

## Webasto Thermo Test 3

Bedienungsanweisung  
Operating instructions  
Bedieningshandleiding  
Notice d'utilisation  
Instrucciones de uso  
Betjeningsvejledning  
Käyttöohje  
Pokyny k obsluze  
Instrukcja obsługi  
Navodilo za uporabo  
Kezelési utasítás  
Kullanma kılavuzu  
Инструкция по эксплуатации  
操作指南  
사용 설명서  
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## Introduction

### General Information

Webasto Thermo Test is diagnostic software for heaters from Webasto. The program supports almost all diagnostic-ready heaters. Its functions include the ability to read out and display control unit information as well as troubleshooting and device startup.

#### **ATTENTION**

Improper use of the software can lead to dangerous operating states of the heaters, including the potential for fuel leakage or combustion. No liability is assumed for damages related to the usage of this software.

### System requirements

- Standard retail PC with Microsoft Windows Vista, 7, 8, 10 (32 or 64 bit)
- Microsoft .NET 4.0 installed (typically comes pre-installed on Windows)
- Minimum of 100 MB of free hard drive space
- One free USB port
- Webasto USB diagnosis adapter (ID 9008487\_)

#### **NOTE:**

The RS232 interface of the USB diagnostic adapter is no longer supported in version 3 and higher of the WTT software.

### What's new?

- Application completely redone in Microsoft .NET 4
- Division of the application into application modules and diagnostic framework
- GUI based on Microsoft Office
- Bus communication based on an ODX database
- Support for heaters with W bus protocol V4.0 and below removed. (The previous WTT software version has been incorporated into this application to ensure backwards compatibility with older heaters and bus protocols.)
- Support for the RS232 interface eliminated
- Customer report export to PDF
- Summary of all device information and parameters in one [Operational Information window](#)
- Search function in the Protocol, Identifier and Operational Information windows
- Stopwatch for recording the protocol and the measured value
- Restore window ([Default View](#))
- Option to [record and play a diagnosis](#)
- W-Bus transmit and receive indicators (Rx/Tx) in the [Status bar](#)

- Many small improvements

### What is new in Version 3.1?

- New languages: Turkish, Dutch, Czech, Hungarian, Slovenian
- [AutoSave](#) for customer reports (optional)
- Query for unsaved customer reports when WTT is closed
- Display of the [Error buffer](#) for MultiControl/SmartControl
- Complete localization of MultiControl/SmartControl parameters
- W-bus LED in [Status bar](#)
- IPCU / LIN/PWM gateway: List of vehicle-specific parameters revised
- [Options and Settings](#) extended
- Many bug fixes

### What is new in Version 3.2?

- New languages: Norwegian, Swedish, Italian, Slovakian, Rumanian
- [Fuel pump test](#)
- Fuel priming revised
- Data set [Updater](#)
- Display of fault details in customer report
- Many small improvements and bugfixes

### What is new in Version 3.3?

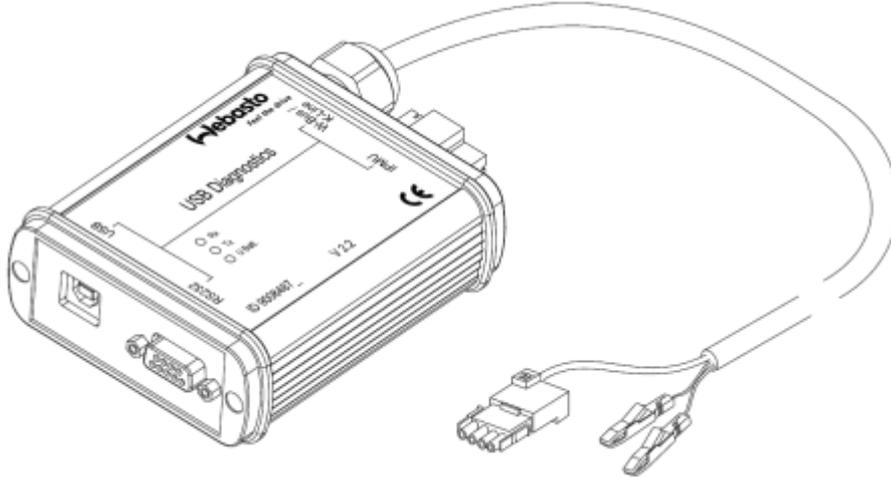
- IPCU 24V support
- Clearer error messages for communication errors
- WTT session is automatically saved in the customer protocol
- State of the heater can be displayed in the trend graph
- Many small improvements and bugfixes

### What is new in Version 3.4?

- One common installer (merged framework and application)
- Software auto-update function
- Improvements to the W-Bus connection
- Send customer report by e-mail

## First Steps

The program communicates via the USB port with the heater's control unit. This port is designed in the control unit as a W-bus (Webasto bus). Because standard PCs do not offer a W-Bus port, you'll need a special port converter from Webasto (Kit order no.: 1320920A):



This port converter is connected to an open USB port on the PC and the diagnostic line on the control unit. The converter must also be connected to the vehicle's electrical supply (12/24V and earthing).

In general, one single USB diagnostic adapter is connected to the PC. Where this is the case, no additional settings need to be made within the program. It will detect the connection automatically.

The program supports a variety of control units. Before starting with a diagnosis, you must first select the connected heater from a list of devices. [Device selection](#) appears automatically each time the program is started.

### **ATTENTION**

Improper use of the software can lead to dangerous operating states of the heaters, including the potential for fuel leakage or combustion. No liability is assumed for damages related to the usage of this software.

You can start or stop the diagnosis, i.e. the communication with the control unit, at any time using the **Start Diagnosis** or **Stop Diagnosis** commands (see [Diagnosis tab](#)).

When a diagnosis is started, the program attempts to contact the connected control unit. Once communication has been successfully established, a display appears in the output windows a few seconds later. If problems arise, a warning box appears. You can track the status of the connection process in the [Status bar](#) or in the [Protocol window](#).

A series of windows are provided to display data from the control unit. You can open them via the [View tab](#).

Precisely which functions are available in the program depends on the scope of functionality available in the respective control unit. Functions that are not available in the control unit are greyed out or hidden.

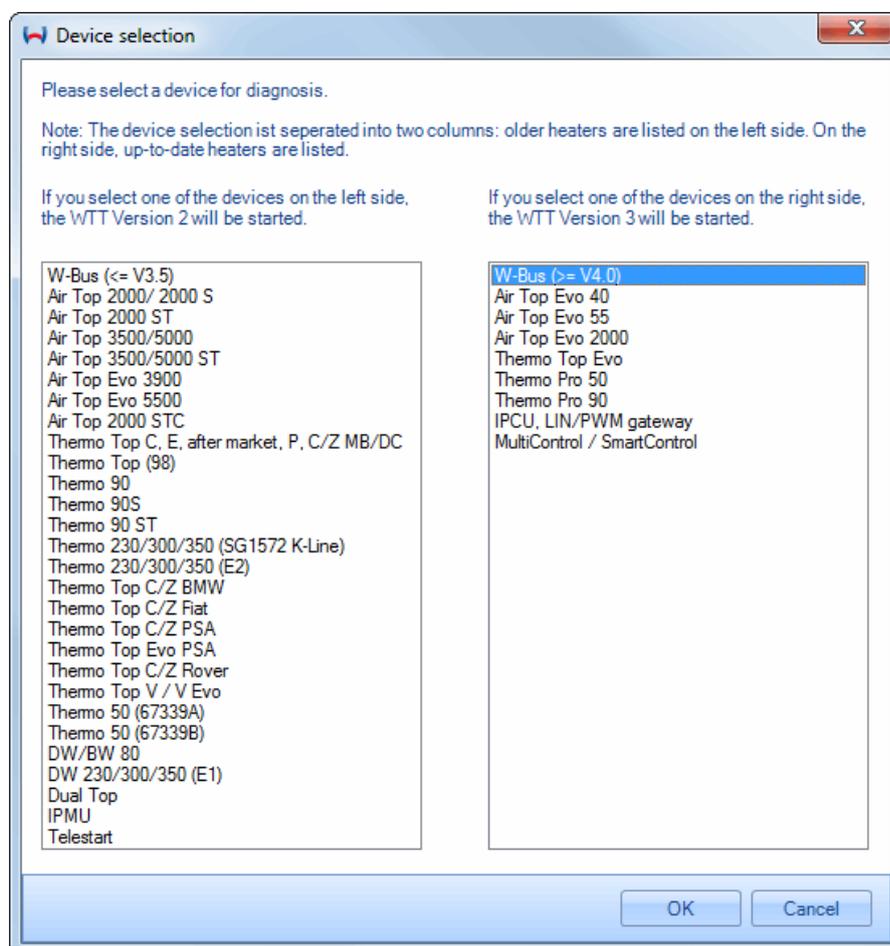
## Device support

WTT 3 supports only heaters using the W-Bus communications protocol version 4.0 and higher. The WWT3 installation package includes the outdated WTT version 2 to ensure compatibility with older heaters.

The program decides which version to be opened based on the select made in the [Choice of heating devices](#) window.

## Device selection

When WTT is started, an initial window opens for selecting the device:



Older heaters are shown in the left-hand list. Whenever one of these devices is selected, WTT Version 2 is started. Whenever a device is selected from the right-hand list, WTT Version 3 is started.

If you are using a newer heater, select version 3.

WTT 2 starts for the following devices:

- Air Top 2000 / 2000 S

WTT 3 starts for the following devices:

- Air Top Evo 40

- Air Top 2000 ST
- Air Top 3500/5000
- Air Top 3500/5000 ST
- Air Top Evo 3900
- Air Top Evo 5500
- Air Top 2000 STC
- Thermo Top C, E, Handel, P, C/Z MB/DC
- Thermo Top (98)
- Thermo 90
- Thermo 90S
- Thermo 90 ST
- Thermo 230/300/350 (SG 1572 K Line)
- Thermo 230/300/350 (E2)
- Thermo Top C/Z BMW
- Thermo Top C/Z Fiat
- Thermo Top C/Z PSA
- Thermo Top C/Z Rover
- Thermo Top Evo PSA
- Thermo Top V EVO
- Thermo 50 (67339A)
- Thermo 50 (67339B)
- DW/BW 80
- DW 230/300/350 (E1)
- Dual Top
- IPMU
- Telestart
- Air Top Evo 55
- Air Top Evo 2000
- Thermo Top Evo
- Thermo Pro 50
- Thermo Pro 90
- Thermo Pro 120
- Thermo Pro 150
- IPCU, LIN/PWM Gateway
- MultiControl / SmartControl

**NOTE:**

No automated detection of the connected heater is currently possible.

**Execute diagnosis**

The following instructions refer to the diagnosis of a heater with WTT Version 3. If an older heater is selected in the Device Selection window, then please read the relevant instructions in the WTT Version 2 Help file.

- In the start-up screen, select the heater from the right [Device list](#) for which you want to perform a diagnosis.

- Once the main WTT window is shown, start the diagnosis (see [Establish connection to a control unit](#)).
  - ➔ You will know that a connection has been successfully established when "Diagnosis is running" appears in the [Status bar](#) and the transmit and receiving indicators (Rx/Tx) are alternatively blinking.

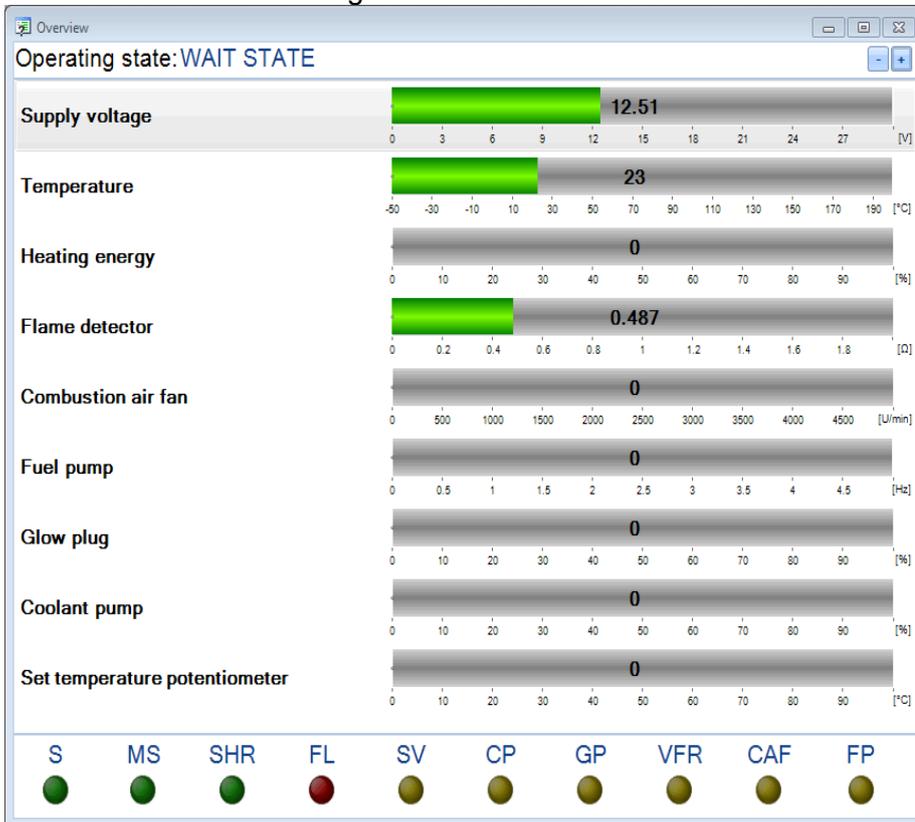


- The **Overview**, **Fault list** and **Operational information** windows are shown in the default view.

