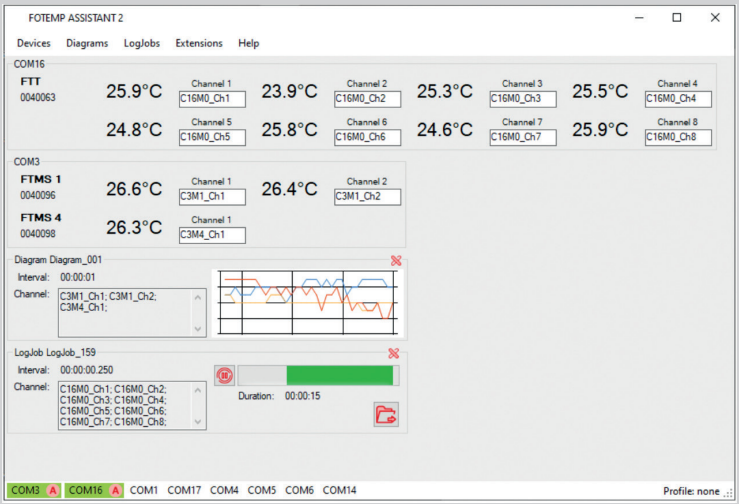
USER MANUAL

FOTEMP ASSISTANT 2

Temperature measurement software



Content index

Introduction

Thank you for using the FOTEMP temperature measurement system from Weidmann Technologies Deutschland GmbH. FOTEMP TS temperature sensors in combination with our measurement devices offer reliable and proven online temperature monitoring. For safe and proper use, read the user manual and all accompanying documentation carefully and keep instructions for further reference. Further information can be found on our website www.comem.com

Accompanying documentation
The following accompanying documentation is also relevant for using FOTEMP ASSISTANT 2 in addition to this user manual:
- Cleaning tool instruction manual (provided together with the cleaning tool if ordered)
- Handling instruction for fiber optic cables and sensors (provided together with the cable or sensor)
- Power supply instructions (provided together with power supply)

Warranty
Weidmann makes no warranty concerning the software, since the software and the communication protocol are available for free. The warranty is void in the event of abuse, e.g. failure to follow recommended operation procedures or failure by the customer to perform as specified in the instruction manual.

Product description

Requirements for hardware

For unboxing and inspecting your temperature measurement system, perform the following steps:
1. Unpack all components carefully.
2. Store the packing material until you have inspected all components.
3. Check if you received all items listed on the enclosed packing list.
4. Inspect the items for any damage.
5. If you notice or suspect any damage, contact Weidmann immediately.

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Functionality

Main product features
Logging
Diagram
Setting
Display

Requirements of software

The download package contains an installer for Windows. The prerequisites are Windows® 7 and Dot.Net 4.8. Admin rights are needed for installation only.

Software

Start screen

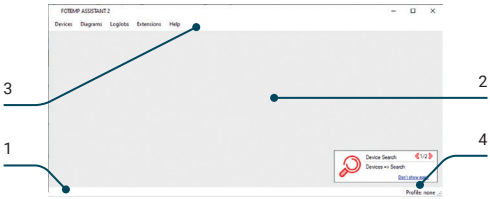


Figure 1: Start screen with empty dashboard

Functionality

Nr	Element	Description
1	Menu bar	Main menu of the program
2	Dashboard	Displays the devices, diagrams, and logging tasks
3	Status bar	Holds all available COM ports and display their status and used protocol
4	General Hint	Shows useful tips on how to get started

Main window

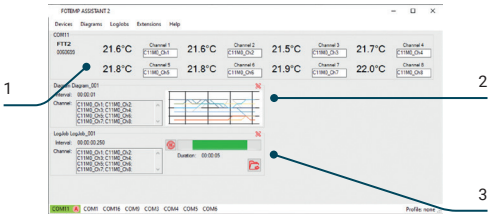


Figure 2: Sample screen with all available widgets

Nr	Element	Description
1	Device widget	Main menu of the program
2	Diagram widget	Displays the progress while searching for new devices
3	LogJob widget	Holds all available COM ports and display their status and used protocol

The main window operates as a dashboard and shows the connected FOTEMP devices as well as active diagrams and logging tasks. In addition to the ports, the current profile can also be seen in the status bar.

