



Meet the
new heat!

User manual

HEAT MANAGER PRO CONNECT

Thank you for choosing “Heat Manager Connect Pro Series”

This manual should enable you to use your machine to full satisfaction.
Every effort has been made to provide you with maximum performance, ergonomics and
benefits from this premium quality product.

Version History:

17-9-2010	Initial version V1.0
21-2-2014	Version 1.1 Updated for Heat Manager Connect software version 4401T V103.133. <ul style="list-style-type: none">- Various cosmetic changes- Easy mode added- Operation principle diagram added- CSV file import added- FTP file manager procedure added
30-12-2014	Version 1.2 skipped
30-12-2014	Version 1.3 Updated for Heat Manager Connect software version 4401T V105.146. <ul style="list-style-type: none">- Various cosmetic changes- Heater element setup procedure added- Current measurement overview screens added for Heat Managers fitted with a current sense module or thyristor units.- Recorder buffer warning added- Auto ranging recorder functionality added
10-06-2015	Version 1.4 Updated for problems with FileZilla FTP client latest version [chapter 8].
11-03-2016	Version 1.5 Updated for Heat manager Connect software version 4401T V106.153. <ul style="list-style-type: none">- Enabled passwords for the easy mode- Extended datalogging and remote monitoring capabilities for the logviewer pc application- Automatic save of the temperature registration/batchinfo at the end of the process (all channels stopped and all temperatures below recorder off temperature)- Manual sampling buffer save files (both batchinfo and registration .CSV) are always extended with the letter H to discern between automatic and manual saved registration.

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READ THIS FIRST

EXPLANATION OF SYMBOLS

The following signs have been used throughout this manual to draw your attention.



Hint: Useful hints for ease of operation.
Printed in Blue.



Info: Information you should know to fully understand your system and benefit from its properties.
Printed in green.



Warning: Read these important messages before executing the desired operation.
Printed in red.



Warning: Read these important messages before executing the desired operation.
Printed in red.

WELDING THERMOCOUPLES



Do not weld thermocouples while connected to the system!
This may damage the system.

TOUCHSCREEN INTRODUCTION

Your machine has been equipped with a "Human Machine Interface" or HMI or -more popular called:- A touch screen.

If you are familiar with touch screen operation, found nowadays on modern cell phones, navigation systems, informational displays etc. you may want to skip this section. If however, this is the first time you are using a touch screen, please keep in mind that in contradiction with older fashioned operating panels utilizing mechanical buttons, lamps and displays, both the displays and images on a touch screen can be interactive too, meaning they will react on a touch by your finger. The interface on the touch screen is optimized for ergonomic operation. In practice this means that all objects are positioned and sized such, that they can be touched easily with your finger without the need for a stylus or precise positioning. A soft tipped stylus can be used if preferred, but is normally not required for proper operation.

Touching objects on a touch screen can be compared with a mouse-click on a computer screen. Based on the shown graphical user interface and your finger's position on the screen, the system can determine what action it should take when an object is touched.



To prevent accidental, unwanted actions some objects may require a prolonged touch, meaning you should keep your fingers pressed longer on a certain object (like a button or display) to invoke the required action.

Example : The RUN/PROG button to start the programmer on the operation screen requires a prolonged touch for about 1 sec.

TOUCHSCREEN MAINTENANCE



IMPORTANT - READ THIS FIRST

Never operate a machine until you have fully understood its safe working conditions and operating principles.

Never operate the machine unless you are authorized to do so

NORMAL EVERY DAY USAGE

Your touch screen utilizes a sensitive touch mechanism. The technique used provides reliable operation, even when the screen is modestly covered with moist and dirt. It also allows the wear of rubber gloves. And even under these conditions **it should normally react already on a gentle touch.**



Some buttons may require a prolonged touch to prevent unwanted actions.

If the touch screen fails to respond, ask yourself first whether you have applied a valid command. If in doubt, you could check the responsiveness of the touch screen by using other commands.

Each valid command will invoke a short beep, confirming the reception of the touch. However, whether or not the actual action is performed depends also on other conditions



**Avoid applying excessive force on the touch screen and never use sharp or hard objects (e.g. nails, tools, kitchenware or a pencil) to operate it !
In either case you might damage the screen and void your warranty.**

TOUCHSCREEN CLEANING

Your touch screen is provided with a durable front sheet which is water, oil and fat resistant. The best way to clean the front sheet is with a soft, lukewarm and mildly moist cloth.

Special, disposable front cover protection sheets that will reinforce and protect your touch screen, are available through your dealer.



Never use solvents (e.g. thinner, tri, turpentine) hot water, soda, abrasives or other aggressive matter for cleaning.

GLOSSARY

In this manual we make use of common terminology that is used for temperature control in general.

Auto hold	This function is used to hold the programmer when the measured value of the programmer (or one of its slaves) deviates more than the adjusted values from the current actual set value. When all measured values are within the so-called deviation band the programmer will automatically continue and start changing the set values.
Burnout	Sensor state that occurs when the electrical connections of the sensor are not correct anymore (e.g. broken thermocouple or badly welded thermocouple).
CSV file	<u>Comma Separated Values</u> file that can be imported into a spreadsheet program (e.g. Microsoft Excel). See the manual of the corresponding program for more information on how to do this. Also see the extra chapter about this at the end of this manual.
History	The history refers to information from the past about the actual state of the process. In the case of the Heat Manager we refer to the measured process values of a running process which are stored in the non-volatile memory of the Heat Manager. These values can be exported to a USB-stick as a so-called CSV file.
Manipulated value	The actual output percentage of a controller, also known as the controller output or MV. This value ranges from 0.0 to 100.0% and depends on the deviation between the actual set value and process value, corrected with historical information from the past via the PID settings.
PID	Response settings of a controller channel. See the end of this manual for more detailed information about these settings.
Process value	The value that is currently measured inside the process under control, also known as PV or the measured value.
Profile	The profile is a combination of set values over time that the programmer will send to its slaves. This is also known as a program or a recipe.
Programmer	The programmer is a channel that is using the profile for sending set values to controllers that are connected to its slaves (when present).
Ramp	This is the rate of change per hour used by a programmer to increase or decrease its set value.
Recorder	The recorder registers the actual process values and stores them on paper or in non-volatile memory. The measurement frequency is time-interval based and this interval (we call that the sampling interval) is adjustable.

Set value	The desired value you wish to reach with the temperature controller, also known as SV or set point.
Slave	A slave is a controller that receives its set value from a programmer or fixed set value controller.
Soak	A process step in the profile where the set value does not change over time, also known as a dwell segment.
Trending	A graphical overview of the measured process values over time.

1. QUICK START

FAMILIARIZE YOURSELF QUICKLY WITH THE INTERACTIVE TOUCHSCREEN CONTROL.

Reading this section learns you in as little as a few minutes how to the Heat Manager.



The screen contains an online help function for most functions however it assumes that you have already basic understanding and experience with interactive touch screen systems.

1.1 SYSTEM STARTUP

Check for clear and safe operating conditions at all times before switching the Heat Manager on.
Wait until the main menu has finished loading.

After the main switch has been switched on, wait for the system to boot properly. Press the “LOGIN” button from the “main menu” screen.
Enter your PIN code and press ENTER. If accepted the other menu items will become selectable.



The “System is locked” message will be displayed in the right bottom of the screen when the user is not logged in or when his session has expired.



The PIN code is only used in the advanced mode. In the easy mode you are always logged on

1.2 LOGONLINE COMMUNICATION (WHEN PRESENT)



For most modem settings a power-cycle of the Heat Manager is necessary (the touchscreen asks you to do this, when this is necessary). Always make sure the LogOnline connection is present and stable before starting the actual heating-process.

You can view the LogOnline connection status by pressing the signal button at the bottom of the screen. This will bring up the "CHECKING CONNECTION" screen. This will show the name of the Telecom provider, the signal strength and LogOnline server link status.



It can take a few minutes before the modem receives online communication with the LogOnline server.



When you see a signal strength indicator that is almost a full graph means that the modem is picking up a strong signal from the telecom provider. This does not mean that the connection with the LogOnline server is present. For this the red cross [X] must disappear over the signal strength indicator.



When the signal is strong, but no communication to the LogOnline server is present after a few minutes, you will see a red cross (X) in this signal strength indicator.
The modem will still try to re-connect.



When the signal is weak: try rotating the Heat Manager so it picks up a better signal. When working indoors you can try to move the Heat Manager around. 10 meters can sometimes make a big difference. Your supplier has special high-sensitivity antennas available for working in remote areas or in buildings that shield the signals too much.



Consult the SETTINGS - MODEM part of this manual for more tips on how to get the LogOnline communication up and running.

1.3 EDIT HEATING PROFILE – EASY MODE

In the easy mode you can directly go to the profile editor by pushing PROFILE SET on the right-bottom of the operation screen. You can also reach the profile editor by pushing PROFILE SET on the right-bottom of the main-menu.



You will only see the PROFILE SET button appear when channel 1 is set as a programmer

You will now see the following screen:



There is only 1 profile and this profile is present in channel 1.

The profile consists of:

- Ramp up rate
- Soak temperature
- Soak time
- Ramp down rate
- End temperature [when the programmer/profiler reaches this value all channels will be stopped, the recorder will remain measuring the process values until all values are below an adjustable value]

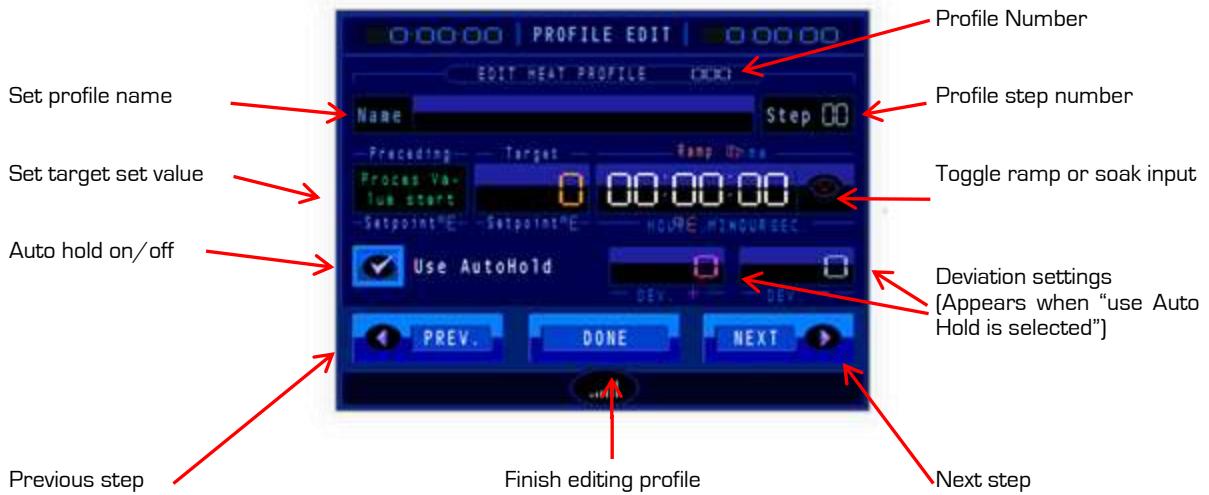
Each profile step has an adjustable auto hold with maximum deviation up and down. You can also switch this auto hold on/off for each step.

