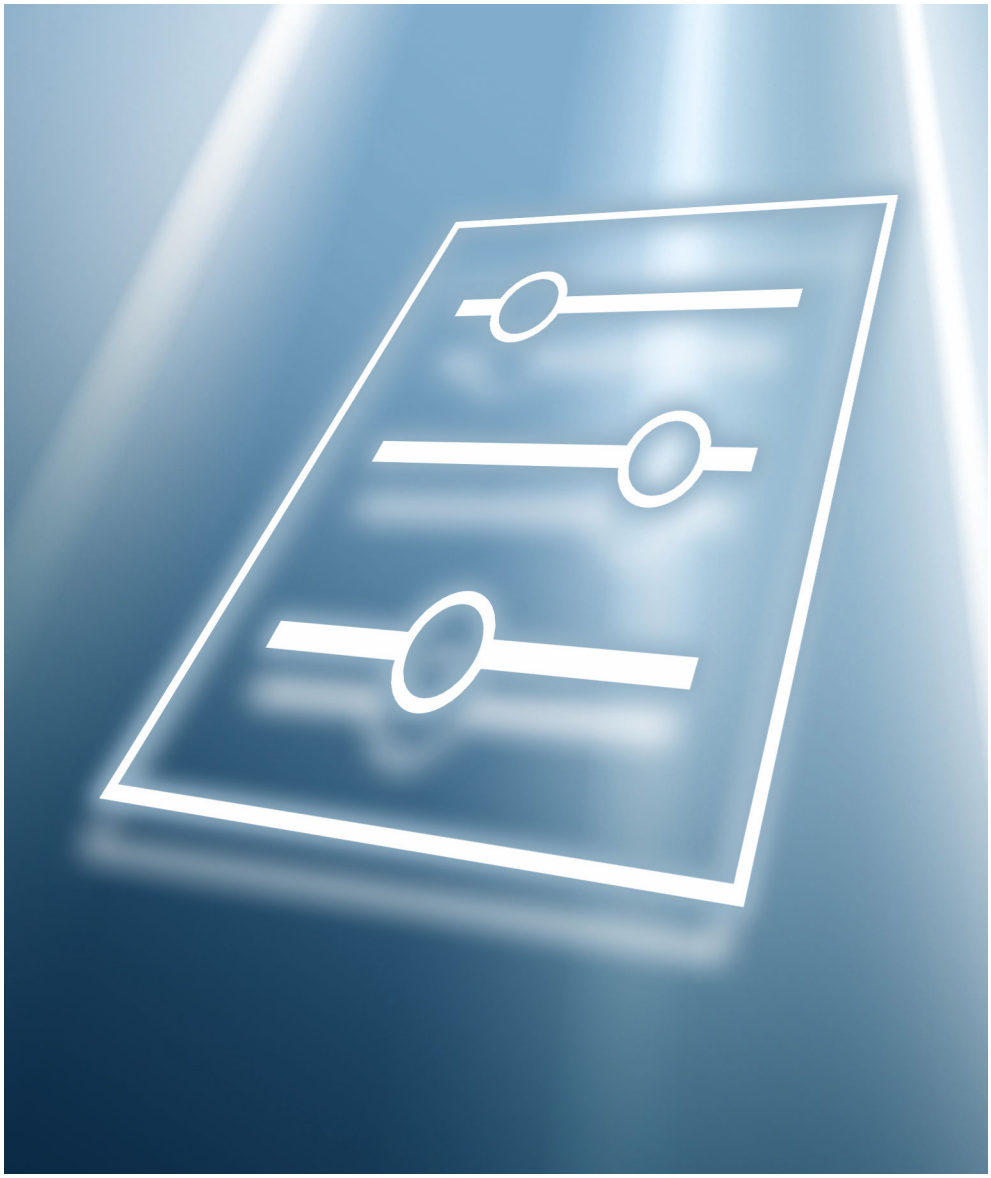
GP01186F/00/EN/01.21-00
71551361
2022-02-28

Valid as of version
01.00.zz (Device firmware)

Description of Device Parameters
FTL64
HART

Vibronic



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 group

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 parameters that are available when the **"Maintenance" option** user role is enabled.

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

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 via the Internet: www.endress.com → Download