The widgets allow starting the configuration dialog of connected devices, enter the diagrams or control the logging task.

Device search

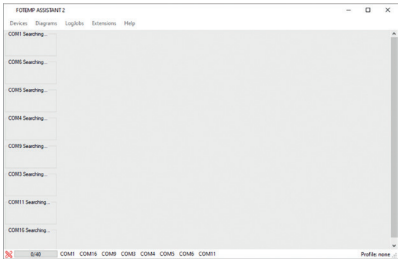


Figure 3: Searching screen with examined ports and progress indicator

FOTEMP ASSISTANT 2 offers the possibility to search for connected devices in 3 different ways.
A “Single Port Search” search FOTEMP devices on a specific user-given COM port, protocol, and address. When a device is found it can be added to the dashboard.
“Search for Ascii Devices” iterates through all existing COM ports of the PC and checks at each of them whether a FOTEMP device (e.g. “FTMS”, “FTOEM” or “FTT2”) answers and adds them to the dashboard in this case.
“Search for Modbus devices” does the same with the Modbus protocol.

NOTICE

Especially for the Modbus protocol, the menu item “Modbus Broadcast” was introduced. In the **special case of the FOTEMP TRAFO 2 in its 9-16 channel version:**
This FOTEMP device contains two Modbus devices in one housing. Device one contains channels 1-8 and device two contains channels 9-16. Both internal devices talk to each other to show all the temperature values on one display. To use FOTEMP ASSISTANT 2 with this device, the internal communication must be switched off. So, the command “Modbus Broadcast – Intercom Off” must be executed. After successful execution, the device’s display shows “REMOTE” on channels 9-16. For setting the device back to a standalone mode execute the command “Modbus Broadcast – Intercom On”.

Context menu device widget

Symbol	Entry	Description
	Module Settings	Control center for FOTEMP devices adjustments.
	Module Information	Displays all device specifications.
	Automatic Temperature Update	Disables/enables automatic temperature update.
	Displayed Temperature • Average Temperature • Live Temperature • Edge	Selects the variable read from the device.
	Sort Direction • Ascending • Descending	Sorts the devices according to their address for bus systems.
	Hidden	Hide the selected device.
	Close	Disconnects the selected device and removes it from the dashboard.

Menu “Devices”

Symbol	Entry	Description
	Search • Single Port Search • Search for Ascii Devices • Search for Modbus Devices	Different options to search for new devices.
	Settings	Control center for FOTEMP devices adjustments.
	Hidden	List the hidden devices.
	Profiles • Load • Save	Load or Save your preferred Profile settings.
	Advanced • Modbus Broadcast • Intercom On • Intercom Off	Advanced functions for FOTEMP device control.

Device Configuration

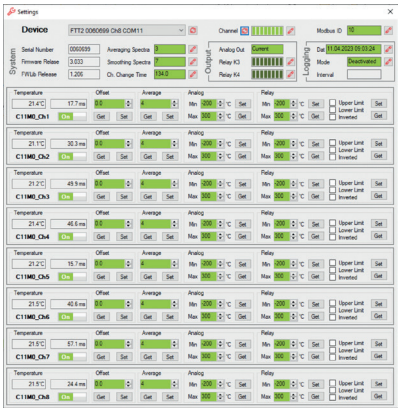


Figure 4: Device Configuration

Each connected device speaking ASCII protocol can be set up by the user as shown in Figure 9. After a connected device is chosen in the “Device” drop-down menu, system values like Serial Number, Firmware version, analog output interface, or logging information are read. The sections “Output” and “Logging” are only shown if a device supports these features. Otherwise, these boxes are blank.

