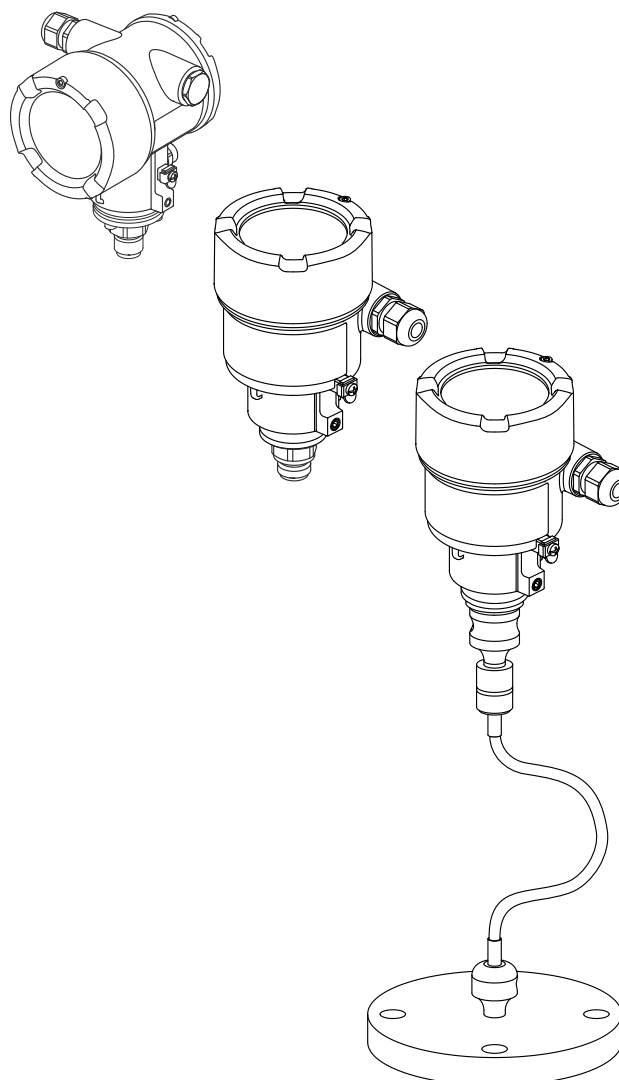


# Description of Device Parameters

## Cerabar PMC51B, PMP51B, PMC71B, PMP71B

### HART

Process pressure measurement





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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](http://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](http://www.endress.com) →  
Download

## 2 Overview of the operating menu

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
















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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


---

<b>Navigation</b>	 System → Display → Language
<b>Prerequisite</b>	A local display is provided.
<b>Description</b>	Use this function to select the configured language on the local display.
<b>Selection</b>	<ul style="list-style-type: none"> <li>■ English</li> <li>■ Deutsch</li> <li>■ Français</li> <li>■ Español</li> <li>■ Italiano</li> <li>■ Nederlands</li> <li>■ Portuguesa</li> <li>■ Polski</li> <li>■ русский язык (Russian)</li> <li>■ Svenska</li> <li>■ Türkçe</li> <li>■ 中文 (Chinese)</li> <li>■ 日本語 (Japanese)</li> <li>■ 한국어 (Korean)</li> <li>■ Bahasa Indonesia</li> <li>■ tiếng Việt (Vietnamese)</li> <li>■ čeština (Czech)</li> </ul>
<b>Factory setting</b>	English (alternatively, the ordered language is preset in the device)


---


#### Access status display


---


<b>Navigation</b>	 System → Display → Access stat.disp
<b>Prerequisite</b>	A local display is provided.
<b>Description</b>	Displays the access authorization to the parameters via the local display.
<b>User interface</b>	<ul style="list-style-type: none"> <li>■ Operator</li> <li>■ Maintenance</li> </ul>

**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

<b>Device tag</b>	
<b>Navigation</b>	  Guidance → Commissioning → Device tag
<b>Description</b>	Enter a unique name for the measuring point to identify the device quickly within the plant.
<b>User entry</b>	Character string comprising numbers, letters and special characters (#32)
<b>Assign PV</b>	
<b>Navigation</b>	  Guidance → Commissioning → Assign PV
<b>Description</b>	Use this function to select a measured variable (HART device variable) for the primary dynamic variable (PV).
<b>Selection</b>	<ul style="list-style-type: none"> <li>■ Pressure</li> <li>■ Scaled variable</li> </ul>
<b>Assign SV</b>	
<b>Navigation</b>	  Guidance → Commissioning → Assign SV
<b>Description</b>	Use this function to select a measured variable (HART device variable) for the secondary dynamic variable (SV).
<b>Selection</b>	<ul style="list-style-type: none"> <li>■ Pressure</li> <li>■ Scaled variable</li> <li>■ Sensor temperature</li> <li>■ Sensor pressure</li> <li>■ Electronic temperature</li> <li>■ Terminal current *</li> <li>■ Terminal voltage 1 *</li> <li>■ Median of pressure signal *</li> </ul>

\* 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*

- MPa
- kPa
- Pa
- bar
- mbar a
- torr
- atm
- kgf/cm<sup>2</sup>
- gf/cm<sup>2</sup>