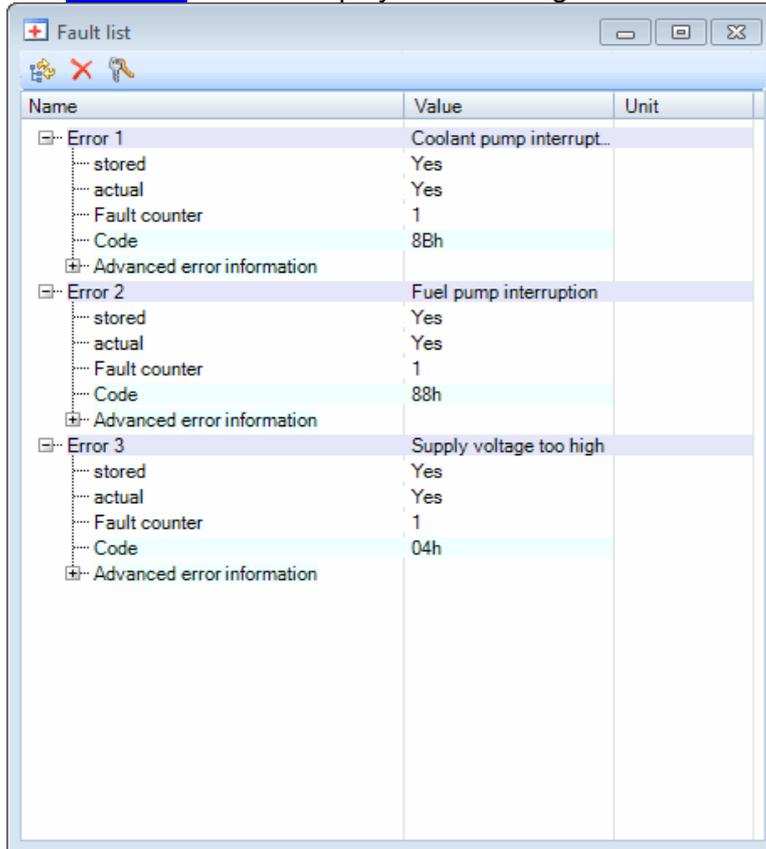
**NOTE:**

The default view can be restored at any time via the [View tab](#).

- The **View** shows the current operating state for the heater. If the heater has not yet been started, then it is in the resting state (Off, Pause or WAIT STATE). The key operational parameters and their values are depicted visually as bars, such as supply voltage or temperature. The lower part of the window depicts the inputs and outputs for the heater -- including the main switch and vehicle fan -- as lamp displays.



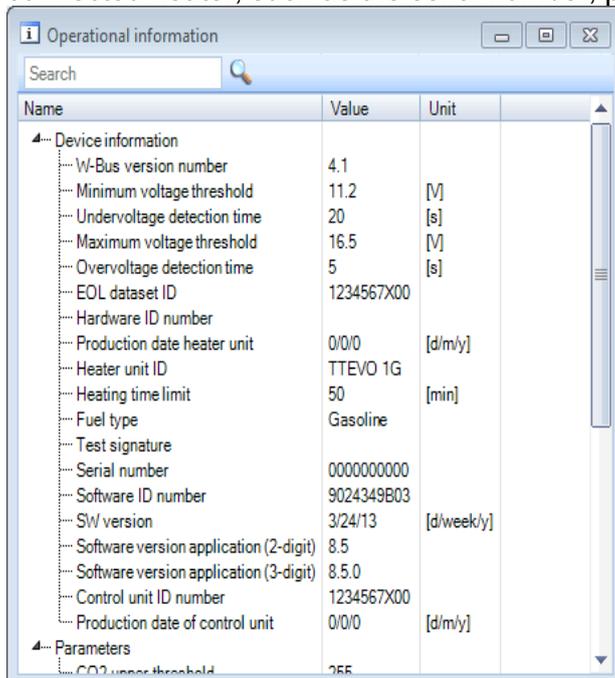
- The **Fault list** window displays the fault log.



Name	Value	Unit
Error 1	Coolant pump interrupt...	
stored	Yes	
actual	Yes	
Fault counter	1	
Code	8Bh	
Advanced error information		
Error 2	Fuel pump interruption	
stored	Yes	
actual	Yes	
Fault counter	1	
Code	88h	
Advanced error information		
Error 3	Supply voltage too high	
stored	Yes	
actual	Yes	
Fault counter	1	
Code	04h	
Advanced error information		

If you hover the pointer above any given fault, a more detailed explanation appears in an info box for that fault.

- The **Operational information** window provides precise information about the connected heater, such as the serial number, production date, burning duration, etc.



Name	Value	Unit
Device information		
W-Bus version number	4.1	
Minimum voltage threshold	11.2	[V]
Undervoltage detection time	20	[s]
Maximum voltage threshold	16.5	[V]
Oversvoltage detection time	5	[s]
EOL dataset ID	1234567X00	
Hardware ID number		
Production date heater unit	0/0/0	[d/m/y]
Heater unit ID	TTEVO 1G	
Heating time limit	50	[min]
Fuel type	Gasoline	
Test signature		
Serial number	000000000	
Software ID number	9024349B03	
SW version	3/24/13	[d/week/y]
Software version application (2-digit)	8.5	
Software version application (3-digit)	8.5.0	
Control unit ID number	1234567X00	
Production date of control unit	0/0/0	[d/m/y]
Parameters		
CO2 upper threshold	255	

- The **Diagnosis tab** contains the main diagnosis functions: start and start the diagnosis, the **Customer report**, the switch-on commands for the heater, adjustment functions and a fault log. The **Faults** section provides direct insight into the faults

logged by the control unit. You can also delete the heater's fault memory.



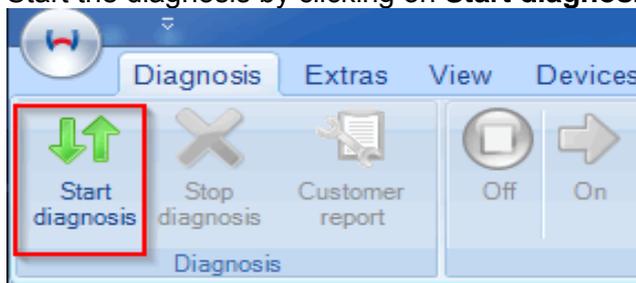
- The Adjustment section on the **Diagnosis** tab can be used to execute [Component test](#), [Fuel Priming](#) and [CO2 Adjustment](#).
- The [Customer report](#) presents operating data, device information and an error log. The customer report can be saved as a PDF or printed.

## Procedure

### Establish connection with a control unit

The following steps are used to establish a connection with a control unit:

1. Connect the heater to the USB diagnostic adapter.
2. Connect the USB diagnostic adapter to a USB port on the PC.
3. Launch the WTT software
4. Select the connected device using [Device selection](#) and confirm with OK.
5. The main window of the WTT software then appears.
6. Start the diagnosis by clicking on **Start diagnosis** or by pressing **F2**.



### Read out control unit faults

The following steps are used to read out the faults from the control unit:

1. Establish a [Connection to control unit](#).
2. The **Faults** section of the **Diagnosis** register tab contains a fault counter indicating how many faults are recorded in the control unit's fault memory.  
Examples:

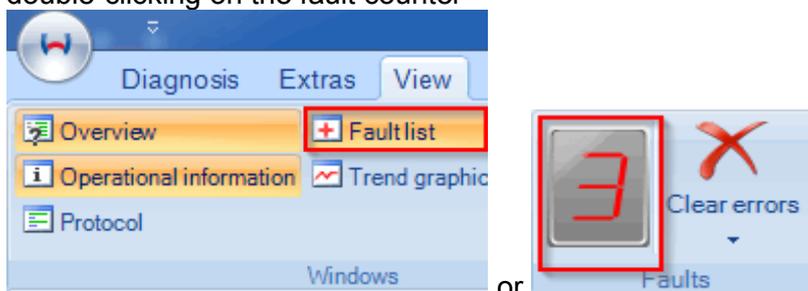


→ no fault in control unit



→ five faults in the control unit

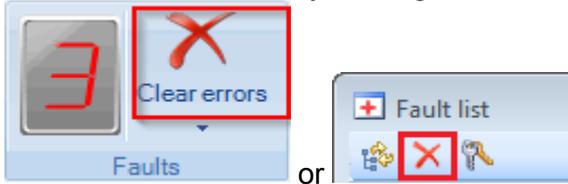
3. Open the fault display by clicking on the **Fault list** button on the **View** tab or by double-clicking on the fault counter



➔ All fault incidents are automatically added to the Fault list together with several pieces of extra information. That supplemental information will vary based on the specific control unit.

➔ If you hover the pointer above a fault entry in the Fault list, you'll see an explanation of the fault with additional notes about that entry.

- Control unit errors can be deleted by clicking in the **Diagnosis** tab on **Clear Errors** in the **Faults** section, or by clicking on the Delete symbol in the **Fault list** window.



➔ A confirmation message appears when a fault is successfully cleared.

#### NOTES:

- Do not delete the fault until you are certain that the fault being displayed has been resolved. The deletion process also generally serves as a fault clearance process for the heater, e.g. a heater lock-out after overheating.
- If the Fault list shows defective components, then they can be individually controlled using the [Component test function](#) to narrow down the source of the fault.

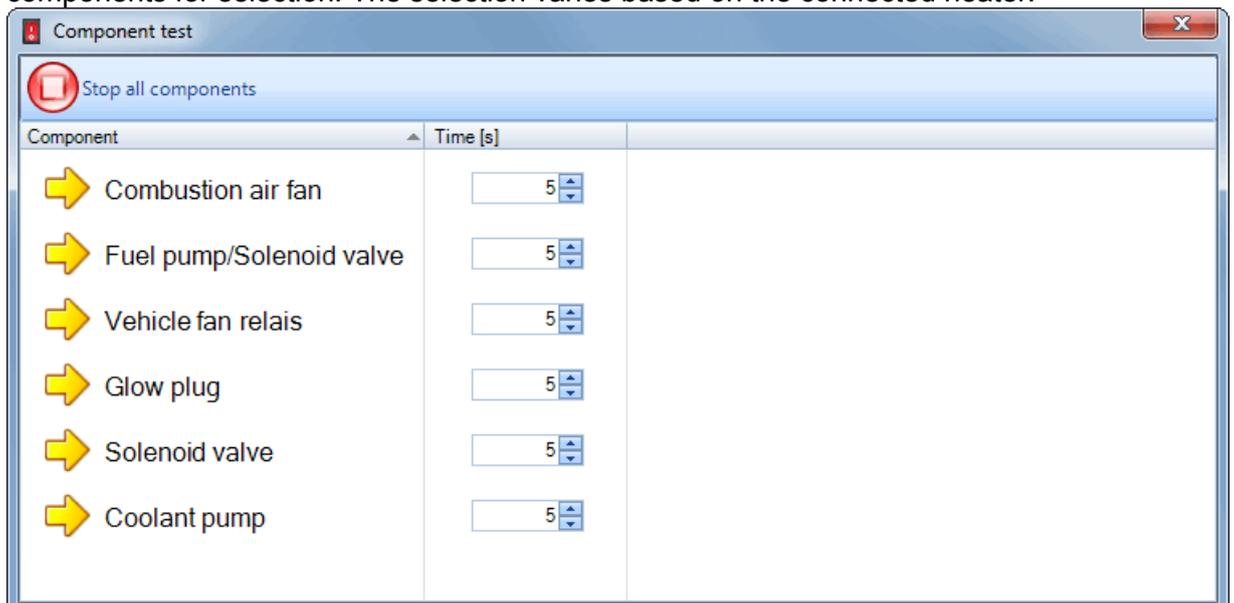
### Execute Component Test

#### ATTENTION

Improper usage of the component test can lead to dangerous operating states in the heater, including the potential for fuel leakage or combustion.

The following procedure is used to test device components:

- Establish a [Connection to control unit](#).
- In the **Diagnosis** tab, click on **Component test** in the **Adjustment** section.
- After starting the function, a window appears containing a list of all available components for selection. The selection varies based on the connected heater.



- In the **Time** field, set the desired run time for the components to be tested. Click on the desired component to activate the control of the components.

- While active, the remaining run time is shown below the components. As long as this display is active, the components can be stopped by clicking on them another time.

#### NOTES:

- The heater must be switched off to perform a component test.
- If the component test cannot be executed, then the message "*Component could not be started*" appears. Depending on the control unit, faults may also be recorded in the fault memory. The fault counter then increments by one.

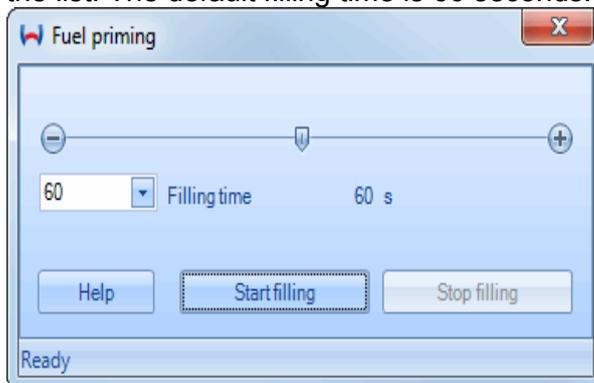
## Fuel Priming

### ATTENTION

Improper fuel priming can lead to dangerous operating states in the heater, including the potential for fuel leakage or combustion.

Fuel priming is performed using the following procedure:

- Establish a [Connection to control unit](#).
- In the **Diagnosis** tab, click on **Fuel Priming** in the **Adjustment** section.
- Select the **Filling time** by repositioning the slider or by selecting a preset time from the list. The default filling time is 60 seconds.



- Start the filling process by clicking on **Start filling**.
- The filling process stops automatically once the defined filling time is reached.
- To abort an ongoing filling process prematurely, click on **Stop filling**.

#### NOTES:

- The heater must be switched off to perform fuel priming.
- The fuel priming generally continues running to its conclusion even after the diagnostic adapter has been disconnected.
- Closing the dialogue box by clicking on X aborts the filling process.

