

Special Documentation

Micropilot FMR6x

Heartbeat Diagnostics
Heartbeat Verification
Heartbeat Monitoring

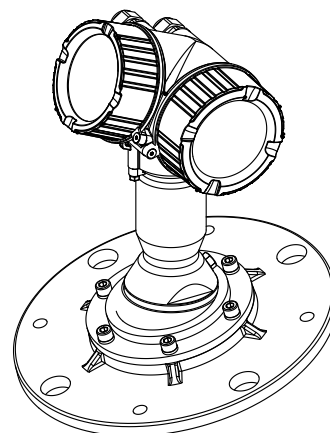
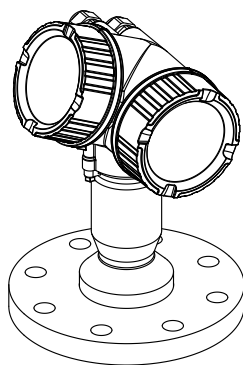
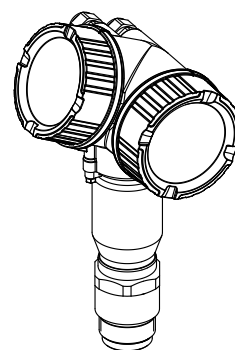
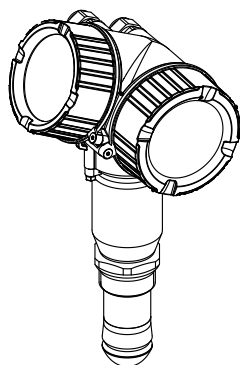


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1 Document information

1.1 Document function

This Special Documentation contains a description of the additional parameters and technical data that are available with the **Heartbeat Verification** and **Heartbeat Monitoring** application packages.

 This manual is a Special Documentation. It is not a substitute for the technical documentation according to the following table:








Product	Communication	Operating Instructions	Technical Information
FMR60	HART	BA01618F	TI01302F
FMR62	HART	BA01619F	TI01303F
FMR67	HART	BA01620F	TI01304F

 The Operating Instructions and other technical documents pertaining to the device are available via:

- Internet: www.endress.com/deviceviewer
- Smart phone/tablet: *Endress+Hauser Operations App*

1.2 Symbols used

1.2.1 Symbols for certain types of information

Symbol	Meaning
 A0011193	Tip Indicates additional information.
 A0011194	Reference to documentation Refers to the corresponding device documentation.
 A0011195	Reference to page Refers to the corresponding page number.
 A0011196	Reference to graphic Refers to the corresponding graphic number and page number.
 A0013140	Operation via local display Indicates navigation to the parameter via the local display.
 A0013143	Operation via operating tool Indicates navigation to the parameter via the operating tool.
 A0013144	Write-protected parameter Indicates a parameter that can be locked against changes by entering a user-specific code.

1.2.2 Symbols in graphics

Symbol	Meaning
1, 2, 3 ...	Item numbers
A, B, C, ...	Views
A-A, B-B, C-C, ...	Sections

1.3 Documentation

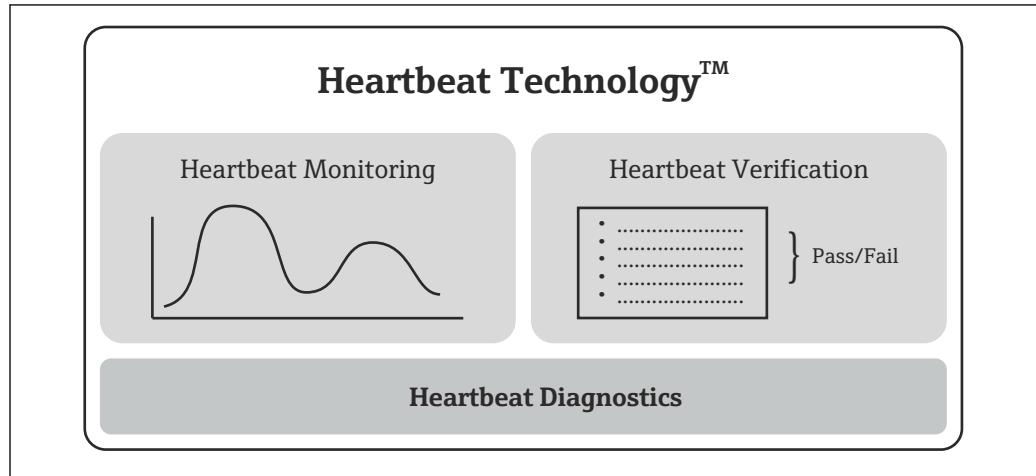


For an overview of the scope of the associated Technical Documentation, refer to the following:

- The *W@M Device Viewer*: enter the serial number from the nameplate (www.endress.com/deviceviewer)
- The *Endress+Hauser Operations App*: Enter the serial number from the nameplate or scan the 2-D matrix code (QR code) on the nameplate.

2 Heartbeat modules

2.1 Overview



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1 Heartbeat modules

2.2 Short description of the modules

2.2.1 Heartbeat Diagnostics

Function

- Continuous self-monitoring of the device.
- Diagnostic messages output to
 - the local display
 - an asset management system (e.g. FieldCare/DeviceCare)
 - an automation system (e.g. PLC)

Advantages


- Device condition information is available immediately and processed in time.
- The status signals are classified in accordance with VDI/VDE 2650 and NAMUR recommendation NE 107 and contain information about the cause of the error and remedial action.

Detailed description

→ 10

2.2.2 Heartbeat Verification

Device functionality checked on demand


- Verification of the correct functioning of the measuring device within specifications (see Technical Information of the respective device, →  4).
- The verification result provides information about the condition of the device: **Passed** or **Failed**.
- The results are documented in a verification report.
- The automatically generated report supports the obligation to demonstrate compliance with internal and external regulations, laws and standards.
- Verification is possible without interrupting the process.

Advantages

- No onsite presence is required to use the function.
- The DTM ¹⁾ triggers verification in the device and interprets the results. No specific knowledge is required on the part of the user.
- The verification report can be used to prove quality measures to a third party.
- **Heartbeat Verification** can replace other maintenance tasks (e.g. periodic check) or extend the test intervals.