*US units*

psi

*Other units*

- inH<sub>2</sub>O
- inH<sub>2</sub>O (4°C)
- mmH<sub>2</sub>O
- mmH<sub>2</sub>O (4°C)
- mH<sub>2</sub>O
- mH<sub>2</sub>O (4°C)
- ftH<sub>2</sub>O
- inHg
- 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

<b>Selection</b>	<i>SI units</i> <ul style="list-style-type: none"> <li>■ °C</li> <li>■ K</li> </ul>	<i>US units</i> <ul style="list-style-type: none"> <li>°F</li> </ul>
<b>Factory setting</b>	Country-specific: <ul style="list-style-type: none"> <li>■ °C</li> <li>■ °F</li> </ul>	
<b>Additional information</b>	<i>Selection</i>	

---

## Zero adjustment

---

<b>Navigation</b>	  Guidance → Commissioning → Zero adjustment
<b>Description</b>	Due to the mounting position of the measuring instrument, a pressure shift may occur. The pressure shift can be corrected with the zero adjustment.
<b>Selection</b>	<ul style="list-style-type: none"> <li>■ No</li> <li>■ Confirm</li> </ul>

---

## Pressure



---

<b>Navigation</b>	  Guidance → Commissioning → Pressure
-------------------	---

---

## Output current transfer function

---

<b>Navigation</b>	  Guidance → Commissioning → Curr. trans.func
<b>Description</b>	<p>'Linear' The linear pressure signal is used for the current output. The flow must be calculated in the evaluation unit.</p> <p>'Square - 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.</p>
<b>Selection</b>	<ul style="list-style-type: none"> <li>■ Linear</li> <li>■ Square *</li> </ul>
<b>Additional information</b>	<i>Selection</i>  <b>"Square" option</b> Is used when a linear output proportional to the flow is required. The flow calculation 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<sup>3</sup>
- g
- kg
- t
- g/s
- kg/s
- kg/min
- kg/h
- t/min
- t/h
- t/d
- m<sup>3</sup>/s
- m<sup>3</sup>/min
- m<sup>3</sup>/h
- m<sup>3</sup>/d
- l/s
- l/min
- l/h
- Nm<sup>3</sup>/h
- NI/h
- Sm<sup>3</sup>/s
- Sm<sup>3</sup>/min
- Sm<sup>3</sup>/h
- Sm<sup>3</sup>/d
- Nm<sup>3</sup>/s
- g/cm<sup>3</sup>
- kg/m<sup>3</sup>

*Custom-specific units*

Free text

*US units*

- ft
- in
- ft<sup>3</sup>
- gal (us)
- bbl (us;oil)
- oz
- lb
- STon
- lb/s
- lb/min
- lb/h
- STon/min
- STon/h
- STon/d
- ft<sup>3</sup>/s
- ft<sup>3</sup>/min
- ft<sup>3</sup>/h
- ft<sup>3</sup>/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<sup>3</sup>/min
- Sft<sup>3</sup>/h
- Sft<sup>3</sup>/d

*Imperial units*

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

---

**Free text**

---

**Navigation**

Guidance → Commissioning → Free text

**User entry**

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

---

**Temperature unit**

---

**Navigation**

Guidance → Commissioning → Temperature unit

**Description**

Use this function to select the unit for the temperature.

**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

---

**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'

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 \*
- Table

**Additional information**

*Selection*


**"Square" option**

Is used when a linear output porportional to the flow is required. The flow calcaultion 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)

---

**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 %

---

\* Visibility depends on order options or device settings



<b>Pressure value 1</b>		
<b>Navigation</b>	  Guidance → Commissioning → P. value 1	
<b>Description</b>	If Zero is confirmed, the applied pressure is transferred to the field "Pressure value 1" and set to 4mA. The "Pressure value 1" is assigned to the Scaled variable value 1.	
<b>User entry</b>	Signed floating-point number	
<b>Scaled variable value 1</b>		
<b>Navigation</b>	  Guidance → Commissioning → Sc. var.value 1	
<b>Description</b>	Assignment of Pressure Value 1 to Scaled Variable value 1.	
<b>User entry</b>	Signed floating-point number	
<b>Pressure value 2</b>		
<b>Navigation</b>	  Guidance → Commissioning → P. value 2	
<b>Description</b>	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.	
<b>User entry</b>	Signed floating-point number	
<b>Scaled variable value 2</b>		
<b>Navigation</b>	  Guidance → Commissioning → Sc. var.value 2	
<b>Description</b>	Assignment of Pressure Value 2 to Scaled Variable value 2.	
<b>User entry</b>	Signed floating-point number	
<b>Lower range value output</b>		
<b>Navigation</b>	  Guidance → Commissioning → Lo.range.outp.	
<b>Description</b>	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 → Up.rangval.out



**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  $\leq$  “low saturation”, the output current is set to “low saturation”.  
If Measured value  $\geq$  “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**

