



Infrared data evaluation

Liebherr Temperature Monitoring
Infrared Key

Components supplied in the retrofitting kit 9590 555-01:

Infrared key

1x



Infrared key for uploading the temperature data

IR connection cable

1x



Connects the IR key to RS232 PC interface for downloading the data

Data evaluation software CD

1x



Liebherr Temperature Monitoring Infrared Key

The Liebherr Temperature Monitoring software is continually being further developed and optimized. The respective most recent version is available for download from the Liebherr website www.liebherr.com.

Reading the temperature memory

The electronic system records approximately 3000 temperature values. This corresponds to a period of approximately 33 days (for models GKPv and GGPv) and a period of approximately four days (for models LKPv and LGPv). To ensure a perfect record, the following steps must be taken during this period.

The infrared key for the EVCO controller is designed to copy the stored temperatures.



Brief description of the download process using the key:

- **Connect** the device you wish to program **to the power supply and switch it on**
- Switch on the infrared key: **Press button 1 for 3 seconds** → 5 beeps, LED flashes → the key is switched on for 30 seconds
- Activate menu: **Aim the key at the electronic system and press button 1 for 3 seconds** → one beep will be emitted → "UpLoad Par" will be displayed
- Select menu: **Press button 1 briefly** → one beep will be emitted → "DownLoad Par" will be displayed
- Select menu: **Press button 1 again briefly** → one beep will be emitted → "UpLoad Store" will be displayed
- Copy data: **Press button 2 briefly** → one beep will be emitted → the following will appear in the display: "----- OK -----" → two beeps will be emitted – if "Error" appears in the display, this point must be repeated (press button 2 briefly)
- Deactivate menu: **Press button 1 for 3 seconds** → electronic system returns to default display

Brief description of the process to transfer and save the temperature data to the PC:

- Connect the key to the COM port on the PC using the cable
- Start the "Temperature Monitoring Infrared Key" PC software
- Select the menu point "Start download" and check the COM port number
- Click on "Connect"
- The key must be activated and the message must be confirmed by clicking OK
- Start the transfer by clicking on "Download" (this may take several minutes)
- Return to the main screen by clicking on "No"
- Open menu point "Save as..."
- Click on "Save"

Functions of the IR key:

Switching the key on and off

The key is off and the LED is not flashing. Button 1 or 2 must be pressed for 3 seconds to switch on the key.

The key is switched on if the LED flashes. If the key is not used for 30 seconds, it will switch off automatically and emit five beeps.

Operating the EVCO controller with the key

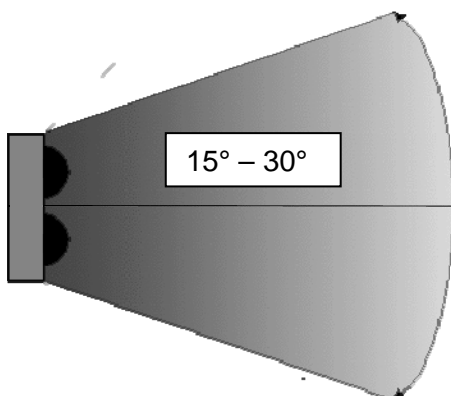
The controller you wish to operate must be connected to the voltage supply and be switched on logically. The key must be pointed towards the controller's infrared interface to activate the controller's infrared menu:



The infrared interface is circled in the graphic above. The key must be in the correct position relative to the controller to ensure a fast data transfer:

ideally approximately 50 cm away from and at an angle of 90° to the display right in front of the interface.