Proof test for SIL/WHG-locked devices ²⁾

- The **Heartbeat Verification** module contains a wizard for the proof test which must be performed at appropriate intervals for the following applications:
 - SIL (IEC61508/IEC61511)
 - WHG (German Water Resources Act)
- When a proof test is performed, the SIL-locking or WHG-locking will be temporarily unlocked. After the proof test, the wizard guides back to the locked state.
- The wizard can be used via FieldCare, DeviceCare, PACTware or a DTM-based process control system.

 In the case of SIL-locked and WHG-locked devices, the "Heartbeat Verification" module can **not** be used without additional measures (e.g. by-passing of the output current) because the output current must be simulated (Increased safety mode) or the level must be approached manually (Expert mode) during subsequent re-locking (SIL/WHG locking).

Detailed description

→  12

1) DTM: Device Type Manager; controls device operation via DeviceCare, FieldCare, PACTware or a DTM-based process control system.

2) Only relevant for devices with SIL or WHG approval: order code 590 ("Additional approval"), option LA ("SIL") or LC ("WHG").

2.2.3 Heartbeat Monitoring


Monitoring parameters in the verification report

- For the test items of the verification report, the corresponding parameter values are also included in the report.
- The verification report contains additional parameter values to assess the condition of the device.
- The data are supplied in the XML format in order to allow easy trend analysis in an external tool.

Advantages

- Early detection of changes (trends) to ensure plant availability and product quality.
- Use of device data for the proactive planning of measures (e.g. cleaning/maintenance).
- Identification of undesirable process conditions as the basis to optimizing the facility and the processes.
- Can be used to control automated measures to remove foam or buildup.

"Foam detection" wizard

 The **Foam detection** wizard is only visible for **Medium type = Liquid**. This is the case for FMR60 and FMR62.

- The Heartbeat Monitoring module contains the **Foam detection** wizard.
- This wizard is used to configure automatic foam detection, which detects foam on the product surface on the basis of the reduced signal amplitude. Foam detection can be linked to a switch output in order to control a sprinkler system, for example, which dissolves the foam.
- This wizard can be used via FieldCare, DeviceCare, PACTware or a DTM-based process control system.

"Build-up detection" wizard

- The Heartbeat Monitoring module contains the **Build-up detection** wizard.
- The wizard is used to configure automatic buildup detection, which detects the buildup of deposits on the antenna on the basis of the increased area of the coupling signal. Buildup detection can be linked to a switch output in order to control a compressed air system, for example, to clean the antenna.
- This wizard can be used via FieldCare, DeviceCare, PACTware or a DTM-based process control system.

Detailed description

→  18

2.3 Module availability

Heartbeat Diagnostics is available in all device versions with Heartbeat Technology. Feature 540 in the product structure determines whether **Heartbeat Verification** and **Heartbeat Monitoring** are available:

Heartbeat module	Feature 540: "Application package"
Heartbeat Verification	<ul style="list-style-type: none"> ■ EH: "Heartbeat Verification + Monitoring" ■ EJ: "Heartbeat Verification"
Heartbeat Monitoring	EH: "Heartbeat Verification + Monitoring"

If the device was ordered with one of these options, the corresponding Heartbeat modules are available on delivery.

2.4 Subsequent activation of the modules

If a Heartbeat module was not selected when the device was ordered, it is possible to activate the module subsequently depending on the firmware version. Contact your Endress+Hauser sales organization and you will get a serial-number-specific activation code that must be entered via the operating menu. The relevant Heartbeat module is then permanently available in the device.

2.4.1 Menu path for the activation code

Navigation

"Expert" → System → Administration → Activate SW option


2.4.2 Firmware versions that support subsequent module activation


Device	Communication	Firmware version
FMR6x	HART	01.00.zz or higher

3 Heartbeat Diagnostics

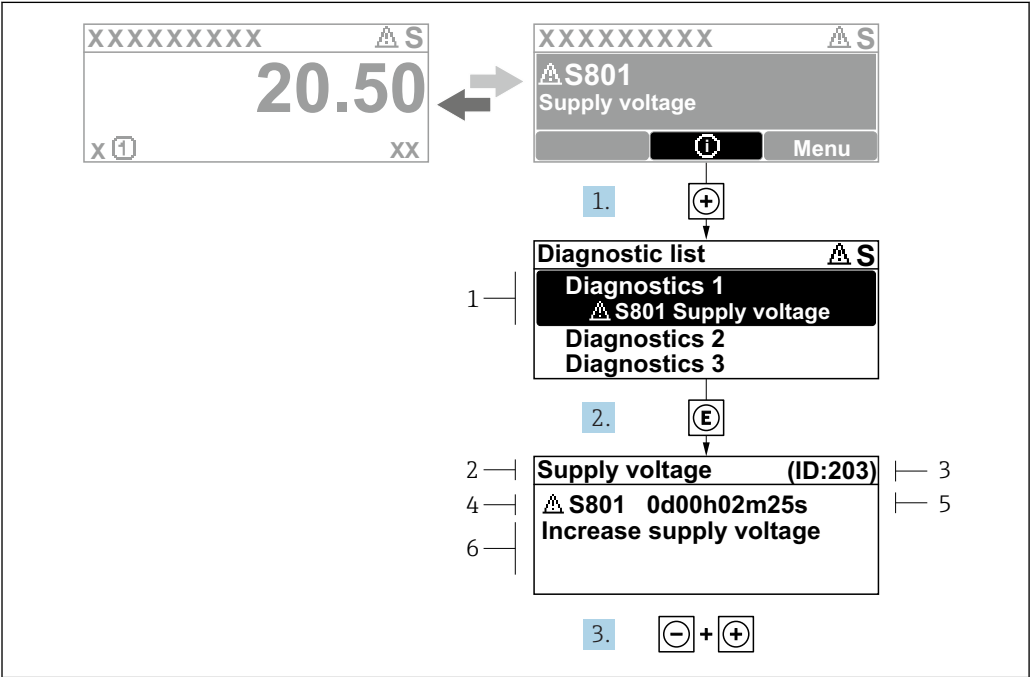
Device diagnostic messages, along with remedial measures, are displayed:


- on the local display of the device
- in the operating tool (FieldCare/DeviceCare)

 For information about using the diagnostic messages, see the "Diagnostics and troubleshooting" section of the Operating Instructions.