---



<b>Navigation</b>	Guidance → Commissioning → Fail.behavior
<b>Description</b>	Defines which current the output assumes in the case of an error. Min: < 3.6 mA Max: >21.5 mA
<b>Selection</b>	<ul style="list-style-type: none"> <li>■ Min.</li> <li>■ Max.</li> </ul>

**3.1.2 "SIL confirmation" wizard**

*Navigation*           Guidance → SIL confirmation

---

**Proof test via Bluetooth allowed?**

---



<b>Navigation</b>	Guidance → SIL confirmation → Bluetooth
<b>Description</b>	<p>After completion of the SIL activation/deactivation wizard, the device will be write protected via software lock.</p> <p>To use the proof test wizard (optional) where alarm currents are simulated, the device does not have to be unlocked.</p> <p>It must be defined, if the proof test wizard via Bluetooth is allowed.</p>
<b>Selection</b>	<ul style="list-style-type: none"> <li>■ No</li> <li>■ Yes</li> </ul>

---

**Enter SIL locking code**

---



<b>Navigation</b>	Guidance → SIL confirmation → SIL locking code
<b>Description</b>	Enter the locking code to start the SIL/WHG locking sequence.
<b>User entry</b>	0 to 65 535
<b>Additional information</b>	<b>Locking codes</b> <ul style="list-style-type: none"> <li>■ WHG: 7450</li> <li>■ SIL: 7452</li> <li>■ SIL and WHG: 7454</li> </ul>

---

**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**

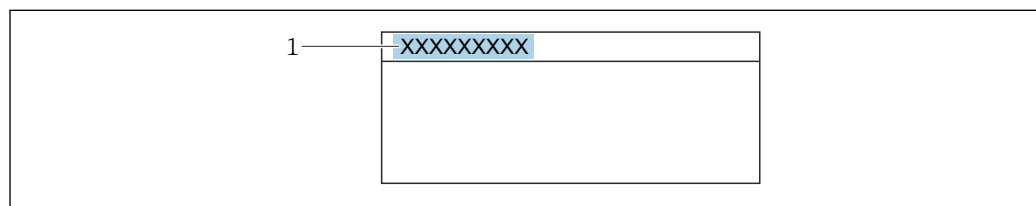

---

**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*



A0029422


1 Position of the header text on the display

The number of characters displayed depends on the characters used.

---

**Device name**





---

<b>Navigation</b>	 Guidance → SIL confirmation → Device name
<b>Description</b>	Displays the name of the transmitter. It can also be found on the nameplate of the transmitter.
<b>User interface</b>	Max. 32 characters such as letters or numbers.

---

**Serial number**



---

<b>Navigation</b>	 Guidance → SIL confirmation → Serial number
<b>Description</b>	Displays the serial number of the measuring device.  The number can be found on the nameplate of the sensor and transmitter.
<b>User interface</b>	Max. 11-digit character string comprising letters and numbers.
<b>Additional information</b>	<i>Description</i>  <b>Uses of the serial number</b> <ul style="list-style-type: none"> <li>▪ To identify the measuring device quickly, e.g. when contacting Endress+Hauser.</li> <li>▪ To obtain specific information on the measuring device using the Device Viewer: <a href="http://www.endress.com/deviceviewer">www.endress.com/deviceviewer</a></li> </ul>

---

**CRC device configuration**



---

<b>Navigation</b>	 Guidance → SIL confirmation → CRC device conf.
<b>Description</b>	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.
<b>User interface</b>	0 to 65 535

---

**Stored CRC device configuration**



---

<b>Navigation</b>	 Guidance → SIL confirmation → Stored CRC conf.
<b>Description</b>	Stored CRC after the last SIL lock. Factory delivery is 65535 means that the device has not yet been SIL locked.
<b>User interface</b>	0 to 65 535

---

**Timestamp stored CRC device config.**



---

<b>Navigation</b>	 Guidance → SIL confirmation → TS stored CRC
<b>Description</b>	Gives the time stamp when the CRC was last stored following completion of the SIL-Mode Wizard.
<b>User interface</b>	Character string comprising numbers, letters and special characters (#20)

---

**Operating time**



---

<b>Navigation</b>	 Guidance → SIL confirmation → Operating time
<b>Description</b>	Indicates how long the device has been in operation.
<b>Additional information</b>	Maximum time: 9 999 d (≈ 27 years)

---

**Configuration counter**




---

<b>Navigation</b>	 Guidance → SIL confirmation → Config. counter
<b>Description</b>	Use this function to display the counter reading for changes to device parameters. Info: Static parameters, whose values change during optimization or configuration, cause this parameter to increment by 1. This supports parameter version management. If several parameters change, e. g. due to loading of parameters from FieldCare, etc. in the device, the counter can show a higher value. The counter can never be reset and is not reset to a default value after a device reset. If the counter overflows, (16 bit), it starts again at 1.
<b>User interface</b>	0 to 65 535

---

**Zero adjustment offset**



---

<b>Navigation</b>	  Guidance → SIL confirmation → Zero adj. offset
<b>User interface</b>	Character string comprising numbers, letters and special characters (#20)

---

**HP/LP swap**


---

**Navigation**  Guidance → SIL confirmation → HP/LP swap

**User interface**

- No
- Yes

---

**Damping**


---


**Navigation**  Guidance → SIL confirmation → Damping

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

---

**Sensor pressure range behavior**


---

**Navigation**  Guidance → SIL confirmation → P-range behavior

**User interface**

- Alarm
- Warning
- Remark
- Special

---

**Output current transfer function**


---

**Navigation**   Guidance → SIL confirmation → Curr. trans.func

**User interface**

- Linear
- Square

---

**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.behavior


**User interface**

- Min.
- Max.

