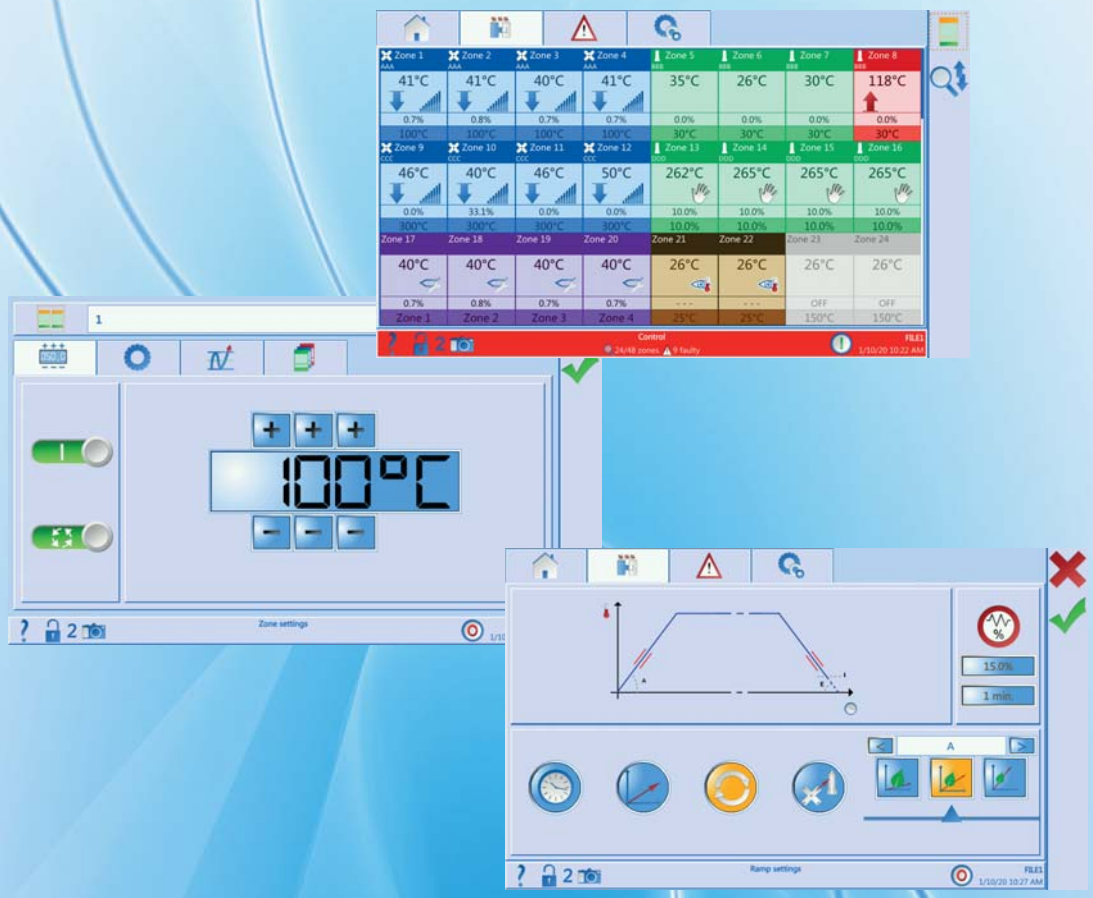
# MV3-IM and MV3-TS Series USER Guide



## *Hot runner temperature control*
## *Software MV3-IM and MV3 Series Multizone Controllers*

| Written by : K. PERRIN<br>Date : 08/04/19 | | Approved by : **NCN**<br>Date : 08/01/20 |
|---|---|---|
| ***Change history*** | ***Date*** | ***Change description*** |
| A | 08/04/19 | Merge MV3-IM and MV3-TS, 6.0 Version |
| B | 08/01/20 | Version 7.3 |

*Translated from the original manual*

## CONTENTS

# 1) FIRST START-UP

Connect the power cord to the appropriate power supply (see nameplate and operating instructions).
Check all incoming and outgoing connections.
Turn on the system using the interruptor located on the front.
After a few seconds, the display screen lights up.