You can change the set values by pushing the corresponding value on the screen (or by pushing the corresponding number next to it).

You can push the arrow up button \swarrow to advance the temperature set value in the first step freely until 300°C. Above that temperature a ramp-up is mandatory and this button will disappear.

1.4 EDIT HEATING PROFILES – ADVANCED MODE

Use the PROFILE SET option to edit and create heating profiles. Press PROFILE SET in the main menu and press EDIT to show the list with heating profiles. Select the desired heating profile and press NEXT to display the selected profile in the profile-editor.



Once you have configured all programmer steps you can view and verify the profile graphically by pressing DONE. When this graph doesn't match your desired profile you can edit the steps again in the editor by pressing PREVIOUS.

Press NEXT in the profile preview screen to finish editing your profile. You can store your profile in the internal non-volatile memory of the Heat Manager by pressing YES, STORE.

1.5 CHANNEL SET

Advanced mode:

Use the CHANNEL SET option in the main-menu to select a channel configuration. You can select a preset that can be changed on the next screen.

Select 1 PROG/5 SLAVES, ALL FIXED SETP, ALL RECORDER or INDIVID CHANNEL.

On the next screen you can change these settings freely as desired into programmer, slave, fixed set value, manual output value, recorder or unused.

You can change a previously used channel setting by selecting the USE LAST option. This button only appears after at least one channel setting has been done in the past.

Easy mode:

G to the main menu and select the 1 PROG/5 SLAVES, ALL FIXED SETP. or CHANGE CHANNELS buttons (only visible after at least one channel setting has been done).



These buttons just give a pre-selection that you can modify later,
this can save you valuable configuration time



You can quickly change from advanced mode to easy mode when all channels are in stopped state. After changing between these operation states a CHANNEL SET is necessary.

- | | |
|------------------------------|---|
| 1 PROG/5 SLAVES: | Set channel 1 to programmer and connect channel 2 to 6 to them as slaves. |
| ALL FIXED SETP.: | Set all channels to a fixed set value controller |
| USE LAST/
CHANGE CHANNELS | Take the current configuration and perform changes to them. This button can only be pressed after at least 1 configuration has been made. This is the case when you use the Heat Manager for the first time, or when you switch between the advanced of easy mode (and vice-versa). |
| ALL RECORDER: | <i>Only available in the advanced mode.</i>
Set all channels as a recorder. No temperature control will be performed, you can use the Heat Manager as a digital recorder. |
| INDIVID. CHANNEL: | <i>Only available in the advanced mode.</i>
Start the channel configuration with all channels in UNUSED state (no operation) |



Set channels to UNUSED when you don't use them, otherwise you will get sensor burnout alarms and programmers that hold without any obvious reason



The following applies only to the easy mode: After pushing the 1 PROG/5 SLAVES button the default profile (150 degr/hr up to 600 degrees, soak for 1hr5mins and ramp down to 300 degrees at 150 degr/hr) will be loaded into the programmer/profiler

The following screen appears every time when you select a channel set preset in the **advanced mode**. In the **easy mode** it is only visible when you push CHANGE CHANNELS.



Advanced mode:

In the advanced mode each channels can be configured as follows: Unused, Programmer, Fixed Set value, Record only, Manual control, Slave or Unused. You can do this by pressing the arrow pointing down to show the selection menu.

Press the NEXT button after configuring the channels to assign a profile (for programmers), Set value (Fixed SP) and % (Manual Control).

Easy mode:

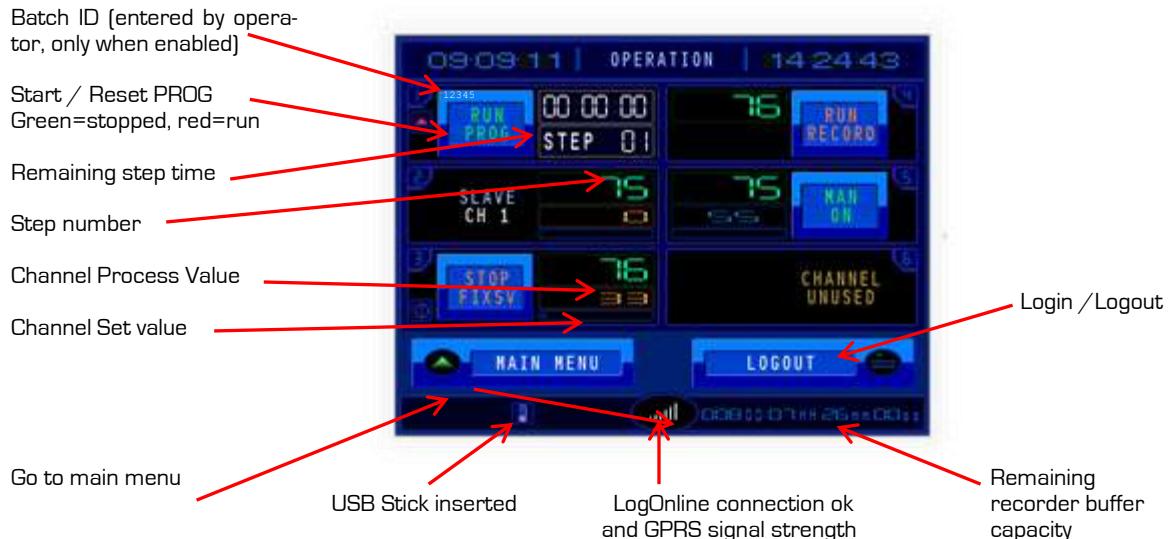
In the easy mode you can make the following selections:

Channel 1: Programmer or Fixed Set value

Channels 2-6: Unused, slave of channel 1 or Fixed Set value

1.6 OPERATION

Go to the operation screen to start specific channels. The channels can also be stopped on this screen. Press OPERATION on the main menu screen to show this screen.



To start a configured programmer press the **RUN PROG** button for approximately 3 seconds (the connected slaves will also start automatically). Please note that a green color means that the channel is currently **not** running. A red channel is active and running.

Please note that when the first channel starts, the datalogging will also start. Depending on the settings chosen in the setup (see engineering manual) the Heat Manager can ask for extra batch-related information. The Heat Manager can be setup in such a way, that for each channel (or channel group) startup, new batch related information can be entered. The batchID will be logged together with the temperatures so lateron you can see which batch ID ran on which channel.

Press the **RESET PROG** button for approximately 3 seconds to stop and reset the program back to the first step.

The current process- and set value of each channel will be displayed on the operation screen. Green color for process value and orange for the set value.

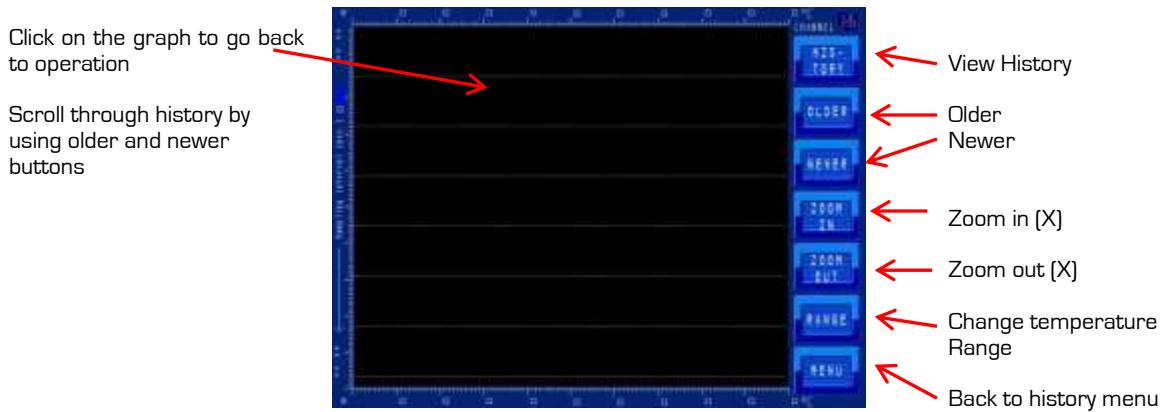
Press a few seconds on the temperature values next to the RUN / RESET PROG to view additional profile information.

From this operation screen you can also go to the channel details screens. On this channel details screen you can push the Step/Hold tab for stepping to the next step in the program or holding/continuing the programmer.

On this Step/Hold screen you can also manually adjust the set value when the programmer is in a soak segment.

1.7 PAPERLESS RECORDER

Go to the HISTORY menu to view the channel trending. Press HISTORY in the main menu screen and select TREND 1-6. Here you can select which channel to view. There is also a possibility to view all channels at the same time by pressing the 1-6 button.



When you push in the middle of the trending screen you return to the operation screen

You can change the measured temperature range by pushing the [AUTO RANGE] or [RANGE] button. In [AUTO RANGE] mode the HeatManager automatically detects the temperature range. When you push this button [RANGE] appears and it is now on manual range mode. Every time the button is pushed the range is changed until you reach the [AUTO RANGE] mode again.

Please note that the recorder starts automatically when the first channel is started. The recorder stops automatically when all channels are in stopped mode and below an adjustable temperature (default 200°C).

1.8 EXPORT DATA

Export the recorder data to the SD card inside the Heat Manager, together with the job/batch info data. Press HISTORY in the main menu screen and select EXPORT->SD. Here you can insert job, process, equipment and operator information. Fill in the forms until you come on the SAVE TO SD screen.



You will be prompted to insert a file number. Insert this number and press "SAVE TO SD". Please note that the Heat Manager automatically adds a "H" to the batch info and measurements CSV file. This is to discern between automatically generated .CSV files (at the end of the process when all channels are stopped and all temperatures are below the recorder stop temperature).

Wait until the Heat Manager says that it is ready with the saving procedure (with a large file from a full data logging buffer this can take a few minutes time). The CSV file will now be stored on your SD card.



You can transfer this file from the SD card to the USB device later on with the File Manager in the HISTORY menu, select the SD<>USB button for this.