Operating Instructions: →  4

3.1 Diagnostic messages on the local display module (example)

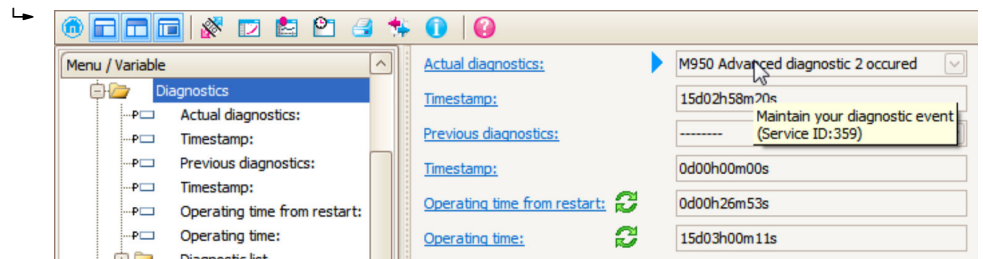


 2 Message for remedial measures

- 1 Diagnostic information
- 2 Short text
- 3 Service ID
- 4 Diagnostic behavior with diagnostic code
- 5 Operation time of occurrence
- 6 Remedial measures

3.2 Diagnostic messages in an operating tool

1. Navigate to the **Diagnostics** menu.
 - ↳ In the **Actual diagnostics** parameter, the diagnostic event is shown with event text.
2. On the right in the display range, hover the cursor over the **Actual diagnostics** parameter.



A tool tip with remedial measures for the diagnostic event appears.

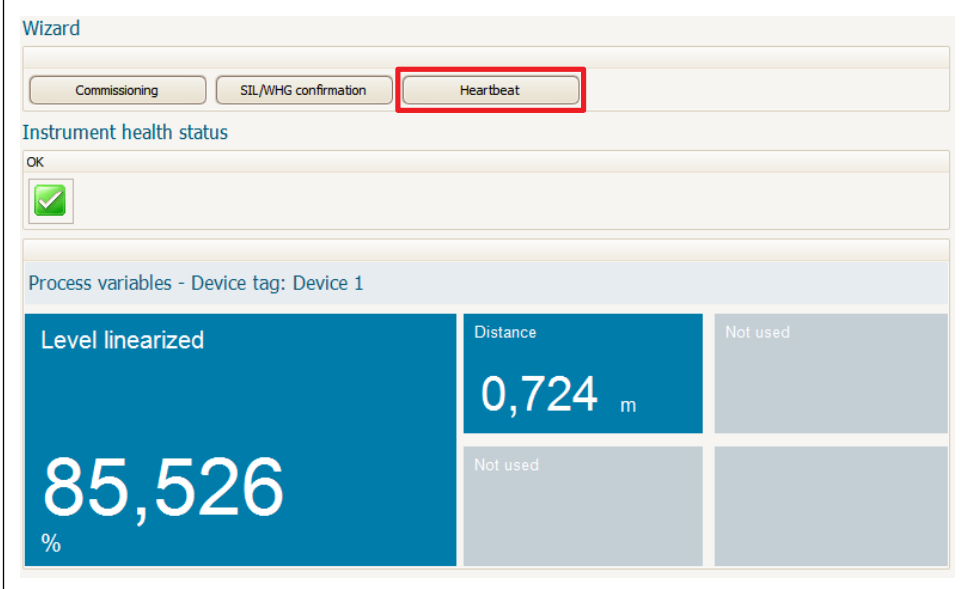
4 Heartbeat Verification

4.1 Verification report

4.1.1 Creating the verification report using the wizard

 The wizard to create a verification report is only available if the device is operated via FieldCare, DeviceCare, PACTware or a DTM-based process control system.

1.



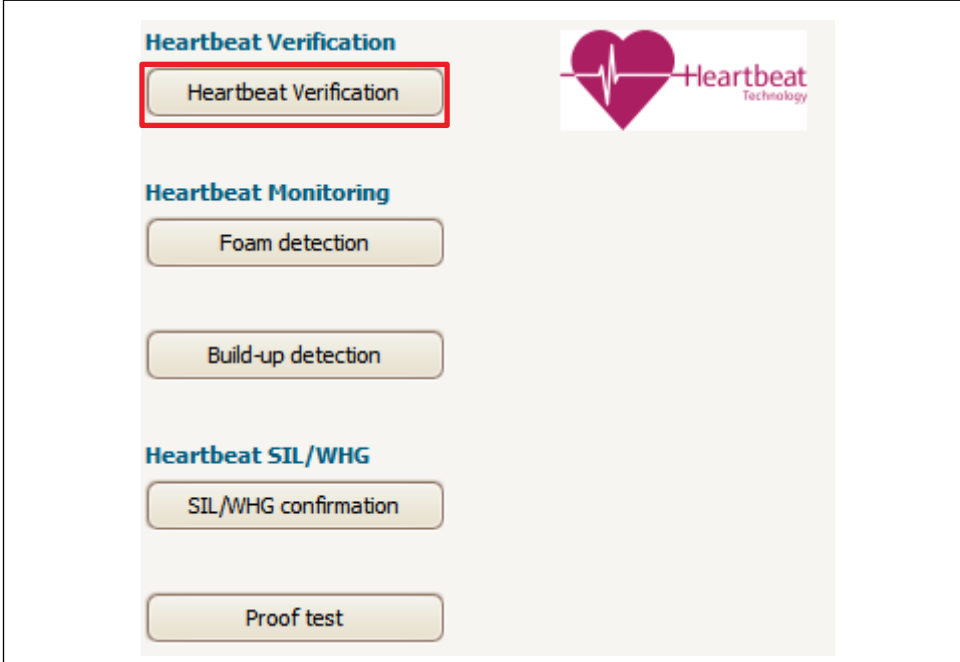
The screenshot shows a 'Wizard' window with three tabs: 'Commissioning', 'SIL/WHG confirmation', and 'Heartbeat'. The 'Heartbeat' tab is selected and highlighted with a red box. Below the tabs, the 'Instrument health status' is shown as 'OK' with a green checkmark icon. Under 'Process variables - Device tag: Device 1', there is a large blue box displaying 'Level linearized' and '85,526 %'. To the right, there are four smaller boxes: 'Distance' with '0,724 m', and three boxes labeled 'Not used'.