---

### Current range output

---

**Navigation**  Guidance → SIL confirmation → Cur.range outp

**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 → Measmode c.out

**Description** Select curve of current output.


**User interface**

- Standard
- Inverse
- Bi-directional

---

### Lower range value output

---

**Navigation**  Guidance → SIL confirmation → Lo.range.outp.

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

---

### Upper range value output

---


**Navigation**  Guidance → SIL confirmation → Up.rangval.out

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

---

**Assign PV**


---



<b>Navigation</b>	 Guidance → SIL confirmation → Assign PV
<b>Description</b>	Identifies the process variable linked with the primary variable. Primary variable is used in HART as current output.
<b>User interface</b>	<ul style="list-style-type: none"> <li>■ Pressure</li> <li>■ Scaled variable</li> </ul>

---

**Enter SIL locking code**


---





<b>Navigation</b>	  Guidance → SIL confirmation → SIL locking code
<b>Description</b>	Enter the locking code to start the SIL/WHG locking sequence.
<b>User entry</b>	0 to 65 535
<b>Additional information</b>	<b>Locking codes</b> <ul style="list-style-type: none"> <li>■ WHG: 7450</li> <li>■ SIL: 7452</li> <li>■ SIL and WHG: 7454</li> </ul>

---

**Code incorrect**


---




<b>Navigation</b>	 Guidance → SIL confirmation → Code incorrect
<b>Description</b>	Abort SIL confirmation sequence or reenter SIL locking code.
<b>Selection</b>	<ul style="list-style-type: none"> <li>■ Reenter code</li> <li>■ Abort sequence</li> </ul>

---

**Locking status**


---

<b>Navigation</b>	 Guidance → SIL confirmation → Locking status
<b>Description</b>	Displays the active write protection.
<b>User interface</b>	<ul style="list-style-type: none"> <li>■ Hardware locked</li> <li>■ SIL locked</li> <li>■ Temporarily locked</li> </ul>

**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 <b>Access status display</b> 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 <b>Access status display</b> 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





---

<b>Navigation</b>	  Diagnostics → Active diagnos. → Active diagnos.
<b>Prerequisite</b>	A diagnostic event has occurred.
<b>Description</b>	Displays the current diagnostic message. If two or more messages occur simultaneously, the message with the highest priority is shown on the display.
<b>User interface</b>	Symbol for diagnostic behavior, diagnostic code and short message.
<b>Additional information</b>	<p><i>User interface</i></p> <p> Additional pending diagnostic messages can be viewed in the <b>Diagnostic list</b> submenu.</p> <p><i>Example</i></p> <p>For the display format:  F271 Main electronic failure</p>

---

#### Timestamp






---

<b>Navigation</b>	  Diagnostics → Active diagnos. → Timestamp
<b>Description</b>	Displays the operating time when the current diagnostic message occurred.
<b>User interface</b>	Days (d), hours (h), minutes (m) and seconds (s)
<b>Additional information</b>	<p><i>User interface</i></p> <p> The diagnostic message can be viewed via the <b>Actual diagnostics</b> parameter (→  34).</p> <p><i>Example</i></p> <p>For the display format:  24d12h13m00s</p>

---

### Previous diagnostics





---

<b>Navigation</b>	  Diagnostics → Active diagnos. → Prev.diagnostics
<b>Prerequisite</b>	Two diagnostic events have already occurred.
<b>Description</b>	Displays the diagnostic message that occurred before the current message.
<b>User interface</b>	Symbol for diagnostic behavior, diagnostic code and short message.
<b>Additional information</b>	<p><i>User interface</i></p> <p> Via the local display: the time stamp and corrective measures referring to the cause of the diagnostic message can be accessed via the  key.</p> <p><i>Example</i></p> <p>For the display format:   F271 Main electronic failure</p>

---

### Timestamp



---

<b>Navigation</b>	  Diagnostics → Active diagnos. → Timestamp
<b>Description</b>	Displays the operating time when the last diagnostic message before the current message occurred.
<b>User interface</b>	Days (d), hours (h), minutes (m) and seconds (s)
<b>Additional information</b>	<p><i>User interface</i></p> <p> The diagnostic message can be viewed via the <b>Previous diagnostics</b> parameter (→  35).</p> <p><i>Example</i></p> <p>For the display format:  24d12h13m00s</p>

---

### Operating time from restart



---

<b>Navigation</b>	  Diagnostics → Active diagnos. → Time fr. restart
<b>Description</b>	Shows the time the device has been in operation since the last device restart.
<b>User interface</b>	Days (d), hours (h), minutes (m), seconds (s)

---

**Operating time**


---

<b>Navigation</b>	  Diagnostics → Active diagnos. → Operating time
<b>Description</b>	Indicates how long the device has been in operation.
<b>Additional information</b>	Maximum time: 9 999 d (≈ 27 years)



### 3.2.2 "Minimum/maximum values" submenu

*Navigation*       Diagnostics → Min/max val.