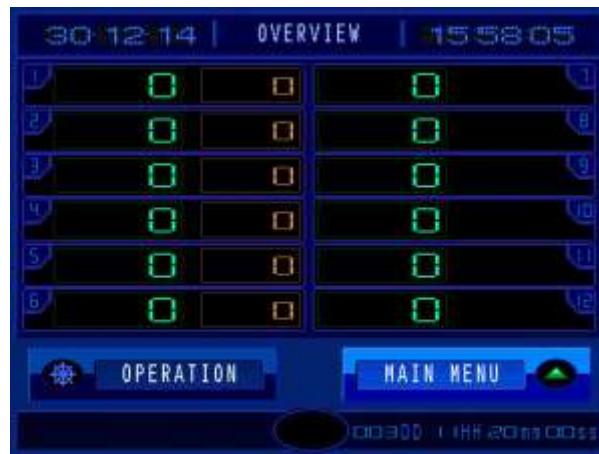
Please note that, depending on the settings chosen in the setup (see engineering manual) the Heat Manager can also save the datalogging automatically together with the entered batch-related information so the stored temperatures can be related back to a batch ID entered by the operator.

1.9 TEMPERATURE OVERVIEW (12 CHANNEL VERSION)

When the 12 channel version is used, the operation screen has an extra button in the middle of the bottom of the screen:



When you push this button the following screen will appear:



The orange numbers are the set values and the green numbers are the actual temperatures.

1.10 CURRENT MEASUREMENT OVERVIEW (WITH CURRENT SENSING MODULE)

When the Heat Manager is fitted with a current sensing module you see the following button at the bottom of the operation screen:



When you push this button an overview of all the actual currents and their alarms is shown.



The numbers with A behind them are the actual currents. The orange numbers are the actual set points and the green ones the actual temperatures.

When an alarm occurs with regard to the current you will see the following messages:

[HEATER BROKEN]: The measured current of the heating element is below the nominal value. This can be caused by a broken heating element or a broken connection to a heating element.

[CURRENT ON LIMIT]: The actual current exceeds the nominal current. This can be caused by a short circuit in the heating element.

[RELAY SHORT CIRCUIT]: There is a current flowing but the controller did not switch on its control output. This can be caused by a broken relay.

Note: These can also be caused when one of the heating element nominal currents is not set correctly (see settings section in the engineering manual)

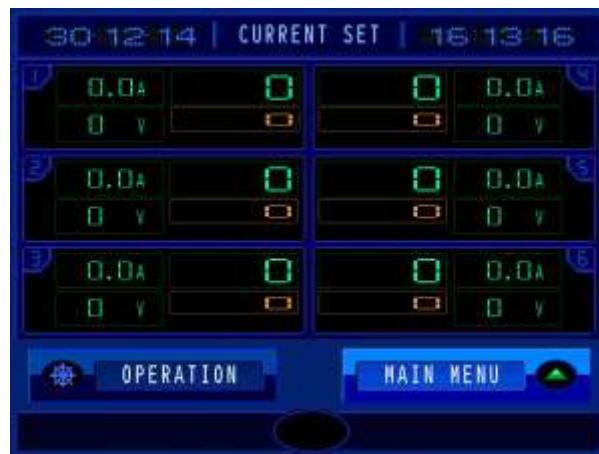
Note: When a Fixed setvalue controller is used the controller will automatically switch off when a current alarm occurs. This is adjustable in the system settings (see the engineering manual).

1.11 CURRENT MEASUREMENT OVERVIEW (WITH THVA1 THYRISTOR MODULE)

When the Heat Manager is fitted with THVA1 thyristor modules you see the following button at the bottom of the operation screen:



When you push this button the following screen will appear:



The numbers with A behind them are the actual currents, the ones with the V the voltage.

The orange big numbers are the actual set points and the green ones the actual temperatures.

The following alarms can occur:

- | | |
|---------------------|---|
| [HEATER BROKEN]: | The actual current is below the nominal current, this can be caused by a broken heating element or a connection to it that is broken. |
| [CURRENT ON LIMIT]: | The actual current is above the maximum current. This can be caused by a short circuit in the heating element. |
| [THYRISTOR BROKEN]: | The thyristor inside the THVA1 thyristor unit is broken |
| [BOARD ERROR]: | The control board inside the THVA1 thyristor unit is broken |
| [MAX TEMPERATURE]: | The temperature inside the THVA1 thyristor unit exceeds its limits. |
| [FUSE BROKEN]: | The fuse of the THVA1 thyristor unit is broken |

[POWER FREQUENCY]: The frequency of the power supply to the THVA1 thyristor unit is outside its limits

[POWER SUPPLY]: The power supply to the THVA1 thyristor unit is outside its limits.

Note: These can also be caused when one of the heating element nominal currents is not set correctly (see settings section in the engineering manual)

2.FUNCTIONAL DESCRIPTION

Heating Profiles

Store up to 100 heating profiles, each one consisting of 16 steps in the advanced mode
Save, Copy and exchange heating profiles between Heat Manager(s) and PC using an USB stick
Run and monitor your heating profiles
Up to 6 programmers, each running a different profile, in the advanced mode
1 programmer with ramp up, soak and ramp down settings in the easy mode
Adjustable auto-hold deviation band in each process step (for both advanced and easy mode)

Channels

6 or 12 universal inputs for use with thermocouples and infrared camera's with thermocouple type output.

Trend charts

Record trend charts
Store trend charts on the internal SD card and transfer them to an USB stick as a CSV file together with the batch data (batch number, equipment, operator, batch IDs etc.).

Remote Trending

Use the Heat Manager in combination with LogOnline temperature registration service. Major benefit is that the measured data is authenticated.
You can give a so-called witness account so the customer can follow the process while it is executed on the work piece.
Connection to LogOnline can be established through Wi-Fi, Ethernet or via a GPRS modem.

Safety

Thermocouple polarity protection
Weld discharge protection filter (Optional)
Thermocouple break protection
Alarming through sounder, SMS and/or E-mail
Heating element break, over current and broken relay detection (with current sensing module)

External signaling

External IO units for signaling that all temperatures are within the adjustable limits

User friendly

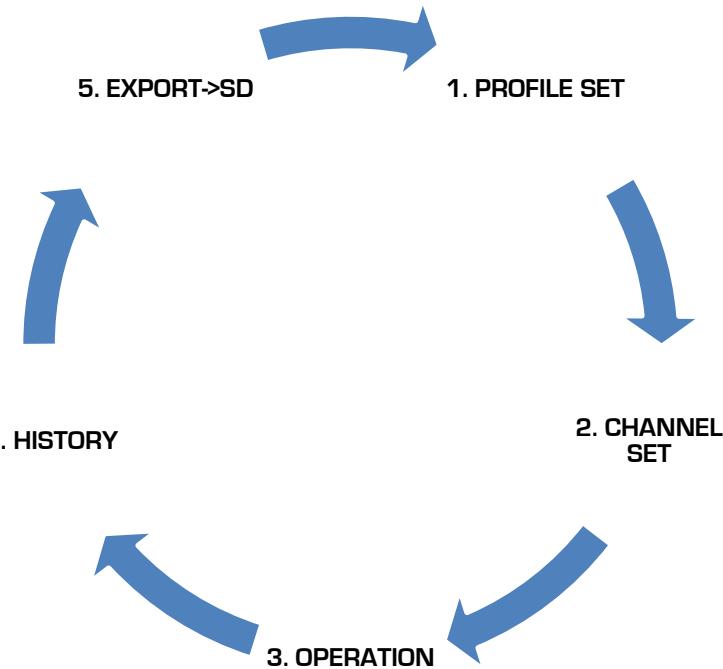
Graphical user interface optimized for simple and ergonomic operation
Online help and quick start wizard
All cables are detachable for easy transport
Universal wide range power supply

Remote Operation

The Heat Manager can be fully remotely controlled with the iPhone/iPad/Android app. This can be done over an Ethernet/Wi-Fi/GPRS connection.

3. PRINCIPLE OF OPERATION

To fully understand the Heat Manager operation we will first illustrate this by means of this schematic diagram that shows you the steps to take.



The operation cycle is as follows:

First we need to set the desired heating profile that is going to be performed on the work piece. This is normally done by entering the desired process into the Heat Manager. You need to do this only once for each different heating profile so it can be re-used in various different channel configurations. This is done in the **PROFILE SET** menu item.

After that we need to tell the Heat Manager which channel has to do what. For each channel the desired configuration must be set.

This is done in the **CHANNEL SET** menu item.

After this configuration phase we can go to the **OPERATION** screen and start the channels that we wish to use. The actual temperature control process will now start. The actual status can be followed on the operation screen.

During operation we also want to see how the process is running in a graphical way. For this we can go to the **HISTORY** menu item. Here we can view the process graphically and in a numerical way.

If desired, we can export the data at the end of the process as a .CSV file to the internal SD card. We can also transfer it to an USB stick so we can import it into a pc with (e.g.) Microsoft Excel. We do this by selecting the **EXPORT->SD** menu item in the **HISTORY** menu. Please note that the Heat Manager can also be set-up to export the .CSV automatically when all channels are stopped and below an adjustable temperature.

4. NORMAL OPERATION

This part of the manual describes the operation of the Heat Manager in more detail. The Heat Manager can operate in the so-called advanced and easy mode. The advanced mode is more suitable for a stationary oven process whereas the easy mode has been developed for quick on-site work.

If you want you can also the easy mode for a stationary kiln, or the advanced mode for on-site welding work. That all depends on the situation and the work-piece. You can quickly adapt the Heat Manager to this, even on-site, when desired.

The major differences between the advanced and easy operation modes are:

Advanced mode	Easy mode
Up to 6 programmers, each programmer running a different profile	Channel 1: Fixed set value or programmer Channel 2-6: Slave(s) of channel 1, fixed set value or unused
Each profile up to 16 steps, fully flexible	1 profile consisting of ramp up, soak and ramp down

For the rest both modes work the same. The main difference is the way you program the heating-profile.

The following part of the manual describes the operation of the Heat Manager in these various modes. Don't confuse the easy mode with the advanced mode.

4.1 MAIN MENU – EASY MODE

The main menu in easy-mode is slightly different from the one in the advanced mode. This has been done to make operation more efficient by removing unnecessary extra touches on the screen.



1 PROG/5 SLAVES

Set channel 1 to programmer and connect channel 2-6 to it as slaves. **The default profile will be loaded, so check this before starting!**

ALL FIXED SETP.

Set all channels to a fixed set value controller and ask the set value for each channel. Please note that a running programmer/profiler will be **stopped** when you select this option.

CHANGE CHANNELS

Change the current channel configuration

OPERATION

Use the OPERATION button to start, reset and monitor the running heating profile or fixed set values.

INFO

Use the INFO page to view system properties. The end user license agreement and service information can be viewed here.

HISTORY

Use the HISTORY option to view and export trending information. Trending data can be stored as a CSV file on the internal SD/CF card. CSV files from the SD/CF card can also be transferred to an USB device.

SETTINGS

The settings menu allows you to change Language-, recorder-, control-, profile- and system settings.

PROFILE SET

Use PROFILE SET to create and change the heating profile.