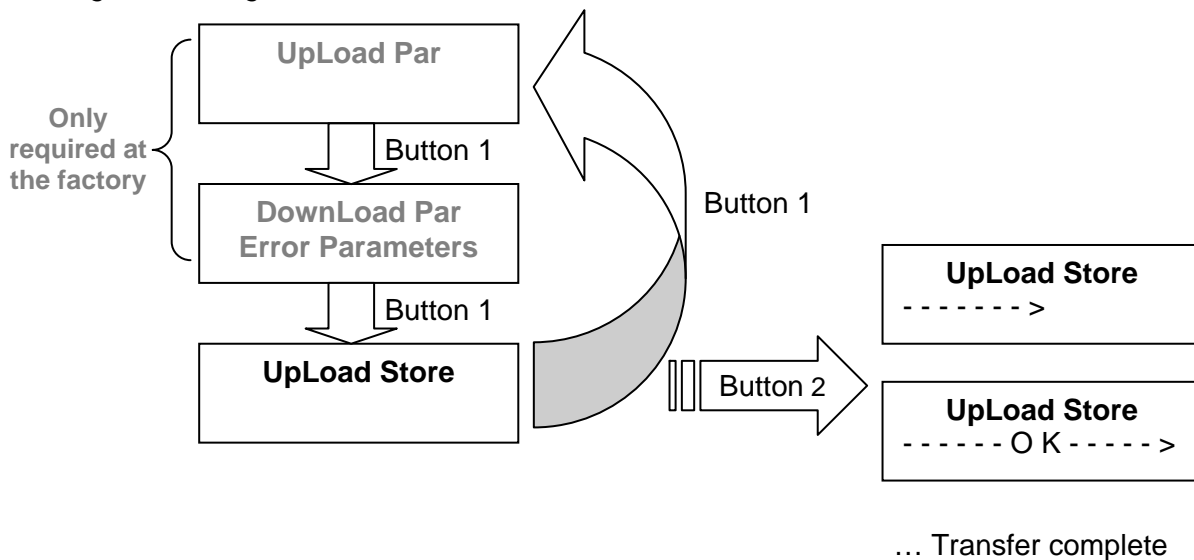
The infrared interface is designed for high data transfer rates over short distances.



The receiver diode can receive infrared signals from a distance of up to one metre. To ensure that two devices will exchange their data even if their infrared transceivers are not precisely lined up, the transmitter diode sends out the light in a cone with a beam angle of up to 30°.

Button 1 must be pressed for 3 seconds to activate the infrared menu on the controller while the key is switched on.

Navigation through the infrared menu:



The following will appear in the display:

UpLoad Par ("Upload parameters")

This function is disabled as standard.

If you press button 1, the display will move on.

The following will appear in the display:

DownLoad Par ("Download parameters")
Error Parameters

This function is disabled as standard and therefore the message "Error Parameters" will be output.

If you press button 1, the display will move on.

UpLoad Store

The temperatures recorded by the electronic system can be read out. Pressing button 2 starts the transfer of the logged data from the electronic system to the key.

While this transfer is taking place, an arrow shows the progress, for example "----->".

As soon as the transfer has been completed successfully, the following appears: "----- OK -----".

If an error has occurred, the following message will appear in the display: "Error".

Press button 1 for 3 seconds to exit the infrared menu. If the electronic system does not receive any commands from the key for a period of 10 seconds, the system will automatically exit the infrared menu and will return to the default display.

Description of the download process using the key (series of figures):

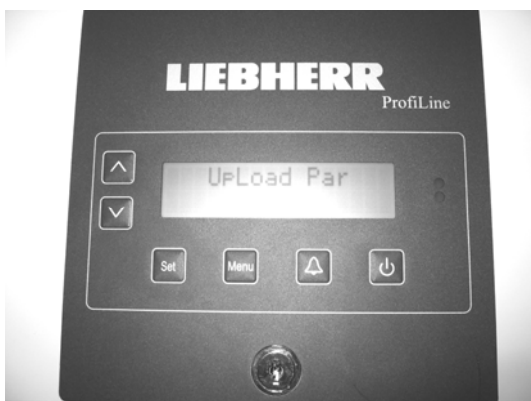
D1. The device must be connected to the power supply and switched on.