---

**Pressure min**




---

<b>Navigation</b>	  Diagnostics → Min/max val. → Pressure min
<b>User interface</b>	Signed floating-point number

---

**Pressure max**




---

<b>Navigation</b>	  Diagnostics → Min/max val. → Pressure max
<b>User interface</b>	Signed floating-point number

---

**Counter limit underruns sensor Pmin**




---

<b>Navigation</b>	  Diagnostics → Min/max val. → Counter P < Pmin
<b>User interface</b>	0 to 65 535

---

**Counter limit overruns sensor Pmax**



---

<b>Navigation</b>	  Diagnostics → Min/max val. → Counter P > Pmax
<b>User interface</b>	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 9726.85 °C

---

**Maximum sensor temperature**

---


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

**User interface** -273.15 to 9726.85 °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

---

<b>Navigation</b>	  Diagnostics → Min/max val. → Max.electr.temp.
<b>User interface</b>	Signed floating-point number



### 3.2.3 "Simulation" submenu

*Navigation*       Diagnostics → Simulation

---

### Simulation



---

<b>Navigation</b>	  Diagnostics → Simulation → Simulation
<b>Selection</b>	<ul style="list-style-type: none"> <li>■ Off</li> <li>■ Pressure</li> <li>■ Current output</li> <li>■ Diagnostic event simulation</li> </ul>

---

### Value pressure simulation



---

<b>Navigation</b>	  Diagnostics → Simulation → Value pressure
<b>User entry</b>	Signed floating-point number

---

### Value current output



---

<b>Navigation</b>	  Diagnostics → Simulation → Value curr.out
<b>Description</b>	Defines the value of the simulated output current.
<b>User entry</b>	3.59 to 23 mA

---

### Diagnostic event category

---



<b>Navigation</b>	 Diagnostics → Simulation → Event category
<b>Description</b>	Use this function to select the category of the diagnostic events that are displayed for the simulation in the <b>Diagnostic event simulation</b> parameter (→  40).

- 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 (→  39).

### 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)**

<b>Navigation</b>	 Diagnostics → HBT → HBT Verification → Operating time
<b>Description</b>	Indicates how long the device has been in operation.
<b>User interface</b>	Days (d), hours (h), minutes (m), seconds (s)

**Verification result**

<b>Navigation</b>	 Diagnostics → HBT → HBT Verification → Verific. result
<b>User interface</b>	<ul style="list-style-type: none"> <li>■ Not done</li> <li>■ Passed</li> <li>■ Not done</li> <li>■ Failed</li> </ul>

**Status**


<b>Navigation</b>	 Diagnostics → HBT → HBT Verification → Status
<b>Description</b>	Displays the current status of the verification.
<b>User interface</b>	<ul style="list-style-type: none"> <li>■ Done</li> <li>■ Busy</li> <li>■ Failed</li> <li>■ Not done</li> </ul>

**"Loop diagnostics" submenu**

*Navigation*       Diagnostics → HBT → Loop diagn.

**Rebuild baseline**



<b>Navigation</b>	 Diagnostics → HBT → Loop diagn. → Reb. baseline
<b>Description</b>	<p>Notice</p> <p>The current output is simulated.</p> <p>Bridge the PLC or take other appropriate measures to prevent an erroneous triggering of alarm messages or changes in the control loop behavior.</p> <p>The baseline should be rebuilt if planned changes have been made in the loop.</p>

- 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**



---

<b>Navigation</b>	 Diagnostics → HBT → Loop diagn. → Terminal volt. 1
<b>Description</b>	Shows the current terminal voltage that is applied at the output.
<b>User interface</b>	0.0 to 50.0 V

---

**Clamping voltage lower threshold**



---

<b>Navigation</b>	 Diagnostics → HBT → Loop diagn. → Lower threshold
<b>User interface</b>	0.0 to 50.0 V

---

**Clamping voltage upper threshold**


---

<b>Navigation</b>	 Diagnostics → HBT → Loop diagn. → Upper threshold
<b>User interface</b>	0.0 to 50.0 V

**"Statistical Sensor Diagnostics" submenu**


*Navigation*       Diagnostics → HBT → SSD

---

**SSD: Statistical Sensor Diagnostics**


---




<b>Navigation</b>	 Diagnostics → HBT → SSD → Stat. Sens. Diag
<b>Description</b>	<p>Enable or disable SSD.</p> <p>After selecting 'Disable', no statistical sensor diagnosis takes place. No diagnostic messages are output.</p>
<b>Selection</b>	<ul style="list-style-type: none"> <li>■ Disable</li> <li>■ Enable</li> </ul>

---

**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" submenu

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

---

#### Electronic temperature

---

**Navigation**   Application → Measured values → Electronic 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**

---





<b>Navigation</b>	 Application → Sensor → Sensor cal. → Calibr offset
<b>Prerequisite</b>	Absolute pressure sensor
<b>User entry</b>	Signed floating-point number