After pushing the 1 PROG/5 SLAVES button the default profile (150 degr/hr up to 600 degrees, soak for 1hr5mins and ramp down to 300 degrees at 150 degr/hr) will be loaded into the programmer/profiler

4.2 PROFILE SET – EASY MODE

4.2.1 Edit heating profile easy mode

In the easy mode you can directly go to the profile editor by pushing PROFILE SET on the right-bottom of the operation screen. You can also reach the profile editor by pushing PROFILE SET on the right-bottom of the main-menu.



You will only see the PROFILE SET button appear when channel 1 is set as a programmer

You will now see the following screen:



The profile consists of:

- Ramp up rate
- Soak temperature
- Soak time
- Ramp down rate
- End temperature (when the programmer/profiler reaches this value all channels will be stopped. The recorder however, will remain measuring the process values until all values are below an adjustable value)

Each profile step has an adjustable auto hold with maximum deviation up and down. You can also switch this auto hold on/off for each step.

You can change these set values by pushing the corresponding values on the screen (or by pushing the corresponding numbers next to it).

You can push the arrow up button \swarrow to advance the temperature set value in the first step freely until 300°C. Above that temperature a ramp-up is mandatory and this button will disappear.

4.2.1.1 Heating rate

Let us start by adjusting the heating rate (also called ramp-up). Push the corresponding value on the screen and the following screen will appear:



Enter the desired heating up rate in degrees per hour and put a marker on the auto hold when you wish to use that. After checking the auto hold marker you can enter how much the process value is allowed to deviate from the set value.

Push PROFILE SET to return to the profile editor (the screen will automatically return to the profile editor when no button is pushed)

4.2.1.2 Soak temperature

Push the soak temperature on the profile editor and the following screen will appear:



Enter the desired soak temperature (target) and put a marker on the auto hold when you wish to use that in this step. After checking the auto hold marker you can enter how much the process value is allowed to deviate from the set value.

Push PROFILE SET to return to the profile editor (the screen will automatically return to the profile editor when no button is pushed)

4.2.1.3 Soak time

Push the soak time on the profile editor and the following screen will appear:



Enter the desired soak time in hours, minutes and seconds. There is no auto-hold marker on this screen, since the auto-hold setting of the previous screen (soak temperature) is used.

Push PROFILE SET to return to the profile editor (the screen will automatically return to the profile editor when no button is pushed)

4.2.1.4 Cooling rate

Push the cooling rate on the profile editor and the following screen will appear:



Enter the desired cooling down rate in degrees per hour and put a marker on the auto hold when you wish to use that. After checking the auto hold marker you can enter how much the process value is allowed to deviate from the set value.

Push PROFILE SET to return to the profile editor (the screen will automatically return to the profile editor when no button is pushed)

4.2.1.5 End temperature

Push the soak temperature on the profile editor and the following screen will appear:



Enter the desired end temperature and put a marker on the auto hold when you wish to use that. After checking the auto hold marker you can enter how much the process value is allowed to deviate from the set value.

When the programmer/profiler reaches the end temperature all channels will be switched off, the temperature registration however remains running until all process values (programmer/slaves) are below an adjustable limit (see settings recorder configuration – recorder off temperature).

Push PROFILE SET to return to the profile editor (the screen will automatically return to the profile editor when no button is pushed)

4.3 CHANGE CHANNELS – EASY MODE

In this screen you can change a configuration before actually starting. You can also use it for adapting the system online while it is performing a heating. You can for example couple or de-couple extra slaves, or set specific channels to a fixed set value for pre-heating.



This menu-item can only be executed when a channel set has already been made, otherwise this option cannot be selected.

After selecting this menu-item the following screen will appear:



Please note, that the following selections are possible:

For channel 1: Programmer/profiler with ramp up, soak and ramp down
 Fixed set value

For channels 2-6: Unused (no operation)
 Slave of channel 1
 Fixed set value

After pushing NEXT the Heat Manager will ask the desired fixed set values (in case this option was selected). When a programmer/profiler was active in channel 1, it will be restarted at its current process value in the process-step that was active.

4.4 MAIN MENU – ADVANCED MODE



CHANNEL SET

Use CHANNEL SET to create your channel configuration. Your channels can be set as Programmer, Slave, Fixed set value, manual output, recorder or can be left unused.

PROFILE SET

Use PROFILE SET to create and change your heating profiles.

HISTORY

Use the HISTORY option to view and export trending information. Trending data can be stored as a CSV file on the internal SD/CF card. CSV files from the SD/CF card can also be transferred to an USB device.

OPERATION

Use the OPERATION option to start, reset and monitor the heating profiles.

INFO

Use the INFO page to view system properties. The end user license agreement and customer information can be viewed here.

HELP

The HELP section provides the user with useful information about the Heat Manager and its functions.

SETTINGS

The settings menu allows you to change Language-, recorder-, control-, profile- and system settings.

LOGIN / LOGOUT

Use the LOGIN/LOGOUT button to login to the system. The keyboard will allow you to fill in your 4 digit PIN code.

4.5 PROFILE SET – ADVANCED MODE

4.5.1 Heating Profiles

Select PROFILE SET from the main menu to enter the PROFILE SET screen. Here you can choose to EDIT your profiles or SAVE/LOAD them to/from an USB stick.



Click the EDIT button on the top left to view or configure the existing heating profiles.

4.5.2 Save profiles to USB stick

You can decide to save the internal buffer with 100 heating profiles on an USB stick.

First connect the USB-Stick to the Heat Manager. Press PROFILE SET in the main menu and select the option SAVE TO USB. After connecting the USB device the SAVE TO USB button will appear.



**Make sure that there are no old profile settings on the USB device.
The Heat Manager Connect will overwrite these files without warning.**



**When performing this operation, the Heat Manager Connect will write the whole database
with 100 profiles to the USB stick**

Press the SAVE to USB button to export the heating profiles to your USB stick. Wait with removing your USB stick until the Heat Manager is finished exporting the heating profiles.

The profiles will be stored on your USB under the name F00001.BIN in the folder named \FILE. This is a binary file and cannot be edited. It can be copied however to a normal PC for backup reasons.

4.5.3 Load profiles from USB stick

Place your profile file F00001.BIN [size 31kB] in a folder named \FILE and place this in the root of your USB stick.

Then connect the USB stick to the Heat Manager.

Go to the MAIN MENU and press PROFILE SET to show the profile menu.

Press the LOAD FR USB button to show the load recipe screen.

If the USB device is correctly connected to the system (USB icon visible in the bottom of the screen) the LOAD FR USB button will appear in the load recipe screen.

Press the LOAD FR USB button to start loading the file with 100 heating profiles from the USB device.

Once the profiles are loaded, the "File was successfully loaded" message will appear.

The heating profiles are now stored inside the internal battery back-up memory and the USB device can be safely removed.

Here is a printout of a screen from a windows PC showing the necessary file and directory on the USB stick.



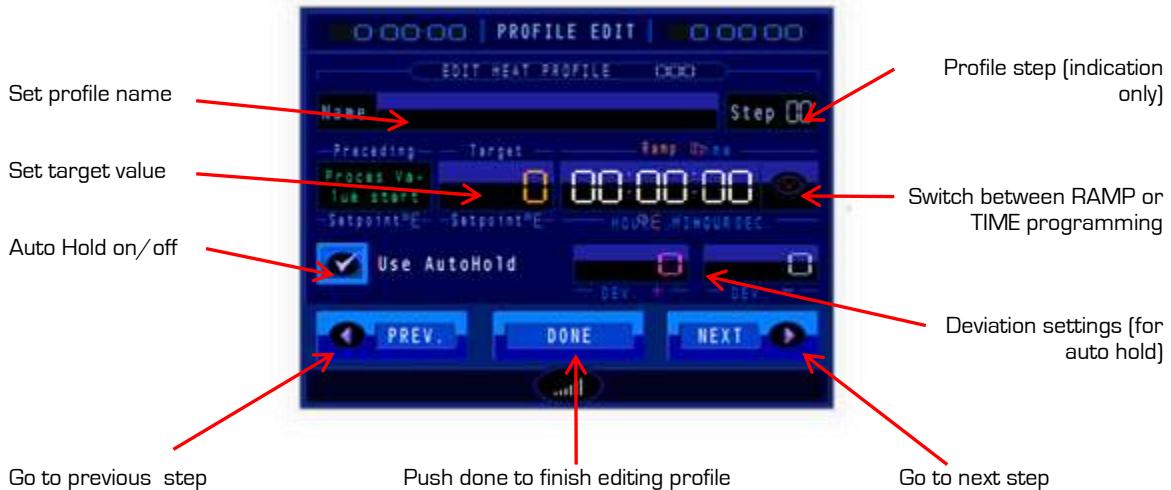
4.5.4 Edit and create a heating profile

First we need to select a profile.

Select EDIT in the PROFILE SET Screen to show the SELECT PROFILE TO EDIT screen. The Heat Manager can store up to 100 heating profiles. Each heating profile can contain up to 16 steps. Use the up and down buttons on the screen to scroll through the heating profiles and make a selection.



Select the desired profile by pressing on it. Your selection will now turn white. Press the NEXT button to start creating or editing the selected heating profile. The Edit Heat Profile screen will now show the first profile step. Here you can setup and edit each step of your heating profile.



The Edit Heat Profile screen will allow you to setup your heating profile. You can configure Ramp[up], Ramp[down] and Soak steps.

Each step can be either RAMP or SOAK but not both! This will be automatically detected by the Heat Manager, depending on difference of previous set value and the newly entered target set value.

The first step will automatically start with the process value as "process value at start". Normally speaking this will be the actual process value of the programmer.

The following steps will automatically use the "target set value" of the previous step.

4.5.4.1 Edit profile name

Click on the input field right next to the NAME label. The keyboard will pop up allowing you to fill in the desired name. Press ENTER to confirm the name you entered.

4.5.4.2 Configure ramp (up) step

Follow the next steps to configure your ramp[up] step:

Set a higher target value than the process value by pressing the target value and filling in the desired set value.

Setup the ramp method by filling in the amount of degrees per hour or the timespan of the step. [Use the ramp soak setting button to change method from degrees per hour to time] press the NEXT button to configure the next step of the profile.



Time can be set by pressing the corresponding seconds, minutes or hours.

4.5.4.3 Configure soak step

Follow the next steps to configure your soak step:

- Set the same target value as the preceding process value. The Heat Manager will automatically recognize this as a SOAK step. Fill in the SOAK time (RAMP is not possible in this situation)
- Press the NEXT button to configure the next step.



4.5.4.4 Configure ramp(DOWN) step

A ramp(down) step can be configured by setting a lower target value than the preceding process value. Configuring the duration of the Ramp(down) step is configured in the same way as a ramp(up) step.



4.5.4 5 Configure auto hold

SOAK and RAMP steps can be supported by Auto-Hold. Press the checkbox next to “Use Auto Hold” to enable the auto-hold function for this profile-step. After doing so you will be able to fill in the allowable temperature deviation values for this step.