1.5.2 Supplementary device-dependent documentation

Special Documentation

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

2 Overview of the operating menu

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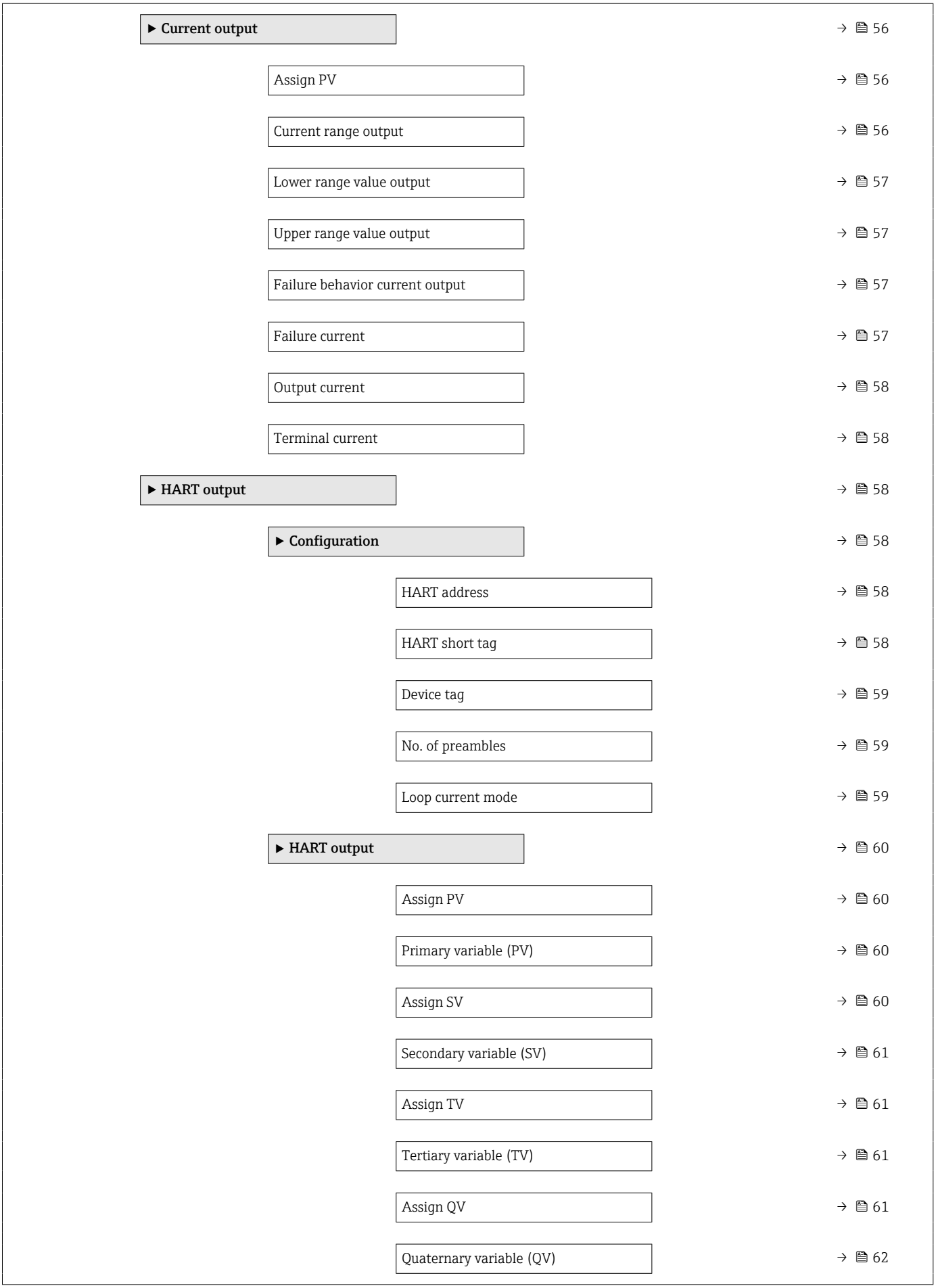
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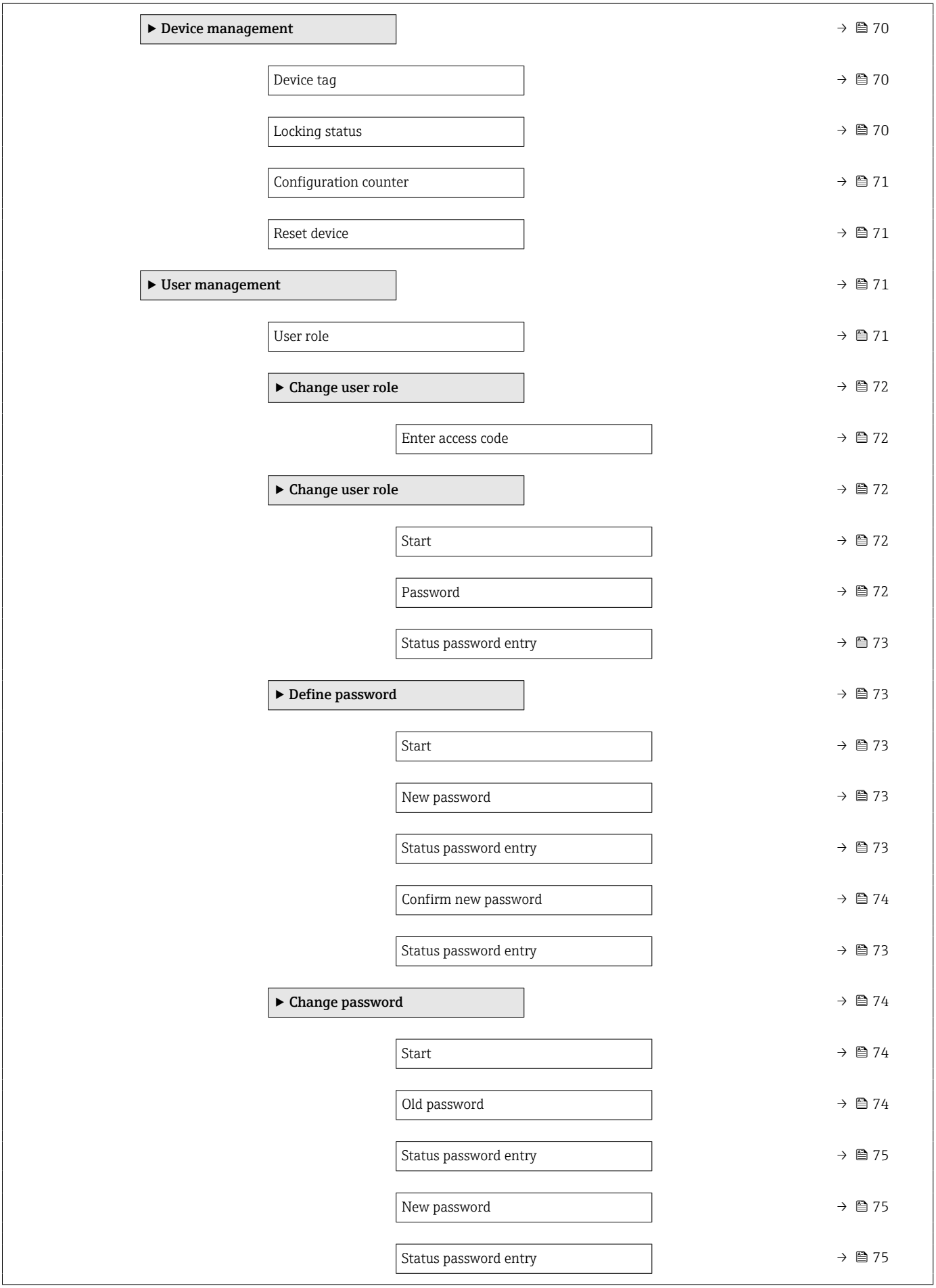
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3 Description of device parameters

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

Navigation System → User manag. → User role

Language

Navigation System → Display → Language

Description Set display language

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

User role

Navigation System → User manag. → User role

Description Shows the access authorization to the parameters via the operating tool

* Visibility depends on order options or device settings

User interface

- Operator
- Maintenance
- Expert
- Production
- Development

3.1 "Guidance" menu

Navigation Guidance

3.1.1 "Commissioning" wizard

Navigation Guidance → Commissioning

Temperature unit

Navigation Guidance → Commissioning → Temperature unit

Description Used to display the electronics temperature.

Selection

SI units	*US units*
▪ °C	°F
▪ K	

Mode of operation

Navigation Guidance → Commissioning → Mode of operat.

Description Level limit detection: Switching mode, output is either 8 mA (demand) or 16 mA (good).

Sensor frequency : Continuous mode, output between 4 mA and 20 mA proportional to sensor frequency.

Selection
- Level limit detection
- Sensor frequency

Safety function

Navigation Guidance → Commissioning → Safety function

Description MIN: Use for dry run protection.

MAX: Use for overfill protection.

Selection
- MIN
- MAX

Density setting

Navigation Guidance → Commissioning → Density setting

Selection
- > 0.4 g/cm³ *
- > 0.4 g/cm³ *
- > 0.5 g/cm³
- > 0.7 g/cm³

Additional information *Selection*
- **> 0.4 g/cm³** option
  For liquids with a density of 0.4...0.6 g/cm³
- **> 0.4 g/cm³** option
  For liquids with a density of 0.4...0.6 g/cm³
- **> 0.5 g/cm³** option
  For liquids with a density 0.5...0.8 g/cm³
- **> 0.7 g/cm³** option
  Standard setting for liquids with a density > 0.7 g/cm³

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 4 to 23 mA

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 4 to 23 mA

* Visibility depends on order options or device settings

Current range output

Navigation Guidance → Commissioning → Cur.range outp

Description Defines 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 "Safety lock" wizard

Navigation Guidance → Safety lock

Proof test via Bluetooth allowed?