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Click the **Heartbeat** button on the dashboard.

↳ A choice of heartbeat wizards is displayed.

2.

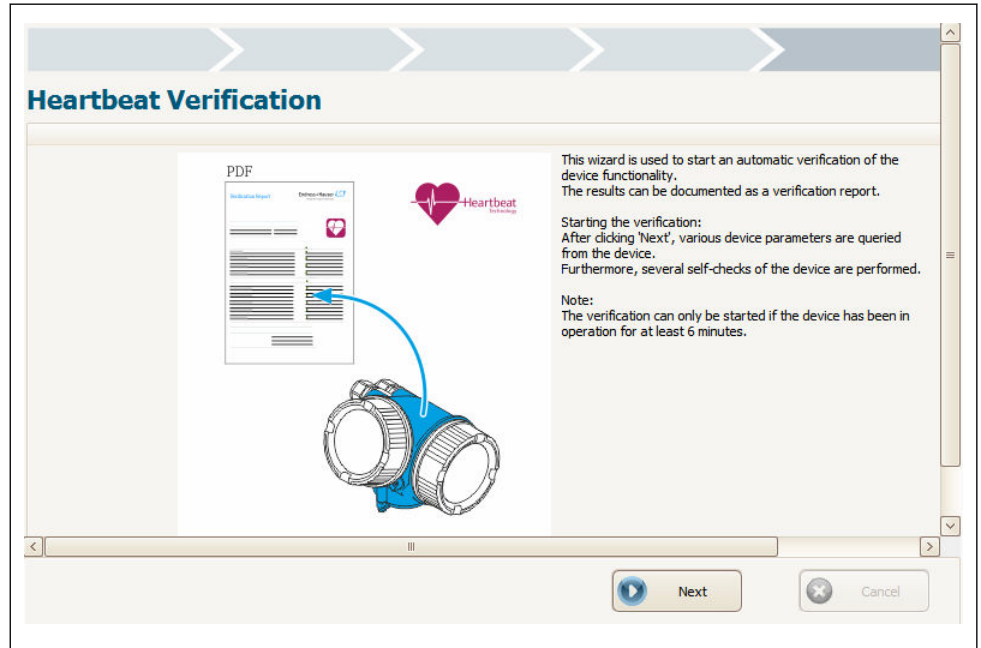


The screenshot shows a 'Heartbeat Verification' screen. At the top, there is a 'Heartbeat Verification' button highlighted with a red box. To the right is the 'Heartbeat Technology' logo. Below this, under the heading 'Heartbeat Monitoring', there are two buttons: 'Foam detection' and 'Build-up detection'. Under the heading 'Heartbeat SIL/WHG', there are two buttons: 'SIL/WHG confirmation' and 'Proof test'.

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Select the **Heartbeat Verification** wizard.

3.



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Follow the instructions given by the wizard.

- The wizard guides you through the entire process for creating the verification report. The verification report can be saved as a PDF or XML file.

4.1.2 Contents of the verification report


- The verification report contains the results of the test items: **Passed** or **Failed** is indicated as the result.
- If the **Heartbeat Monitoring** module is available, additional pages with the test items and associated parameter values are displayed in addition to the verification report.

Verification report: general information

Parameter	Description/comments
Device information	
Location	Location of the device within the plant; is defined when the verification report is created.
Device tag	Is defined when commissioning the device: Commissioning → Device tag
Device name (HART, PROFIBUS)	Is hard-programmed into the device.
Device Type (FOUNDATION Fieldbus)	Is hard-programmed into the device.
Serial number	Is hard-programmed into the device.
Firmware version	Is hard-programmed into the device.
ENP version (FOUNDATION Fieldbus)	Is hard-programmed into the device.
Order code (FOUNDATION Fieldbus)	Is hard-programmed into the device.
<ul style="list-style-type: none"> ■ Extended order code 1 to 3 (HART, PROFIBUS) ■ Extended order code 1 to 2 (FOUNDATION Fieldbus) 	Contains the options of all the ordering features of the device. Is hard-programmed into the device.
Verification information	
Date/time	Date and time when the verification was performed.
Notes	Notes that can be entered when creating the verification report.
Result	
Overall verification result	<ul style="list-style-type: none"> ■  Passed ■  Failed

Verification report: verification results



The test result for all the test items is given on the subsequent pages. The following results are possible:

- : Passed
- : Failed

Verification criteria for the test items

Test item	Verification criterion
Mainboard module	
Check set and measured current	Indicates whether read-back current at the output matches the current set by the device.
Logical program run control	Indicates whether the function blocks of the software are executed in the correct order.
Check sum RAM	Checks the correct function of the RAM (Random Access Memory).
Status	Checks all the relevant status signals of the device.
I/O module	
Check sum RAM	Checks the correct function of the RAM (Random Access Memory).
Sensor	
Result self check	Checks whether the device is fit for use. To do so, a test signal generated in the sensor module is fed into the analog path. The test signal is recorded and evaluated. Test: <ul style="list-style-type: none"> ■ Test echo in timeframe? ■ Test echo amplitude in permitted range?
Result device check	Checks the strength of the found echos.
Check sum RAM	Checks the correct function of the RAM (Random Access Memory).
HF path verification	Checks the analog signal path between the antenna and the sensor module.
IF signal verification	Indicates whether the amplitude of the FMCW signal is in the appropriate range.
Sensor module voltage verification	Checks the voltage of the sensor module.
Clock verification	Checks the basic functions that are necessary to achieve the required accuracy.
Temperature check	Checks whether the temperature in the terminal compartment is within the critical limits.

Monitoring parameters in the verification report

 In the case of devices with the "Heartbeat Monitoring" module, the verification report contains additional monitoring parameters →  18.