- Set the allowable upper deviation (with regard to actual set value) by pressing the “DEV +” button.
- Set the allowable lower deviation (with regard to actual set value) by pressing the “DEV –” button.



When the Auto Hold is selected for the actual profile-step, the Heat Manager will not change the set values, nor will it decrease the step time. Only when the process values of the programmer and its slaves are within the programmed auto hold band it will continue with changing the set values and start decreasing the step time.

4.5.5 Saving your heating profile

Press DONE after configuring all the steps to the heating profile to display a graphical preview of the edited heating profile.



You can use the PREVIOUS button to return to editing the heating profile steps

Press the NEXT button in the profile preview screen to finish editing your heating profile. Upon doing so you will be asked if you want to store the new heating profile. press YES, STORE to confirm or use the MAIN MENU and PREVIOUS buttons to cancel this saving procedure.



Each step will be executed, also when a time of 0 is programmed. It is advised to check all 16 steps before pressing done to prevent erroneous operation



At the end of a heating profile (e.g. step 6), the Heat Manager will continue with the next step (e.g. step 7). Since the times in the unused steps are set to 0, the Heat Manager will continue stepping through all steps until it reaches step 16. It will then stop the programmer/profiler and its slaves automatically and give a message on the operation screen that the heating profile is ready.

4.5.6 Updating your changed heating profile in channels with the same profile

After saving the heating profile the Heat Manager will automatically detect in which channels the profile with the same profile-number is active and ask you in which channels it should be updated.



You can only select channels that are a programmer and have the same profile number as the profile stored after editing.

When you select a channel to be updated, an UPDATE button will appear. After pressing this button the corresponding programmer will be updated with the changed profile.

When the programmer was already running it will restart in step 1 at the actual process value of the programmer.

4.6 CHANNEL SET – ADVANCED MODE

4.6.1 Setting up your channel configuration

Enter the channel set menu by pressing the CHANNEL SET button in the main menu screen. You can use one of the predefined channel configuration presets or make your own specific configuration.



Make sure that you already prepared and saved the desired heating profile with PROFILE SET before configuring a channel to a programmer since each programmer must have a profile connected to it.

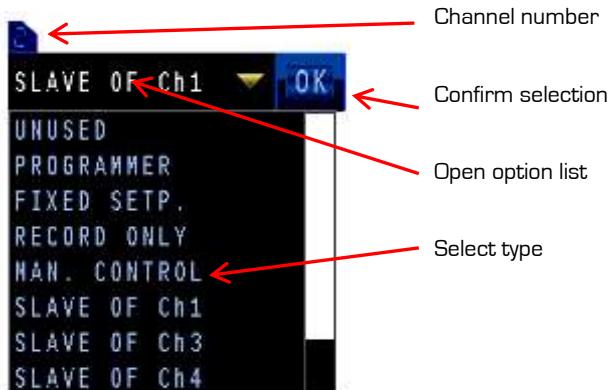


These presets can be altered on the next screen after selecting them in the screen above.
It is just a preset that can save you valuable time while configuring the channels



You can change the channel configuration while the channels are running. E.g. you can change a running programmer into a fixed set value controller. You can also couple unused channels to the running programmer, if desired. This way you can quickly adapt to changing process situations while you are working on the work piece

Choosing the INDIVID. CHANNEL option brings up the channel configuration screen as well, but now the screen displays 6 unused channels which can be configured as desired.



Click on the yellow arrow down [▼] to open up all possible channel settings. Make a selection by clicking on one of the options. The selected option will be highlighted. Press the OK button next to the label to confirm your choice. The label next to the channel will now display the new configuration. Repeat this for all 6 channels.



The channels can be set as unused, programmer, fixed set value, record only, manual control or slave to a programmer.
A channel can also be configured as a slave to a fixed set value.



Warning: the Heat Manager will display an error message as soon as an invalid configuration is entered. For instance: a slave to a slave is not possible. You can also not change a programmer when slaves are still connected to it. First disconnect the slaves before changing a programmer configuration.

4.6.2 Connecting a previously stored heating profile to a programmer

Press the NEXT button after having set up the channel configuration to start setting up your channels.

You will be automatically asked to assign a desired heating profile to each programmer or enter set values for the fixed set value and manual control channels.

In case of a *programmer* you will be asked to assign a Heating Profile from the internal database of 100 stored heating profiles.

Select the desired heating profile by pressing it. The selected profile will now be highlighted in white.



Click NEXT button after having selected a profile to view the heating profile graphically. If the heating profile is correct you can confirm your choice by pressing the NEXT button. You can return to the profile selection screen by pressing the PREVIOUS button.

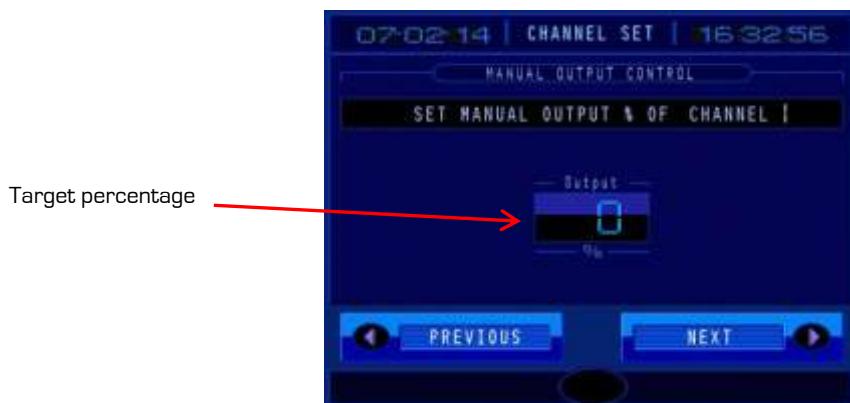


Click NEXT again to confirm that this is the heating profile you want to use.

When having set up a **fixed set value** channel you will be prompted to set up the target set value. Press NEXT to confirm your channel settings.



When setting up a **manual output control** you will be prompted to set the target percentage for that channel.



Click NEXT again to confirm that this is setting you want to use.

The Heat Manager will continue to ask details for each channel setting until all are complete. After that an overview screen will show the configurations you made. It is still possible to go back and alter things by pushing the previous button.

When you confirm the settings the channel settings will be stored and used by the Heat Manager.

4.7 OPERATION

On this screen you can start and stop the channels. You can also monitor the actual process values, set values, step time and controller output state. You can go to this screen from many menus by pushing the OPERATION screen.

4.7.1 Starting programmers



Press the "RUN PROG" button (keep it pressed for a few seconds) to start a programmer. If this is the first programmer you start, you will be asked what to do with the internal log data buffer on the "NEW JOB LOG DATA" screen.



The Heat Manager automatically detects if one of the channels contain a profile that exceeds the current sampling buffer size, you see that in the warning text in the bottom of the screen.

You can choose to keep on logging to an existing log file by pressing APPEND TO LOG.

Press the SAVE LOG button to save your current log file before starting a new session. Here you will have to fill in batch-related data about the logging before it will be stored on the internal SD/CF card.

Delete the current log data by pressing DELETE LOG.

Note that when the first channel starts the Heat Manager can ask you for batch-related data, this depends on how the Heat Manager was set-up. Only after entering a valid batch ID the Heat Manager can continue with the startup procedure.



Pressing the "DELETE LOG" button will permanently delete the stored log data from the internal SD/CF-card. This cannot be undone

Go to the OPERATION screen again after having set up the logging [normally this is done automatically by the Heat Manager]. You will now see that the selected programs, fixed set values and manual outputs will now be running. Pressing the RESET PROG button [keep pressed for a few sec] will stop the programmer.



**Pressing the RESET PROG button will stop the programmer and/or its slaves.
It will not pause!**

The following icons will be displayed when a programmer channel is showing activity:



Set value is ramping down



Set value is stable (SOAK)



Set value is ramping up

The blue bar presented at each channel [] will display the actual controller output of that channel. A fully lit up bar means that the relay driving the heating element is activated. The dots in the bar show the actual control percentage (also known as manipulated value) of that channel.

4.7.2 Detailed operation information



Press the field next to the "START/RESET PROG" button for about 2 seconds to show the channel detail screen (red rectangle). Note that this can only be done for channels that are **not** configured as slaves! The channel OVERVIEW screen will now appear, showing you more information about the status of that specific channel.



The overview screen will show you basic information about the selected channel. You can start and stop the program from here. You can also navigate to the STEP/HOLD and TREND screens by pressing the tabs on the top of the screen. The manual tab is not implemented yet.

The Step/Hold tab will only be visible when you set this channel as a programmer.

4.7.3 Step / Hold heating profile

Show the channel detail screen and press the Step/Hold tab to show the current step of the running profile in this channel. Here you can manually influence the steps of your running profile.



Press the HOLD button to place the running step on hold and pause your profile. The set values and step time will now remain the same. The temperature control however, will still operate and try to reach the last desired set value.

The HOLD button will now be changed into UNHOLD. To continue your profile press the UNHOLD button. You can also choose to go to the next step by pressing the STEP button. Note that these buttons need to be pressed for several seconds, this is to prevent unwanted operation by accidentally pushing these buttons.

4.7.4 View channel trending

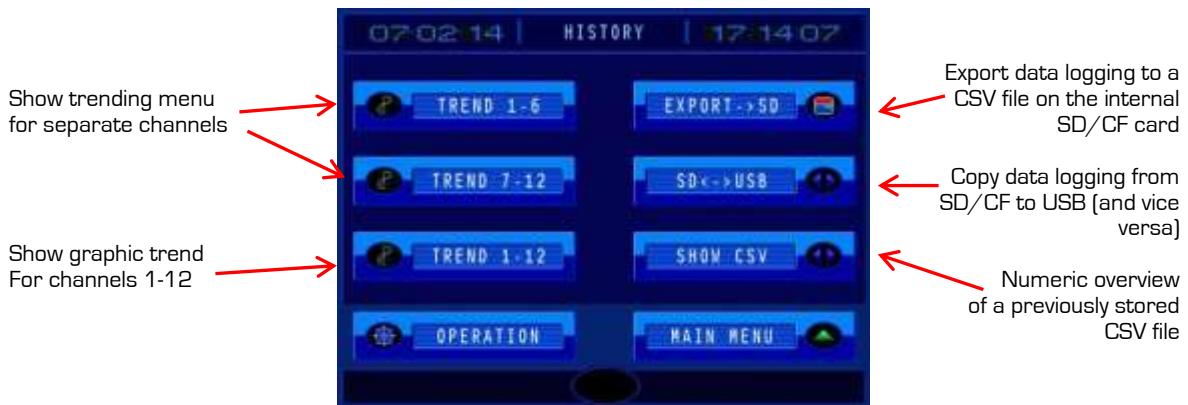
Press the Trend tab on the right of the channel detail screen to show the current trend-graph for this channel. View the recorder history of the manual to learn how to view the graph and its history.