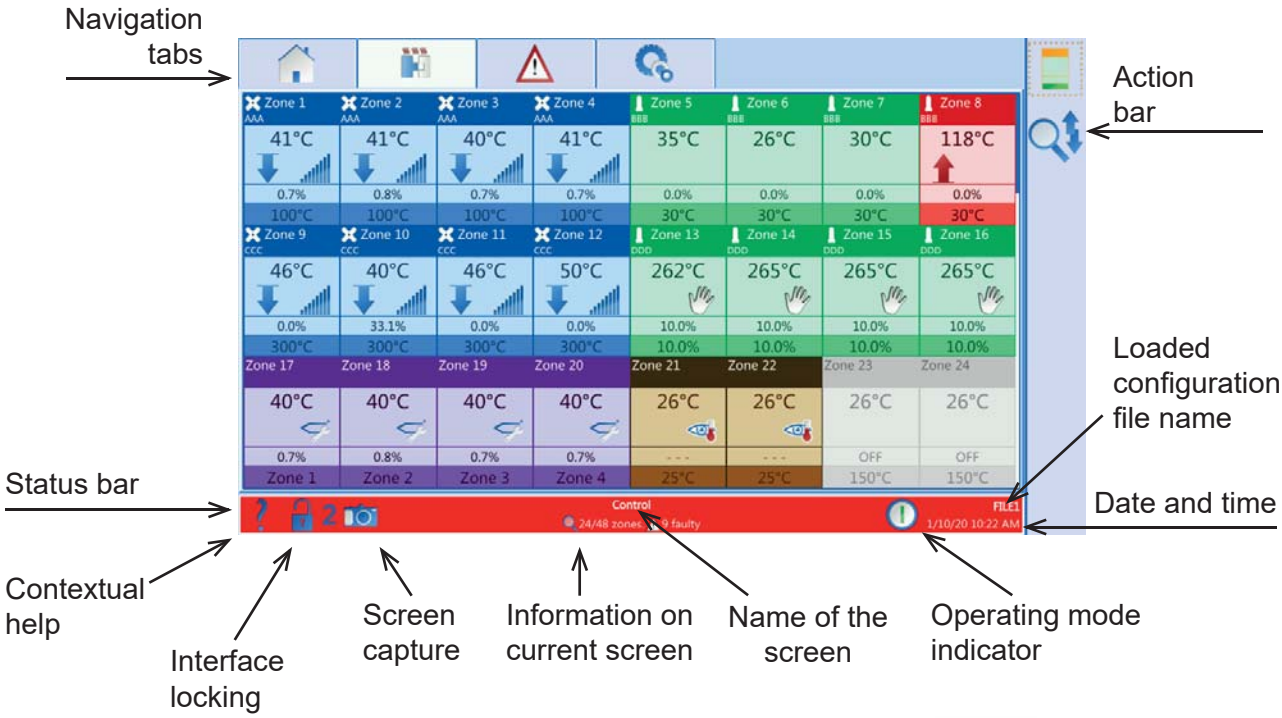
System type/
Serial number/
Software version


# 2) GENERAL PRESENTATION OF THE INTERFACE

## 2.1) COLOR TOUCH SCREEN

The user interface always displays these 3 elements:

- Status bar at the bottom of the screen
- Action bar on the right side
- 4 navigation tabs at the top of the screen