Navigation Guidance → Safety lock → Bluetooth

Description After completion of the Safety mode wizard, the device will be write protected via software lock.

To use the proof test wizard (optional), 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 safety locking code

Navigation Guidance → Safety lock → Safety code

Description The Safety locking/unlocking code can be found in the corresponding safety manual or the WHG documentation.

User entry 0 to 65 535

SIL status

Navigation Guidance → Safety lock → SIL status

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

Character test string

Navigation Guidance → Safety lock → Char.test string

Description The following character string is displayed:
0123456789+-,.

Set the 'Confirm' parameter to 'Yes' if this string is rendered correctly.
Set the 'Confirm' parameter to 'No' if this string is not rendered correctly. Safety locking is not possible in this case.

User interface Character string comprising numbers, letters and special characters

Device tag

Navigation Guidance → Safety lock → Device tag

Description Enter the name for the measuring point.

User interface Character string comprising numbers, letters and special characters

Device name

Navigation Guidance → Safety lock → Device name

Description Use this function to display the device name. It can also be found on the nameplate.

User interface Character string comprising numbers, letters and special characters

Serial number

Navigation Guidance → Safety lock → Serial number

Description The serial number is a unique alphanumerical code identifying the device.
It is printed on the nameplate.
In combination with the Operations app it allows to access all device related documentation.

User interface Character string comprising numbers, letters and special characters

CRC device configuration

Navigation Guidance → Safety lock → 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 → Safety lock → Stored CRC conf.

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

User interface 0 to 65 535

Timestamp stored CRC device config.

Navigation Guidance → Safety lock → TS stored CRC

Description Gives the time stamp when the CRC was last stored following completion of the safety lock wizard.

User interface Character string comprising numbers, letters and special characters

Operating time

Navigation Guidance → Safety lock → Operating time

Description Indicates how long the device has been in operation.

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

Density setting

Navigation Guidance → Safety lock → Density setting

User interface
- > 0.4 g/cm³ *
- > 0.4 g/cm³ *
- > 0.5 g/cm³
- > 0.7 g/cm³

Safety function

Navigation Guidance → Safety lock → Safety function

User interface
- MIN
- MAX

Switching delay uncovered to covered

Navigation Guidance → Safety lock → Time delay cover

User interface
- 0.25 s
- 0.50 s
- 1.00 s

* Visibility depends on order options or device settings

- 1.50 s
- 5.00 s
- Customer specific

Switching delay uncovered to covered

Navigation Guidance → Safety lock → Time delay cover

User interface Character string comprising numbers, letters and special characters

Switching delay covered to uncovered

Navigation Guidance → Safety lock → Time delay free

User interface
- 0.25 s
- 0.50 s
- 1.00 s
- 1.50 s
- 5.00 s
- Customer specific

Switching delay covered to uncovered

Navigation Guidance → Safety lock → Time delay free

User interface Character string comprising numbers, letters and special characters

Failure behavior current output

Navigation Guidance → Safety lock → Fail.behav.out

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

User interface
- Min.
- Max.

Current range output

Navigation Guidance → Safety lock → 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

Lower range value output

Navigation Guidance → Safety lock → Low.range outp

Description Assigned value 4 mA.

User interface Character string comprising numbers, letters and special characters

Upper range value output

Navigation Guidance → Safety lock → Upp.range outp

Description Assigned value 20 mA.

User interface Character string comprising numbers, letters and special characters

Locking status

Navigation Guidance → Safety lock → Locking status

Description Indicates the type of locking.

'Hardware locked' (HW)
The device is locked by the 'WP' switch on the main electronics module. To unlock, set the switch into the OFF position.

'Safety locked' (SW)
Unlock the device by entering the appropriate access code in 'Enter safety unlocking code'.

'Temporarily locked' (SW)
The device is temporarily locked by processes in the device (e.g. data upload/download, reset). The device will automatically be unlocked after completion of these processes.

User interface
- Hardware locked
- Safety locked
- Temporarily locked

Code incorrect

Navigation Guidance → Safety lock → Code incorrect

Description Abort SIL confirmation sequence or reenter SIL locking code.

Selection
- Reenter code
- Abort sequence

3.1.3 "Safety unlock" wizard

Navigation Guidance → Safety unlock

Enter safety unlocking code

Navigation Guidance → Safety unlock → Safe.unlock code

Description The Safety locking/unlocking code can be found in the corresponding safety manual or the WHG documentation.

User entry 0 to 65 535

Code incorrect

Navigation Guidance → Safety unlock → Code incorrect

Description Abort SIL confirmation sequence or reenter SIL locking code.

Selection
- Reenter code
- Abort sequence

Locking status

Navigation Guidance → Safety unlock → Locking status

Description Indicates the type of locking.

'Hardware locked' (HW)
The device is locked by the 'WP' switch on the main electronics module. To unlock, set the switch into the OFF position.

'Safety locked' (SW)
Unlock the device by entering the appropriate access code in 'Enter safety unlocking code'.

'Temporarily locked' (SW)
The device is temporarily locked by processes in the device (e.g. data upload/download, reset). The device will automatically be unlocked after completion of these processes.

User interface
- Hardware locked
- Safety locked
- Temporarily locked

3.2 "Diagnostics" menu

Navigation Diagnostics

3.2.1 "Active diagnostics" submenu

Navigation Diagnostics → Active diagnos.

Active diagnostics

Navigation Diagnostics → Active diagnos. → Active diagnos.

Description Displays the currently active diagnostic message.

If there is more than one pending diagnostic event, the message for the diagnostic event with the highest priority is displayed.

User interface Positive integer

Timestamp

Navigation Diagnostics → Active diagnos. → Timestamp

Description Displays the timestamp for the currently active diagnostic message.

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

Previous diagnostics

Navigation Diagnostics → Active diagnos. → Prev.diagnostics

Description Displays the diagnostic message for the last diagnostic event that has ended.

User interface Positive integer

Timestamp

Navigation Diagnostics → Active diagnos. → Timestamp

Description Displays the timestamp of the diagnostic message generated for the last diagnostic event that has ended.

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

Operating time from restart

Navigation Diagnostics → Active diagnos. → Time fr. restart

Description Indicates how long the device has been in operation since the last time the device was restarted.

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.

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

3.2.2 "Minimum/maximum values" submenu

Navigation Diagnostics → Min/max val.

Frequency min

Navigation Diagnostics → Min/max val. → Frequency min

Description Minimum or maximum measured sensor frequency.

User interface Signed floating-point number

Frequency max

Navigation Diagnostics → Min/max val. → Frequency max

Description Minimum or maximum measured sensor frequency.