## Fuel pump test

With the fuel pump test you can check the quantity delivered by the fuel pump DP42.

**ATTENTION**

Incorrect use of the fuel pump test may result in dangerous heater operation, including the potential for fuel leakage or combustion.

Follow the procedure below to test the fuel pump:

1. Establish a [Connection to control unit](#).
2. Click on **Fuel Pump Test** in the **Calibration** section under the **Diagnosis** tab.
3. Select a **filling time** of 60 seconds (standard setting).
4. Place the fuel line into a measuring cylinder with a minimum capacity of 30 ml.
5. Start the filling process by clicking on **Start filling**.
6. Check the fuel pump frequency of 7 Hz in the [Overview window](#).
7. Make sure there are no bubbles in the delivered fuel. Repeat test if necessary.
8. Wait until the filling time has finished. Filling stops automatically.
9. Check that the delivered quantity is within the following range (at 7 Hz/60 s).
  - Diesel: 12.0 up to 14.6 ml
  - Petrol : 11.6 up to 14.3 ml

If the quantity is not in the specified range make sure bubble-free delivery took place. If the result still deviates from the specified value, look for the fault in the fuel take-off area (e.g. overpressure or underpressure) or in the fuel line (e.g. kinked, clogged) and rectify. If the fault cannot be rectified, contact your Webasto Service partner or the Hotline.

**NOTES:**

- The heater must be switched off to perform the fuel pump test.
- Closing the dialogue box by clicking on X aborts the filling process.

**CO<sub>2</sub> Adjustment**

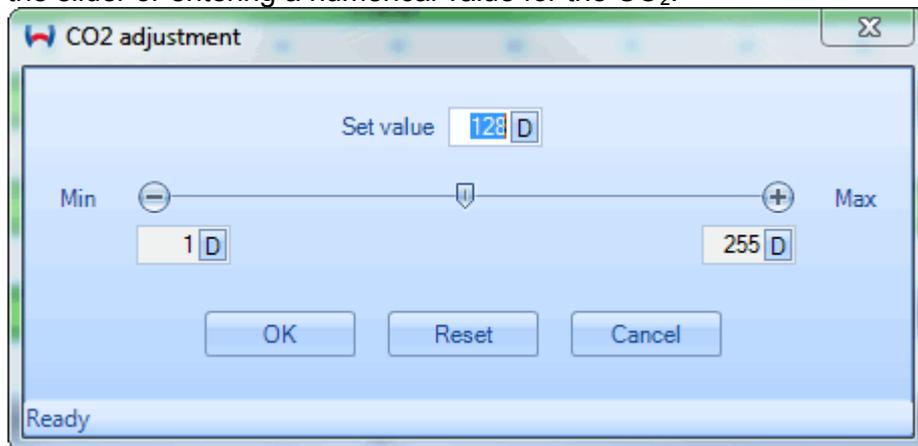
To undertake CO<sub>2</sub> adjustment, the heater must be switched into regular heating operation. The CO<sub>2</sub> adjustment function will not initiate and a corresponding message will appear if the heater is not in heating mode.

Some heaters automatically launch into heating mode when the CO<sub>2</sub> adjustment is started. If this is the case, then wait until it is possible to adjust the CO<sub>2</sub> value. If an automatic start is not supported, then the heater must be manually switched on (see [Diagnosis tab](#)).

Please use the following procedure if the heater does not support an automatic start (e.g. Thermo Pro 50/90, Air Top 40 heater):

1. Establish a [Connection to control unit](#).
2. In the **Diagnosis** tab, click on **CO<sub>2</sub> adjustment** in the **Adjustment** section.

- After display of a Notes window, the CO<sub>2</sub> adjustment window is displayed. The heater is switched on automatically. The CO<sub>2</sub> adjustment is only possible if the heater is in heating mode (operating mode: Full load).
- Once heating mode has been achieved, you can adjust the settings by repositioning the slider or entering a numerical value for the CO<sub>2</sub>:



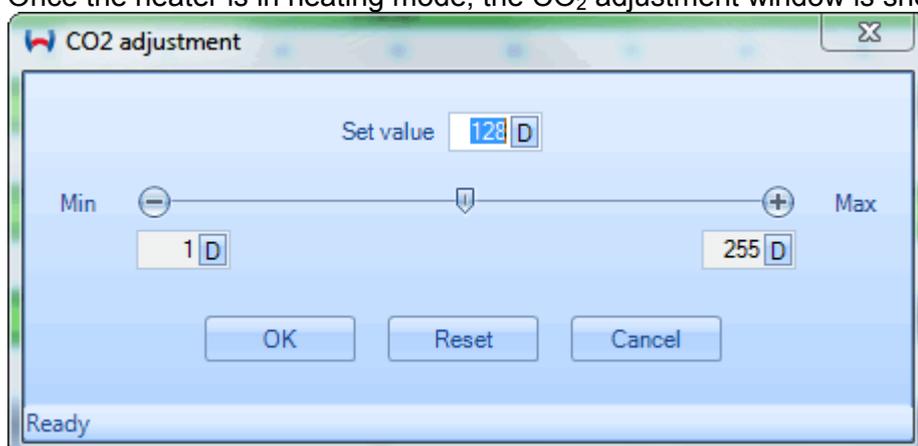
- Click on **Reset** to undo a change to the CO<sub>2</sub> value and return to the original CO<sub>2</sub> value.
- Click on **OK** to save the new value. The heater is automatically switched off.

or

Click on **Cancel** to end the CO<sub>2</sub> adjustment process without saving the value. The heater is automatically switched off.

The following procedure is used if the heater does not support an automatic start (e.g. Thermo Top Evo):

- Establish a [Connection to control unit](#).
- Start the heater (see [Diagnosis tab](#)) and wait until heating mode is reached (operating mode: Full load).
- In the **Diagnosis** tab, click on **CO<sub>2</sub> adjustment** in the **Adjustment** section.
- Once the heater is in heating mode, the CO<sub>2</sub> adjustment window is shown:



- Reposition the slider or enter a numerical value to change the CO<sub>2</sub> adjustment.

7. Click on **Reset** to undo a change to the CO<sub>2</sub> value and return to the original CO<sub>2</sub> value.
6. Click on **OK** to save the new value. The heater continues to run and must be switched off manually (see [Diagnosis tab](#)).

or

Click on **Cancel** to end the CO<sub>2</sub> adjustment process without saving the value. The heater continues to run and must be switched off manually (see [Diagnosis tab](#)).

#### NOTES:

- Depending on the heater, the adjustment is performed by modifying the speed of the fan or the frequency of the fuel pump. For this reason some control units allow for proportional adjustment, while others work with a proportion of the CO<sub>2</sub> emissions.
- After making an adjustment to the settings, wait until the new CO<sub>2</sub> value has stabilised.
- Clicking on **D** or **H** next to the numerical value switches the CO<sub>2</sub> value between decimal and hexadecimal.

### Measurement protocol

Use this function to log the data from the control unit cyclically into a file.

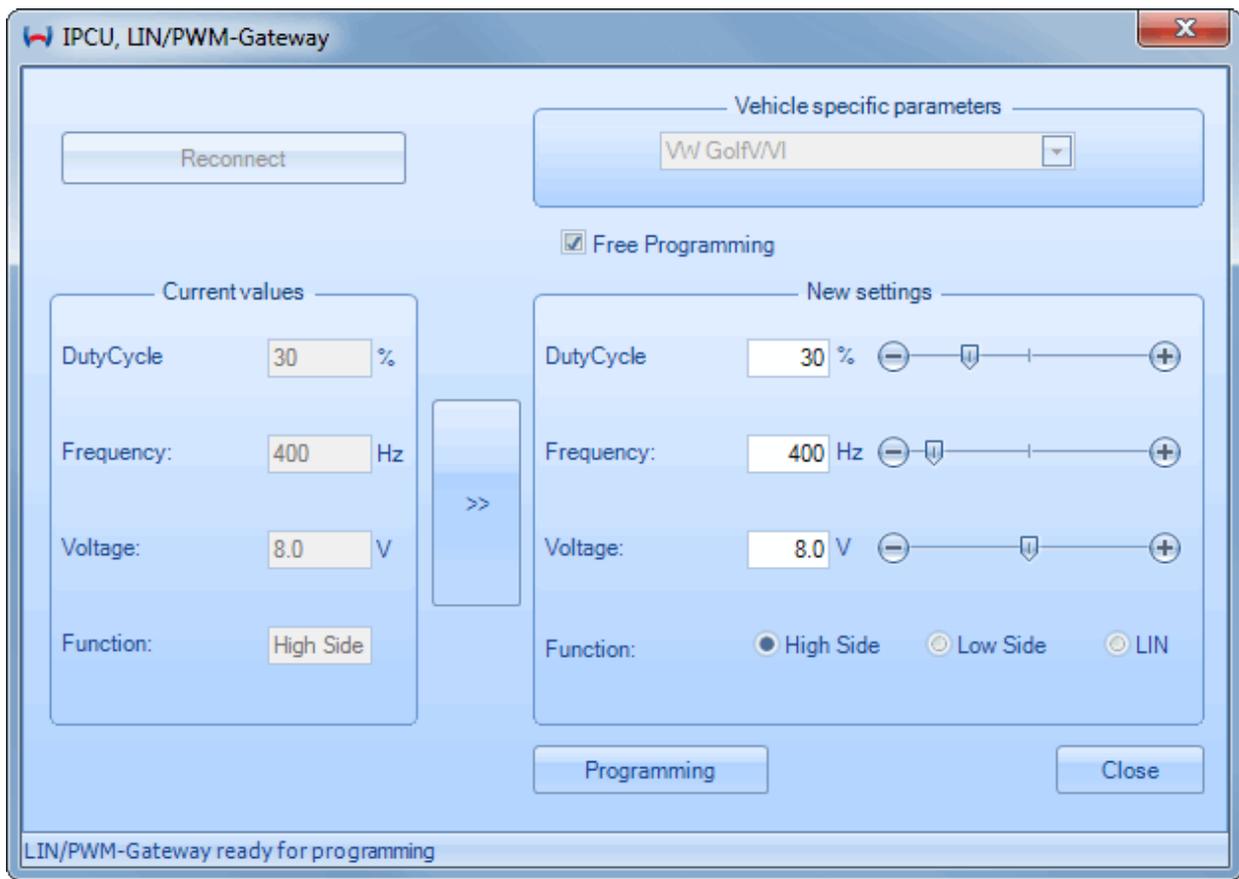
The follow procedure is used to record the measurements:

1. Select **Options and Settings** for WTT from the **Extras** tab.
2. Use **Search...** to select a measurement file and close the Options window by clicking on **Apply**.
3. In the **Extras** tab, click on the **Measurements** slider in the **Miscellaneous** section. The measured values are being recorded if the stopwatch is moving.
4. Stop the recording of the measured values by clicking again on the **Measurements** slider. The slider switches to *OFF* and logging is stopped.

#### NOTES:

- The measurement value log file is in the form of an ASCII text file. The individual measurement values are separated by tabs. This means that the file can, for example, be imported and evaluated using Microsoft Excel<sup>®</sup>.
- Please do not open the file while protocolling is ongoing.

## IPCU and LIN/PWM Gateway programming



General procedure for reading settings from an IPCU or LIN/PWM gateway:

1. Connect an IPCU module or LIN/PWM gateway to the USB diagnosis adapter or the IPCU cable harness (ID 9016419 B).
2. Start WTT and select the device **IPCU - LIN/PWM Gateway** from the Start menu or click on the **IPCU - LIN/PWM Gateway** symbol in the **Devices** tab when no diagnosis is running.
3. Once the **IPCU - LIN/PWM Gateway** dialogue box is opened, the selected measurements are continuously read out and displayed under **Current values**.

The following procedure is used to program vehicle-specific parameters into an IPCU or LIN/PWM gateway:

1. Select the relevant vehicle from the **Vehicle specific parameters** list. In selecting the vehicle, the predefined parameters are adopted into **New Settings**.
2. Click on **Programming** to save the settings in the IPCU or LIN/PWM gateway.

The following procedure is used to modify setting in an IPCU (Intelligent PWM Control Unit) or LIN/PWM Gateway:

1. Click on **>>** to adopt the **Current values** in to the **New Settings**.

2. The values cannot be changed unless the checkbox **Free Programming** is ticked.
3. Click on **Programming** to save the settings in the IPCU or LIN/PWM gateway.

#### NOTES:

- Please note when selecting the freely definable parameters that they must adhere to the requirements of the fan motor. Unrealistic parameters can lead to malfunction or damage of the fan motor during operation of the module.
- Unlike the LIN/PWN gateway, the IPCU has no LIN operating mode. For this reason the LIN function cannot be selected for that module.
- If the duty cycle is set to 100%, then the IPCU module or LIN/PWM gateway is configured as a voltage divider. No configuration of the **Frequency** is desired or even possible. The output DC voltage for the module in that case corresponds to the **Voltage** parameter.
- For **Low Side**, no configuration of the **Voltage** is necessary or even possible, since in this operating mode the battery voltage is automatically adopted as the reference voltage.