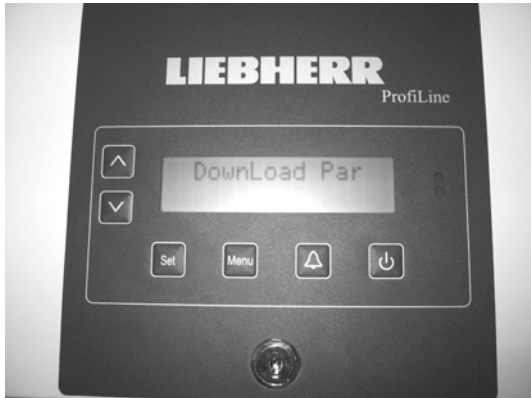
D2. Switch on the infrared key, in other words press button 1 for 3 seconds → 5 beeps, LED flashes → the key is switched on for 30 seconds.



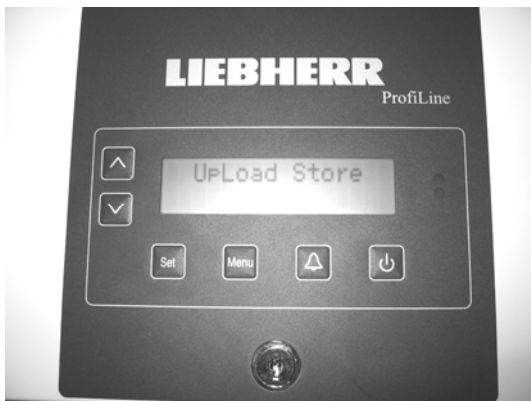
D3. Activate menu: Aim the key at the electronic system and press button 1 for 3 seconds → one beep will be emitted → "UpLoad Par" will be displayed.



D4. Select menu: Press button 1 briefly → one beep will be emitted → “DownLoad Par” will be displayed.



D5. Select menu: Press button 1 again briefly → one beep will be emitted → “UpLoad Store” will be displayed.



D6. Copy data: Press button 2 briefly → one beep will be emitted → the following will appear in the display: “----- OK ----->” → two beeps will be emitted – if “Error” appears in the display, this point must be repeated (press button 2 briefly, etc.).

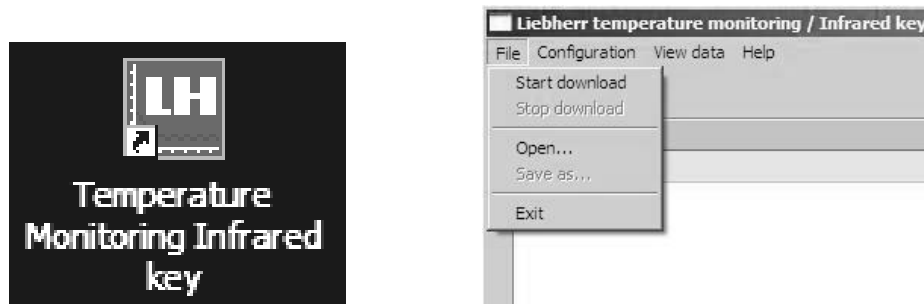
D7. Deactivate menu: Press button 1 for 3 seconds → electronic system returns to default display.

Transferring the temperature data to the PC:

Ü1. The connection cable must be connected to the COM port (RS232) on the PC and to the infrared key.



Ü2. The installed “Temperature Monitoring Infrared key” PC software must be started.



Ü3. Open the “Start Download” point in the pull-down menu.