---

**Zero adjustment offset**

---




<b>Navigation</b>	 Application → Sensor → Sensor cal. → Zero adj. offset
<b>User entry</b>	Signed floating-point number

---

**Sensor Trim Reset**

---




<b>Navigation</b>	 Application → Sensor → Sensor cal. → Sen. Trim Reset
<b>Selection</b>	<ul style="list-style-type: none"><li>■ No</li><li>■ Confirm</li></ul>

---

**Lower sensor trim**

---





<b>Navigation</b>	 Application → Sensor → Sensor cal. → LowerSensor trim
<b>User entry</b>	Signed floating-point number

---

**Upper sensor trim**


---





<b>Navigation</b>	 Application → Sensor → Sensor cal. → UpperSensor trim
<b>User entry</b>	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 - 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 \*



**Additional information**

*Selection*

**"Square" option**

Is used when a linear output proportional to the flow is required. The flow calculation 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**

---



<b>Navigation</b>	Application → Sensor → Sensor conf. → Low flow cut off
<b>Description</b>	When activated, this function suppresses small flows which can lead to large fluctuations in the measured value.
<b>User entry</b>	0.0 to 50.0 %

**"Wet calibration" submenu**

*Navigation*      Application → Sensor → Wet calibration

*"Zero" wizard*

*Navigation*      Application → Sensor → Wet calibration → Zero

---

**Zero**

---



<b>Navigation</b>	Application → Sensor → Wet calibration → Zero → Zero
<b>Selection</b>	<ul style="list-style-type: none"> <li>■ No</li> <li>■ Confirm</li> </ul>

---

**Pressure**

---

<b>Navigation</b>	Application → Sensor → Wet calibration → Zero → Pressure
-------------------	--

---

**Pressure value 1**

---



<b>Navigation</b>	Application → Sensor → Wet calibration → Zero → P. value 1
<b>Description</b>	If Zero is confirmed, the applied pressure is transferred to the field "Pressure value 1" and set to 4mA. The "Pressure value 1" is assigned to the Scaled variable value 1.
<b>User entry</b>	Signed floating-point number

---

**Lower range value output**

---



**Navigation** Application → Sensor → Wet calibration → Zero → Lo.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**

---



<b>Navigation</b>	Application → Sensor → Wet calibration → Span → Up.rangval.out
<b>Description</b>	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.
<b>User entry</b>	Signed floating-point number

**3.3.3 "HART output" submenu**

*Navigation* Application → HART output

**"Configuration" submenu**

*Navigation* Application → HART output → Configuration

---

**HART address**

---



<b>Navigation</b>	Application → HART output → Configuration → HART address
<b>Description</b>	Define the HART address of the device.
<b>User entry</b>	0 to 63
<b>Additional information</b>	<ul style="list-style-type: none"> <li>▪ 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).</li> <li>▪ Only addresses in the range 0 to 15 are permitted for a system according to HART 5.0.</li> <li>▪ All addresses in the range 0 to 63 are permitted for a system with HART 6.0 and higher.</li> </ul>

---

**HART short tag**

---





<b>Navigation</b>	Application → HART output → Configuration → HART short tag
<b>Description</b>	Defines the short tag for the measuring point.  Maximum length: 8 characters Allowed characters: A-Z, 0-9, certain special characters
<b>User entry</b>	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" submenu

Navigation  System




#### 3.4.1 "Device management" submenu

Navigation  System → Device manag.

---


<b>Device tag</b>	
<hr/>	
<b>Navigation</b>	  System → Device manag. → Device tag
<b>Description</b>	Enter a unique name for the measuring point to identify the device quickly within the plant.
<b>User entry</b>	Character string comprising numbers, letters and special characters (#32)

---

<b>Locking status</b>	
<hr/>	
<b>Navigation</b>	  System → Device manag. → Locking status
<b>Description</b>	Displays the active write protection.
<b>User interface</b>	<ul style="list-style-type: none"> <li>■ Hardware locked</li> <li>■ SIL locked</li> <li>■ Temporarily locked</li> </ul>
<b>Additional information</b>	<p><i>User interface</i></p> <p>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.</p> <p> 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.</p>

*Selection*


*Function scope of the "Locking status" parameter*

Options	Description
None	The access status displayed in the <b>Access status display</b> 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**

Use this function to display the counter reading for changes to device parameters.

**Info:**

Static parameters, whose values change during optimization or configuration, cause this parameter to increment by 1. This supports parameter version management. If several parameters change, e. g. due to loading of parameters from FieldCare, etc. in the device, the counter can show a higher value. The counter can never be reset and is not reset to a default value after a device reset. If the counter overflows, (16 bit), it starts again at 1.

**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.

### 3.4.2 "User management" submenu

*Navigation*  System → User manag.