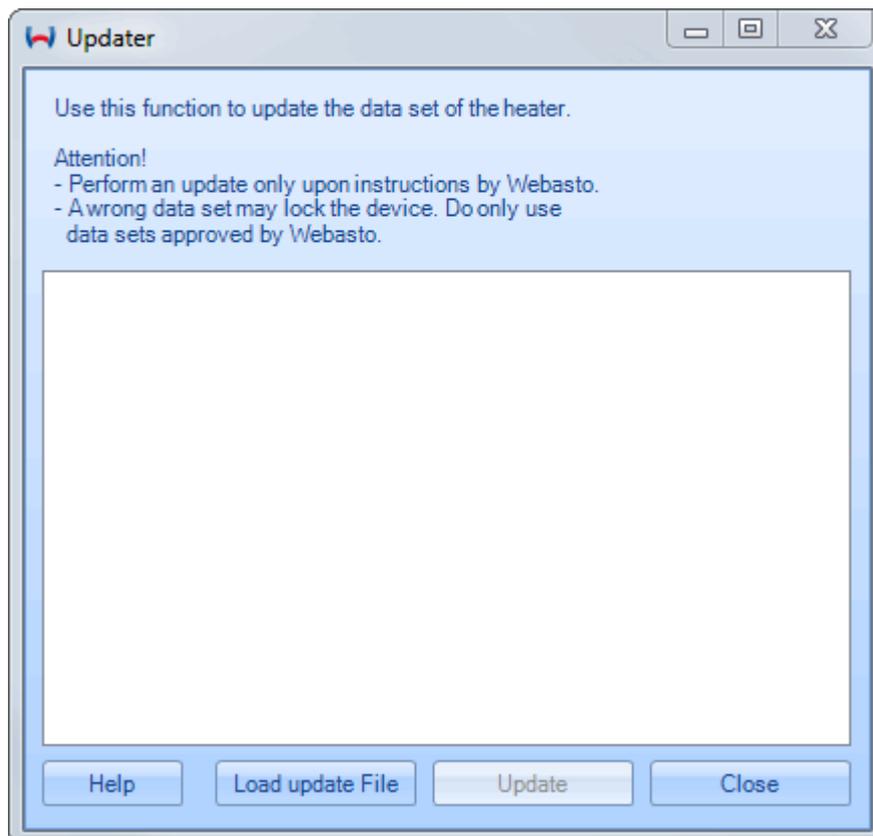
### Save and play WTT session

During ongoing diagnosis, the W-Bus communication is protocolled internally and a timestamp is appended. This WTT session can be stored and replayed using the functions in the **WTT Session** section of the [Extras tab](#). This is important in particular when working with the Support team in particular.

#### Example

You have a problem with your heater and start the diagnostic process using the WTT software. After the diagnosis starts, you read out the fault memory and conduct a [Component test](#). Unexplained communication breakdowns or other malfunctions continue to appear. Save the WTT session using the commands in the **WTT Session** area of the **Extras** tab. After ringing the Webasto hotline, send the protocol file to the hotline. The experts at Webasto can then review your session file in detail to determine what happened during the diagnosis session and analyse the W-Bus traffic. This allows for a highly precise fault diagnosis and ensures that you'll receive a faster response on the potential cause of the fault.

## Updater



The data set of a heater can be updated with the updater.

### **ATTENTION**

The heater should be updated only when instructed to do so by Webasto.

The wrong data set can disable the heater. Only use Webasto-approved data sets.

Communication with the heater must not be interrupted during the update procedure, otherwise the heater will be locked out.

Proceed as described in the following to update the data set:

1. Download the correct data set update for your heater from the dealer portal. The file may need to be unpacked.
2. Make sure that the diagnostic procedure has stopped.
3. Click on **Updater** under the **Extras** tab.
4. Click on **Load Update File** and select the data set upload previously downloaded from the dealer portal (file extension: .WUC)
5. A check is performed to ensure the data set update is compatible with the connected heater. If this check is successful, a confirmation prompt will appear as to whether you really wish to overwrite the data set. Confirm with **Yes**.
6. Wait until the update procedure has finished. Communication with the heater must not be interrupted, otherwise the heater will be locked out.

7. After the update has finished, the dialogue window can be closed by clicking on X.

NOTES:

- The update can take up to 5 minutes depending on the type of heater.
- An update file can contain several configurations; at least one of these must be compatible with the connected heater.

## User Interface

### Tabs

All functions in WTT can be accessed using the tabs. This allows you to access many commands quickly and conveniently using the mouse. There are four tabs:

#### Diagnosis tab

- Functions for starting and stopping the diagnosis
- Access to the customer report
- Control of the heater (switch on / off)
- Adjustment functions
- Fault list

#### Extras tab

- Recording functions
- Port selector
- Options

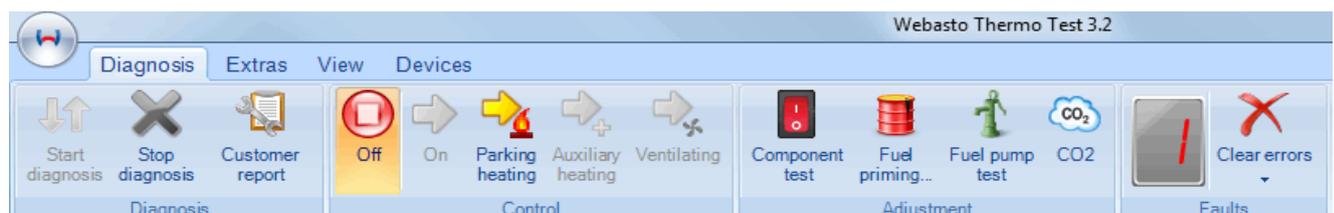
#### View tab

- Window manager
- Language settings

#### Devices tab

- Starting and parameterisation of non-heaters

### Diagnosis tab



Starts communication with the connected control unit



Ends the communication with the control unit



Opens the [Customer report dialogue box](#)



Switches off the heater



Switches on the heater. This function produces different reactions in different heaters. In general heating begins. For some heaters, a temperature probe or air-

conditioning controller can be used to arrange ventilation.



Starts the heater in parking heating. By default this lasts for 59 minutes.



Starts the heater in auxiliary heating



Starts the ventilation function on the heater



Activation of individual components of the control unit (see [Component test](#))



Filling the fuel line for the heater (see [Fuel Priming](#))



Tests the fuel pump (see [Fuel pump test](#))



Starts the [CO2 Adjustment](#) (heat setting)



Displays the number of faults in the control unit. Double clicking opens the [Fault list](#) window



Clears the fault memory in the control unit

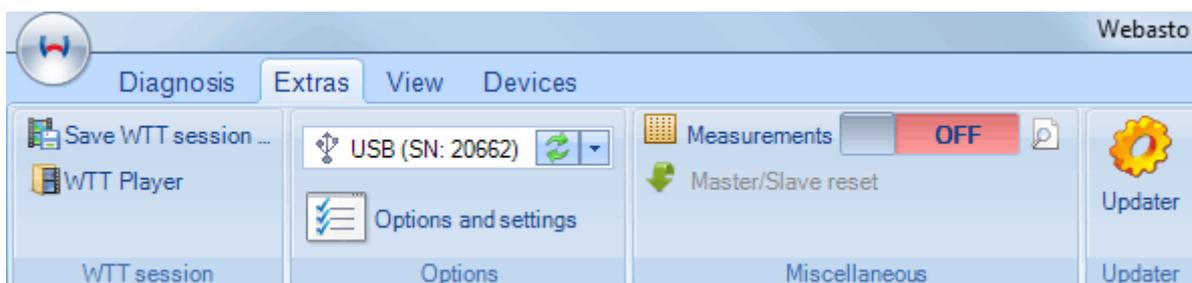


Displays fault if a fault status is present in the control unit

#### NOTES:

- The switch-on symbol cannot be used until the diagnosis is started.
- Only those switch-on symbols supported by the connected heater are actually shown.
- Hover the mouse pointer above the fault message (such as STFL) to see an explanation of the fault.
- If the menus for the tabs are not visible, please press **Ctrl + F1** to restore them to the screen.

#### Extras tab



Starts [Measurement protocol](#)

-  Reset the master/slave setting (for supported air heaters only)
-  Save the [WTT session](#)
-  Starts playback of a [WTT session](#)
-  Selection of a communications interface
-  Opens the [Options and Settings](#) window
-  Starts the data set [Updater](#)

### View tab



-  Opens/closes the [Overview](#) window
-  Opens/closes the [Operational information](#) window
-  Opens/closes the [Protocol](#) window
-  Opens/closes the [Fault list](#) window
-  Opens/closes the [Trend graphic](#) window
-  Restores the default view
-  Define the window arrangement (stacked, side-by-side, overlapping)
-  Sets the language

### NOTE:

- The language can only be changed when no diagnosis is running, and requires a restart of WTT.

### Devices tab



Opens the dialogue box for parameterisation of the [MultiControl or SmartControl](#)



Opens the dialogue box for parameterisation of the [IPCU and/or the LIN/PWM gateway](#)

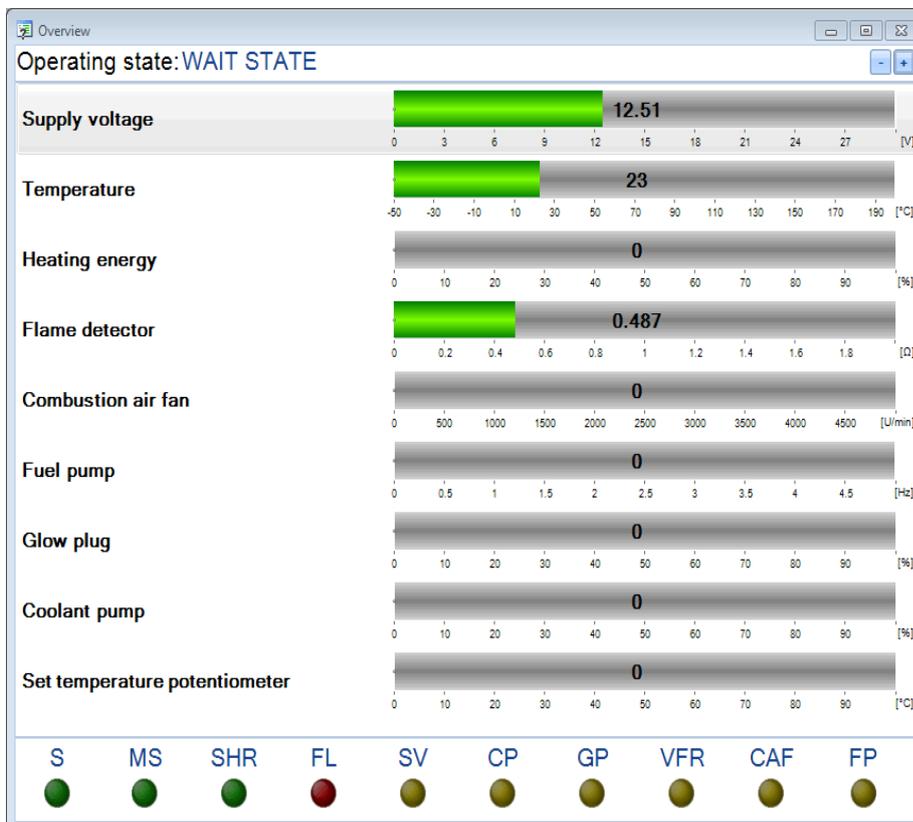
### NOTE:

- The define can only be started when no diagnosis is running.

### View window

#### Overview window

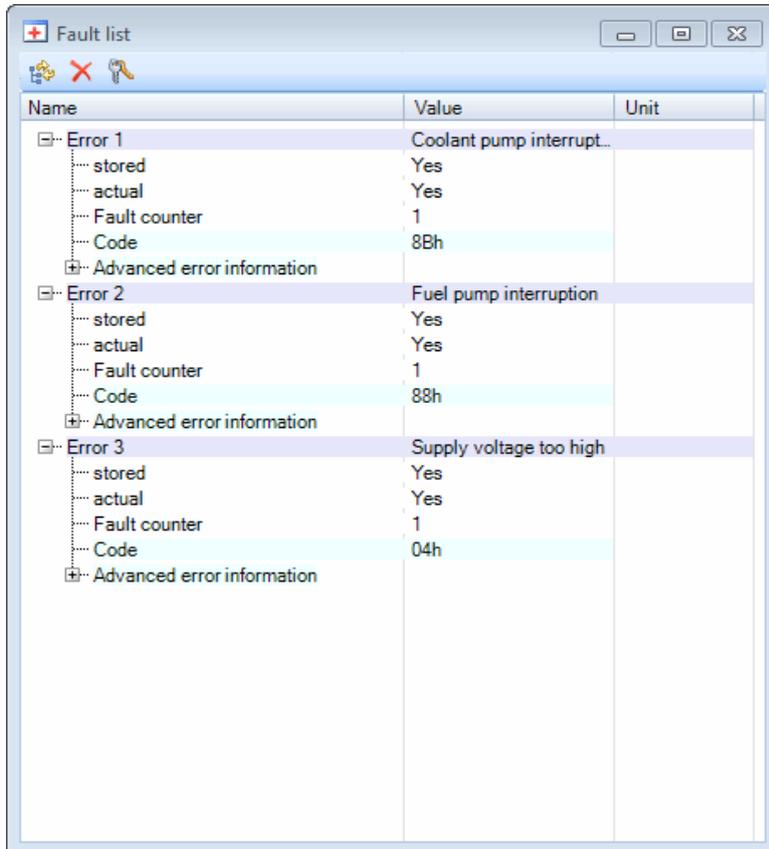
The Overview window provides a visual presentation of the key input and output signals and parameters for the heater. This enables a quick overview of the key heating benchmarks.



The parameters are represented visually as bars, while input/output signals appear as lamp displays. Move the mouse pointer above a display element for an explanation of the abbreviations.

**NOTE:**

The displayed parameters will vary from control unit to control unit.

**Fault list**


Name	Value	Unit
<ul style="list-style-type: none"> <li>[-] Error 1</li> <li>  [ ] stored</li> <li>  [ ] actual</li> <li>  [ ] Fault counter</li> <li>  [ ] Code</li> <li>  [-] Advanced error information</li> </ul>	<ul style="list-style-type: none"> <li>Coolant pump interrupt..</li> <li>Yes</li> <li>Yes</li> <li>1</li> <li>8Bh</li> </ul>	
<ul style="list-style-type: none"> <li>[-] Error 2</li> <li>  [ ] stored</li> <li>  [ ] actual</li> <li>  [ ] Fault counter</li> <li>  [ ] Code</li> <li>  [-] Advanced error information</li> </ul>	<ul style="list-style-type: none"> <li>Fuel pump interruption</li> <li>Yes</li> <li>Yes</li> <li>1</li> <li>88h</li> </ul>	
<ul style="list-style-type: none"> <li>[-] Error 3</li> <li>  [ ] stored</li> <li>  [ ] actual</li> <li>  [ ] Fault counter</li> <li>  [ ] Code</li> <li>  [-] Advanced error information</li> </ul>	<ul style="list-style-type: none"> <li>Supply voltage too high</li> <li>Yes</li> <li>Yes</li> <li>1</li> <li>04h</li> </ul>	

The Fault list presents all faults recorded in the control unit. Supplemental information at the time of the fault is also displayed for each fault.