For each channel of the chosen device, the measured values are read out and shown. If analog output and relay features are given by the device, their switching border levels are shown too. The channels can be enabled or disabled. The state that all channels of a device are switched off is invalid, and the software will automatically re-enable channel 1.
The green background color of a text box means that the value is the same as in the device memory.

Menu “Diagrams”

Symbol	Entry	Description
	New Diagram...	Opens a menu to set up a new diagram.
	Load Diagram	Open a window to display stored data.

Add a Diagram

The menu entry “New Diagram” gives the options showing visually the measured values. Therefore, it needs to know the desired channels. The user is asked, via the dialog in Figure 5, which channels shall be shown in the diagram. The available channels depend on the variable to be logged, temperature or edge. Choose multiple channels holding the shift key and use the One-Arrow icon to transfer the list entries from the left to the right box. Enter a name and an interval into the text boxes and press the “Apply” button. If channels are selected (single channel with the One-Arrow icon , all channels with the Two-Arrow icon), the diagram is added to the main window.

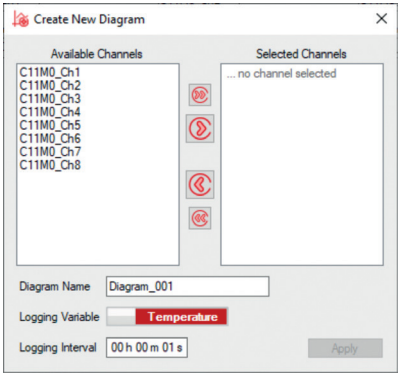


Figure 5: Create a new diagram dialog

Here, the user has the possibility to exit the diagram or to double-click on the box to open a separate window.

Figure 6: Sample diagram widget

View Diagram

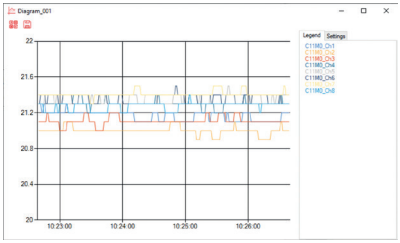


Figure 7: Sample diagram

The separate window shows current measurement values as time series and has two menu icons.

The most left icon lets the user create an additional time series for calculated values (adding, subtracting current or average values for any active channels).

The rightest icon lets the user save the diagram as a picture (PNG) or data file (CSV/XLSX).

CAUTION

The diagram is used to show measured values. It does not store the values somewhere but in internal memory. The save command in the separate diagram window stores existing already drawn values only.

Load Diagram

Figure 8: Load values for visualisation

FOTEMP ASSISTANT 2 also offers the possibility to visualize saved diagrams and log jobs again. This applies to both the temperature and edge series. The log data of the FOTEMP TRAFO 2 or the FOTEMP HANDHELD can also be displayed.

Add a Series

The menu entry “Create New Series” gives the user the option to create an additional time series for calculated values. Therefore, it needs to know the desired channels and the desired mathematical operation. The user is asked, via the dialog in Figure 8, which channels shall be used and how they are to be calculated against each other. The channels are selected via click and added to the calculation by pressing the specific button. The formula is updated at each step and each step can be undone or restored. In addition to the available channels, constants can also be included in the calculation. When the desired result is achieved, the new series can be named added to the diagram.

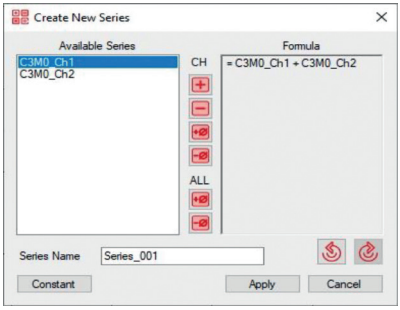


Figure 9: Create a new series dialog

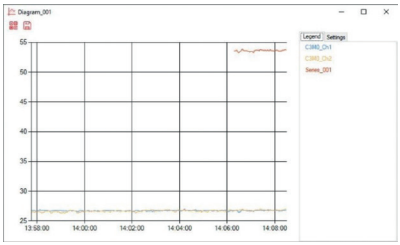


Figure 10: Diagram with a created series

Menu “LogJobs”

Symbol	Entry	Description
	New LogJob...	Opens a menu to set up a new LogJob.