---

#### Access status tooling

---

**Navigation**   System → User manag. → Access stat.tool


**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 9999

**"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 	
<b>Navigation</b>	 System → User manag. → Define password → Conf. new passw.
<b>Description</b>	Enter the new password again to confirm.
<b>User entry</b>	Character string comprising numbers, letters and special characters (#16)
<b>"Change password" wizard</b>	
<i>Navigation</i>	 System → User manag. → Change password
Start	
<b>Navigation</b>	 System → User manag. → Change password → Start
<b>User interface</b>	Character string comprising numbers, letters and special characters (#14)
Old password 	
<b>Navigation</b>	 System → User manag. → Change password → Old password
<b>Description</b>	Enter the current password, to subsequently change the existing password.
<b>User entry</b>	Character string comprising numbers, letters and special characters (#16)
Status password entry	
<b>Navigation</b>	  System → User manag. → Change password → Status pw entry
<b>Description</b>	Use this function to display the status of the password verification.
<b>User interface</b>	<ul style="list-style-type: none"> <li>■ -----</li> <li>■ Wrong password</li> <li>■ Password rule violated</li> <li>■ Password accepted</li> <li>■ Permission denied</li> <li>■ Confirm PW mismatch</li> <li>■ Reset password accepted</li> <li>■ Invalid user role</li> <li>■ Wrong sequence of entry</li> </ul>

<b>New password</b>		
<b>Navigation</b>	 System → User manag. → Change password → New password	
<b>Description</b>	<p>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'.</p> <p>Any new password must consist of at least 4 and a maximum of 16 characters and can contain letters and numbers.</p>	
<b>User entry</b>	Character string comprising numbers, letters and special characters (#16)	
<b>Confirm new password</b>		
<b>Navigation</b>	 System → User manag. → Change password → Conf. new passw.	
<b>Description</b>	Enter the new password again to confirm.	
<b>User entry</b>	Character string comprising numbers, letters and special characters (#16)	
<b>"Delete password" wizard</b>		
<i>Navigation</i>	 System → User manag. → Delete password	
<b>Start</b>		
<b>Navigation</b>	 System → User manag. → Delete password → Start	
<b>User interface</b>	Character string comprising numbers, letters and special characters (#14)	
<b>Old password</b>		
<b>Navigation</b>	 System → User manag. → Delete password → Old password	
<b>Description</b>	Enter the current password, to subsequently change the existing password.	
<b>User entry</b>	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)


**Access status tooling**


**Navigation**  System → User manag. → Logout → Access stat.tool

**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**






---








<b>Navigation</b>	 System → Display → Format display
<b>Prerequisite</b>	A local display is provided.
<b>Description</b>	Use this function to select how the measured value is shown on the local display.
<b>Selection</b>	<ul style="list-style-type: none"> <li>▪ 1 value, max. size</li> <li>▪ 1 bargraph + 1 value</li> <li>▪ 2 values</li> </ul>
<b>Additional information</b>	<p><i>Description</i></p> <p>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.</p> <ul style="list-style-type: none"> <li>▪  The <b>Value 1 display</b> parameter (→  63) to <b>Value 4 display</b> parameter (→  65) are used to specify which measured values are shown on the local display and in what order.</li> <li>▪ 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 <b>Display interval</b> parameter.</li> </ul>






---

**Value 1 display**


---

<b>Navigation</b>	 System → Display → Value 1 display
<b>Prerequisite</b>	A local display is provided.
<b>Description</b>	Use this function to select one of the measured values shown on the local display.
<b>Selection</b>	<ul style="list-style-type: none"> <li>▪ Pressure</li> <li>▪ Scaled variable</li> <li>▪ Current output</li> <li>▪ Sensor temperature</li> <li>▪ Percent of range</li> </ul>
<b>Additional information</b>	<p><i>Description</i></p> <p>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.</p> <ul style="list-style-type: none"> <li>▪  The <b>Format display</b> parameter (→  63) is used to specify how many measured values are displayed simultaneously and how.</li> </ul> <p><i>Dependency</i></p> <ul style="list-style-type: none"> <li>▪  The unit of the displayed measured value is taken from the <b>System units</b> submenu.</li> </ul>

Value 2 display 	
<b>Navigation</b>	  System → Display → Value 2 display
<b>Prerequisite</b>	A local display is provided.
<b>Description</b>	Use this function to select one of the measured values shown on the local display.
<b>Selection</b>	<ul style="list-style-type: none"> <li>▪ None</li> <li>▪ Pressure</li> <li>▪ Scaled variable</li> <li>▪ Current output</li> <li>▪ Sensor temperature</li> <li>▪ Percent of range</li> </ul>
<b>Additional information</b>	<p><i>Description</i></p> <p>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.</p> <p> The <b>Format display</b> parameter (→  63) is used to specify how many measured values are displayed simultaneously and how.</p> <p><i>Dependency</i></p> <p> The unit of the displayed measured value is taken from the <b>System units</b> submenu.</p>
Value 3 display 	