4.2 Proof test for SIL or WHG applications

1.

Wizard

Commissioning

SIL/WHG confirmation

Heartbeat

Instrument health status

OK

Process variables - Device tag: Device 1

Level linearized

85,526

%

Distance

0,724 m

Not used

Not used

Not used

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Click the **Heartbeat** button on the dashboard.
↳ A choice of heartbeat wizards is displayed.

2.

Heartbeat Verification

Heartbeat Verification

Heartbeat Monitoring

Foam detection

Build-up detection

Heartbeat SIL/WHG

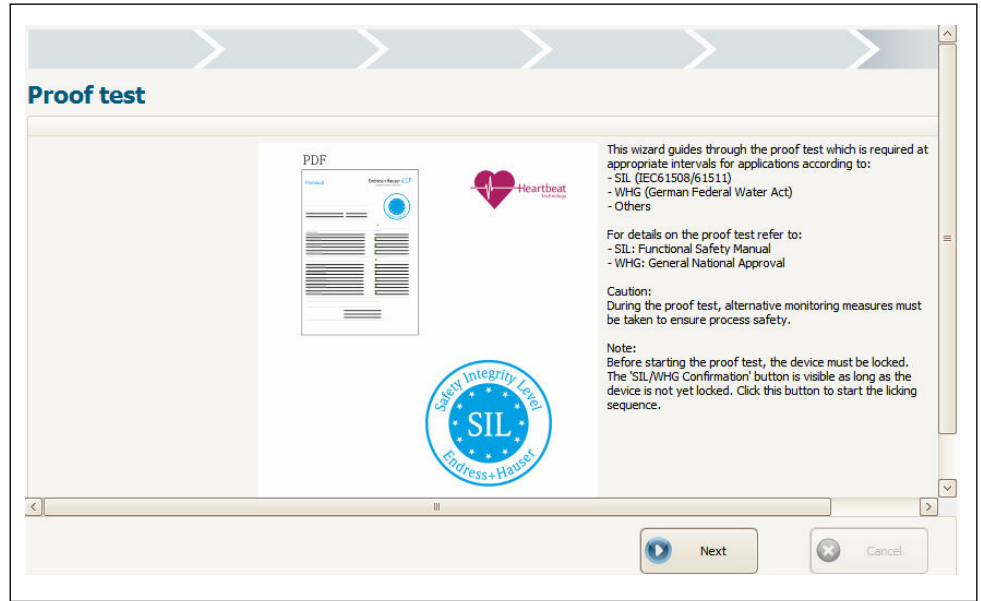
SIL/WHG confirmation

Proof test

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Select the **Proof test** wizard.

3.



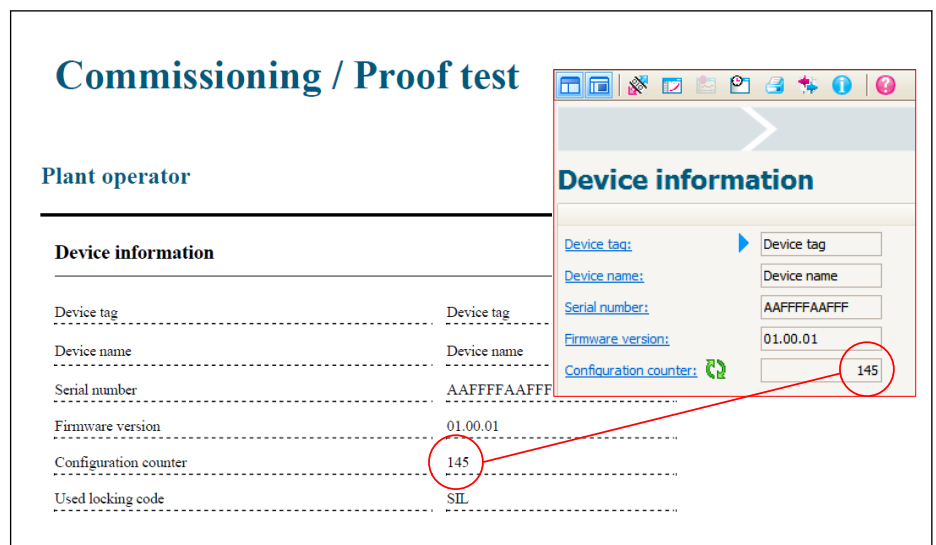
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Click **"Next"** to start the wizard.

4.

The **Configuration counter** parameter is displayed (among other things) on the next page.

Compare the displayed value to the value from the last proof test protocol:



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If the values are identical, the device configuration has not been changed since the last proof test.

5.



On the next pages follow the instructions of the wizard.

➤ The wizard guides through the complete proof test. Before completing the wizard, a proof test protocol can be saved as a PDF file.

5 Heartbeat Monitoring

5.1 Monitoring parameters in the verification report

In the case of devices with the "Heartbeat Monitoring" module, the verification report contains two additional tables with detailed information on the monitoring parameters.

- Table "Monitoring parameters of the test items" (→  18)
- Table "Additional monitoring parameters" (→  20)


The following is specified for each monitoring parameter:

- the parameter name
- the unit (if relevant for this parameter)
- the measured value
- the minimum permitted value (if relevant for this parameter)
- the maximum permitted value (if relevant for this parameter)

5.1.1 Monitoring parameters of the test items

The monitoring parameters of the test items enable device experts to analyze the device status in detail.