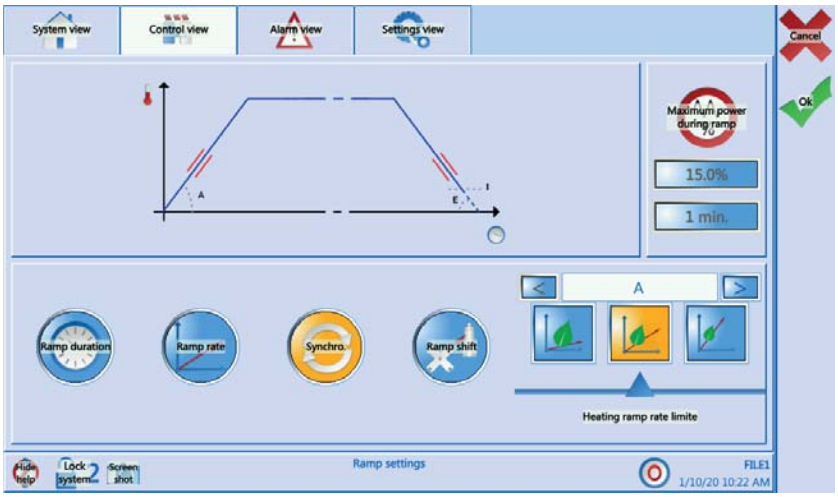


The status bar provides general information on the system status such as date and time, current configuration file, current screen name (as well as other information relevant to the screen such as the number of zones displayed out of the total number of zones, the number of zones selected and the number of zones in alarm), current operating mode (Stop/Gradual stop/Standby/Production - see §3.2.1). On the left, there are also three icons for actions concerning the graphical user interface. The status bar blinks red if alarms are triggered.

The contents of the Action bar depend on the screen currently in view and display icons which act directly on system settings.

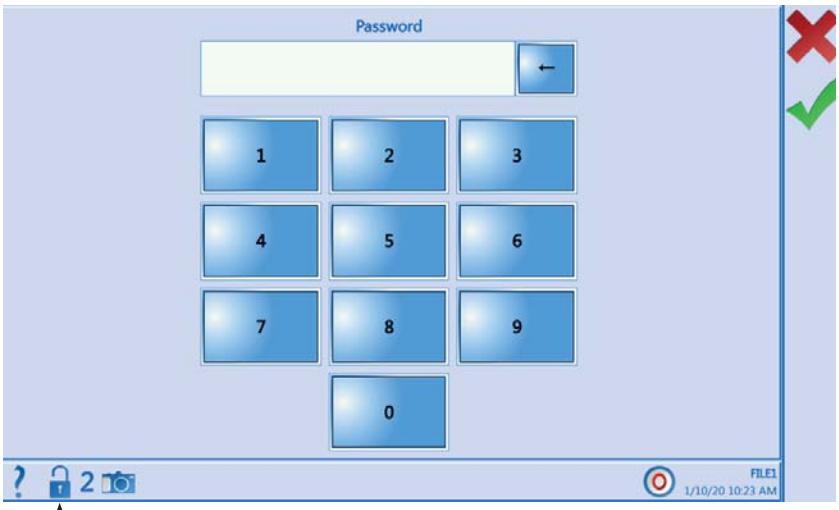
### 2.1.1) Contextual help

The question mark icon ? activates or deactivates the contextual help function displaying a description over the icons. This function is useful during learning how to use the user interface or when you have a doubt about the meaning of an icon.




### 2.1.2) Locking/Unlocking the user interface

There are 3 privilege levels which allow access to all or some of the interface functions. The current privilege level is displayed at the bottom of the page:




Current privilege level

Functions available for the different privilege levels are listed below:

| Privilege level | Accessible functions |
|---|---|
| 0 | The interface is "read-only", no changes can be made to the system. |
| 1 | Possible modifications are:<br>• Change a setpoint<br>• Turn zones On/Off<br>• Auto/Manual mode<br>• Change the operation mode<br>• Load a file |
| 2 | The interface is fully accessible, all modifications are possible. |

By default, on start-up, the user interface is not locked (privilege level 2), all functions are accessible.

By pressing the open or closed padlock icon at the bottom of the screen, a numeric keypad appears allowing changes to the privilege level by entering the appropriate password:

- to change to privilege level 1, enter the default password for this level, "654321",

  to confirm press ;
- to change to privilege level 2, enter the default password for this level, "123456",

  to confirm press ;
- to change to privilege level 0, enter the password of the current level, to confirm press .

To change the passwords for privilege levels, refer to §3.1.1.3.
To set the user level on start-up, refer to §3.1.1.1.