User interface Signed floating-point number

Minimum terminal voltage

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

Description Minimum or maximum measured terminal (supply) voltage.

User interface 0.0 to 50.0 V

Maximum terminal voltage

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

Description Minimum or maximum measured terminal (supply) voltage.

User interface 0.0 to 50.0 V

Minimum electronics temperature

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

Description Minimum or maximum measured main electronics temperature.

User interface Signed floating-point number

Maximum electronics temperature

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

Description Minimum or maximum measured main electronics temperature.

User interface Signed floating-point number

Minimum sensor temperature

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

Description Minimum or maximum measured sensor (sensor electronics) temperature.

User interface Signed floating-point number

Maximum sensor temperature

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

Description Minimum or maximum measured sensor (sensor electronics) temperature.

User interface Signed floating-point number

3.2.3 "Simulation" submenu

Navigation Diagnostics → Simulation

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

Simulation

Navigation Diagnostics → Simulation → Simulation

Description By activating the simulation, the following can be simulated:
- Fork state
- Sensor frequency
- Current output
- Diagnostic event simulation

The simulation can affect the output current.

Selection
- Off
- Fork state
- Sensor frequency
- Current output
- Diagnostic event simulation

Frequency simulation value

Navigation Diagnostics → Simulation → Freq. simulation

Description In level limit detection mode, output current and fork state are independent of frequency simulation value.

User entry 0 to 10 000 Hz

Fork state simulation value

Navigation Diagnostics → Simulation → Fork. simul.val.

Description In sensor frequency mode, output current is independent of fork state simulation value. In level limit detection mode, sensor frequency is independent of fork state simulation value.

Selection
- Fork covered
- Fork uncovered

Diagnostic event category

Navigation Diagnostics → Simulation → Event category

Description Select which diagnostic events can be simulated.

Selection
- Sensor
- Electronics
- Configuration
- Process

Diagnostic event simulation

Navigation Diagnostics → Simulation → Diag. event sim.

Description Select the diagnostic event to be simulated.

Note:
To terminate the simulation, select "Off".

Selection Off

3.2.4 "Heartbeat Technology" submenu

Navigation Diagnostics → Heartbeat Techn.

"Heartbeat Verification" submenu

Navigation Diagnostics → Heartbeat Techn. → Heartbeat Verif.

Date/time Heartbeat Verification

Navigation Diagnostics → Heartbeat Techn. → Heartbeat Verif. → Date/time Heartbeat Verification

Description Date and time of last Hearbeat Verification.

This value is updated with every Heartbeat verification.

Note:
If time information is not available, e.g. Heartbeat verification is started from display, '--------' is shown.

User interface Character string comprising numbers, letters and special characters

Start verification

Navigation Diagnostics → Heartbeat Techn. → Heartbeat Verif. → Start verificat.

Description Start verification.

Selection
- Cancel
- Start

Operating time (Verification)

Navigation Diagnostics → Heartbeat Techn. → Heartbeat Verif. → Operating time

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

Overall result

Navigation Diagnostics → Heartbeat Techn. → Heartbeat Verif. → Overall result

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

Status

Navigation Diagnostics → Heartbeat Techn. → Heartbeat Verif. → Status

Description Shows the actual status.

User interface
- Done
- Busy
- Failed
- Not done

"Frequency history" submenu

Navigation Diagnostics → Heartbeat Techn. → Freq. history

Sensor frequency 1

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 1

User interface Signed floating-point number

Sensor frequency 2

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 2

User interface Signed floating-point number

Sensor frequency 3

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 3

User interface Signed floating-point number

Sensor frequency 4

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 4

User interface Signed floating-point number

Sensor frequency 5

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 5

User interface Signed floating-point number

Sensor frequency 6

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 6

User interface Signed floating-point number

Sensor frequency 7

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 7

User interface Signed floating-point number

Sensor frequency 8

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 8

User interface Signed floating-point number

Sensor frequency 9

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 9

User interface Signed floating-point number

Sensor frequency 10

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 10

User interface Signed floating-point number

Sensor frequency 11

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 11

User interface Signed floating-point number

Sensor frequency 12

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 12

User interface Signed floating-point number

Sensor frequency 13

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 13

User interface Signed floating-point number

Sensor frequency 14

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 14

User interface Signed floating-point number

Sensor frequency 15

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 15

User interface Signed floating-point number

Sensor frequency 16

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Frequency 16

User interface Signed floating-point number

Date 1

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 1

User interface Character string comprising numbers, letters and special characters

Date 2

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 2

User interface Character string comprising numbers, letters and special characters

Date 3

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 3

User interface Character string comprising numbers, letters and special characters

Date 4

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 4

User interface Character string comprising numbers, letters and special characters

Date 5

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 5

User interface Character string comprising numbers, letters and special characters

Date 6

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 6

User interface Character string comprising numbers, letters and special characters

Date 7

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 7

User interface Character string comprising numbers, letters and special characters

Date 8

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 8

User interface Character string comprising numbers, letters and special characters

Date 9

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 9

User interface Character string comprising numbers, letters and special characters

Date 10

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 10

User interface Character string comprising numbers, letters and special characters

Date 11

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 11

User interface Character string comprising numbers, letters and special characters

Date 12

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 12

User interface Character string comprising numbers, letters and special characters

Date 13

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 13

User interface Character string comprising numbers, letters and special characters

Date 14

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 14

User interface Character string comprising numbers, letters and special characters

Date 15

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 15

User interface Character string comprising numbers, letters and special characters

Date 16

Navigation Diagnostics → Heartbeat Techn. → Freq. history → Date 16

User interface Character string comprising numbers, letters and special characters

"Loop diagnostics" submenu

Navigation Diagnostics → Heartbeat Techn. → Loop diagn.

Rebuild baseline	
Navigation	Diagnostics → Heartbeat Techn. → 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 → Heartbeat Techn. → 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

Baseline status	
Navigation	Diagnostics → Heartbeat Techn. → 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 → Heartbeat Techn. → Loop diagn. → Loop diagn.

Selection
- Disable
- Enable

Terminal voltage 1

Navigation Diagnostics → Heartbeat Techn. → 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 → Heartbeat Techn. → Loop diagn. → Lower threshold

User interface 0.0 to 50.0 V

Clamping voltage upper threshold

Navigation Diagnostics → Heartbeat Techn. → Loop diagn. → Upper threshold

User interface 0.0 to 50.0 V

806 Alarm delay

Navigation Diagnostics → Heartbeat Techn. → Loop diagn. → 806 Alarm delay

User entry 0 to 60 s

"Process window" submenu

Navigation Diagnostics → Heartbeat Techn. → Process window

Sensor frequency

Navigation Diagnostics → Heartbeat Techn. → Process window → Frequency

Description Actual fork frequency.

User interface 0 to 10 000 Hz

900 Process alert frequency too low

Navigation Diagnostics → Heartbeat Techn. → Process window → 900 Freq. too low

Description Note: With the MAX safety function, no event for 'Process alert frequency too low' is triggered if the fork is covered.