When you push in the middle of the trending screen you return to the operation screen

4.8 HISTORY

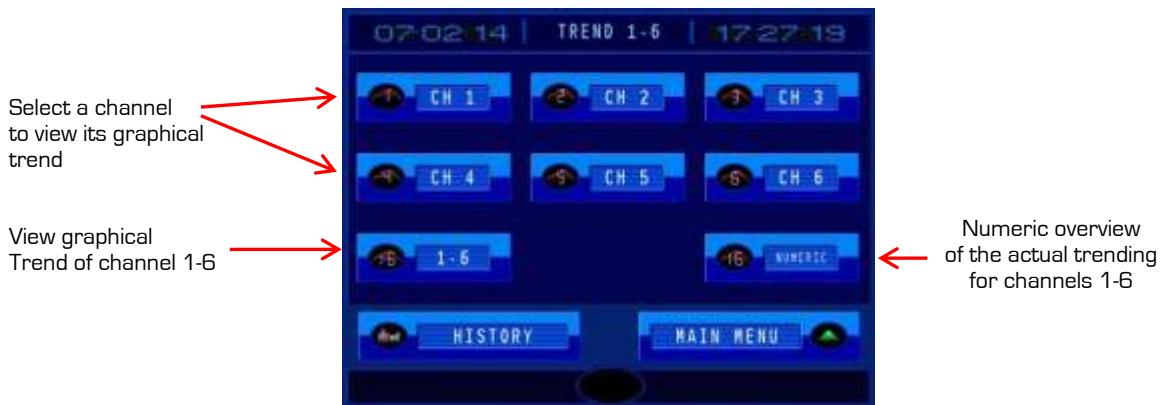
The Heat Manager allows you to view and export the trending data. You can enter the history menu by pressing the HISTORY button in the main menu screen.



4.8.1 Trending function

The Heat Manager has a built in trending function. This trending function can be accessed by pressing the TREND 1-6 button on the HISTORY screen. Pressing the TREND 1-6 button will bring up the channel selection screen. Here you can choose which of the channels you wish to view.

4.8.1.1 Trending channel selection



4.8.1.2 Graphic overview

Press the desired channel to view its trending graphically. You can also choose to view all channels in one overview by pressing the 1-6 button.

Each channel has its own specific color, here is a legend:

Channel 1:	red	Channel 7:	red dotted line
Channel 2:	white	Channel 8:	white dotted line
Channel 3:	light blue	Channel 9:	light blue dotted line
Channel 4:	dark green	Channel 10:	dark green dotted line
Channel 5:	dark brown	Channel 11:	dark brown dotted line
Channel 6:	purple	Channel 12:	dark purple dotted line

Graph of actual trending.
Newest value is on the top
of the screen



Press the HISTORY button to enable looking back in time, you can now use the older/newer buttons.



When you push in the middle of the trending screen you return to the operation screen

You can change the measured temperature range by pushing the [AUTO RANGE] or [RANGE] button. In [AUTO RANGE] mode the HeatManager automatically detects the temperature range. When you push this button [RANGE] appears and it is now on manual range mode. Every time the button is pushed the range is changed until you reach the [AUTO RANGE] mode again.

4.8.1.3 Numeric overview

When selecting the NUMERIC button the following screen will appear:



This screen shows the actual sampling buffer with measured values. The newest value is shown on top of this screen.



This is the actual sampling buffer inside the battery backed-up memory of the Heat Manager. These measurements are not yet stored on the SD/CF card, use the EXPORT->SD button for this in the HISTORY menu.

You can scroll through the measurements by using the arrow up and down buttons on the screen. Push the number buttons to change the step-size for the arrow buttons.

To see the last actual value again on top, push on the orange round arrow button.

4.8.2 Export to the SD card

Create a new CSV file from the actual sampling buffer on the internal SD/CF card. Press "EXPORT > SD".

You will now be asked to fill in extra information that will be stored under the same file number, excluding the SA prefix (that is used for the actual measured values).

Click on the "« edit here »" fields to enter the desired information.



You will be asked to fill in 4 screens before you reach the actual "save to SD" screen.

Each of these screens provides the CSV file with information about the actual heating process and can be used for administrative reasons.

The following screens can be filled in:

- Job Information
- Process Information
- Equipment information
- Operator remarks

After having filled in batch information you will be asked to give a filename number.

Press the input field next to FILE NAME to bring up the keyboard and fill in the desired file number (The extension CSV will be added automatically).

Press SAVE TO SD to start saving your information to the internal SD card. The Heat Manager will now save 2 files containing the same number. The file with the SAxxx.CSV prefix contains the measured values and the other file with the same number the header with batch specific information. Please note that the Heat Manager will automatically add the letter "H" to the batchinfo and Measurements filename, this is to discern between manual- or automatically saved files.



The **SAVE TO SD** button will appear as soon as the FILE NAME has been filled in. Push this to start the export procedure.

If the **SAVE TO SD** button does not appear contact your supplier.

Please note that it can take a few minutes of time to write a full data logging buffer to the SD card, please be patient and wait until the Heat Manager confirms that the files have been written correctly.

4.8.3 Copy SD data from/to USB stick

The trending data .CSV files are saved to the internal SD card in directory \SAMPO1. You can copy these CSV files to your own windows PC by selecting the SD<->USB button to copy file from the internal SD card to a USB stick (or vice-versa). Use the built in file explorer to select the files you wish to delete or copy.



If this is your first time using the built in File Manager, it is recommended that you read the File Manager instructions in the common section of the manual.

5. USER SETTINGS AND PREFERENCES

To enter this menu press SETTINGS in the main menu screen.



RECODER CFG: Adjust the recorder settings [sampling time, recorder off temperature]

LIMIT SET: Adjust the temperature limit settings for the external signaling modules

MODEM: Adjust the GPRS modem settings

CONTROL CFG: Adjust temperature controller parameters (see engineering manual)

CURRENT SET: Adjust the nominal current for each heating channel (see engineering manual)

SYSTEM: Adjust system settings (see engineering manual)

5.1 ADJUSTING THE SAMPLING INTERVAL

Press SETTINGS > RECORDER CFG to enter the RECORDER SETTINGS screen.



The sampling interval value is the timespan (sec) between each sample. For instance: an interval of 60 sec will sample each minute. Changing the interval will have impact on the remaining recorder capacity. Lowering the interval will decrease the recorder capacity where increasing the interval will do the opposite.



After an X amount of time the CF card will run out of recording capacity and a warning screen will now appear. Use the file manager to transfer your readings from the CF card to an USB device. Clear the data on the CF card as soon as you have copied your data.

Note that the Heat Manager will only check if its sampling buffer is full on the operation screen. If you leave that screen you have plenty of time to store the internal buffer.

The recorder off temperature is set to 200°C by default. When the programmer is finished and all channels have been switched off, the sampling of temperatures continues until all are below this value. Then the sampling will also stop.

With the remaining recorder capacity you see how much room is left in the internal sampling buffer of the Heat Manager.

5.2 SETTING THE TEMPERATURE DEVIATIONS FOR THE EXTERNAL OUTPUTS (DIO MODULES, WHEN PRESENT)



On this screen you can set the lower and upper limits per channel.

When the channel is running and the measured temperature is between these values, the external output (when present in the system) will be activated for that specific channel.

When all temperatures are within limits the digital output 7 of the external output module will be activated.

Digital output 8 is used as an alarm in case of a process value burnout or polarity error.



You can invert the action of each digital output (active high or low) for each channel.
Consult the engineering manual for this feature.

5.3 SETTING UP MODEM FOR LOGONLINE CONNECTION (WHEN PRESENT)



For most modem settings a power-cycle of the Heat Manager is necessary (the touchscreen asks you to do this, when this is necessary). Always make sure the LogOnline connection is present and stable before starting the actual heating-process.

You can view the LogOnline connection status by pressing the signal button at the bottom of the screen. This will show the "CHECKING CONNECTION" screen.

The screen will show the name of the provider, signal strength and LogOnline link status.



It can take a few minutes before the modem receives an online communication with the LogOnline server.



When the signal strength indicator is almost full graph the modem is picking up a strong signal from the provider. This does not necessarily mean that the connection with the LogOnline server is present (yet).



When the signal is strong, but no communication to the LogOnline server is present after a few minutes you will see a red cross (X) in this signal strength indicator. The modem will still try to re-connect. If after some minutes the connection is still not present you need to check the items on the next page to try to solve this problem.



When the signal is weak: try rotating the Heat Manager so it picks up a better signal. When working indoors you can try to move the Heat Manager around. 10 meters can sometimes make a big difference. Your supplier has special high-sensitivity antennas available for working in remote areas or in buildings that shield the signals too much.



Please make sure you have the PIN and PUK codes readily available for your SIM-card before trying to set a new PIN code to the modem. If in doubt: set the PIN code of the SIM card with your mobile phone to 0000 because that is the first code the modem will try at startup (after performing an initial setup). When the touchscreen receives information from the modem that the PIN code is correct, it stores this working code internally in the touchscreen so it can be automatically supplied to the modem at startup.
If the touchscreen is re-initialized or updated it will first try PIN code 0000 again to access the modem at startup.

Here are some items to check if you cannot get a connection with the LogOnline server

Check with your SIM-card provider:

- You use an enabled data-SIM card
- When working abroad whether roaming is enabled
- Set the correct APN (access provider name)
- Most providers don't need a user name and password so you can leave these screens empty, but some do.



When you made new settings they will be transferred to the modem.



Sometimes it takes a few minutes for the modem to accept the new settings.
Please be patient and follow the instructions on the touchscreen.



When you cannot get the connection to LogOnline running after trying all the advice above, please remember that the Heat Manager always has an internal recorder buffer that measures the actual temperatures. You can export these measurements as a CSV file that can be transferred to the USB-stick and imported to Excel, in case of emergency.



All other settings are covered in the engineering manual

6. COMMON FUNCTIONS

6.1 BUILT IN QWERTY KEYBOARD

While using the Heat Manager Connect you will be asked to fill in all sorts of information. This can be done with the built in touch-keyboard. The keyboard is as displayed below.

You will notice that the keyboard makes use of the standard “QWERTY” layout. The things you must know to make correct use of the keyboard are:

- Your written text will be displayed in the “input field” at the top of the screen.
- You can change the layout from “QWERTY” to “numeric” and vice versa by pressing the “123 :#+” / “ABC” button at the left bottom of the keyboard.
- Use the “BS” and “CLR” buttons to clear parts of the inserted text.
- Close the keyboard by pressing “ESC” at the left bottom of the screen
- Move the cursor by pressing the “Left” and “Right” arrow buttons at the right bottom of the keyboard.
- Confirm your entry by pressing “ENTER”



6.2 NUMERIC KEYBOARD

You make use of the numeric keyboard when editing heating profiles. The functions of this keyboard will be explained below.



The minimal and maximal values that can be entered will be displayed at the top of the keyboard. Values that do not fall in this range will not be accepted by the system.