### 2.1.3) Screen shots

The camera icon is displayed when a USB flash drive or hard disk is connected. This icon enables you to capture screens and save them at the root of your USB device.
Note: Please wait a few seconds before withdrawing the USB device to make sure that your screen capture is completely saved on the system.

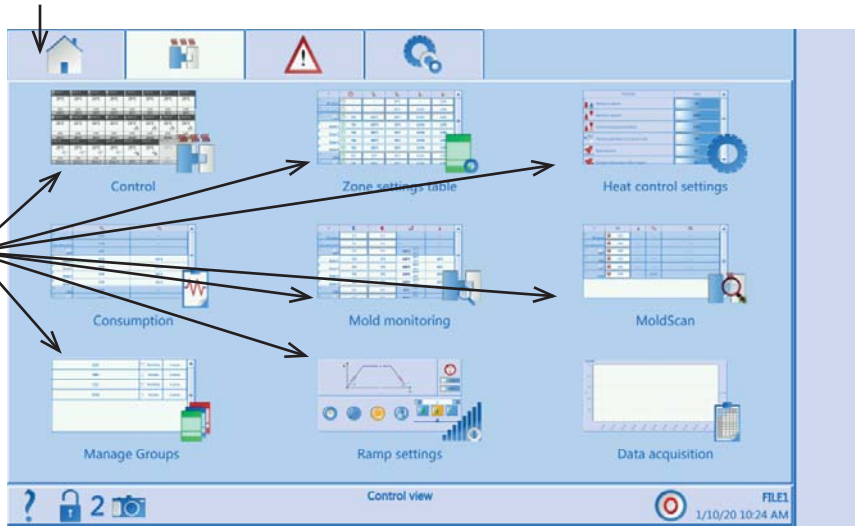
### 2.1.4) Navigation and screens

The four navigation tabs at the top of the screen represent the four different views provided in the user interface: System view, Control view, Alarm view and Configuration view.
The current view depends on which tab is selected.

Each tab gives access to a set of screens. For example, to change or view the settings of one or more zones, press "Control view" . The different screens of this view are represented by thumbnails.

Press the tab to return to this display

Select the appropriate thumbnail to access the screen




Press the «Zone configuration table» thumbnail to go to that screen. You can now check the status of the control zones by clicking on the "Control view" tab  and by selecting the "Control" thumbnail.

## 2.2) SCREEN DISTRIBUTION

The screens are assigned to the different views according to their function:

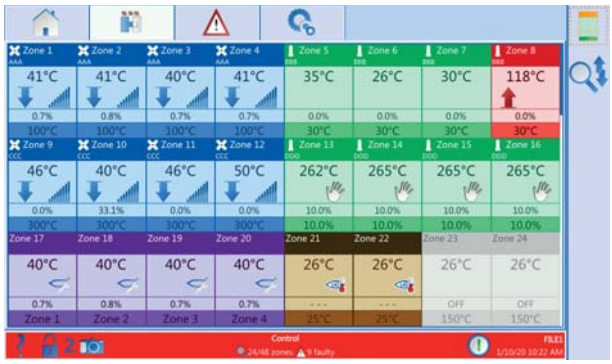
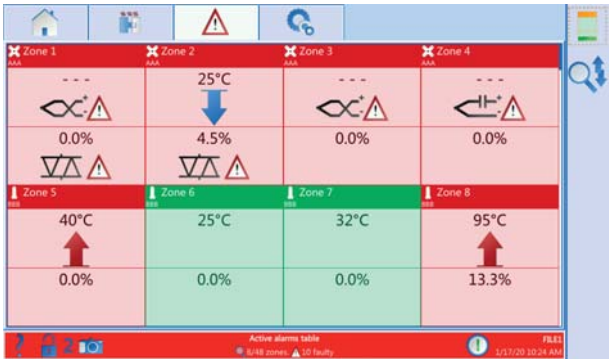
- The SYSTEM view pertains to the whole system (i. e. mold files).
- The CONTROL view pertains to the temperature control.
- The ALARM view pertains to alarm management.
- The CONFIGURATION view pertains to the software configuration options.