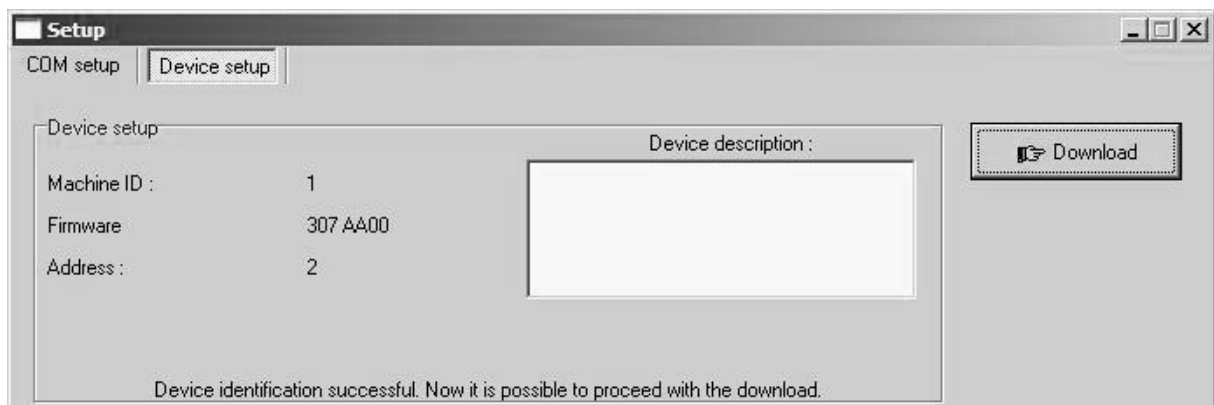
Ü4. It must be ensured that the correct COM port has been selected. Then click on “Connect”.

If the infrared key is switched off, the program will output the following instruction:



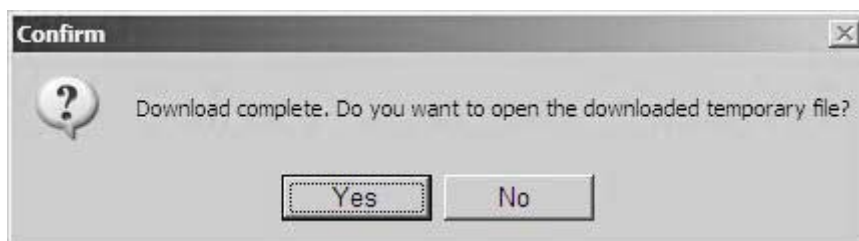
Ü5. The key must be switched on by pressing a button for 3 seconds. Then click on “OK”.

The key is switched on if the LED flashes. If the key is not used for 30 seconds, it will switch off automatically and emit five beeps.



Ü6. Click on “Download” to start the data transfer.

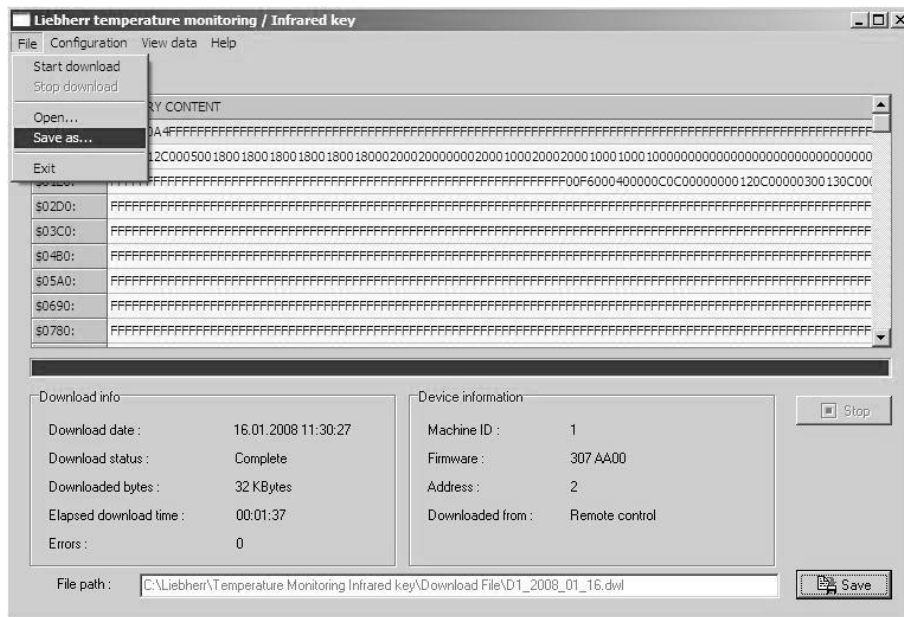
The data transfer may take several minutes. Then the infrared key will switch off automatically and the following query will appear:



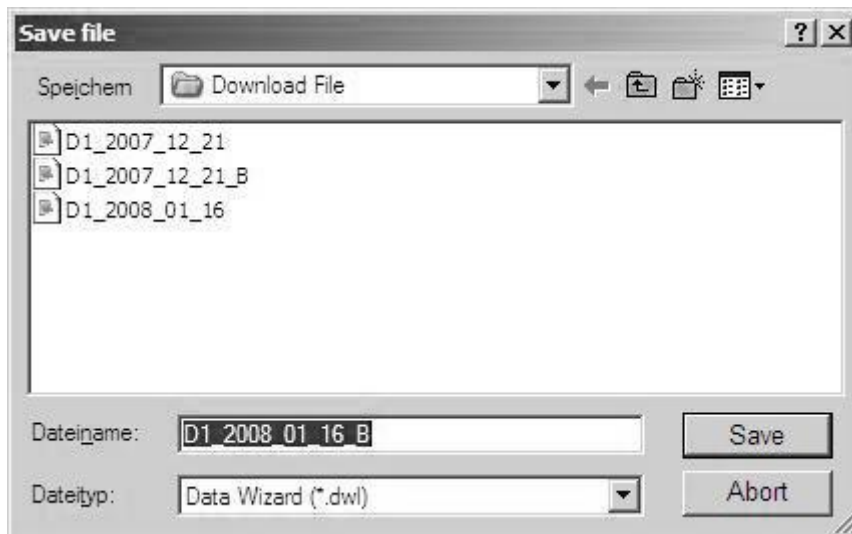
Click on “Yes” if you wish to visualise the data that have been read.

Ü7. Click on “No” to return to the main screen so that you can proceed to saving the read data.

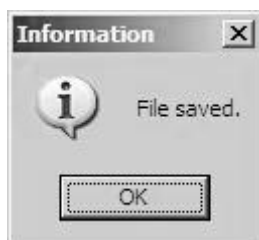
Main software screen



Ü8. The data can be saved using “Save as...” in the pull-down menu (alternatively you can click on “Save” at the bottom right).

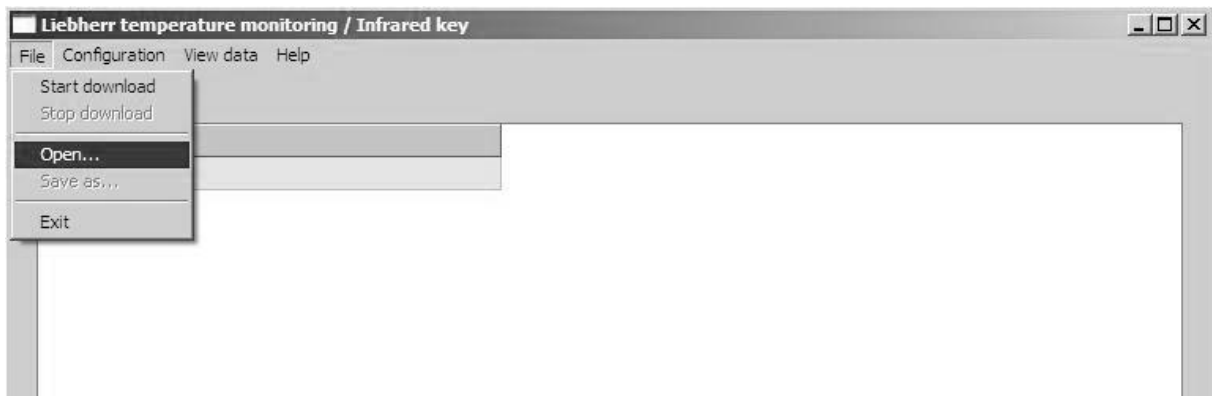


Ü9. Click on “Save” if you wish to save the data that have been read.