Add a LogJob

LogJobs are tasks that have a different priority than charts. Use them when the measurement is fixed, and you need to prove that something works. Instead of plotting and eventually saving the measurement data, a LogJob continuously writes the values to the specified file. In addition, of course, a graph can be created to observe the values as they are recorded.

LogJobs can be provided with an interval from 00:00:01 seconds to 24:00:00 hours or with option continuous. In this case, measurements are made as fast as the instrument and PC allow, with a target interval of about 250ms. A parallel diagram would slow down the sampling in this case.
LogJobs can also be limited to a duration of 00:00:01 seconds to 24:00:00 hours or operated endlessly.

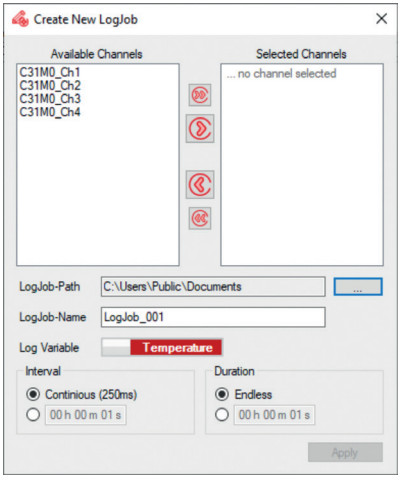


Figure 11: Create a new LogJob dialog

Figure 12: Sample LogJob widget

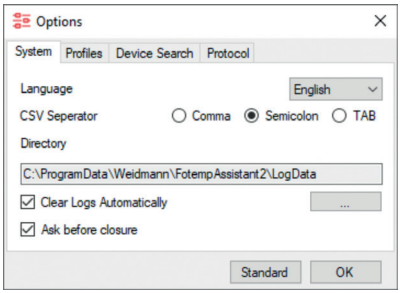
Menu “Help”

This menu contains everything helpful about the software as well as the settings.

Symbol	Entry	Description
	Options	Parameters of the software.
	Release Notes	Description of the changes made to the releases.
	Search For Updates	Check if a newer version is available.
	About	Further information about the software.

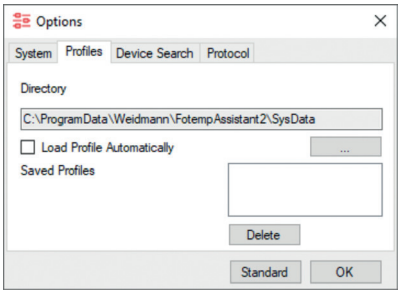
Options – System

In the system options, the language, the separator for CSV files and the default file location can be specified. The option “Ask before closing” determines whether running diagrams or LogJobs should be closed automatically when the user closes the software or whether a warning appears. The option “ Clear Logs Automatically” specifies whether the report files of the previous program usages should be kept or deleted when the program is started.

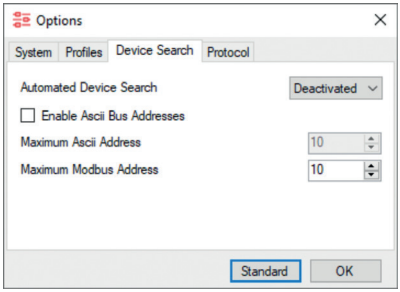


Options – Profiles

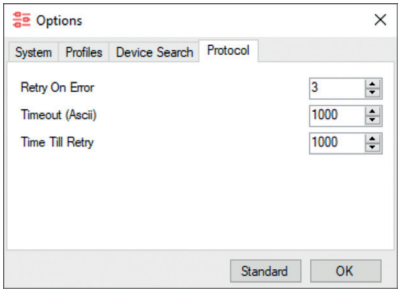
Profiles contain a setup of active devices and customized channel names. They will be saved as XML files for later reuse in repeated measurements in the desired directory. They can be loaded either manually or automatically to restore a specific view. If a profile no longer meets the requirements, it can also be deleted here.