The table below gives a summary of the screens available under the different tabs.

| Tab | Screen | |
|---|---|---|
| System |  | • Configuration files<br>• Operating Mode<br>• Time Programming / Scheduling<br>• Documentation |
| Control |  | • Control<br>• Zone configuration table<br>• Temperature control settings<br>• Power consumption<br>• Mold monitoring<br>• MoldScan<br>• Group management<br>• Ramp settings<br>• Data acquisition |
| Alarms |  | • Table of active alarms<br>• List of active alarms<br>• Alarm log<br>• Alarm Parameters |
| Configuration |  | • General configuration<br>• Regional parameters<br>• Privileges<br>• Network settings<br>• System info<br>• External parameters |

## 2.3) GETTING STARTED WITH THE INTERFACE

The "Control" and "Table of active alarms" screens both contain information on the heating zones. On each of these screens the zones are represented in a grid: zoom in or out to re-size this grid.

| "Control" screen | "Table of active alarms" screen |
|---|---|
|  |  |

### 2.3.1) Information on heating zones

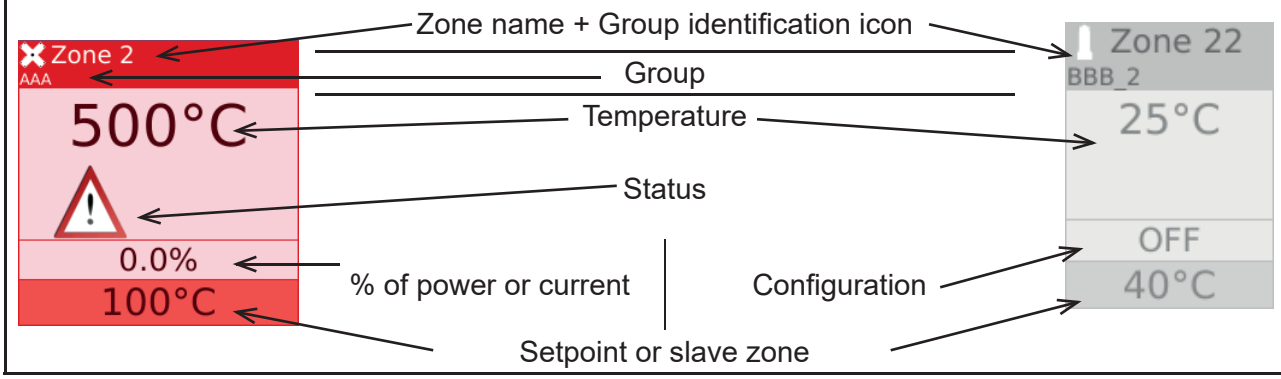
The information displayed for each zone also depends on the selected zoom level and on the screen size.

The color indicates the status of the zone:

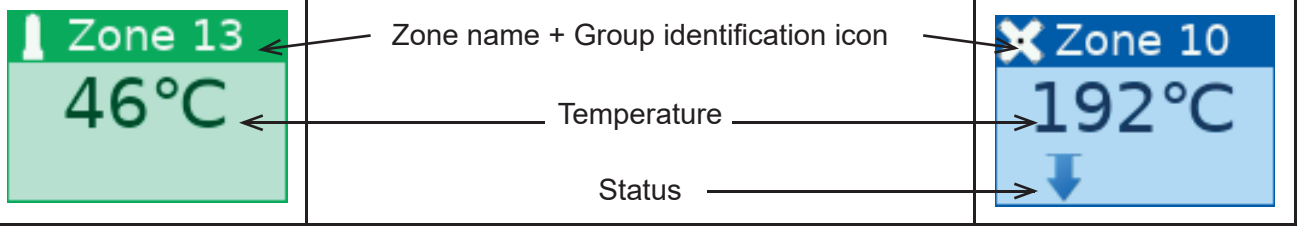
- Red: zone with alarm.
- Green: zone without alarm.
- Grey: zone OFF.
- Blue: zone with low temperature alarm.
- Purple: zone using the temperature probe of another zone.
  The name of the reference zone is displayed in place of the setpoint temperature.
- White: zone ON, system in STOP mode.
- Beige: zone under surveillance