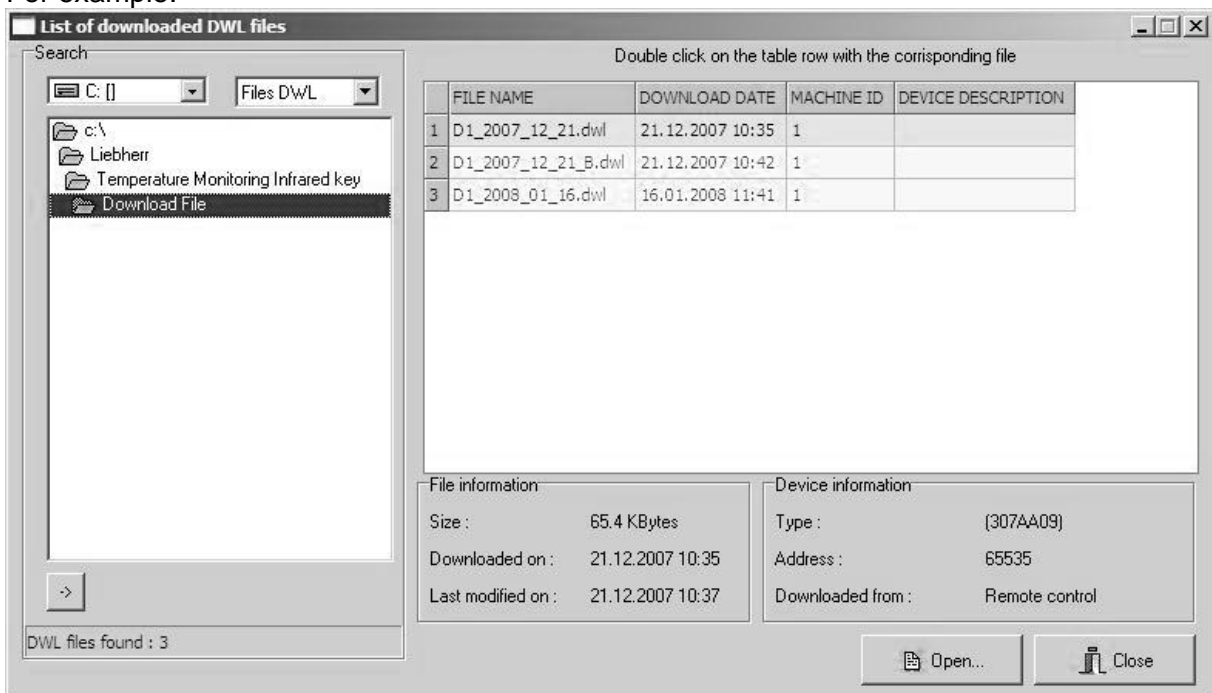
This message shows that the data have been saved successfully.

Opening the saved temperature data:



- The data can be called up using "Open" in the pull-down menu.

For example:



- The directory can be selected on the left-hand side of the displayed window while the stored data can be selected on the right-hand side of it. Click on "Open" to call up the data.

Note:

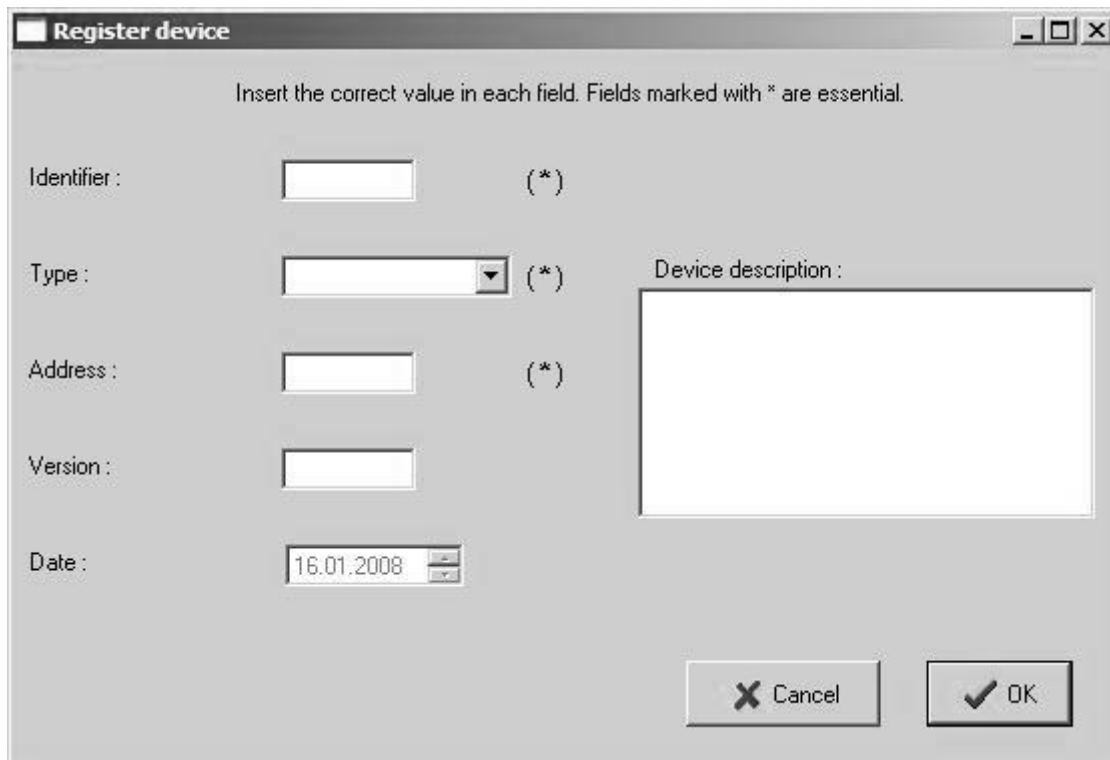
The first time any data are transferred from a new device, the program will also require the information about the source of the data.

The following message will appear:



If you click on **Yes**, the following window will appear.

If you click on **No**, the program will go to the "Data View Table" window (see next page).

A "Register device" dialog box with a title bar containing a minus, maximize, and close button. The main text says: "Insert the correct value in each field. Fields marked with * are essential." Below this, there are five input fields on the left, each followed by an asterisk (*):

- Identifier : [text box] (*)
- Type : [dropdown menu] (*)
- Address : [text box] (*)
- Version : [text box]
- Date : [date picker showing 16.01.2008]

To the right of these fields is a large text area labeled "Device description :". At the bottom right, there are two buttons: "Cancel" (with a red X icon) and "OK" (with a green checkmark icon).

This is where information about the relevant device from which the data are read is saved. This ensures that the data can be assigned to the correct device, in other words it shows which device the data have been taken from.

The data can be filtered, printed, saved in various formats and plotted in a graph using the "Data View Table" window.

Data view

Options

- ☒ Include history
- ☐ Enable data compression
- ☐ Include power cuts
- ☐ Include alarms
- ☐ Include HACCP

You can choose which data is listed here.

History Options

- ☐ Enable data filter
- Start date: 05.08.2007
- End date: 21.12.2007

Device information

File: C:\Liebher\Temperature Monitoring Infrared key\Download File\D1_2008_01_16.dwl

Machine ID: 1 Device description: Unknown

Downloaded on: 16.01.2008 11:41

Requested data time range: 05.08.2007 008:36 - 21.12.2007 10:20 Data time range found: 05.08.2007 008:36 - 21.12.2007 10:20

	START DATE	END DATE	DURATION	TYPE	DESCRIPTION	INTERIOR
1	05.08.2007 008:38					-20 °C
2	05.08.2007 008:40					-19 °C
3	05.08.2007 008:42					-19 °C
4	05.08.2007 008:44					-20 °C
5	05.08.2007 008:46					-21 °C
6	05.08.2007 008:48					-21 °C
7	05.08.2007 008:50					-21 °C
8	05.08.2007 008:52					-21 °C
9	05.08.2007 008:54					-20 °C
10	05.08.2007 008:56					-20 °C
11	05.08.2007 008:58					-19 °C
12	05.08.2007 009:00					-19 °C
13	05.08.2007 009:02					-20 °C

Click here to accept the changes.