If you point the mouse at any given fault, an info box with a detailed description of the individual fault appears.

**Menu commands**

 Expands or collapses the fault tree completely.

 Clear fault from the control unit.

 Delete heater lock-out.

**Operational information**

The operational information window provides you with display information, operating data and parameters. This encompasses among other the serial and ID numbers, the version number, manufacturing date and the operating hours and start counter.

Name	Value	Unit
Device information		
W-Bus version number	4.1	
Minimum voltage threshold	11.2	[V]
Undervoltage detection time	20	[s]
Maximum voltage threshold	16.5	[V]
Overvoltage detection time	5	[s]
EOL dataset ID	1234567X00	
Hardware ID number		
Production date heater unit	0/0/0	[d/m/y]
Heater unit ID	TTEVO 1G	
Heating time limit	50	[min]
Fuel type	Gasoline	
Test signature		
Serial number	0000000000	
Software ID number	9024349B03	
SW version	3/24/13	[d/week/y]
Software version application (2-digit)	8.5	
Software version application (3-digit)	8.5.0	
Control unit ID number	1234567X00	
Production date of control unit	0/0/0	[d/m/y]
Parameters		
CO2 upper threshold	255	
CO2 lower threshold	1	
CO2 adjustment	1	
Operating data		
Heating time	00:29	[h:min]
On-time PH	00:26	[h:min]
On-time SH	00:02	[h:min]
Flame interruption counter	0	
Ventilation time	00:00	[h:min]
Start counter	5	
Start counter PH	4	
Start counter SH	1	

**NOTE:**

- Varying data and parameters are displayed based on the connected control unit.

**Protocol list**

Time	Absolute time	Time difference	Type	Name	Telegram
5/16/2014 11:13:22 AM	0.000	0.000	Info	Information	Diagnosis started
5/16/2014 11:14:29 AM	64.508	0.040	StChg	Information	WAIT STATE -> MOTOR CHECK (0s)
5/16/2014 11:14:30 AM	66.030	0.069	StChg	Information	MOTOR CHECK -> PRE-GLOWING1 (0s)
5/16/2014 11:14:31 AM	66.991	0.040	StChg	Information	PRE-GLOWING1 -> COOL2 (0s)
5/16/2014 11:14:41 AM	77.144	0.253	C NAK	Read status & opera...	Received error (RXTIMEOUT)
5/16/2014 11:14:44 AM	79.379	0.040	StChg	Information	COOL2 -> WAIT STATE (2s)
5/16/2014 11:14:47 AM	83.114	0.030	Info	Information	Diagnosis finished

The protocol list shows info and fault messages that are also displayed in the status bar. Above and beyond this, you'll see a protocol of status changes for the control unit, including indication of the time in that given state.

Additional options can be selected via the menu or by right-clicking in the protocol window.

#### Menu commands:

-  Pause/Continue display in the Protocol window.
-  Copies the selected Protocol selection to the clipboard
-  Delete the display in the Protocol window
-  Start/stop stamping current time in the protocol
-  Start/stop stamping absolute time in the protocol
-  Switch on/off display of time difference between two telegrams in the protocol
-  Switch on/off display of telegram name in the protocol
-  Edit color filter for telegrams

Use the slider control  on the right side of the menu to switch on/off the writing of the protocol to a file. The save path for the file can be selected in [Options and Settings](#).

#### Trend graphic

The trend graphic creates visual depictions of measurements and signals from the control unit over an extended period of time. The recording of the measurements is performed in 1 sec. intervals.

You can switch individual measurements on/off on the left side of the menu.

The individual measurements are depicted in various colours.

Hover the mouse pointer in the diagram on one of the graphs to display the associated value and unit.

#### Status bar

The left side of the status bar (on the lower edge of the program window) displays fault messages and details on the state of communication. The right area of the status bar displays the heater ID, the USB diagnosis adapter being used, the W-BUS communications LEDs (Rx/Tx) and the status of the W-BUS line.



#### NOTES:

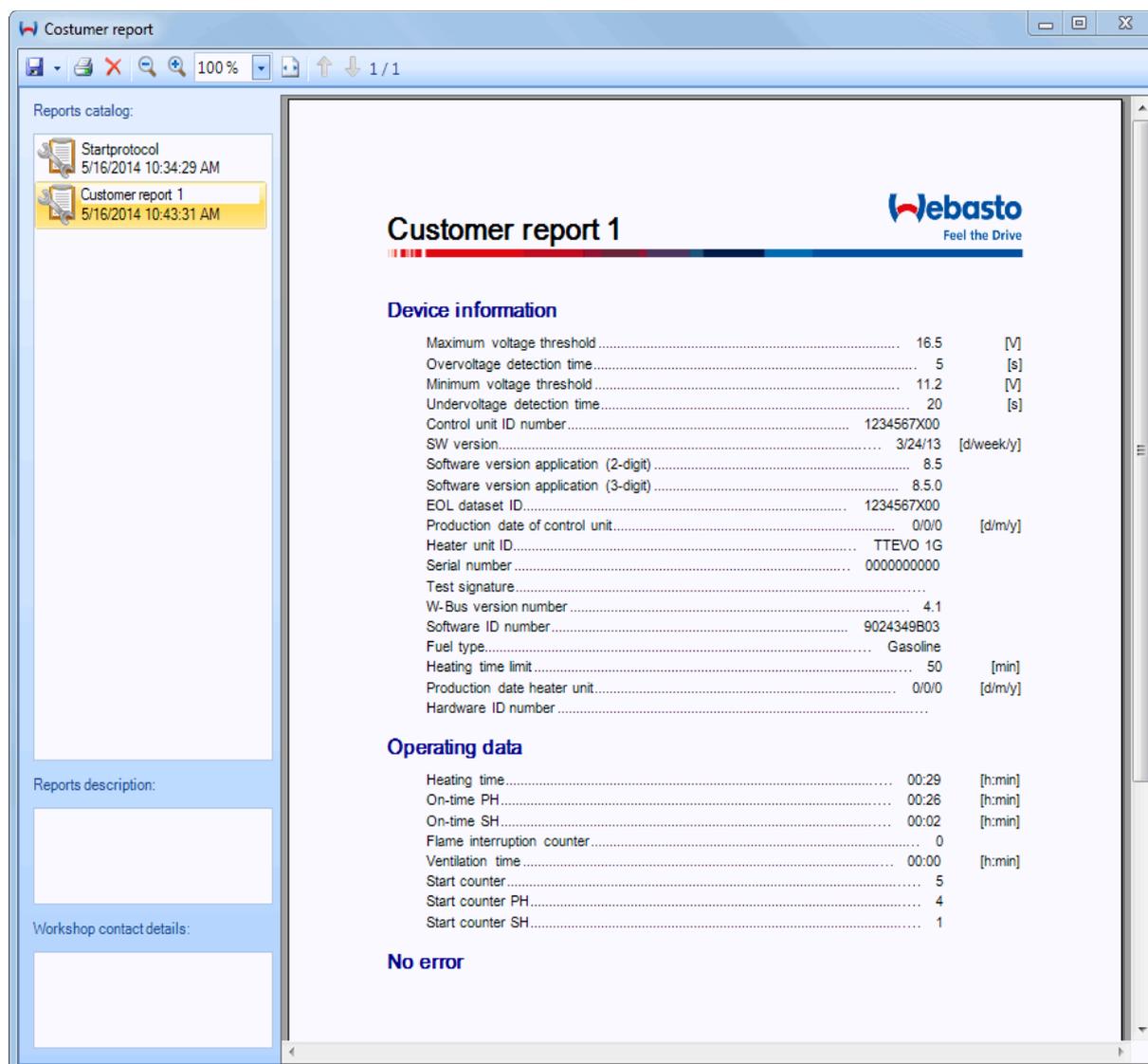
- As soon as a communications link is established with the heater, the text "Diagnosis is running..." appears in the status bar.

- If the diagnosis is started but the W-bus communications LEDs (Rx/Tx) are not blinking alternately, then a fault has occurred. (See [Known Problems and Issues](#))
- If the W-BUS LED lights up red continuously, there is a malfunction on the W-bus. (see [Known Problems and Issues](#))

## Dialogue box

### Customer report dialogue box

The customer report is called up via the [Diagnosis tab](#) and encompasses the device information, operational data and control unit faults into one report.



Each time the customer report function is executed, a new customer report is automatically generated. Under some circumstances several reports may thus appear in the list. The customer report memory is not cleared until the program is closed down.

The start protocol serves as a special type of customer report. It is automatically generated when a diagnosis is started to provide a snapshot of the connected heater. This start protocol cannot be deleted.

The following elements appear on the left side of the window:

#### Customer report list

This contains a list of all reports that have been created during a WTT session. Saved reports can be identified from their diskette symbol.



➔ Customer report not saved



➔ Customer report saved

### Protocol description

You can enter a description in this field, such as details on a problem that has occurred. The data is automatically added to the protocol after entry.

### Workshop contact details:

This field is intended for entry of the workshop contact details. The data is automatically added to the header of the report after entry.

This field must be filled out when a customer report is saved or printed.

### Menu commands



Save the customer report as a PDF file



Send the customer protocol by e-mail



Print out the customer report



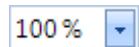
Clear the selected customer report



Zoom out the view of the customer report



Zoom in the view of the customer report



Set the view of the customer report to a predefined size



Adjust the view of the customer report to the width of the window



Move back to previous page of the customer report



Jump to the next page of the customer report

### AutoSave

Customer reports can be saved automatically when the window closes. For this to happen, the [AutoSave](#) function must be enabled in Options and a storage location for the reports must be defined.

The menu bar shows if the function is switched on or off.

The default setting is for AutoSave to be disabled.

### NOTES:

- After saving the customer report, the saved PDF file can be automatically displayed using an installed PDF reader. The check box after the field "Open after Save" must be ticked.
- The file suffix (.pdf) will be added automatically during the save process, or you can enter it manually, such as Report\_TTEvo\_011214.pdf.
- When closing the WTT, a Notes window notifies any customer reports that have not been saved.

## Dialogue box MultiControl / SmartControl

This dialogue box is used to change the settings for the MultiControl / SmartControl control elements and/or SmartControl.

All functions are accessible via the control tabs or via menu commands:

### Menu bar

- Save and load setting as data set, number of errors

### Settings tab

- Modify settings and parameters for MultiControl and SmartControl

### Timer tab (not available for SmartControl)

- Create and delete timer

### Heaters tab

- Switch heater

### Faults tab

- Display of the error buffer

The dialogue box is called up from within the main WTT window via the **Devices** tab. No diagnosis may be ongoing at the time. As soon as a success connection to the MultiControl / SmartControl has been established, the settings are automatically read out and displayed.

### Menu bar



The menu bar is used to save and load settings for MultiControl / SmartControl as a data set.

In addition, the number of faults in the error buffer is displayed.



Whenever communication with MultiControl / SmartControl is interrupted, you can restart communication here.



Use this function to save the settings to a file.



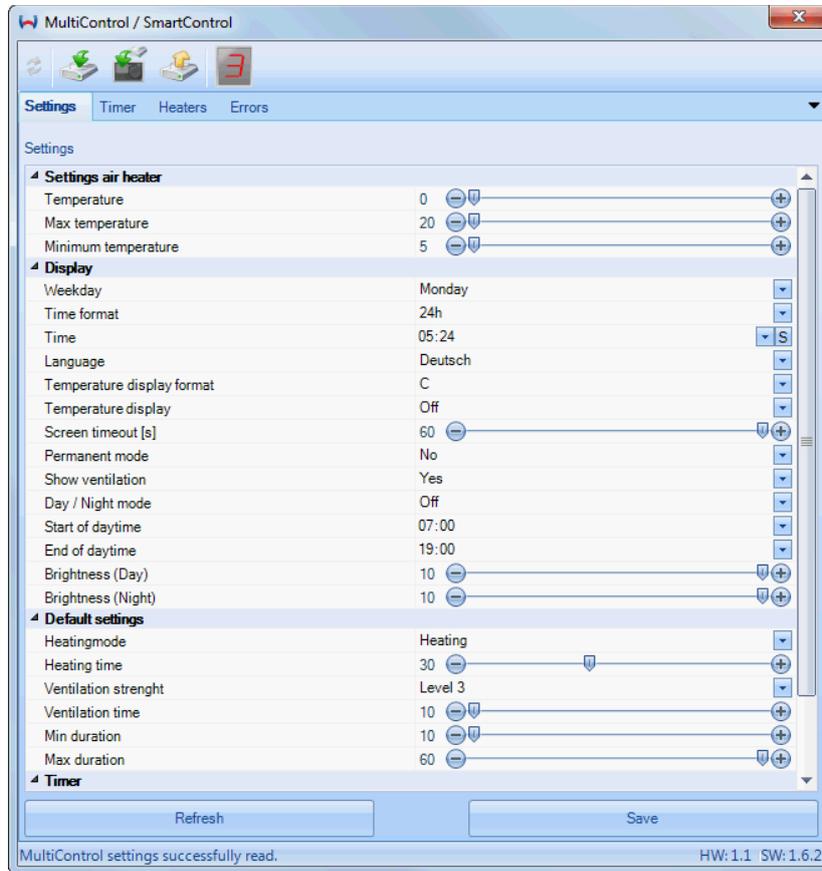
Use this function to write saved settings from a file directly to MultiControl / SmartControl.