Selection
- Disable
- Enable

900 Alarm delay

Navigation Diagnostics → Heartbeat Techn. → Process window → 900 Alarm delay

User entry 0 to 300 s

Low alert value

Navigation Diagnostics → Heartbeat Techn. → Process window → Low alert value

Description If this limit value is undercut, an event is generated. There is no hysteresis. A typical value is 1% below the actual frequency.

User entry 0 to 2 000 Hz

901 Process alert frequency too high

Navigation Diagnostics → Heartbeat Techn. → Process window → 901 Freq. high

Description Note: With the MIN safety function, no event for 'Process alert frequency too high' is triggered if the fork is uncovered.

Selection
- Disable
- Enable

901 Alarm delay

Navigation Diagnostics → Heartbeat Techn. → Process window → 901 Alarm delay

User entry 0 to 300 s

High alert value

Navigation Diagnostics → Heartbeat Techn. → Process window → High alert value

Description If this limit value is exceeded an event is generated. There is no hysteresis. With stable environmental conditions a typical value is 1% above the actual frequency.

User entry 0 to 2 000 Hz

3.2.5 "Proof test" submenu

Navigation Diagnostics → Proof test

Date/time proof test

Navigation Diagnostics → Proof test → Date/time

Description This value is updated with every proof test and with inspector decision „Passed“.

User interface Character string comprising numbers, letters and special characters

Time stamp of last proof test

Navigation Diagnostics → Proof test → Last proof test

Description As soon as key is pressed, actual operating hours counter is saved.

User interface Character string comprising numbers, letters and special characters

3.2.6 "Diagnostic settings" submenu

Navigation Diagnostics → Diag. settings

"Properties" submenu

Navigation Diagnostics → Diag. settings → Properties

49 Corrosion warning

Navigation Diagnostics → Diag. settings → Properties → 49 Corr. warning

Description Enables or disable the corrosion warning. The corrosion warning is set if sensor frequency exceeds frequency at delivery status by 5%.
If turned on event category can be set in menu -> Diagnostics -> Diagnostic settings -> Configuration
Diagnostic behaviour can be changed to 'Logbook entry only' in the same menu.

Selection
- Off
- On

Upper warning frequency

Navigation Diagnostics → Diag. settings → Properties → U. warning freq.

Description If the sensor frequency is currently greater than the upper warning frequency, then a warning is generated. The switching output remains in the current state. It is recommended to remove the sensor and check it for corrosion.

User interface 0 to 10 000 Hz

825 Electronics temperature

Navigation Diagnostics → Diag. settings → Properties → 825 Electr. temp

Description Activates the monitoring of the electronics temperature. The limit values are fixed and depend on the order code of the device (+85°C and -40/-50/-60°C or 185°F and -40/-58/-76°F).

Selection
- Off
- On

826 Sensor temperature

Navigation Diagnostics → Diag. settings → Properties → 826 Sensor temp.

Description Activates the monitoring of the sensor (electronics) temperature. The limit values are fixed and depend on the order code of the device (+85°C and -40/-50/-60°C or 185°F and -40/-58/-76°F).

Selection
- Off
- On

"Sensor" submenu

Navigation Diagnostics → Diag. settings → Sensor

49 Diagnostic behavior

Navigation Diagnostics → Diag. settings → Sensor → 49 Diag. behav.

Description Select event behavior

'Logbook entry only': no digital or analog transmission of the message.

'Warning': Current output unchanged. Message is output digitally (default).

If the permissible conditions are reached again, the warning is no longer available in the instrument.

Selection
- Warning
- Logbook entry only

49 Event category

Navigation Diagnostics → Diag. settings → Sensor → 49Event category

Selection
- Failure (F)
- Function check (C)
- Out of specification (S)
- Maintenance required (M)
- No effect (N)

"Process" submenu

Navigation Diagnostics → Diag. settings → Process

806 Diagnostic behavior

Navigation Diagnostics → Diag. settings → Process → 806 Diag. behav.

Description Select event behavior

'Logbook entry only': no digital or analog transmission of the message.

'Warning': Current output unchanged. Message is output digitally (default).

If the permissible conditions are reached again, the warning is no longer available in the instrument.

Selection
- Warning
- Logbook entry only

806 Event category

Navigation Diagnostics → Diag. settings → Process → 806Event category

Description Select category for diagnostic message.

Selection
- Failure (F)
- Function check (C)
- Out of specification (S)
- Maintenance required (M)
- No effect (N)

900 Diagnostic behavior

Navigation Diagnostics → Diag. settings → Process → 900 Diag. behav.

Description Select event behavior

'Logbook entry only': no digital or analog transmission of the message.

'Warning': Current output unchanged. Message is output digitally (default).

If the permissible conditions are reached again, the warning is no longer available in the instrument.

Selection
- Warning
- Logbook entry only

900 Event category

Navigation Diagnostics → Diag. settings → Process → 900Event category

Selection
- Failure (F)
- Function check (C)
- Out of specification (S)
- Maintenance required (M)
- No effect (N)

901 Diagnostic behavior

Navigation Diagnostics → Diag. settings → Process → 901 Diag. behav.

Description Select event behavior

'Logbook entry only': no digital or analog transmission of the message.

'Warning': Current output unchanged. Message is output digitally (default).

If the permissible conditions are reached again, the warning is no longer available in the instrument.

Selection
- Warning
- Logbook entry only

901 Event category

Navigation Diagnostics → Diag. settings → Process → 901Event category

Selection
- Failure (F)
- Function check (C)
- Out of specification (S)
- Maintenance required (M)
- No effect (N)

3.3 "Application" menu

Navigation Application

3.3.1 "Measured values" submenu

Navigation Application → Measured values

Sensor frequency

Navigation Application → Measured values → Frequency

Description Actual fork frequency.

User interface 0 to 10 000 Hz

Fork state

Navigation Application → Measured values → Fork state

Description The condition of the fork is displayed.

User interface
- Fork covered
- Fork uncovered

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

Sensor temperature

Navigation Application → Measured values → Sensor temp.

User interface Signed floating-point number

Electronics temperature

Navigation Application → Measured values → Electronics temp

User interface Signed floating-point number

3.3.2 "Measuring Units" submenu

Navigation Application → Measuring Units

Temperature unit

Navigation Application → Measuring Units → Temperature unit

Description Used to display the electronics temperature.

Selection

SI units	*US units*
▪ ℃ ▪ K	℉

3.3.3 "Sensor" submenu

Navigation Application → Sensor

"Sensor configuration" submenu

Navigation Application → Sensor → Sensor conf.

Mode of operation

Navigation Application → Sensor → Sensor conf. → Mode of operat.

Description Level limit detection: Switching mode, output is either 8 mA (demand) or 16 mA (good).

Sensor frequency : Continuous mode, output between 4 mA and 20 mA proportional to sensor frequency.