The following functions can be started with the buttons:



Print the temperature data in list form.

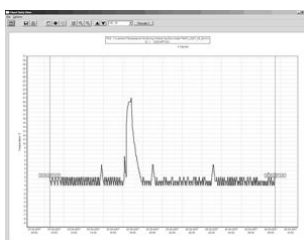


Save the temperature data in various file formats.

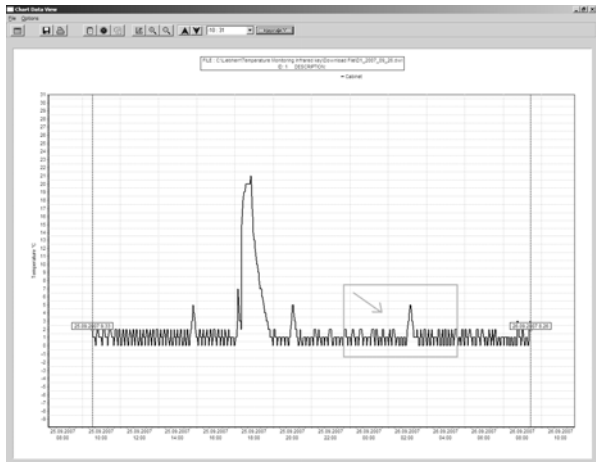
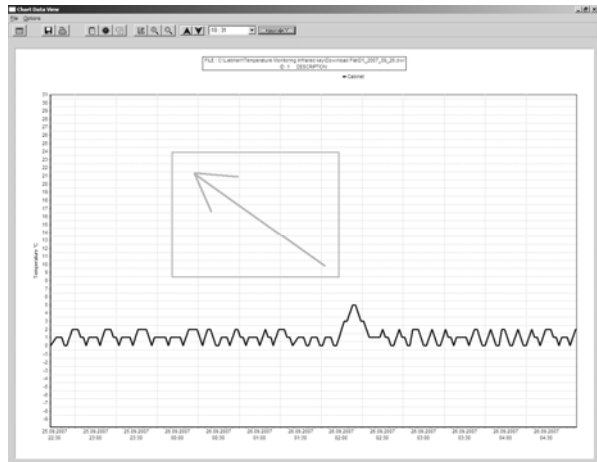
EXCEL (*.xls)
WORD (*.doc)
HTML (*.htm)
TEXT (*.txt)



Plot the temperature data in a graph:



Functions of the graphic display:

<i>Zoom (zooming a section)</i>	<i>Unzoom (back to full view)</i>
	
<p>Too zoom, left-click and draw a selection rectangle over the area you wish to zoom. From left to right and from top to bottom (arrow direction). As soon as you release the mouse button, the zoomed section will be displayed.</p>	<p>To return to full view, left-click and draw a selection rectangle. From right to left and from bottom to top (arrow direction). As soon as you release the mouse button, the full view will be displayed again.</p>

Menu bar:



	Show table
	Save chart as an image (file format: ".bmp")
	Print chart
	Insert comment into chart title
	Display/Hide points on chart
	Reset Y-axis (the temperature axis will be zoomed to full view)
	Zoom in
	Zoom out
	Zoom into Y-axis
	Zoom out of Y-axis
<div data-bbox="188 1769 391 1825">-10 : 31</div> <div data-bbox="406 1769 566 1825">Rescale Y</div>	<p>Scaling of Y-axis Temperature range (for example: -10 to 31)</p>