Use this function to read saved data from a file and display it in the dialogue window.

## Settings tab

This tab contains functions to read out and modify the settings for a connected MultiControl / SmartControl. After changes are made, click on **Save** to store in the MultiControl / SmartControl.



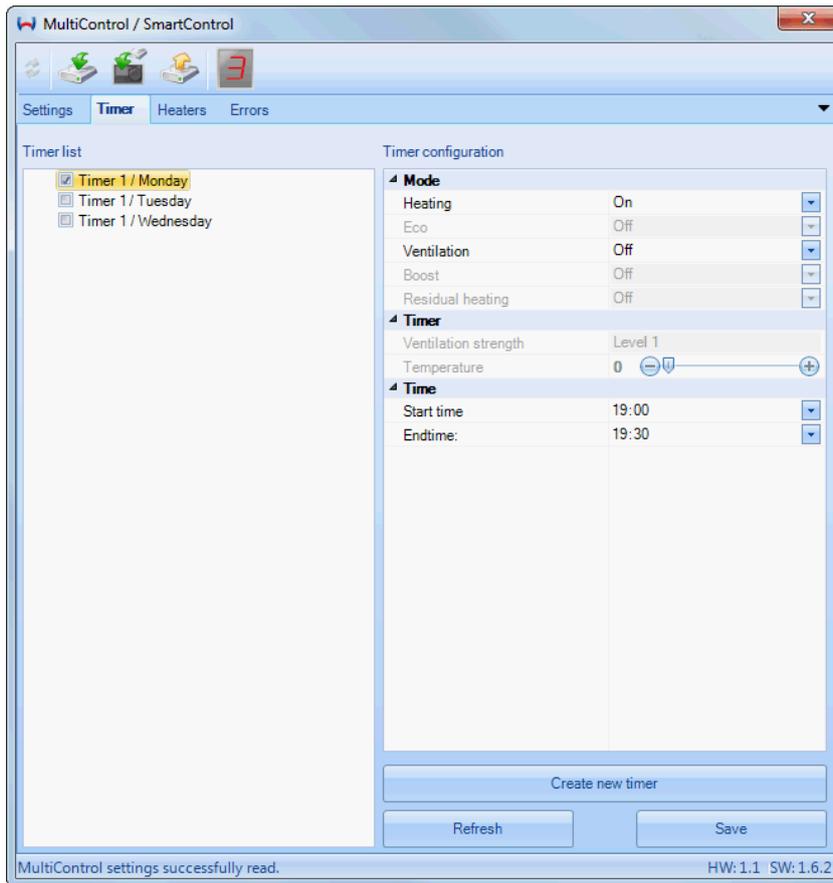
If changes are made directly into the MultiControl / SmartControl while the Settings window is still being displayed, then the settings are not automatically synchronised. Click in this case on **Refresh** to refresh the settings.

## NOTES:

- When saving the settings, all values are automatically saved.
- If an attempt is made to save implausible values, a fault message appears indicating that the settings could not be saved.

## Timer tab

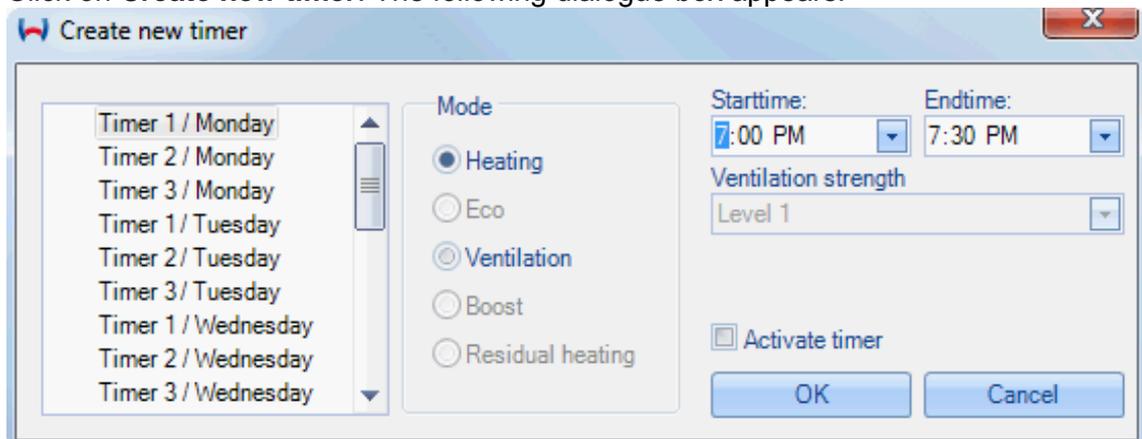
In this tab you can manage the MultiControl timer. All timers stored in MultiControl are listed on the left side of the window. The right side contains details on the selected timer.



### Create new timer

The following procedure is used to create a new timer:

1. Click on **Create new timer**. The following dialogue box appears:



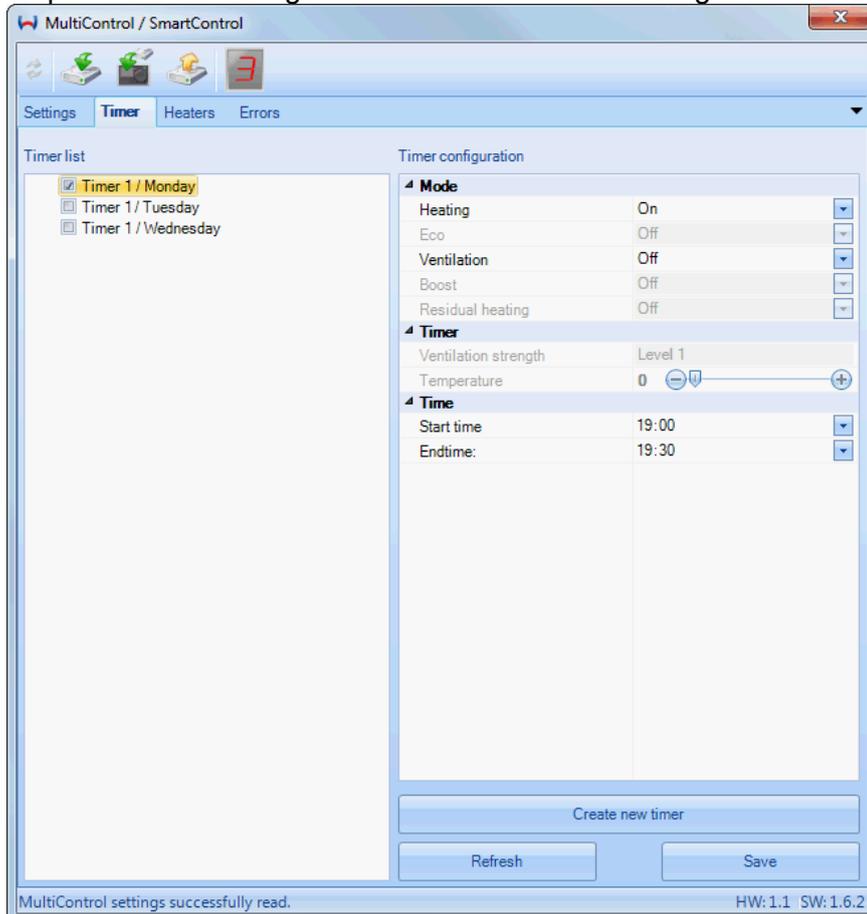
2. On the left side, select the timer for the corresponding weekday that you want to add.
3. Select the *Heating mode*.
4. Select the *Start time* and *End time* for the timer.
5. If *Ventilation* is selected in *Heating mode*, select the *Ventilation strength*.
6. If an air heater is selected in MultiControl as a heater, then select the *Target temperature*.
7. If the timer is to be activated, set the **Activate Timer** option to ON. Please note that by default only one timer can be active in MultiControl at any one time.

8. Click on **OK** to create the timer.
9. The newly created timer appears in the *Timer list* on the left side of the tab.

### Modify timer

The following procedure is used to modify an existing timer:

1. On the **Timer** tab, click in the *Timer list* to select the timer you want to change. The respective timer configuration is then shown on the right side:

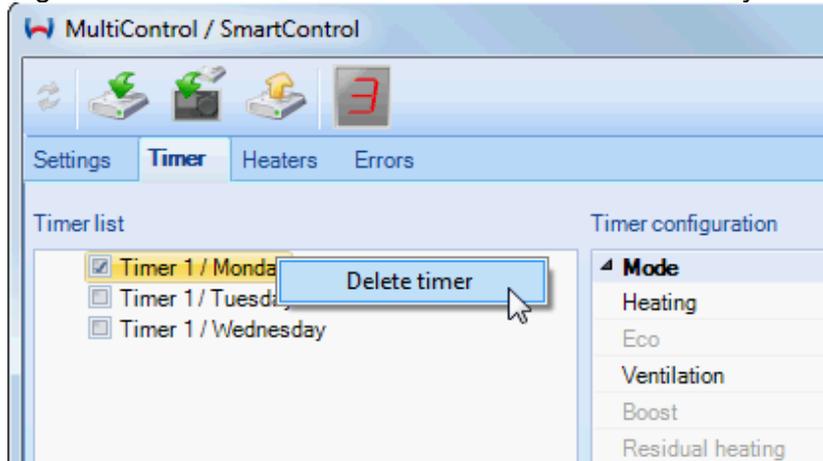


2. Change the settings as desired and click on **Save** to adopt the changes to the timer into MultiControl.

### Delete timer

The following procedure is used to delete an existing timer:

1. Right-click in the **Timer** tab in the *Timer list* on the timer you want to delete.

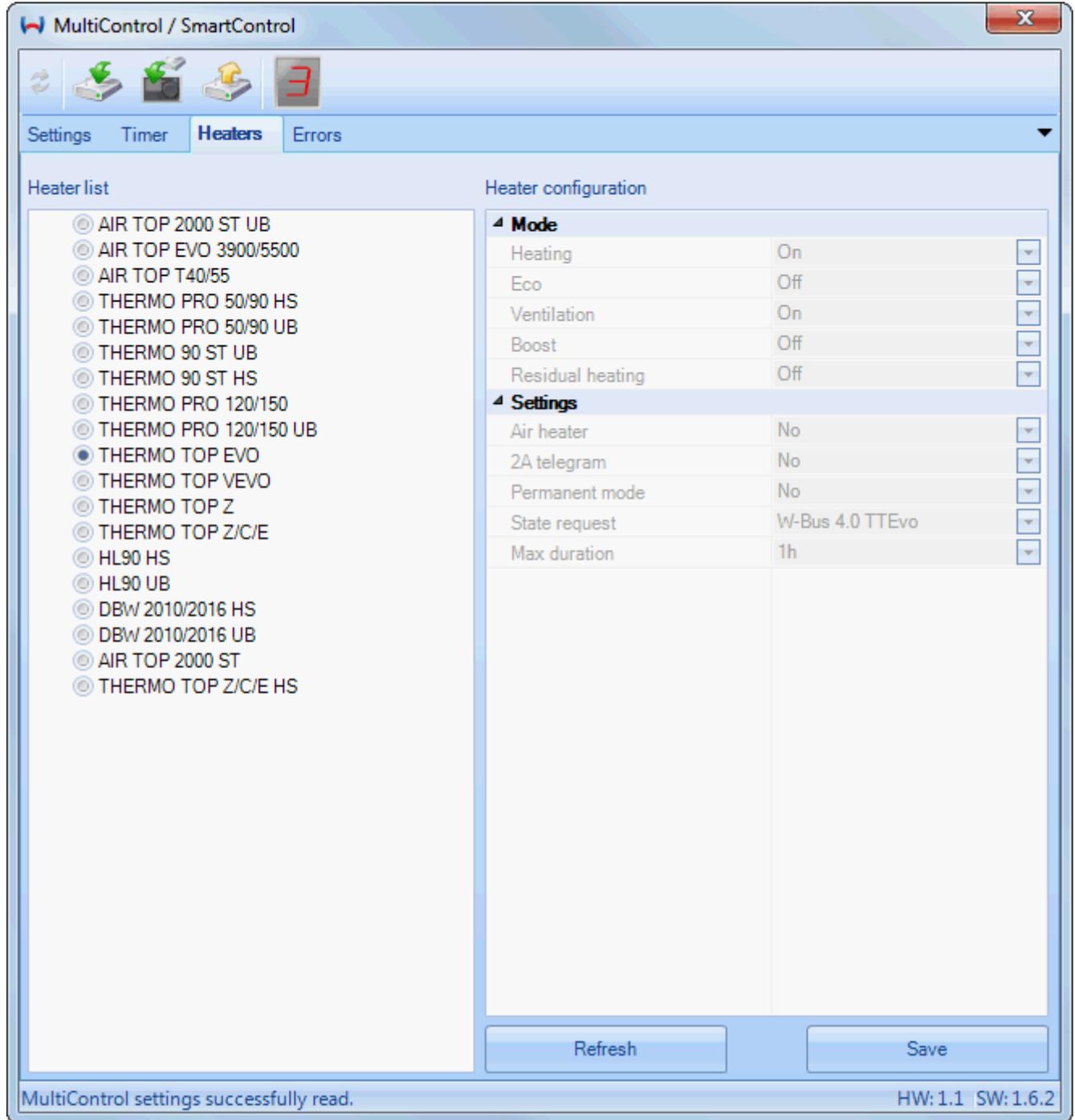


2. In the pop-up menu that appears, select **Delete timer** to delete the timer from MultiControl.

NOTE:

- Multiple timers can be deleted at once by preselecting them. To do so select all timers to be deleted with the left mouse button while pressing and holding the  $\uparrow$  button.