<b>Navigation</b>	  System → Display → Value 3 display
<b>Prerequisite</b>	A local display is provided.
<b>Description</b>	Use this function to select one of the measured values shown on the local display.
<b>Selection</b>	<ul style="list-style-type: none"> <li>▪ None</li> <li>▪ Pressure</li> <li>▪ Scaled variable</li> <li>▪ Current output</li> <li>▪ Sensor temperature</li> <li>▪ Percent of range</li> </ul>
<b>Additional information</b>	<p><i>Description</i></p> <p>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.</p> <p> The <b>Format display</b> parameter (→  63) is used to specify how many measured values are displayed simultaneously and how.</p> <p><i>Selection</i></p> <p> The unit of the displayed measured value is taken from the <b>System units</b> submenu.</p>



---

**Value 4 display**

---

<b>Navigation</b>	System → Display → Value 4 display
<b>Prerequisite</b>	A local display is provided.
<b>Description</b>	Use this function to select one of the measured values shown on the local display.
<b>Selection</b>	<ul style="list-style-type: none"> <li>■ None</li> <li>■ Pressure</li> <li>■ Scaled variable</li> <li>■ Current output</li> <li>■ Sensor temperature</li> <li>■ Percent of range</li> </ul>
<b>Additional information</b>	<p><i>Description</i></p> <p>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.</p> <p> The <b>Format display</b> parameter (→  63) is used to specify how many measured values are displayed simultaneously and how.</p> <p><i>Selection</i></p> <p> The unit of the displayed measured value is taken from the <b>System units</b> submenu.</p>

---

**Contrast display**

---

<b>Navigation</b>	System → Display → Contrast display
<b>Description</b>	Adjust local display contrast setting to ambient conditions (e.g. lighting or reading angle).
<b>User entry</b>	20 to 80 %
<b>Factory setting</b>	Depends on the display
<b>Additional information</b>	<p> Set the contrast via the push-buttons:</p> <ul style="list-style-type: none"> <li>■ Weaker: Press the  and  buttons simultaneously</li> <li>■ Stronger: Press the  and  buttons simultaneously</li> </ul>



### 3.4.5 "Software configuration" submenu

*Navigation*  System → Softw. config.

---

#### CRC device configuration



---

<b>Navigation</b>	  System → Softw. config. → CRC device conf.
<b>Description</b>	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.
<b>User interface</b>	0 to 65 535

---

#### Stored CRC device configuration



---

<b>Navigation</b>	  System → Softw. config. → Stored CRC conf.
<b>Description</b>	Stored CRC after the last SIL lock. Factory delivery is 65535 means that the device has not yet been SIL locked.
<b>User interface</b>	0 to 65 535

---

#### Timestamp stored CRC device config.



---

<b>Navigation</b>	  System → Softw. config. → TS stored CRC
<b>Description</b>	Gives the time stamp when the CRC was last stored following completion of the SIL-Mode Wizard.
<b>User interface</b>	Character string comprising numbers, letters and special characters (#20)

---

#### Activate SW option

---

<b>Navigation</b>	  System → Softw. config. → Activate SW opt.
<b>Description</b>	Use this function to enter an activation code to enable an additional, ordered software option.
<b>User entry</b>	Max. 10-digit string of numbers.
<b>Factory setting</b>	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)

<b>Serial number</b>		
<b>Navigation</b>	  System → Information → Serial number	
<b>Description</b>	Displays the serial number of the measuring device.  The number can be found on the nameplate of the sensor and transmitter.	
<b>User interface</b>	Max. 11-digit character string comprising letters and numbers.	
<b>Additional information</b>	<i>Description</i>  <b>Uses of the serial number</b> <ul style="list-style-type: none"> <li>▪ To identify the measuring device quickly, e.g. when contacting Endress+Hauser.</li> <li>▪ To obtain specific information on the measuring device using the Device Viewer: <a href="http://www.endress.com/deviceviewer">www.endress.com/deviceviewer</a></li> </ul>	
<b>Order code</b>		
<b>Navigation</b>	  System → Information → Order code	
<b>Description</b>	Shows the device order code.	
<b>User interface</b>	Character string composed of letters, numbers and certain punctuation marks (e.g. /).	
<b>Factory setting</b>	-	
<b>Additional information</b>	<i>Description</i> 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.  <b>Uses of the order code</b> <ul style="list-style-type: none"> <li>▪ To order an identical spare device.</li> <li>▪ To identify the device quickly and easily, e.g. when contacting Endress+Hauser.</li> </ul>	
<b>Firmware version</b>		
<b>Navigation</b>	  System → Information → Firmware version	
<b>Description</b>	Displays the device firmware version that is installed.	
<b>User interface</b>	Character string in the format xx.yy.zz	
<b>Additional information</b>	<i>User interface</i>  The Firmware version is also located: <ul style="list-style-type: none"> <li>▪ On the title page of the Operating instructions</li> <li>▪ On the transmitter nameplate</li> </ul>	

---

**Hardware revision**


---

<b>Navigation</b>	 System → Information → Hardware rev.
<b>Description</b>	Displays the hardware revision of the module.
<b>User interface</b>	Max. 16 characters, such as letters, numbers or special characters (e.g. @, %, /)

---

**XML build number**


---

<b>Navigation</b>	 System → Information → XML build no.
<b>User interface</b>	Positive integer

---

**Checksum**

---

<b>Navigation</b>	 System → Information → Checksum
<b>User interface</b>	Positive integer

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