Selection
- Level limit detection
- Sensor frequency

Safety function

Navigation Application → Sensor → Sensor conf. → Safety function

Description MIN: Use for dry run protection.

MAX: Use for overfill protection.

Selection
- MIN
- MAX

Density setting

Navigation Application → Sensor → Sensor conf. → Density setting

Selection
- > 0.4 g/cm³ *
- > 0.4 g/cm³ *
- > 0.5 g/cm³
- > 0.7 g/cm³

* Visibility depends on order options or device settings

Additional information *Selection*

- **> 0.4 g/cm³** option
  For liquids with a density of 0.4...0.6 g/cm³
- **> 0.4 g/cm³** option
  For liquids with a density of 0.4...0.6 g/cm³
- **> 0.5 g/cm³** option
  For liquids with a density 0.5...0.8 g/cm³
- **> 0.7 g/cm³** option
  Standard setting for liquids with a density > 0.7 g/cm³

Damping

Navigation Application → Sensor → Sensor conf. → Damping

Description Damping, used for Sensor frequency only. Does not affect Level limit detection and Fork state.

User entry 0 to 999 s

Switching delay uncovered to covered

Navigation Application → Sensor → Sensor conf. → Delay to covered

Description Choose between predefined values or select 'Customer specific' to enter a value between 1.00 s and 60.00 s.

Selection

- 0.25 s
- 0.50 s
- 1.00 s
- 1.50 s
- 5.00 s
- Customer specific

Customer delay to covered

Navigation Application → Sensor → Sensor conf. → Cust. delay cov.

User entry 1 to 60 s

Switching delay covered to uncovered

Navigation Application → Sensor → Sensor conf. → Delay to uncov.

Description Choose between predefined values or select 'Customer specific' to enter a value between 1.00 s and 60.00 s.

Selection
- 0.25 s
- 0.50 s
- 1.00 s
- 1.50 s
- 5.00 s
- Customer specific

Customer delay to uncovered

Navigation Application → Sensor → Sensor conf. → Cust. delay unc.

User entry 1 to 60 s

"Stored frequency" submenu

Navigation Application → Sensor → Stored frequency

Stored uncovered frequency

Navigation Application → Sensor → Stored frequency → St. uncov. freq

Description In this parameter the actual sensor frequency can be stored, which is only possible if the fork is uncovered. The value is displayed on the Heartbeat Technology verification report and can be used as a reference for further/future analyses.

User interface 0 to 10 000 Hz

Stored covered frequency

Navigation Application → Sensor → Stored frequency → Stor. cov. freq

Description In this parameter the actual sensor frequency can be stored, which is only possible if the fork is covered. The value is displayed on the Heartbeat Technology verification report and can be used as a reference for further/future analyses.

User interface 0 to 10 000 Hz

"Sensor calibration" submenu

Navigation Application → Sensor → Sensor cal.

Lower switching point at density

Navigation Application → Sensor → Sensor cal. → Lower sw. point

Description This is the sensor frequency at which the fork status changes to covered (depending on the density selected).

User interface 0 to 2 000 Hz

Upper switching point at density

Navigation Application → Sensor → Sensor cal. → Upper sw. point

Description This is the sensor frequency at which the fork status changes to uncovered (depending on the density selected).

User interface 0 to 2 000 Hz

Frequency at delivery status

Navigation Application → Sensor → Sensor cal. → Freq. delivery

Description Sensor frequency at delivery status.

User interface 0 to 10 000 Hz

Upper warning frequency

Navigation Application → Sensor → Sensor cal. → U. warning freq.

Description If the sensor frequency is currently greater than the upper warning frequency, then a warning is generated. The switching output remains in the current state. It is recommended to remove the sensor and check it for corrosion.

User interface 0 to 10 000 Hz

Upper alarm frequency

Navigation Application → Sensor → Sensor cal. → Upper alarm f.

Description If the sensor frequency is currently greater than the upper alarm frequency, then an alarm is generated and the switching output switches to the safety related state.

User interface 0 to 10 000 Hz

3.3.4 "Current output" submenu

Navigation Application → Curr.output

Assign PV

Navigation Application → Curr.output → Assign PV

Description Assign a measured variable to the primary dynamic variable (PV).

Additional information:
The assigned measured variable is also used by the current output.

User interface
- Level limit detection
- Sensor frequency

Current range output

Navigation Application → Curr.output → Cur.range outp

Description Defines 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)

Lower range value output

Navigation Application → Curr.output → 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 4 to 23 mA

Upper range value output

Navigation Application → Curr.output → 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 4 to 23 mA

Failure behavior current output

Navigation Application → Curr.output → 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.

Failure current

Navigation Application → Curr.output → Failure current

Description Enter current output value in alarm condition

User entry 21.5 to 23 mA

Output current

Navigation Application → Curr.output → Output curr.

Description Shows the value currently calculated for the current output

User interface 3.59 to 23 mA

Terminal current

Navigation Application → Curr.output → Terminal curr.

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

User interface 0 to 30 mA

3.3.5 "HART output" submenu

Navigation Application → HART output

"Configuration" submenu

Navigation Application → HART output → Configuration

HART address

Navigation Application → HART output → Configuration → HART address

Description Enter the address to exchange data via the HART protocol.

User entry 0 to 63

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 Character string comprising numbers, letters and special characters (8)

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

"HART output" submenu

Navigation Application → HART output → HART output

Assign PV

Navigation Application → HART output → HART output → Assign PV

Description Assign a measured variable to the primary dynamic variable (PV).

Additional information:
The assigned measured variable is also used by the current output.

User interface
- Level limit detection
- Sensor frequency

Primary variable (PV)

Navigation Application → HART output → HART output → Primary var (PV)

Description Shows the current measured value of the primary dynamic variable (PV)

User interface 4 to 23 mA

Assign SV

Navigation Application → HART output → HART output → Assign SV

Description Assign a measured variable to the second dynamic variable (SV).

Selection
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Electronics temperature
- Measured current *
- Terminal voltage *
- Not used

Additional information *Selection*
- **Fork state** option
  Indicates fork state 'Fork covered ' (1) or 'Fork uncovered ' (0).
- **Sensor temperature** option
  Temperature of sensor electronics in the housing.

* Visibility depends on order options or device settings

Secondary variable (SV)

Navigation Application → HART output → HART output → Second.var(SV)

Description Shows the current measured value of the secondary dynamic variable (SV)

User interface 0 to 10 000 Hertz

Assign TV

Navigation Application → HART output → HART output → Assign TV

Description Assign a measured variable to the tertiary dynamic variable (TV).

Selection
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Electronics temperature
- Measured current *
- Terminal voltage *
- Not used

Additional information *Selection*
- **Fork state** option
  Indicates fork state 'Fork covered ' (1) or 'Fork uncovered ' (0).
- **Sensor temperature** option
  Temperature of sensor electronics in the housing.