## Heaters tab



MultiControl / SmartControl

Settings Timer **Heaters** Errors

Heater list

- AIR TOP 2000 ST UB
- AIR TOP EVO 3900/5500
- AIR TOP T40/55
- THERMO PRO 50/90 HS
- THERMO PRO 50/90 UB
- THERMO 90 ST UB
- THERMO 90 ST HS
- THERMO PRO 120/150
- THERMO PRO 120/150 UB
- THERMO TOP EVO
- THERMO TOP VEVO
- THERMO TOP Z
- THERMO TOP Z/C/E
- HL90 HS
- HL90 UB
- DBW 2010/2016 HS
- DBW 2010/2016 UB
- AIR TOP 2000 ST
- THERMO TOP Z/C/E HS

Heater configuration

**Mode**

Heating	On	▼
Eco	Off	▼
Ventilation	On	▼
Boost	Off	▼
Residual heating	Off	▼

**Settings**

Air heater	No	▼
2A telegram	No	▼
Permanent mode	No	▼
State request	W-Bus 4.0 TTEvo	▼
Max duration	1h	▼

Refresh Save

MultiControl settings successfully read. HW: 1.1 SW: 1.6.2

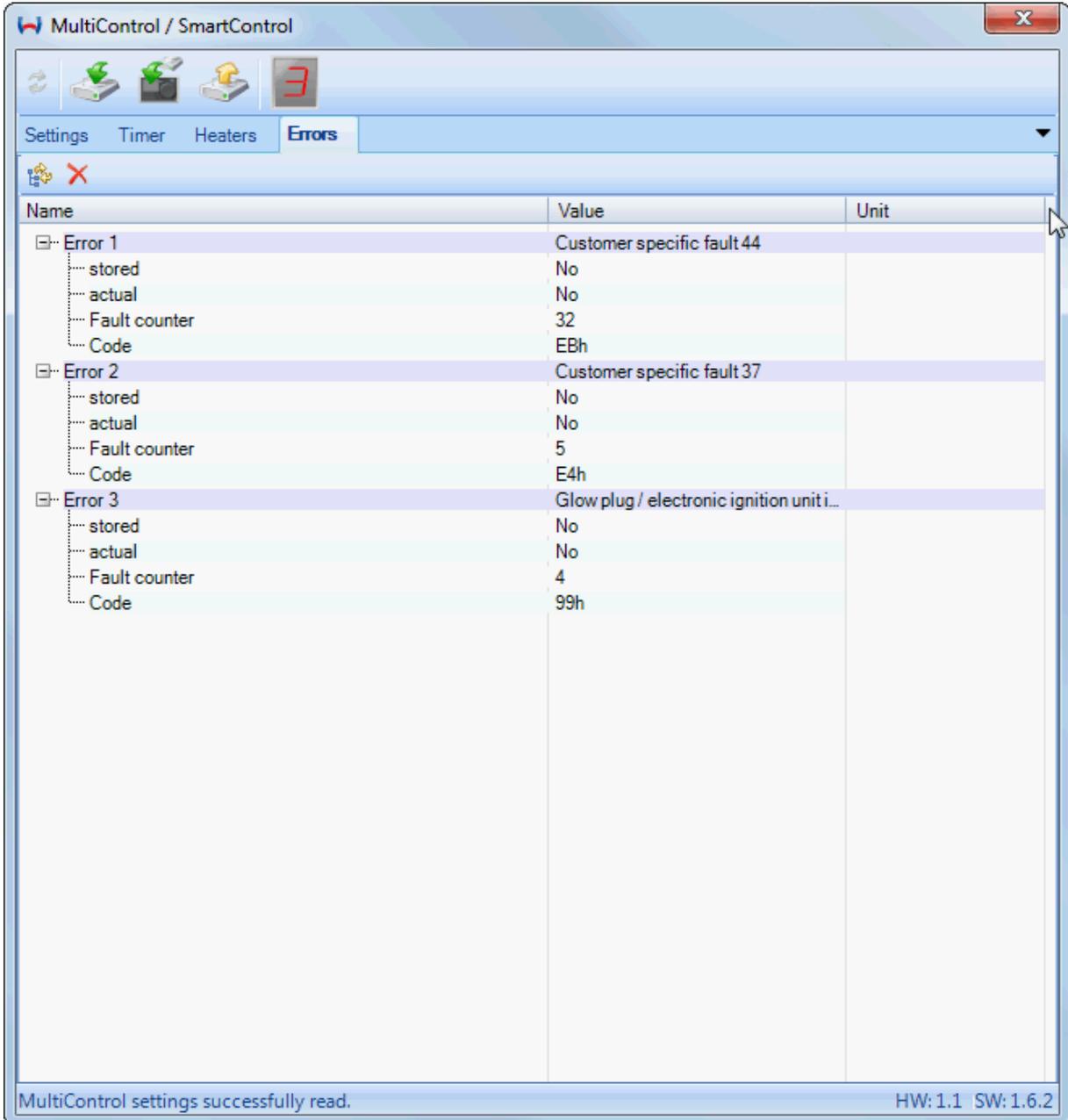
This tab contains a list of the heaters and which MultiControl / SmartControl is set. The details for the selected heater are shown on the right side, including which heating mode the heater supports and other settings.

To make another heater active, click the corresponding heater in the list and then select **Save**.

### NOTES:

- Activating another heater deletes all timers in MultiControl!
- The heater configuration cannot be altered.

## Errors tab



Name	Value	Unit
[-] Error 1	Customer specific fault 44	
[-] stored	No	
[-] actual	No	
[-] Fault counter	32	
[-] Code	EBh	
[-] Error 2	Customer specific fault 37	
[-] stored	No	
[-] actual	No	
[-] Fault counter	5	
[-] Code	E4h	
[-] Error 3	Glow plug / electronic ignition unit i...	
[-] stored	No	
[-] actual	No	
[-] Fault counter	4	
[-] Code	99h	

MultiControl settings successfully read. HW: 1.1 SW: 1.6.2

The Fault list presents all faults recorded in the control unit. Supplemental information at the time of the fault is also displayed for each fault.

If you point the mouse at any given fault, an info box with a detailed description of the individual fault appears.

### Menu commands

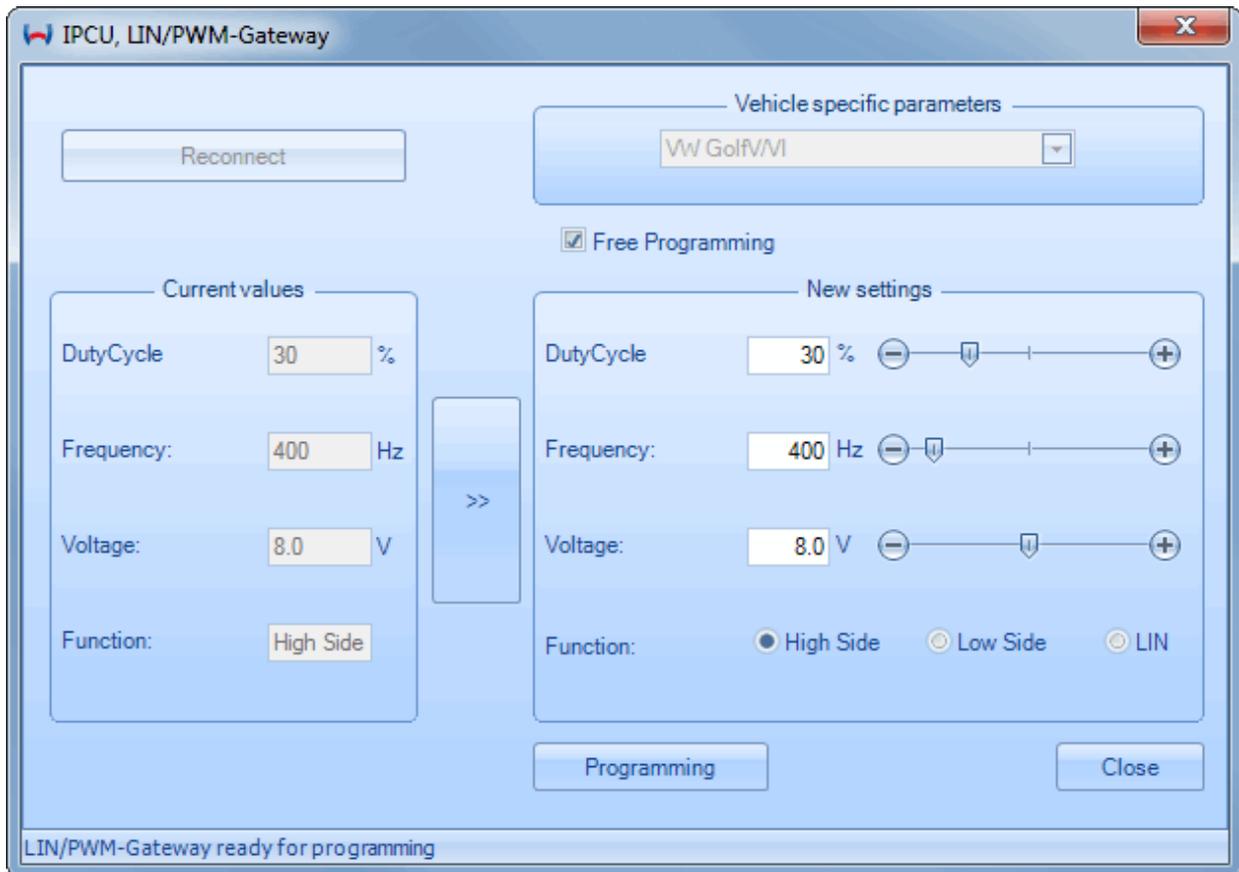
 Expands or collapses the fault tree completely.

 Clear fault from the control unit.

### Dialogue window IPCU and LIN/PWM Gateway

This dialogue window is used to program an IPCU module (Intelligent PWM Control Unit) or a LIN/PWM gateway. This module is used to activate vehicle fan motors.

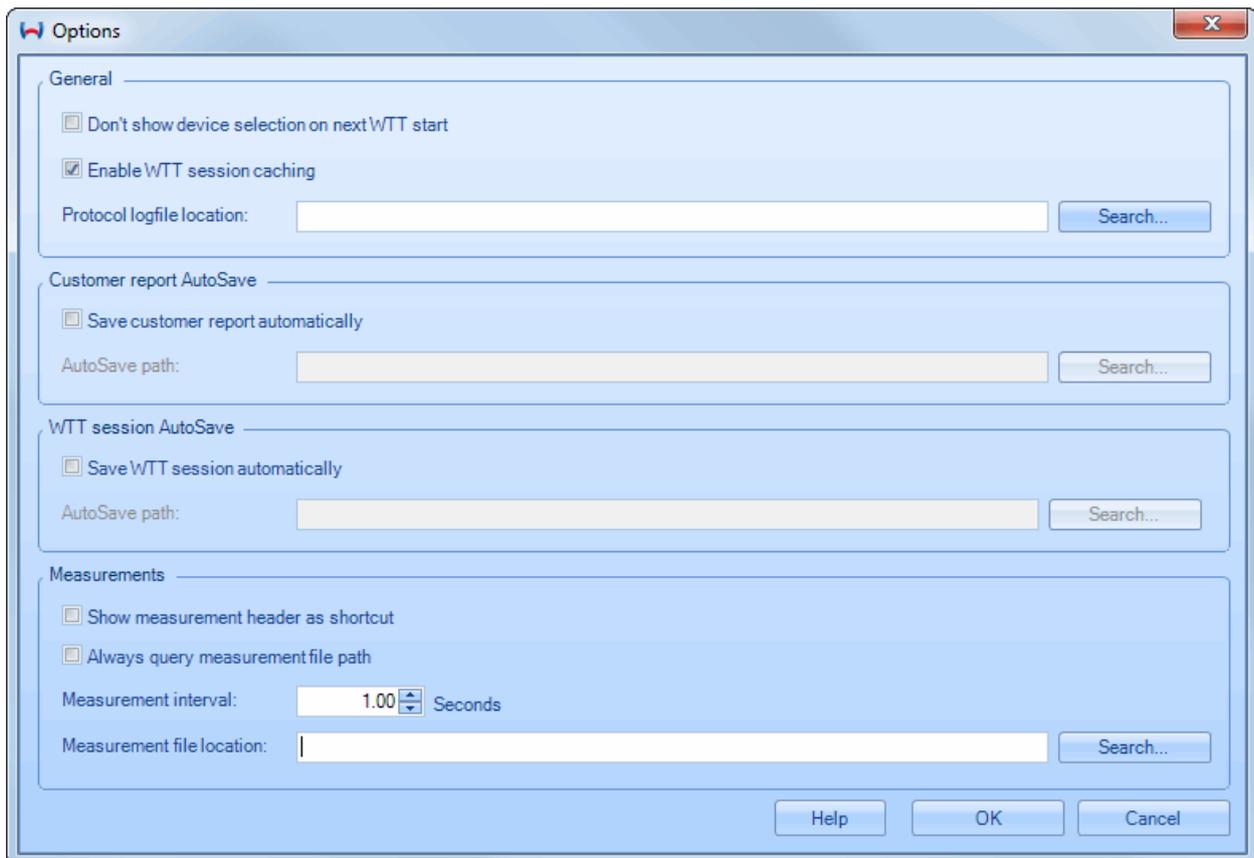
The dialogue box is called up from within the main WTT window via the **Devices** tab. No diagnosis may be ongoing at the time.



You will find the procedure for reading and programming an IPCU or LIN/PWM gateway in section [IPC and LIN/PWM gateway programming](#).

### Options and Settings dialogue box

General WTT settings are made in this dialogue box.