#### 2.3.1.1) Control screen

| Max. information displayed | |
|---|---|
| **Zone with alarm** | **Zone switched off** |



| Min. information displayed | |
|---|---|
| **Zone without alarm** | **Zone with low temperature alarm** |




The meaning of the various status icons is described below:

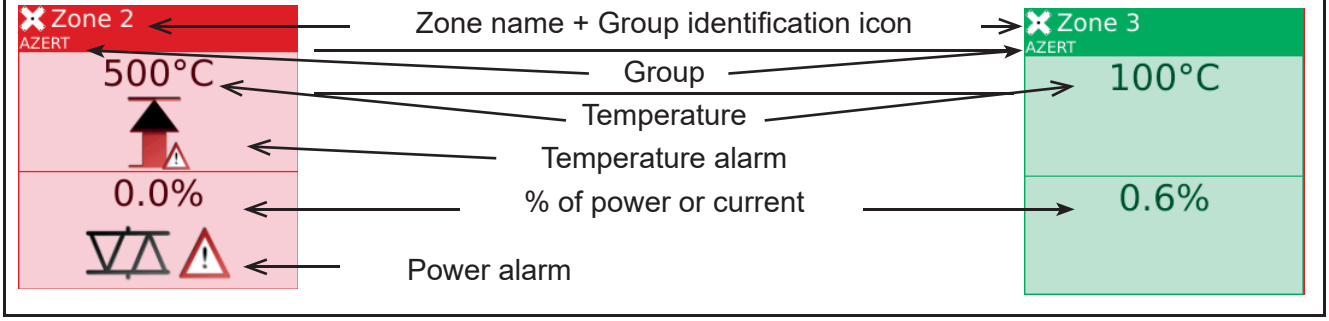
| Icon | Description |
|---|---|
|  | Temperature of the zone is below setpoint: Low temperature alarm. |
|  | Temperature of the zone is above setpoint: High temperature alarm. |
|  | The zone has an alarm triggered which is not High or Low temperature. |
|  | A ramp has been applied to the zone so that its setpoint can be gradually reached. |
|  | The zone is in Boost mode (§3.1.2.1- §3.1.2.3). |
|  | The zone is backed up: the power applied to the zone is identical to the power applied to the slave zone (§3.1.2.3). |
|  | The zone is in manual mode. The power applied is set by the ‘Manual Setpoint». There is no temperature control on the zone. |
|  | The zone is being monitored |

2.3.1.2) **A**larm screen

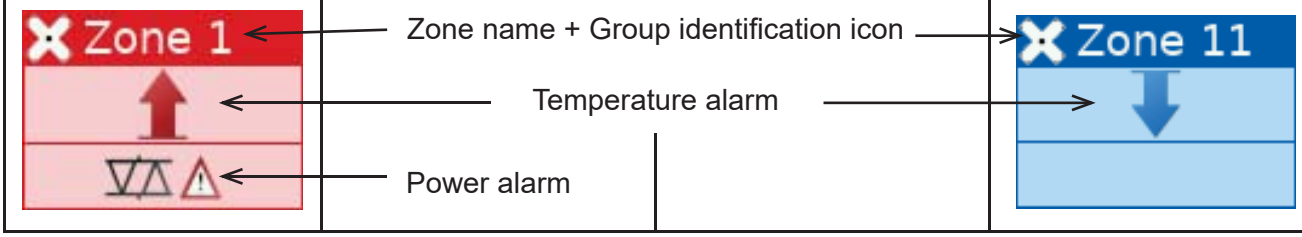
The information displayed for each zone also depends on the selected zoom level and on the screen size.