Use the number buttons to fill in the input field.

Use the **BS** and **CLR** buttons to clear areas of the input field.

You can close the Keyboard by pressing the **ESC** button.

Confirm your filled in data by pressing the **ENTER** button.

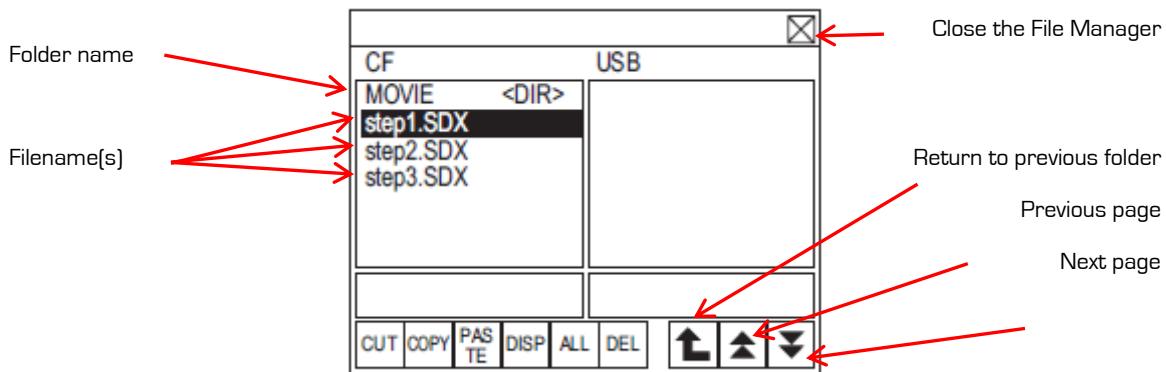
6.3 LOGIN KEYBOARD

After pressing the "LOGIN" button the Login Keyboard will appear. The login keyboard works in the same way as the numeric keyboard, the only difference is that the input field will cover up your input with "****" for safety reasons. Your login code is a 4 digit number.



6.4 USING THE BUILT IN FILE MANAGER

You will have to make use of the built in File Manager to transfer files from the SD/CF card to the USB stick. The left part of the File Manager will show you the files that are on the SD/CF card and the right part of the file browser will show you the files from the USB stick.



- [DEL] : Deletes the selected file or folder.
- [COPY] : Selects all the files in the displayed folder.
- [DISP] : Displays the files in the selected folder
- [PASTE] : Pastes the file that was cut or copied.
- [ALL] : Copies the selected file or folder.
- [DEL] : Cuts the selected file or folder.

Transferring data from the internal SD/CF card to USB stick.

Use the following steps to copy files from the CF Card to the USB device using the File Manager. First make sure that your USB device is connected to the Heat Manager!



Do not disconnect the USB device until you have closed down the File Manager

Select the files you wish to transfer from the left column of the File Manager.
The files you have selected will be highlighted in "white". Entire directories can also be selected.
Directories are shown with <DIR> next to the folder name.
You can either choose to copy the files or cut the files. Press CUT or COPY.
The USB section will now be highlighted in yellow.
Select the directory in which you want the files to be stored. Now press PASTE to copy the files. Close the File Manager by pressing the X button on the top right.
The files are now copied and the USB device can be removed.



Always check if your CSV files can correctly be opened before removing these files from the SD/CF card.

7. IMPORTING A CSV FILE INTO EXCEL 2010

Here is a short step-by-step instruction on how to import a previously stored CSV file into Microsoft Excel 2010 and divide the measured process values by 10 (necessary in Centigrade mode of the Heat Manager, in Fahrenheit there is no extra decimal point so this step is not necessary).

This instruction assumes you have already basic knowledge about Microsoft Excel 2010. If not: please consult the corresponding manual.

It can be that your version of Microsoft Excel (or another spreadsheet program) slightly differs from this instruction, please consult the manual of that specific program for extra information on how to do this.

- 1) Open new worksheet
- 2) Data \ from text
- 3) Text files-import
- 4) Separated → next
- 5) Separation characters – comma and text indicator → next
- 6) Set per column what each specific column is (when possible). Especially the date
- 7) Finish: the data is now in the right columns
- 8) Add a new column next to a column with measurements
- 9) Enter formula on 1st position in the newly entered column [e.g. =A3/10]
- 10) With the mouse: click on the newly calculated value and grab the right bottom of the highlighted square (left click)
- 11) Put this new column in a graph (x=time, y=new column) with 1 decimal point.

This instruction is based on the instruction found on the internet (unfortunately in Dutch), see:
<http://www.ikp-ads.com/articles/importtextnl.asp>

Since the end of 2014, there are two other options available for importing the stored .CSV file:

- An automatic Excel 2010 macro that automatically imports the .CSV file and displays the graph.
- A separate windows application that can directly read your .CSV file, together with the batch information. It automatically generates a WORD file with the graph in it with your custom company logo as a watermark in the back of the graph.

Contact your supplier for details if you are interested in these options.

8. FTP FILE TRANSFER BETWEEN HEAT MANAGER AND WINDOWS PC

You can transfer files to and read files from the Heat Manager through a so-called FTP [file transfer protocol] connection. This is a standardized way of transferring files between systems.
For more information on this, check http://en.wikipedia.org/wiki/File_Transfer_Protocol.

In order to work with this protocol in a simple way you can make use of the free FTP tool FileZilla client. You can download it at <https://filezilla-project.org/>.

Remark: download the previous version of FileZilla, version 3.9.0.5, since the commands the new version 3.11.0.1 sends to the HeatManager FTP server are not supported. This older version can be downloaded from: http://sourceforge.net/projects/filezilla/files/FileZilla_Client/3.9.0.5/

8.1 DISABLE FIREWALL SETTINGS

You need to disable firewall settings in your system since this blocks this application. Before starting the communication, make sure you have a connection between your PC and the Heat Manager. Normally you connect the Heat Manager to your PC via a so-called switch, in that case you make use of so-called "straight" ethernet cabling. When connecting directly from a PC to the Heat Manager [so without a switch] you need to make use of a so-called "crossed" ethernet cable. Check with your IT administrator for help on this subject.

Also make sure you set the IP address of the touchscreen correctly (see the engineering manual "network settings" for these adjustments).

You need to know the correct IP address of the Heat Manager your wish to connect to.

8.2 TEST COMMUNICATIONS LINE

When you installed all cabling correctly you can try to test it in the command line of windows. First close all applications.



Keep the "windows button" [see above for example] pressed and push the R key.

Enter cmd in the command line (Dutch windows example, your version can differ from this):



You will now see the screen below (Dutch windows example, your version can differ from this). In this example the IP address of the Heat Manager was set to 10.0.0.103 (see the engineering manual – network settings for this). Please note, that your Heat Manager can have a different IP address.

Enter in the command line: PING 10.0.0.103, followed by the ENTER key.

The PC now tests the communication line between the PC and the specified IP address.



```
C:\Windows\system32\cmd.exe
Microsoft Windows [versie 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. Alle rechten voorbehouden.

C:\Users\Service_04>ping 10.0.0.103

Pingen naar 10.0.0.103 met 32 bytes aan gegevens:
Antwoord van 10.0.0.103: bytes=32 tijd=2 ms TTL=255
Antwoord van 10.0.0.103: bytes=32 tijd<1 ms TTL=255
Antwoord van 10.0.0.103: bytes=32 tijd<1 ms TTL=255
Antwoord van 10.0.0.103: bytes=32 tijd<1 ms TTL=255

Ping-statistieken voor 10.0.0.103:
Pakketten: verzonden = 4, ontvangen = 4, verloren = 0
(0% verlies).

De gemiddelde tijd voor het uitvoeren van één bewerking in milliseconden:
Minimum = 0ms, Maximum = 2ms, Gemiddelde = 0ms

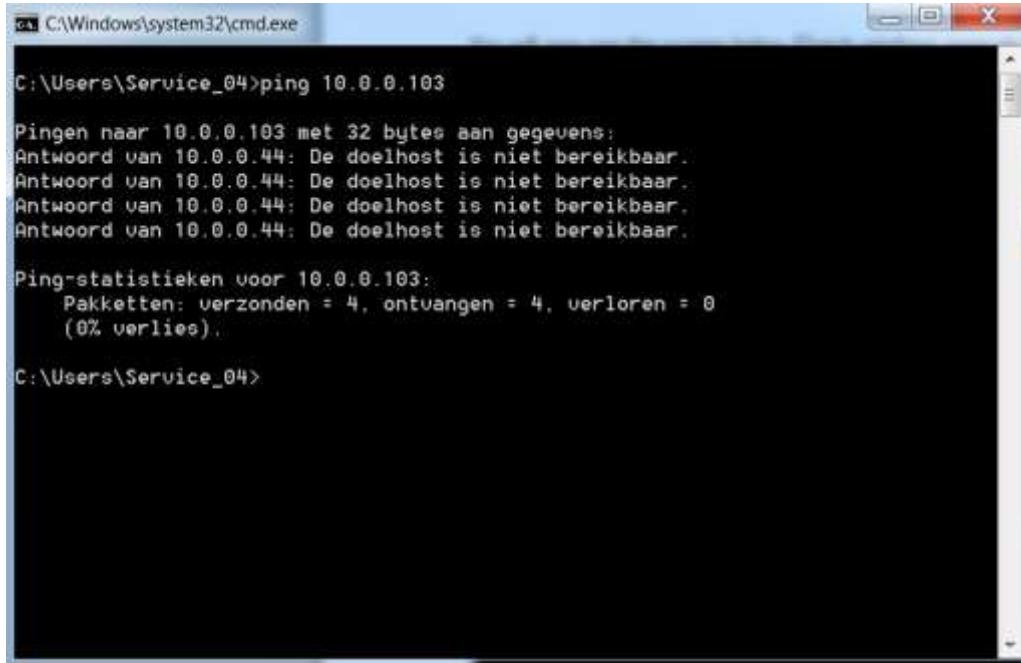
C:\Users\Service_04>
```

When the communication is not working correctly, because of:

- The IP address is not correct
- Ethernet cabling is not correct (no connection or straight/crossed not correct)
- PC has some kind of firewall/safety setting that blocks the communication

You will see a screen similar to the one below:

You need to consult your local IT support to solve this problem.