The following options are available:

- **Don't show device selection on next WTT start:**  
 If this option is selected, then the [Device selection dialogue](#) device selection dialogue is not shown the next time WTT is started. WTT then instead starts with the most recently selected device. .  
 (Standard: OFF)
- **Enable WTT session caching:**  
 With this option, the background storage of WTT sessions can be switched on or off. Warning: If this option is switched off, the [WTT sessions](#) cannot be recorded any more.  
 (Standard: ON)
- **Protocol logfile location:**  
 Enter here the storage location for the record file or select the file by clicking **Search....** If no file exists yet, one will be created automatically.
- **Save customer report automatically**  
 If this option is enabled, customer records can be saved immediately after closing the [Customer report](#) dialogue window.  
 (Standard: OFF)
- **AutoSave path:**  
 Enter here the folder for the customer reports that are to be saved automatically, or select the folder by clicking **Search....**
- **Save WTT session automatically**  
 If this option is enabled, [WTT sessions](#) are saved automatically in the specified directory after closing the WTT.  
 (Standard: OFF)

- **Show measurement header as shortcut:**  
If this option is enabled, all measurement value headings are displayed as short names, e.g. *Temp* instead of *Temperature*.  
(Standard: OFF)
- **Always query measurement file path:**  
If this option is enabled, every time a [Measurement protocol](#) is booted, a query will be issued to determine the storage location of the measurement value file.  
(Standard: OFF)
- **Measurement interval:**  
Enter the measurement interval in seconds to be stored together with the measurements in the measurement file.  
(Standard: 1 second)
- **Measurement file location:**  
Enter here the storage location for the measurement file or select the file by clicking **Search....** If no file exists yet, one will be created automatically.

## **Assignment of function keys**

The function keys can be used to perform the following functions.

F1: WTT Help

F2: Start diagnosis

F3: Stop diagnosis

F4: Switch off the heater

F5: Delete error buffer

F12: Customer report

## Known Problems and Issues

The following is a compilation of frequent questions and issues that arise with the use of the Webasto Thermo Test software.

### Communication & diagnosis

#### Connection cannot be established to the control unit.

Check that the USB adapter is properly connected, and that the voltage supply and [Device selection](#) are correct. For some control units the heater must be started before a diagnosis can be executed.

#### The connection to the control unit keeps breaking off.

Check whether the voltage source for the diagnosis adapter is running stably. Check also that no sources of disruption (such as LED hand torches) are in the vicinity of the USB adapter and cables.

#### The COM port cannot be selected.

The support for the COM port was suspended with WTT version 3.

#### Installation of device driver for the USB adapter.

Administrator rights are required to install the device driver for the Webasto USB adapter. If you are operating the USB adapter on another USB port or via a USB hub, it may be necessary to reinstall the driver.

#### Diagnosis not possible via USB adapter.

If no diagnosis is possible, try the following steps:

- Check whether the heater is connected to the supply voltage.
- Check whether the USB adapter is connected to the supply voltage (12 V or 24V). The U<sub>Batt</sub> LED on the adapter must be lit.
- Check the Rx and Tx LEDs on the USB adapter after initiating the diagnosis. The Rx LED shows the receipt of messages from the control unit. The Tx LED shows that messages are being transmitted to the control unit. The Rx LED should normally light up quite often. The Tx LED by contrast should only light sporadically.

#### The WTT does not display any USB port.

If no USB interface is shown in the Options section of the **Extras** tab, then close WTT and restart the computer. Once the computer has rebooted, restart WTT.

#### No diagnosis possible after PC wakes from standby.

In some cases the WTT diagnosis will encounter problems detecting the USB diagnosis adapter after the PC was in standby mode. In this case unplug and then re-insert the USB adapter cable.

### Device selection

#### After starting the WTT, the device selection dialogue stops being shown.

If the device selection dialogue is no longer shown the next time WTT is started, the option **Don't show device selection on next WTT start** is enabled. Switch this option back off again to display the device selection dialogue when WTT is started. (see [Options and Settings](#))

**In WTT V2.x there was an automatic search for device selection. Where is this function in WTT 3?**

This function was removed from WTT 3.

## **Program interface**

### **Window is not shown.**

If a window (such as Overview or Fault list) does not appear, then the window may be minimised. Please check in the lower left corner of the main window whether the window in question has moved there in minimised form. It is also possible to revert to the default view in the [Tabs view](#).

### **The Overview window is not appearing correctly or is missing entries.**

Click on the start button with the Webasto logo in the upper left corner. In the menu that appears, select **Configuration > Use default**. The Overview window should then appear as accustomed.

### **The tab menus do not appear on screen.**

If the menus for the tabs are not visible, please press **Ctrl + F1** to restore them to the screen.

## **Specific heater problems**

### **The component test of the vehicle fan does not work with Thermo Top Evo.**

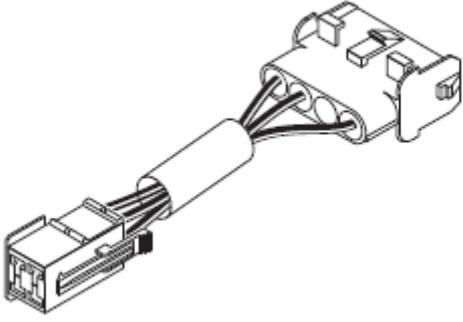
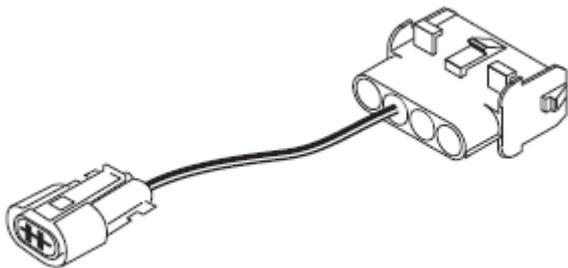
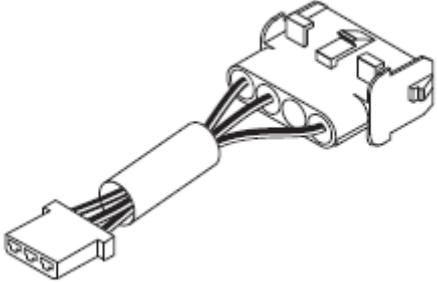
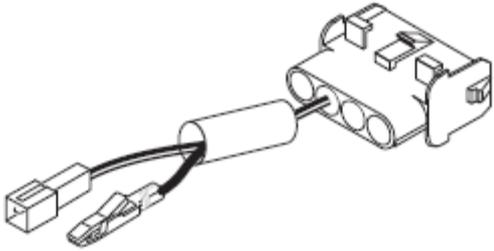
This problem occurs in connection with Thermo Top Evo units with control unit software V8.5. Refer to the [Operational information](#) to check whether such a heater is connected. In this case, the vehicle fan can be tested with the **Ventilation** command (see [Diagnosis tab](#)).

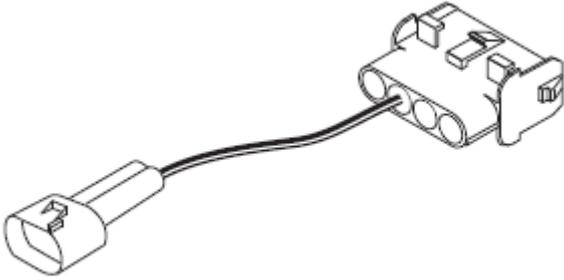
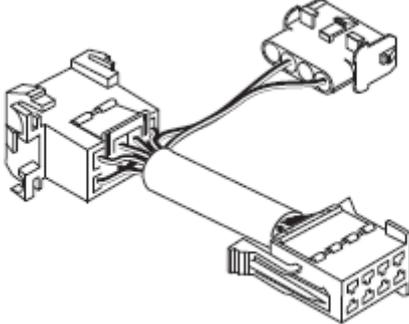
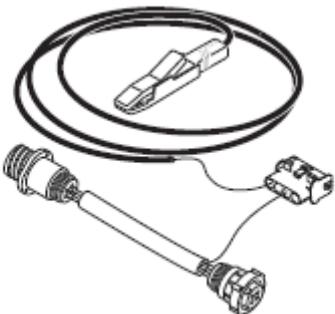
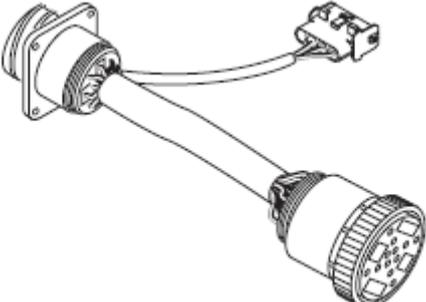
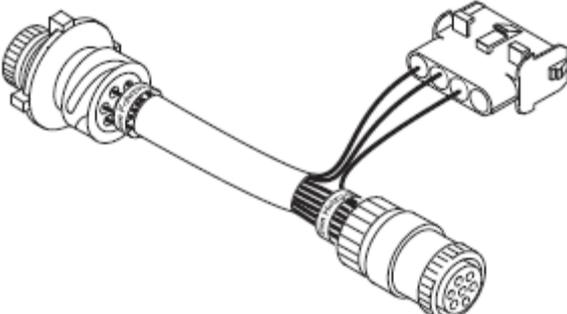
## **Technical Support**

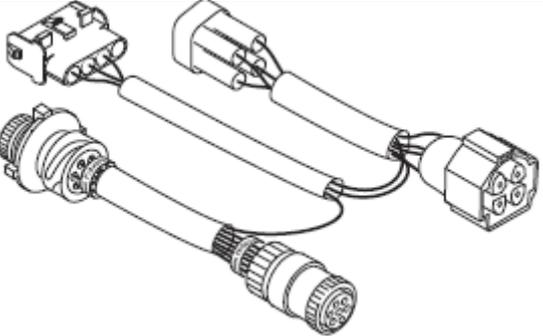
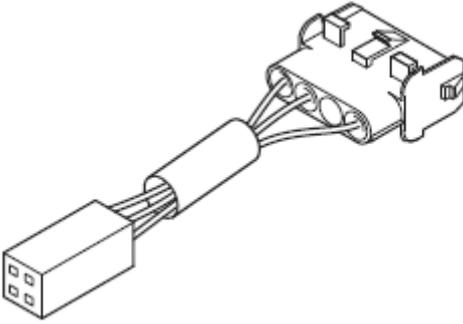
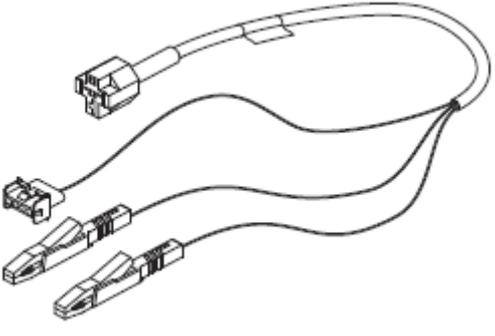
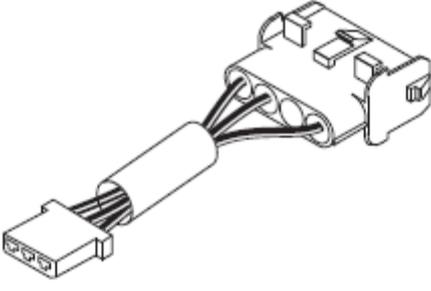
Technical support can be requested via email to the following address:

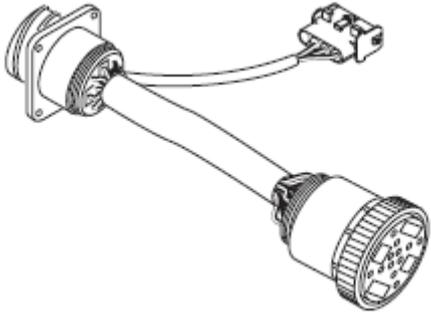
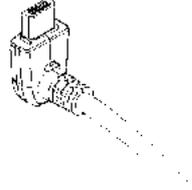
[hotline.wt@webasto.com](mailto:hotline.wt@webasto.com)

## Diagnosis Plug-in adapter Overview

	<p>83661B Plug-in adapter for Thermo 90 heater</p> <p>Order No 1320168A</p>
	<p>92556B Plug-in adapter for heaters Thermo 90 S/ST, Thermo Top Evo and Thermo 50 MAN/Handel</p> <p>Order No 1319941A</p>
	<p>21333B Plug-in adapter for heaters BW 80 and DW 80</p> <p>Order No 1319606A</p>
	<p>92566B Plug-in adapter for heaters Thermo Top Z/C Handel and Air Top 2000 /S</p> <p>Order No 1319943A</p>

	<p>92555B Plug-in adapter for heaters Air Top 3500/5000 /ST and Air Top 2000 ST</p> <p>Order No 1319940A</p>
	<p>9017820A Plug-in adapter for heaters DW 230/300/350 and Thermo 230/300/350</p> <p>Order No 1319914A</p>
	<p>88336D Plug-in adapter for heaters DW 230/300/350 and Thermo 230/300/350</p> <p>Order No 1320899A</p>
	<p>92637A Plug-in adapter for heaters DW 230/300/350 and Thermo 230/300/350 (Van Hool)</p> <p>Order No 1319945A</p>
	<p>66265A Plug-in adapter for heaters DW 230/300/350 and Thermo 230/300/350 (MB/Citaro)</p> <p>Order No 1319685A</p>

	<p>9012265C Plug-in adapter for heater Thermo 230/300/350 Rail</p> <p>Order No 1319888A</p>
	<p>1301783B Plug-in adapter W-Bus diagnosis adapter</p> <p>Order No 1319503A</p>
	<p>9011069A Plug-in adapter IPCU programming cable</p> <p>Order No 1319879B</p>
	<p>9006911A Plug-in adapter for heaters Air Top ST, MB Actros MP 2/3</p> <p>Order No 1319851A</p>
	<p>9013346A Plug-in adapter Telearstart DC heaters</p> <p>Order No 1319895A</p>

	<p>9017819D Plug-in adapter for heaters DW/Thermo 230/300/350 (MAN)</p> <p>Order No 1319913A</p>
	<p>MultiControl plug-in adapter</p> <p>Order No 9029674B</p>

In multilingual versions the German language is binding.

The telephone number of the respective country can be obtained from the Webasto service point flyer or the homepage of your respective Webasto country representative.

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