Test item	Monitoring parameter	Meaning/remarks
Mainboard module		
Check set and measured current	-	Indicates whether read-back current at the output matches the current set by the device.
Logical program run control	-	Indicates whether the function blocks of the software are executed in the correct order.
Check sum RAM	-	Checks the correct function of the RAM (Random Access Memory).
Status	Diagnostics 1	Up to five diagnostic messages are displayed. <ul style="list-style-type: none">▪ Calling up additional information, including remedy measures: → 📄 10▪ Additional information on diagnostic messages: Operating Instructions (BA) of the device (→ 📄 4), chapter "Diagnostics and troubleshooting"
	Diagnostics 2	
	Diagnostics 3	
	Diagnostics 4	
	Diagnostics 5	
I/O module		
Check sum RAM	-	Checks the correct function of the RAM (Random Access Memory).
Sensor		
Result self check	Result self check	Checks whether the device is fit for use. To do so, a test signal generated in the sensor module is fed into the analog path. The test signal is recorded and evaluated. Test: <ul style="list-style-type: none">▪ Test echo in timeframe?▪ Test echo amplitude in permitted range?
	Analogpath test amplitude	
	Analogpath test noise amplitude	
	Analogpath test echo area	
Result device check	Result device check	The Result device check monitoring parameter checks the strength of the found echos. Possible results: <ul style="list-style-type: none">▪ Installation ok▪ Accuracy reduced (signal available but its strength near the lower limit)▪ Measurement capability reduced (signal too weak)▪ Check not done The additional monitoring parameters indicate possible causes for a weak signal and thus help to optimize the installation and calibration of the device.
	Level signal	
Check sum RAM	-	Checks the correct function of the RAM (Random Access Memory).




Test item	Monitoring parameter	Meaning/remarks
HF path verification	HF Verification amplitude	Checks the validity of the measuring signal with respect to electromagnetic compatibility (EMC). The reference depends dynamically on the measured distance.
	HF Verification Echo Distance	
	HF Verification reference echo distance	
	HF Verification Ref. Echo Rela. Ampl.	
IF signal verification	Average value ZF amplitude	Checks the measuring signal on the basis of the amplitude of the intermediate frequency.
	Max value ZF amplitude	
	Min value ZF amplitude	
	Second max value ZF amplitude	
Sensor module voltage verification	Measured supply voltage 1,8V	Checks various supply and reference voltages in the sensor electronics.
	Measured supply voltage 2,5V	
Clock verification		Checks the timer of the sensor module.
Temperature check (HART, PROFIBUS PA)	Sensor temperature	Checks whether the temperature in the terminal compartment is within the critical limits. Temperatures outside the critical limits may cause interruptions of the measurement.
	Max. electronics temperature	→  21
	Min. electronics temperature	

5.1.2 Additional monitoring parameters

Trend evaluation

The additional monitoring parameters convey especially useful information when taking into account not only their current value but also their development (trend) in the past. The XML format of the verification report is particularly suited for the trend evaluation in an external tool.

Monitoring parameter	Meaning/Remarks
<ul style="list-style-type: none"> Min. terminal voltage Max. terminal voltage 	<p>Meaning Minimum or maximum voltage at the supply terminals in the past</p> <p>Evaluation Used to detect possible voltage spikes.</p>
Terminal voltage 1	<p>Meaning Voltage at the supply terminals</p> <p>Evaluation</p> <ul style="list-style-type: none"> Voltages exceeding the maximum limit may damage the device. Voltages which are permanently near the upper limit may reduce the life expectancy of the device. If the voltage falls below the lower limit, the device may fail. <p>Evaluation of the trend Decreasing terminal voltages may indicate corrosion of the supply terminals.</p>
Relative echo amplitude	<p>Meaning Distance of the amplitude of the level signal above the evaluation curve (dependent on the noise level). This value is dependent on the level distance and a number of process conditions.</p> <p>Evaluation of the trend Significant decreases of the amplitude while the other conditions (distance, medium, status of process) remain the same, may indicate build-up at the antenna.</p>
Absolute echo amplitude	<p>Meaning Absolute amplitude of the level signal (not taking into account the noise level). This value is dependent on the level distance and a number of process conditions.</p> <p>Evaluation of the trend Significant decreases of the amplitude while the other conditions (distance, medium, status of process) remain the same, may indicate build-up at the antenna.</p>
Tank bottom echo amplitude	<p>Meaning Amplitude of the tank bottom signal</p> <p>Evaluation of the trend Significant decreases of the amplitude while the other conditions (distance, medium, status of process) remain the same, may indicate build-up at the antenna.</p>
Area of incoupling	<p>Meaning Integral of the envelope curve in the range 0 to 1 m (0 to 3.3 ft)</p> <p>Evaluation of the trend An increase of this value hints at clogging of the antenna.</p>
<ul style="list-style-type: none"> Max. draining speed Max. filling speed 	<p>Meaning Maximum draining or filling speed obtained since the last reset.</p> <p>Evaluation Used to detect possible measured value spikes.</p> <p>Note This drag indicator can be reset via "Expert → Diagnostics → Min/max values → Reset min./max.".</p>
<ul style="list-style-type: none"> Min. level value Max. level value 	<p>Meaning Minimum or maximum level obtained since the last reset.</p> <p>Evaluation Used to detect possible measured value spikes.</p> <p>Note This drag indicator can be reset via "Expert → Diagnostics → Min/max values → Reset min./max.".</p>

Monitoring parameter	Meaning/Remarks
<ul style="list-style-type: none"> Time min. level Time max. level 	<p>Meaning Time at which the minimum or maximum level has been obtained.</p> <p>Evaluation Helps to relate the recorded measured value peak to the process history.</p>
Configuration counter	<p>Meaning Is incremented with each change of a parameter.</p> <p> The creation of a verification report nitself implies a number of parameter changes. Therefore, the Configuration counter parameter will always be different in different reports.</p>
<ul style="list-style-type: none"> Minimum value 1 to 4 Maximum value 1 to 4 <p>(Advanced diagnostics)</p>	<p>Meaning Minimum or maximum value the assigned measured variable has obtained since the last reset.</p> <p>Prerequisite An advanced diagnostics has been configured in the device.</p> <p>Measuring variable being evaluated</p> <ul style="list-style-type: none"> Is assigned in the Assign diagnostic signal 1 to 2 parameter If a foam detection (→  22) or build-up detection (→  25) have been configured by the respective wizard, the following measuring variables are automatically assignend: <ul style="list-style-type: none"> Assign diagnostic signal 1 = Level linearized Assign diagnostic signal 2 = Relative echo amplitude <p>Note This drag indicator can be reset via "Expert → Diagnostics → Advanced diagnostics 1 to 2 → Reset min./max. 1 to 2".</p>
Temperature	<p>Meaning Checks whether the temperature in the terminal compartment is within the critical limits.</p> <p>Evaluation Temperatures outside the critical limits may cause interruptions of the measurement.</p>
<ul style="list-style-type: none"> Max. electronics temperature Min. electronics temperature 	<p>Meaning Checks whether the maximum or minimum electronics temperature obtained in the past is within the critical limits.</p> <p>Evaluation Temperatures outside the critical limits may cause interruptions of the measurement.</p> <p>Note These drag indicators can be reset via: Expert → Diagnostics → Min/max values → Reset min./max. temp..</p>



Integration of monitoring parameters in control systems

A number of monitoring parameters can be transmitted to the control system via the cyclic data traffic. The same is valid for additional parameters of the Advanced Diagnostics. Transmission to the control system uses the HART variables or the Analog Input Blocks, respectively.

