Display → Language

Prerequisite A local display is provided.

Description Use this function to select the configured language on the local display.

Selection
- English
- Deutsch
- Français
- Español
- Italiano
- Nederlands
- Portuguesa
- Polski
- русский язык (Russian)
- Svenska
- Türkçe
- 中文 (Chinese)
- 日本語 (Japanese)
- 한국어 (Korean)
- Bahasa Indonesia
- tiếng Việt (Vietnamese)
- čeština (Czech)

Factory setting English (alternatively, the ordered language is preset in the device)

Format display

Navigation System → Display → Format display

Prerequisite A local display is provided.

Description Use this function to select how the measured value is shown on the local display.

Selection
- 1 value, max. size
- 1 bargraph + 1 value
- 2 values

Additional information

Description

The display format (size, bar graph etc.) and number of measured values displayed simultaneously (1 to 4) can be configured. This setting only applies to normal operation.

- The **Value 1 display** parameter (→ 62) to **Value 4 display** parameter (→ 64) are used to specify which measured values are shown on the local display and in what order.
- If more measured values are specified than the display mode selected permits, then the values alternate on the device display. The display time until the next change is configured via the **Display interval** parameter.

Value 1 display

Navigation System → Display → Value 1 display

Prerequisite A local display is provided.

Description Use this function to select one of the measured values shown on the local display.

Selection
- Pressure
- Scaled variable
- Current output
- Sensor temperature
- Percent of range

Additional information

Description

If several measured values are displayed at once, the measured value selected here will be the first value to be displayed. The value is only displayed during normal operation.

The **Format display** parameter (→ 62) is used to specify how many measured values are displayed simultaneously and how.

Dependency

The unit of the displayed measured value is taken from the **System units** submenu.

Value 2 display

Navigation System → Display → Value 2 display

Prerequisite A local display is provided.

Description Use this function to select one of the measured values shown on the local display.

Selection
- None
- Pressure
- Scaled variable
- Current output
- Sensor temperature
- Percent of range

Additional information

Description

If several measured values are displayed at once, the measured value selected here will be the second value to be displayed. The value is only displayed during normal operation.

The **Format display** parameter (→ 62) is used to specify how many measured values are displayed simultaneously and how.

Dependency

The unit of the displayed measured value is taken from the **System units** submenu.

Value 3 display

Navigation System → Display → Value 3 display

Prerequisite A local display is provided.

Description Use this function to select one of the measured values shown on the local display.

Selection
- None
- Pressure
- Scaled variable
- Current output
- Sensor temperature
- Percent of range

Additional information

Description

If several measured values are displayed at once, the measured value selected here will be the third value to be displayed. The value is only displayed during normal operation.

The **Format display** parameter (→ 62) is used to specify how many measured values are displayed simultaneously and how.

Selection

The unit of the displayed measured value is taken from the **System units** submenu.

Value 4 display

Navigation System → Display → Value 4 display

Prerequisite A local display is provided.

Description Use this function to select one of the measured values shown on the local display.

Selection
- None
- Pressure
- Scaled variable
- Current output
- Sensor temperature
- Percent of range

Additional information

Description

If several measured values are displayed at once, the measured value selected here will be the fourth value to be displayed. The value is only displayed during normal operation.

The **Format display** parameter (→ 62) is used to specify how many measured values are displayed simultaneously and how.

Selection

The unit of the displayed measured value is taken from the **System units** submenu.

Contrast display

Navigation System → Display → Contrast display

Description Adjust local display contrast setting to ambient conditions (e.g. lighting or reading angle).

User entry 20 to 80 %

Factory setting Depends on the display

Additional information

Set the contrast via the push-buttons:
- Weaker: Press the ⊖ and E buttons simultaneously
- Stronger: Press the ⊕ and E buttons simultaneously

3.4.5 "Software configuration" submenu

Navigation System → Softw. config.

CRC device configuration

Navigation System → Softw. config. → CRC device conf.

Description CRC device configuration based on current settings of safety relevant parameters. The CRC device configuration is unique and can be used to detect changes in safety relevant parameter settings.

User interface 0 to 65 535

Stored CRC device configuration

Navigation System → Softw. config. → Stored CRC conf.

Description Stored CRC after the last SIL lock. Factory delivery is 65535 means that the device has not yet been SIL locked.

User interface 0 to 65 535

Timestamp stored CRC device config.

Navigation System → Softw. config. → TS stored CRC

Description Gives the time stamp when the CRC was last stored following completion of the SIL-Mode Wizard.

User interface Character string comprising numbers, letters and special characters (#20)

Activate SW option

Navigation System → Softw. config. → Activate SW opt.

Description Use this function to enter an activation code to enable an additional, ordered software option.

User entry Max. 10-digit string of numbers.

Factory setting Depends on the software option ordered

Additional information

Description

If a measuring device was ordered with an additional software option, the activation code is programmed in the device at the factory.

User entry

To activate a software option subsequently, please contact your Endress+Hauser sales organization.

NOTE!

The activation code is linked to the serial number of the measuring device and varies according to the device and software option.

If an incorrect or invalid code is entered, this results in the loss of software options that have already been activated.

▸ Before you enter a new activation code, make a note of the current activation code from the parameter protocol.

▸ Enter the new activation code provided by Endress+Hauser when the new software option was ordered.

▸ If the code entered is incorrect or invalid, enter the old activation code from the parameter protocol.

▸ Have the Endress+Hauser sales organization check the new activation code remembering to specify the serial number or ask for the code again.

Example for a software option

Order code for "Application package", option **EA** "Extended HistoROM"

3.4.6 "Information" submenu

Navigation System → Information

Device name

Navigation System → Information → Device name

Description Displays the name of the transmitter. It can also be found on the nameplate of the transmitter.

User interface Max. 32 characters such as letters or numbers.

Manufacturer

Navigation System → Information → Manufacturer

User interface Character string comprising numbers, letters and special characters (#32)

Serial number

Navigation System → Information → Serial number

Description Displays the serial number of the measuring device.

The number can be found on the nameplate of the sensor and transmitter.

User interface Max. 11-digit character string comprising letters and numbers.

Additional information *Description*

Uses of the serial number
- To identify the measuring device quickly, e.g. when contacting Endress+Hauser.
- To obtain specific information on the measuring device using the Device Viewer: www.endress.com/deviceviewer

Order code

Navigation System → Information → Order code

Description Shows the device order code.

User interface Character string composed of letters, numbers and certain punctuation marks (e.g. /).

Factory setting –

Additional information *Description*

The order code is generated from the extended order code through a process of reversible transformation. The extended order code indicates the attributes for all the device features in the product structure. The device features are not directly readable from the order code.

Uses of the order code
- To order an identical spare device.
- To identify the device quickly and easily, e.g. when contacting Endress+Hauser.

Firmware version

Navigation System → Information → Firmware version

Description Displays the device firmware version that is installed.

User interface Character string in the format xx.yy.zz

Additional information *User interface*

The Firmware version is also located:
- On the title page of the Operating instructions
- On the transmitter nameplate

Hardware version

Navigation System → Information → Hardware version

Description Displays the hardware revision of the module.

User interface Max. 16 characters, such as letters, numbers or special characters (e.g. @, %, /)

XML build number

Navigation System → Information → XML build no.

User interface Positive integer

Checksum

Navigation System → Information → Checksum

User interface Positive integer

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