The color indicates the status of the zone just like in the control screen.

| Max. information displayed | |
|---|---|
| **Zone in high temperature alarm or other alarms** | **Zone without alarm** |



| Min. information displayed | |
|---|---|
| **Zone with high temperature alarm or other alarms** | **Zone with low temperature alarm** |




The meaning of the various temperature alarm icons is described below:

| Icon | Fault |
|---|---|
|  | Temperature of the zone is below setpoint: Low temperature alarm. |
|  | Temperature of the zone is above setpoint: High temperature alarm. |
|  | Cut Thermocouple. |
|  | Reversed Thermocouple. |
|  | The zone is in manual mode after the thermocouple has been cut.<br>This function must be previously activated (§3.1.2.1). |
|  | Zone temperature is above the abnormally high temperature threshold (§3.1.2.1). |

The meaning of the power alarm icons is described below:

| Icon | Fault |
|---|---|
|  | Load Fault. |
|  | Power monitoring detected a different power than the reference measurement. |
|  | Triac fault on the zone. |
|  | Current measurement is different from the reference measurement. |
|  | A power supply phase is absent on the power cards. |
|  | Overvoltage |

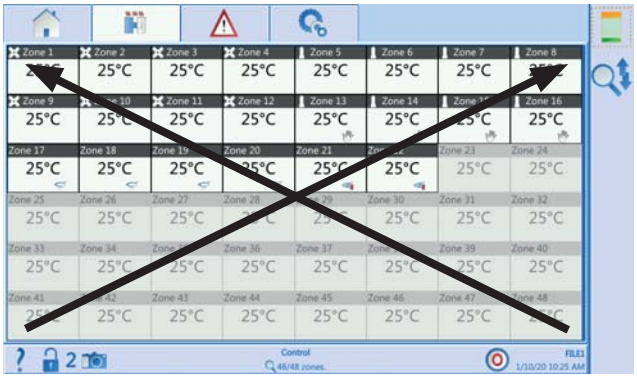
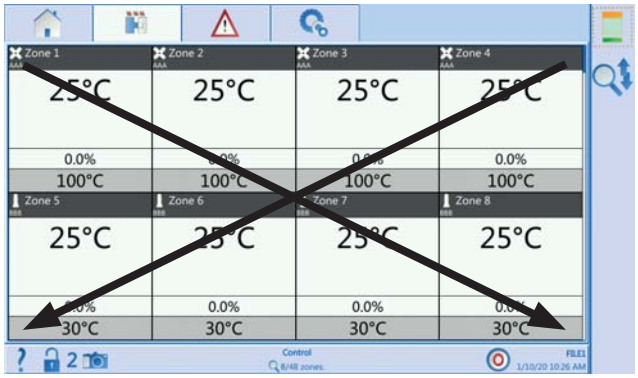
### 2.3.2) Changing the number of zones displayed

It is possible to zoom in or out so as to display more or fewer zones. This allows an overall view of the system showing fewer details for each zone, or alternatively to view more information of a smaller number of zones.
The various zoom levels depend on the screen set up on the system:

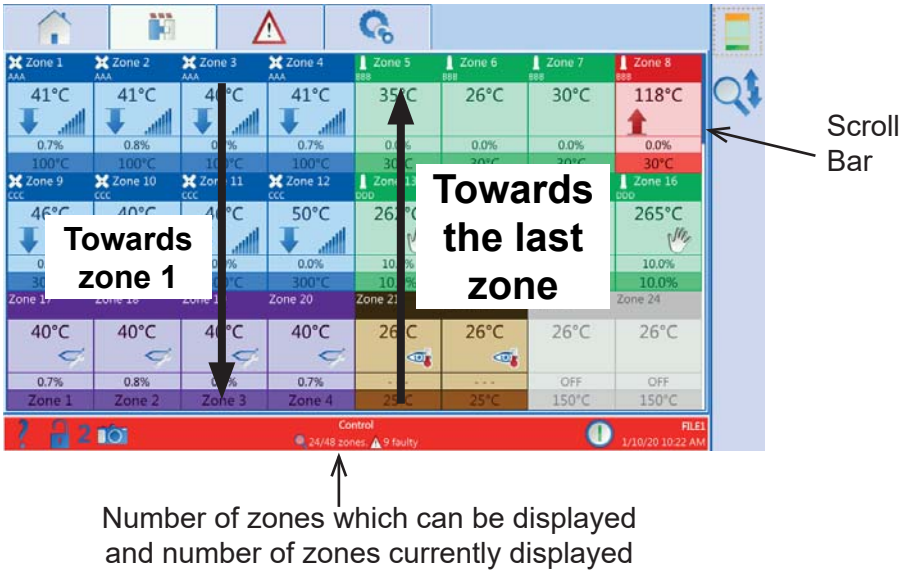
- 7" landscape-oriented screen: 48, 24, 16, 12 or 8 zones can be displayed at once.
- 10" and 15" portrait screens: 96, 72, 48, 24 or 16 zones can be displayed at once.