A screenshot of a Windows Command Prompt window titled 'C:\Windows\system32\cmd.exe'. The command entered is 'ping 10.0.0.103'. The output shows multiple failed ping attempts to the specified IP address, followed by ping statistics and a final prompt.

```
C:\Users\Service_04>ping 10.0.0.103

Pingen naar 10.0.0.103 met 32 bytes aan gegevens:
Antwoord van 10.0.0.44: De doelhost is niet bereikbaar.

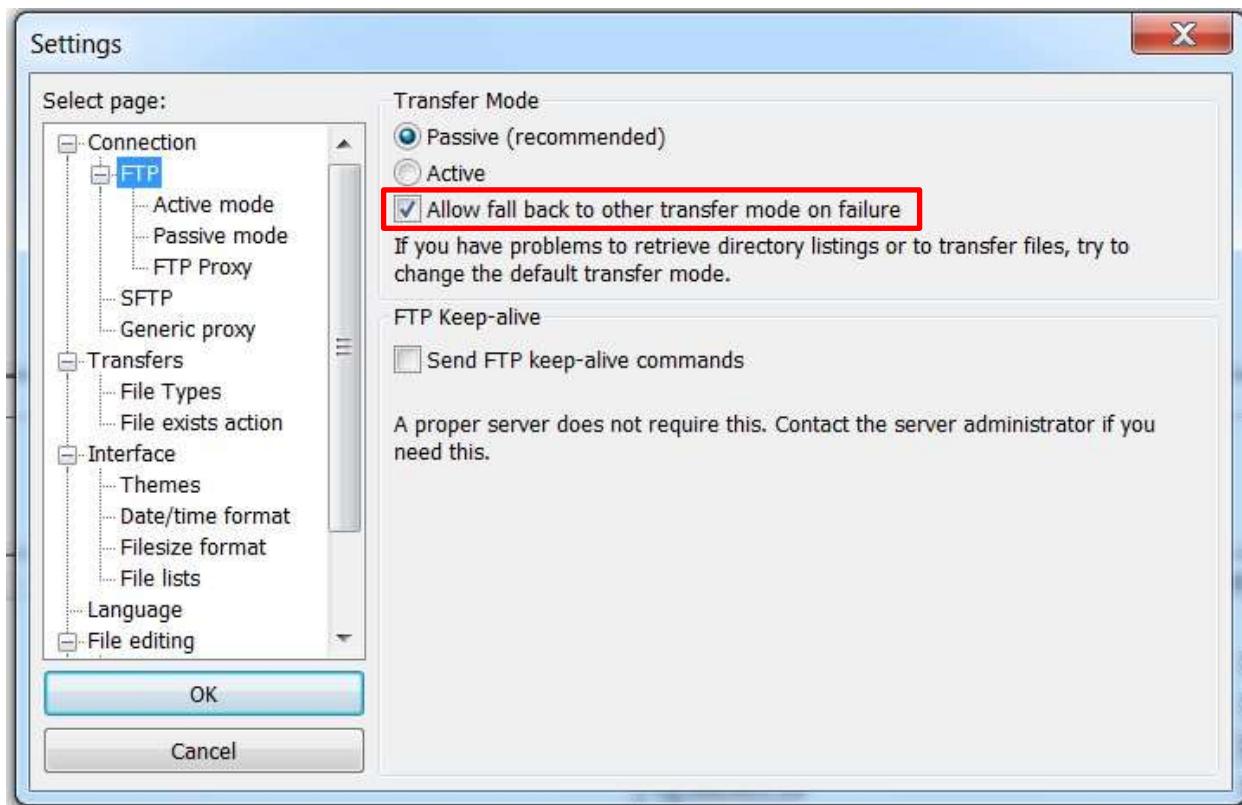
Ping-statistieken voor 10.0.0.103:
  Pakketten: verzonden = 4, ontvangen = 4, verloren = 0
              (0% verlies).

C:\Users\Service_04>
```

8.3 FTP CLIENT

When you tested the connection correctly, you can start the FileZilla client application on your PC.

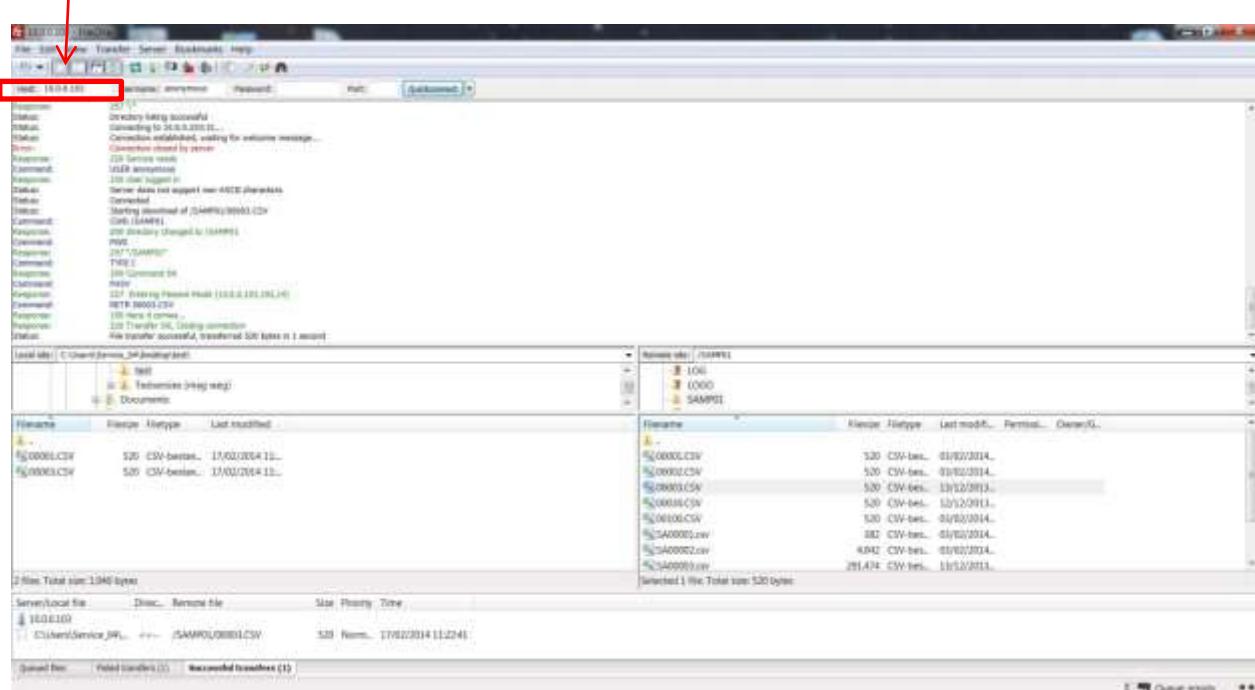
You first need to set 1 extra mark at “allow to fall back to other transfer mode on failure” before starting the communication. Go to the Edit-Settings tab in FileZilla for this.



Press OK to store this setting.

You can now initiate communication with the Heat Manager by entering the IP address and pressing enter.

IP address of the Heat Manager



To the left below you see the current active directory on your PC. To the right you will see the directory on the SD/CF card of the Heat Manager.

8.4 TRANSFER FILE(S)

You can now transfer files between your PC and the Heat Manager SD/CF card by dragging them from one directory to the other one with the mouse.

Here are the most important directories on the SD/CF card of the Heat Manager:

- FILE\FO0001.BIN (default 100 profiles file)
- SAMPO1\0000x.CSV and SA0000x.CSV (these are the exported recorder buffer files. The file starting with the SA are the actual measurements, the other one with the same number contains the batch data information. You need to merge them in your spreadsheet application).
- WebSite (this is the default website present in the Heat Manager, **you should not tamper with this**)
- In the root of the SD/CF card are the two files Logo_start.jpg and Logo_info.jpg. These are the files that the Heat Manager shows at startup. You can modify these files if you want to set your own logo.

You can stop the connection by simply clicking on the (X) right-top of the FileZilla screen.

Don't forget to enable your firewall settings again!

9. FREQUENTLY ASKED QUESTIONS

9.1 WHY CAN'T I START THE CHANNELS AT FIRST?

You first need to perform a channel setting to tell the Heat Manager what each channel needs to do. After performing a channel setting the OPERATION button will appear in the main menu. You can now see the actual temperatures and try to start the desired channels. This situation will also occur if you switch between the easy and advanced mode, in this case the Heat Manager demands a new channel configuration and disables the operation button.

9.2 EVERYTHING IS CORRECTLY CONFIGURED AND A CHANNEL SETTING HAS BEEN PERFORMED, BUT I CANNOT START THE HEAT MANAGER.

Check if all the sensors are connected correctly, when the Heat Manager detects a faulty sensor it blocks the start-button in the operation screen.

9.3 How can I quickly check the logged temperatures from the operation screen?

Push on the blue numbers on right-bottom of the operation screen. You will now see a graphic overview of the currently logged temperatures. Push it again in the middle of the screen to quickly return to the operation screen again.

9.4 How do I go to the next programmed step in the profile?

Go to the operation screen (showing all temperatures) and press on the temperature of the channel that you wish to step. Keep it pressed and the "channel details" will appear. You can now push the Step/Hold tab where you can force a channel in the next step of the profile. Can also force a channel in hold or get it out of this manually forced hold situation.

9.5 The Heat Manager does not continue with the running profile

Check on the operation screen of there is a small [H] shown in the channel, this means that a channel is in hold state. This can be because the temperature deviation from one or more of the channels (both programmer and its slaves) is outside the programmed deviation band (adjustable per step). It can be adjusted in the Heat Manager setup if the profiler is allowed to continue when one of the sensors reaches burnout state (open thermocouple).

Make sure that you put channels that are not in use into UNUSED state (easy mode: CHANGE CHANNELS in the main menu; advanced mode: USE LAST in CHANNEL SET menu). This is to prevent unwanted sensor and deviation alarms.

9.6 HOW TO CHANGE A PROFILE INSIDE A RUNNING PROGRAMMER?

Go to the channel settings, select “use last”. Now, just push the “ok” button behind the programmer (and only that button, nothing else) that you wish to re-load with another profile. Push next, you can now select the desired profile. After returning the programmer with the new profile will restart in step 1 at the currently detected temperature of the programmer. After that you can go to channel details and increase the step-number.

9.6 HOW DO I CHANGE A RAMP IN A RUNNING PROFILE WITH THE ADVANCED MODE?

Select the profile to change in the profile-set from the main menu. Edit the profile that must be changed and change the deviation band in the step you wish to change. When you push done, the changed profile will be shown graphically. When you push next and yes-store the Heat Manager detects in which channels this specific profile is currently running. You can select the programmer that needs to be updated. The Heat Manager will now restart in step 1 at the actual temperature of the programmer.

9.7 THE HEAT MANAGER REACHED THE SOAK-SEGMENT BUT THE TEMPERATURE CANNOT REACH THIS. HOW TO INCREASE THE DEVIATION BAND?

You can go to the channel details [push the temperature on operation for a few seconds]. When the programmer is in a soak segment you can change the set value (orange number) by hand. Another way is changing a running profile (see “how to change a ramp in a running profile with the advanced mode”).

9.8 I LOGGED ON A FEW TIMES WITH THE WRONG PIN-CODE. THE SCREEN IS NOW APPEARS LOCKED. HOW TO UNLOCK THIS?

Enter the unlock code 3712 and push enter. The PIN code will now reset to 0000. Log in with 0000 and the system is unlocked again.

10. NOTES