Refer to the operating menu:

HART:

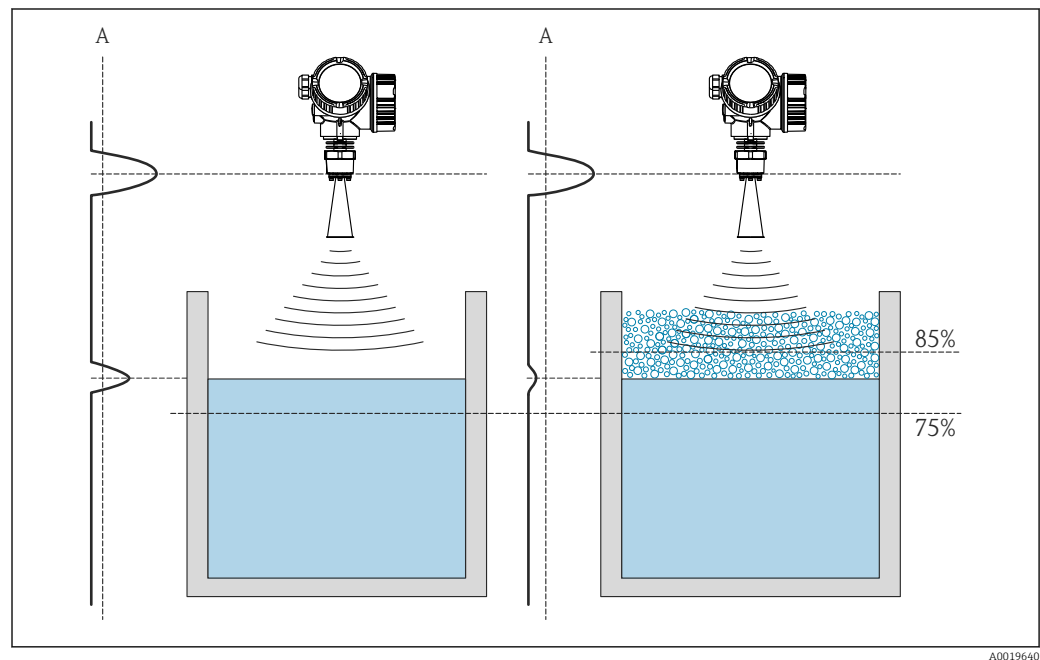
Expert → Communication → Output → PV/SV/TV/QV

For details see the Description of Device Parameters GP01101F.

5.2 Foam detection

- i** The **Foam detection** wizard is only visible for **Medium type = Liquid**. This is the case for FMR60 and FMR62.
- i** On the last page of the wizard the foam detection can be linked to the switch output of the device. When doing so, any usage of the switch output configured prior to this (e.g. by the **Build-up detection** wizard) will be overwritten.

5.2.1 Operating principle



3 Foam detection operating principle. The 75% and 85% limits are sample values. Values that suit the specific application must be selected in each case.

A Amplitude threshold for foam detection

Foam reduces the echo amplitude and can therefore be detected automatically. Given that the echo amplitude also depends on the measured distance, foam detection should only be active if the level is in a user-defined range (75 to 85 % in the example indicated). Foam detection can be linked to a switch output in order to control a sprinkler system, for example, which dissolves the foam.

5.2.2 Configuration

i The **Foam detection** wizard is only available if the device is operated via FieldCare, DeviceCare, PACTware or a DTM-based process control system.

1.

Wizard

Commissioning SIL/WHG confirmation **Heartbeat**

Instrument health status

OK

☒

Process variables - Device tag: Device 1

Level linearized 85,526 %	Distance 0,724 m	Not used
	Not used	

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Click the **Heartbeat** button on the dashboard.

↳ A choice of heartbeat wizards is displayed.

2.

Heartbeat Verification

Heartbeat Verification

Heartbeat Monitoring

Foam detection

Build-up detection

Heartbeat SIL/WHG

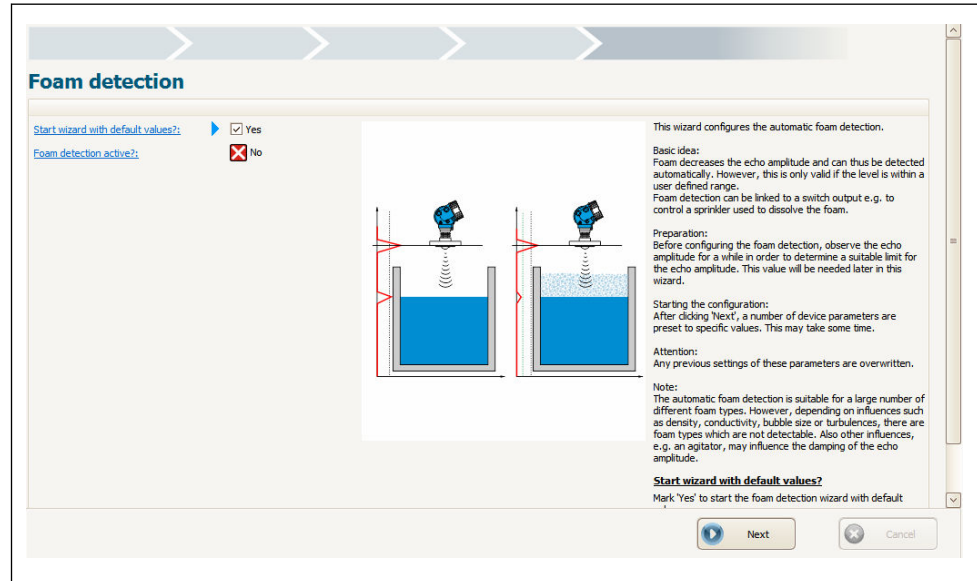
SIL/WHG confirmation

Proof test

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Select the **Foam detection** wizard.