Tertiary variable (TV)

Navigation Application → HART output → HART output → Tertiary var(TV)

Description Shows the current measured value of the tertiary (third) dynamic variable (TV)

User interface 0 to 1.0 ManufacturerNoUnit

Assign QV

Navigation Application → HART output → HART output → Assign QV

Description Assign a measured variable to the quaternary dynamic variable (QV).

* Visibility depends on order options or device settings

Selection
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Electronics temperature
- Measured current *
- Terminal voltage *
- Not used

Additional information *Selection*
- **Fork state** option
  Indicates fork state 'Fork covered ' (1) or 'Fork uncovered ' (0).
- **Sensor temperature** option
  Temperature of sensor electronics in the housing.

Quaternary variable (QV)

Navigation Application → HART output → HART output → Quaterna.var(QV)

Description Shows the current measured value of the quaternary (fourth) dynamic variable (QV)

User interface Signed floating-point number

"Burst configuration 1" submenu

Navigation Application → HART output → Burst config. 1

Burst mode

Navigation Application → HART output → Burst config. 1 → Burst mode 1

Description Switch HART burst mode for burst message on

Selection
- Off
- On

Burst command

Navigation Application → HART output → Burst config. 1 → Burst command 1

Description Select the HART command that is sent to the HART master

* Visibility depends on order options or device settings

Selection
- Primary variable (PV)
- Loop Current and Percent of Range
- Dynamic Variables
- Device variables with status
- Device variables
- Additional device status

Burst variable 0

Navigation Application → HART output → Burst config. 1 → Burst variable 0

Description For HART command 9 and 33, assign a HART device variable or process variable to burst variable

Selection
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Electronics temperature
- Measured current *
- Terminal voltage 1 *
- Percent of range
- Measured current
- Primary variable (PV)
- Secondary variable (SV)
- Tertiary variable (TV)
- Quaternary variable (QV)
- Not used

Burst variable 1

Navigation Application → HART output → Burst config. 1 → Burst variable 1

Description For HART command 9 and 33, assign a HART device variable or process variable to burst variable

Selection
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Electronics temperature
- Measured current *
- Terminal voltage 1 *
- Percent of range
- Measured current
- Primary variable (PV)
- Secondary variable (SV)

* Visibility depends on order options or device settings

- Tertiary variable (TV)
- Quaternary variable (QV)
- Not used

Burst variable 2

Navigation Application → HART output → Burst config. 1 → Burst variable 2

Description For HART command 9 and 33, assign a HART device variable or process variable to burst variable

Selection
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Electronics temperature
- Measured current *
- Terminal voltage 1 *
- Percent of range
- Measured current
- Primary variable (PV)
- Secondary variable (SV)
- Tertiary variable (TV)
- Quaternary variable (QV)
- Not used

Burst variable 3

Navigation Application → HART output → Burst config. 1 → Burst variable 3

Description For HART command 9 and 33, assign a HART device variable or process variable to burst variable

Selection
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Electronics temperature
- Measured current *
- Terminal voltage 1 *
- Percent of range
- Measured current
- Primary variable (PV)
- Secondary variable (SV)
- Tertiary variable (TV)
- Quaternary variable (QV)
- Not used

* Visibility depends on order options or device settings

Burst variable 4

Navigation Application → HART output → Burst config. 1 → Burst variable 4

Description For HART command 33, assign a HART device variable or process variable to burst variable

Selection
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Electronics temperature
- Measured current *
- Terminal voltage 1 *
- Percent of range
- Measured current
- Primary variable (PV)
- Secondary variable (SV)
- Tertiary variable (TV)
- Quaternary variable (QV)
- Not used

Burst variable 5

Navigation Application → HART output → Burst config. 1 → Burst variable 5

Description For HART command 33, assign a HART device variable or process variable to burst variable

Selection
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Electronics temperature
- Measured current *
- Terminal voltage 1 *
- Percent of range
- Measured current
- Primary variable (PV)
- Secondary variable (SV)
- Tertiary variable (TV)
- Quaternary variable (QV)
- Not used

Burst variable 6

Navigation Application → HART output → Burst config. 1 → Burst variable 6

Description For HART command 33, assign a HART device variable or process variable to burst variable

* Visibility depends on order options or device settings

Selection

- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Electronics temperature
- Measured current *
- Terminal voltage 1 *
- Percent of range
- Measured current
- Primary variable (PV)
- Secondary variable (SV)
- Tertiary variable (TV)
- Quaternary variable (QV)
- Not used

Burst variable 7

Navigation Application → HART output → Burst config. 1 → Burst variable 7

Description For HART command 33, assign a HART device variable or process variable to burst variable

Selection

- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Electronics temperature
- Measured current *
- Terminal voltage 1 *
- Percent of range
- Measured current
- Primary variable (PV)
- Secondary variable (SV)
- Tertiary variable (TV)
- Quaternary variable (QV)
- Not used

Burst trigger mode

Navigation Application → HART output → Burst config. 1 → Trigger mode

Description Select the event that triggers the burst message

Selection

- Continuous
- Window *
- Rising *
- Falling *
- On change

* Visibility depends on order options or device settings

Burst trigger level

Navigation Application → HART output → Burst config. 1 → Trigger level

Description Enter the burst trigger value that determines together with the option selected in 'Burst trigger mode' parameter the time of burst message

User entry Signed floating-point number

Min. update period

Navigation Application → HART output → Burst config. 1 → Min. upd. per.

Description Enter the minimum time span between two burst responses of one burst message

User entry Positive integer

Max. update period

Navigation Application → HART output → Burst config. 1 → Max. upd. per.

Description Enter the maximum time span between two burst responses of one burst message

User entry Positive integer

"Information" submenu

Navigation Application → HART output → Information

Device ID

Navigation Application → HART output → Information → Device ID

Description Shows the device ID for identifying the device in a HART network

User interface Positive integer

Device type

Navigation Application → HART output → Information → Device type

Description Shows the device type with which the measuring device is registered with the HART Communication Foundation

User interface 0 to 65 535

Device revision

Navigation Application → HART output → Information → Device revision

Description Shows the device revision with which the device is registered with the HART Communication Foundation

User interface 0 to 255

HART short tag

Navigation Application → HART output → Information → 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 Character string comprising numbers, letters and special characters (8)

HART revision

Navigation Application → HART output → Information → HART revision

User interface 5 to 7

HART descriptor

Navigation Application → HART output → Information → HART descriptor

Description Use this function to define a description for the measuring point.

Maximum length: 16 characters
Allowed characters: A-Z, 0-9, certain special characters

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

HART message

Navigation Application → HART output → Information → HART message

Description Use this function to define a HART message which is sent via the HART protocol when requested by the master.