Options – Device Search
In the device search options, you can enable/disable the automatic device search and specify whether you also want to search for bus devices. If the automatic device search is activated, the software automatically searches for connected devices when it is started. Furthermore, the maximum address can be set for the ASCII bus as well as for Modbus. The higher the address, the longer it takes the software to search through all ports.



Options – Protocol
In the protocol options you can adjust the retries, timeouts and delays.
If your ports or bus system are very sluggish and/or communication is severely impaired, increasing the values may help.



Add-Ins
The "FOTEMP ASSISTANT 2" offers the possibility to be extended by add-ins.

Add-In "CALIBRATION"

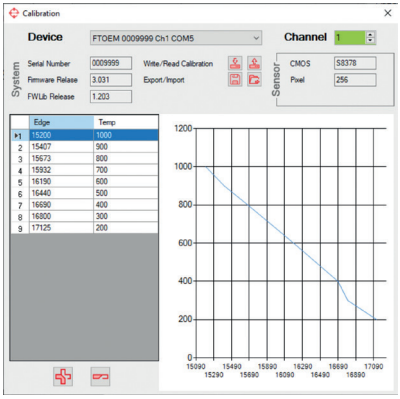


Figure 13: Add-In CALIBRATION

For using add-in "CALIBRATION" the connected device must be selected in the upper drop-down menu in the " CALIBRATION " add-in window, therefore no diagram nor LogJob may run.

If the desired device is chosen, the window presents the serial number, firmware version, and the used sensor data of the device. It reads the channel's calibration table of the channel shown in the right upper text box "Channel". The background color must be green to show the validity of the data. 16 data pairs can be stored in the device per channel.

Reading the values out of the device will be done by pressing the upper right red button.

Writing the values from the table to the unit is done by pressing the upper left red button.

Storing and reading data from/to disk happens by using the lower red icons (left: store a table to disk, right: read a table from disk).

IMPORTANT

Using them to manipulate the calibration data voids the warranty.

Add-In “SPECTRUM”

View Live Spectra

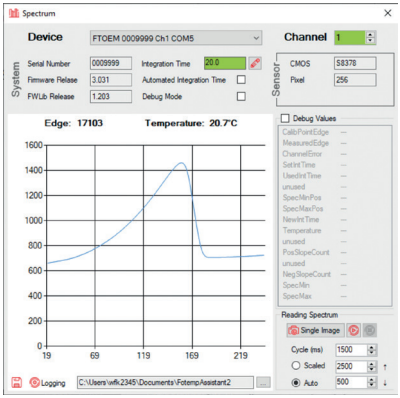


Figure 14: Add-In SPECTRUM

Once you have selected the desired device and then the channel, this add-in allows you to see the reflected input signal of the spectrometer.
Based on the shape and intensity of the spectrum, depending on the integration time, statements can be made about the quality of the signal. For this purpose, the integration time for a certain test temperature must be noted. If one compares the current time value after a few months with the originally noted value pair, one obtains a “key figure” for the adjustment or recalibration. Recalibration should be made when the value is 200% of the original value to maintain the accuracy purchased. Any change of sensor can affect this value due to possible introduction of particles into the light path. However, changes in the spectrum shape can also indicate a defective sensor. Furthermore, this add-in can be used to self-calibrate a device by reusing the “Edge” value measured here in the CALIBRATION add-in.

The add-in allows the spectra to be read out and recorded both once and periodically. However, the readout speed should not be less than 500ms.

Load Saved Spectra

Under the menu item “Diagrams”, the add-in offers the possibility to visualize saved spectra again, analogous to FOTEMP ASSISTANT 2. This also applies to the log data of FOTEMP HD20.

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Manual-04-2025