3.



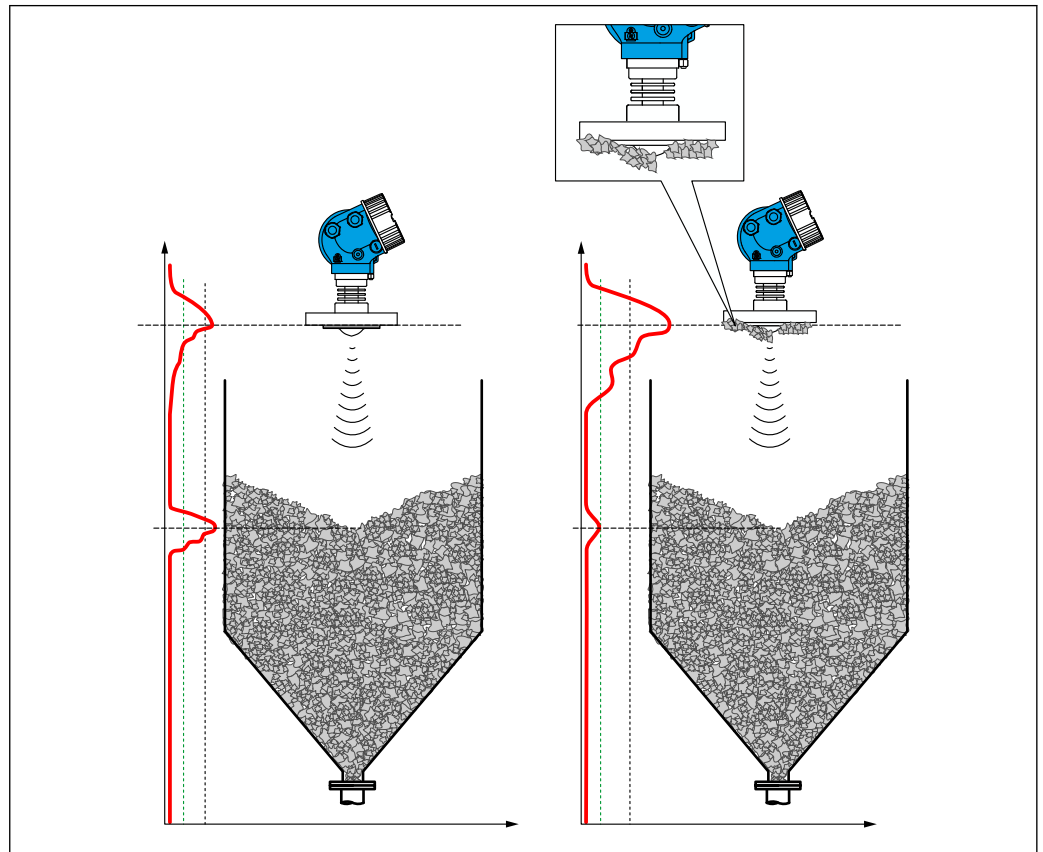
Follow the instructions given by the wizard.

- ↳ The wizard guides you through the entire configuration of the foam detection function.

5.3 Buildup detection

i On the last page of the wizard the build-up detection can be linked to the switch output of the device. When doing so, any usage of the switch output configured prior to this (e.g. by the **Foam detection** wizard) will be overwritten.

5.3.1 Operating principle



4 Buildup detection operating principle

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Buildup increases the area of the coupling signal and can therefore be detected automatically. Buildup detection can be linked to a switch output in order to control a compressed air system, for example, to clean the antenna.

i Condensate and buildup have a comparable influence on the coupling signal. Therefore the buildup detection function can also be used to detect condensation.

5.3.2 Configuration

i The **Build-up detection** wizard is only available if the device is operated via FieldCare, DeviceCare, PACTware or a DTM-based process control system.

1.

Wizard

Commissioning SIL/WHG confirmation **Heartbeat**

Instrument health status

OK

☒

Process variables - Device tag: Device 1

Level linearized 85,526 %	Distance 0,724 m	Not used
	Not used	

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Click the **Heartbeat** button on the dashboard.

↳ A choice of heartbeat wizards is displayed.

2.

Heartbeat Verification

Heartbeat Verification

Heartbeat Monitoring

Foam detection

Build-up detection

Heartbeat SIL/WHG

SIL/WHG confirmation

Proof test

Heartbeat Technology

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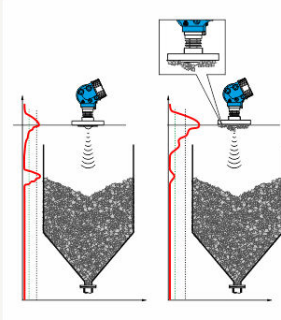
Select the **Build-up detection** wizard.

3.

Build-up detection

[Start wizard with default values?](#) ☒ Yes ☐ No

[Build up detection active?](#) ☒ Yes ☐ No



This wizard configures the automatic build-up detection.

Basic idea:
Build-up at the antenna increases the area of the incoming signal and can thus be detected automatically. The build-up detection can, for example, be linked to a compressed-air system to clean the antenna.

Starting the configuration:
After clicking 'Next', a number of device parameters are preset to specific values. This may take some time.

Attention:
Any previous settings of these parameters are overwritten.

Note:
The automatic build-up detection requires a minimum distance of 1.5m (5ft) between the antenna and the product surface.

Start wizard with default values?
Mark 'Yes' to start the build-up detection wizard with default values.

Any previous changes to build-up-detection related parameters are ignored and their default settings are used instead.

[Next](#) [Cancel](#)

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Follow the instructions given by the wizard.

- The wizard guides you through the entire configuration of the buildup detection function.



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