Maximum length: 32 characters
Allowed characters: A-Z, 0-9, certain special characters

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

HART date code

Navigation Application → HART output → Information → HART date code

Description Enter date of the last configuration change. Use this format yyyy-mm-dd

User entry Character string comprising numbers, letters and special characters (10)

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	Indicates the type of locking. 'Hardware locked' (HW) The device is locked by the 'WP' switch on the main electronics module. To unlock, set the switch into the OFF position. 'Safety locked' (SW) Unlock the device by entering the appropriate access code in 'Enter safety unlocking code'. 'Temporarily locked' (SW) The device is temporarily locked by processes in the device (e.g. data upload/download, reset). The device will automatically be unlocked after completion of these processes.
User interface	▪ Hardware locked ▪ Safety locked ▪ Temporarily locked

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 Reset the device configuration - either entirely or in part - to a defined state

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

3.4.2 "User management" submenu

Navigation System → User manag.

User role

Navigation System → User manag. → User role

Description Shows the access authorization to the parameters via the operating tool

** Visibility depends on communication
* Visibility depends on order options or device settings

User interface
- Operator
- Maintenance
- Expert
- Production
- Development

"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 For authorized service personnel only.

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

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

New password

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

Description Define the new 'Maintenance' password.
A new password is valid after it has been confirmed within the 'Confirm new password' parameter.
Any valid password consists of 4 to 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

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 Define the new 'Maintenance' password.
A new password is valid after it has been confirmed within the 'Confirm new password' parameter.
Any valid password consists of 4 to 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

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

Reset password

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

Description Enter a code to reset the current 'Maintenance' password.
The code is deliverd by your local support.

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

User role

Navigation System → User manag. → Logout → User role

Description Shows the access authorization to the parameters via the operating tool

User interface
- Operator
- Maintenance
- Expert
- Production
- Development

3.4.3 "Bluetooth configuration" submenu

Navigation System → Bluetooth conf.

Bluetooth activation

Navigation System → Bluetooth conf. → Bluetooth active

Description If Bluetooth is deactivated, it can only be reactivated via the display or the operating tool. Reactivating via the SmartBlue app is not possible.

Selection
- Disable
- Enable

3.4.4 "Display" submenu

Navigation System → Display

Language

Navigation System → Display → Language

Description Set display language

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

Format display

Navigation System → Display → Format display

Description Select how measured values are shown on the display

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

Value 1 display

Navigation System → Display → Value 1 display

Description Select the measured value that is shown on the local display

* Visibility depends on order options or device settings

Selection
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Current output
- Terminal voltage

Decimal places 1

Navigation System → Display → Decimal places 1

Description This selection does not affect the measurement and calculation accuracy of the device.

Selection
- x
- x.x
- x.xx
- x.xxx
- x.xxxx

Value 2 display

Navigation System → Display → Value 2 display

Description Select the measured value that is shown on the local display

Selection
- None
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Current output
- Terminal voltage

Decimal places 2

Navigation System → Display → Decimal places 2

Description This selection does not affect the measurement and calculation accuracy of the device.

Selection
- x
- x.x
- x.xx
- x.xxx
- x.xxxx

Value 3 display

Navigation System → Display → Value 3 display

Description Select the measured value that is shown on the local display

Selection
- None
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Current output
- Terminal voltage

Decimal places 3

Navigation System → Display → Decimal places 3

Description This selection does not affect the measurement and calculation accuracy of the device.

Selection
- x
- x.x
- x.xx
- x.xxx
- x.xxxx

Value 4 display

Navigation System → Display → Value 4 display

Description Select the measured value that is shown on the local display

Selection
- None
- Level limit detection
- Sensor frequency
- Fork state
- Sensor temperature
- Current output
- Terminal voltage

Decimal places 4

Navigation System → Display → Decimal places 4

Description This selection does not affect the measurement and calculation accuracy of the device.

Selection
- x
- x.x
- x.xx
- x.xxx
- x.xxxx

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 %

3.4.5 "Geolocation" submenu

Navigation System → Geolocation

Process Unit Tag

Navigation System → Geolocation → Process Unit Tag

Description Enter the process unit in which the device is installed.

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

Location Description

Navigation System → Geolocation → Location Descr.

Description Use this function to enter a description of the location so that the device can be located in the plant.

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

Longitude

Navigation System → Geolocation → Longitude

Description Use this function to enter the longitude coordinates that describe the device location.

User entry −180 to 180 °

Latitude

Navigation System → Geolocation → Latitude

Description Use this function to enter the latitude coordinates that describe the device location.

User entry −5 156.62015616066 to 5 156.62015616066 °

Altitude

Navigation System → Geolocation → Altitude

Description Use this function to enter the altitude data that describe the device location.

User entry Signed floating-point number

Location method

Navigation System → Geolocation → Location method

Description Use this function to select the data format for specifying the geographic location. The codes for specifying the location are based on the US National Marine Electronics Association (NMEA) Standard NMEA 0183.

Selection
- No fix
- GPS or Standard Positioning Service fix
- Differential GPS fix
- Precise positioning service (PPS) fix
- Real Time Kinetic (RTK) fixed solution
- Real Time Kinetic (RTK) float solution
- Estimated dead reckoning
- Manual input mode
- Simulation Mode

3.4.6 "Information" submenu

Navigation System → Information

Device name

Navigation System → Information → Device name

Description Use this function to display the device name. It can also be found on the nameplate.

User interface Character string comprising numbers, letters and special characters

Manufacturer

Navigation System → Information → Manufacturer

User interface Character string comprising numbers, letters and special characters

Serial number

Navigation System → Information → Serial number

Description The serial number is a unique alphanumerical code identifying the device.
It is printed on the nameplate.
In combination with the Operations app it allows to access all device related documentation.

User interface Character string comprising numbers, letters and special characters

Order code

Navigation System → Information → Order code

Description Shows the device order code.

User interface Character string comprising numbers, letters and special characters

Firmware version

Navigation System → Information → Firmware version

Description Displays the device firmware version installed.

User interface Character string comprising numbers, letters and special characters

Hardware version

Navigation System → Information → Hardware version

User interface Character string comprising numbers, letters and special characters

Extended order code 1

Navigation System → Information → Ext. order cd. 1

Description The extended order code is an alphanumeric code containing all information to identify the device and its options.

User interface Character string comprising numbers, letters and special characters

Extended order code 2

Navigation System → Information → Ext. order cd. 2

Description The extended order code is an alphanumeric code containing all information to identify the device and its options.

User interface Character string comprising numbers, letters and special characters

Extended order code 3

Navigation System → Information → Ext. order cd. 3

Description The extended order code is an alphanumeric code containing all information to identify the device and its options.

User interface Character string comprising numbers, letters and special characters

3.4.7 "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 safety lock. Factory delivery is 65535 means that the device has not yet been safety 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 safety lock wizard.

User interface Character string comprising numbers, letters and special characters

Activate SW option

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

Description Enter the application package code or code of another re-ordered functionality to enable it

User entry Positive integer

Software option overview

Navigation System → Softw. config. → SW option overv.

Description Shows all enabled software options

User interface
- SIL
- WHG
- Heartbeat Verification
- Heartbeat Monitoring

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