The zoom level can be changed in either of two ways: either by swiping diagonally upwards to zoom in (displaying fewer zones) and diagonally downwards to zoom out (displaying more zones), or by using the navigation icon  in the Action bar.

#### 2.3.2.1) Zoom in or out by swiping

| Zoom in | Zoom out |
|---|---|
|  |  |

The number of zones currently displayed is shown in the status bar. If the system is capable of managing more zones than the number currently displayed, you can navigate around the zones displayed by swiping upwards or downwards. There is a position indicator on the right-hand side of the window giving further information on the scrolling of the zones.



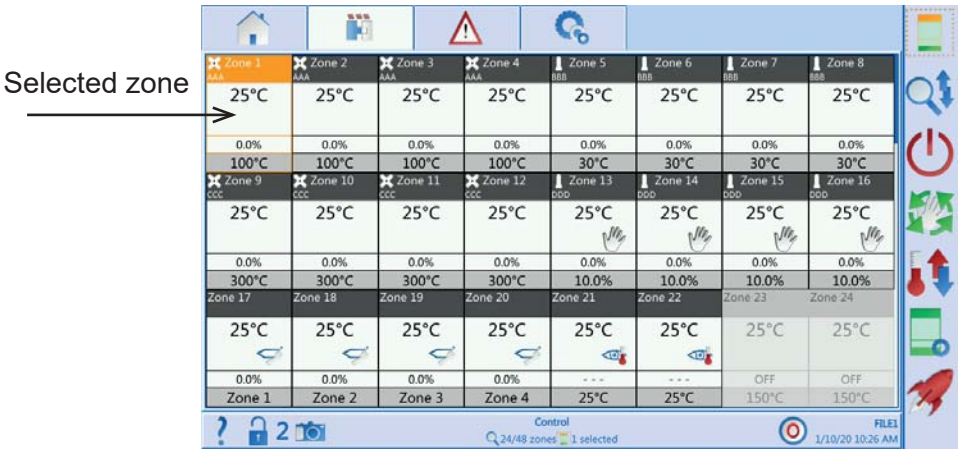
### 2.3.2.2) Zoom in or out using the navigation icon

Pressing the navigation icon  in the Action bar brings up a double icon bar with the following actions:

| Icon | Action |
|---|---|
|  | Scroll up, equivalent to moving towards the first zone. |
|  | Scroll down, equivalent to moving towards the last zone. |
|  | Zoom in, display fewer zones but with more detail. |
|  | Zoom out, display more zones but with less detail. |

### 2.3.3) Selection

It is possible to carry out certain operations on only specifically selected zones. These zones can be selected by pressing a zone, which is then highlighted in orange:




Pressing an already-selected zone deselects it.

It is also possible to select or deselect several zones at the same time by using the selection menu in the Action bar  . Once this menu has been activated, a double Action bar offers the following actions:

| Icon | Action |
|---|---|
|  | Exit the selection menu |
|  | Select zones by group |
|  | Select all zones |
|  | Deselect all zones |

You can also select a set of zones by pressing the first zone desired (e.g. zone 3) and then holding down the last zone desired (e.g. zone 7). All zones between these two will then be selected (zone 3 to zone 7).

# 3) USING THE SYSTEM

In order to use the system correctly, it is necessary to configure it properly before you use it for the first time. This greatly facilitates daily use.
The software also has advanced features including remote operation and customizable company information.

## 3.1) SYSTEM CONFIGURATION

### 3.1.1) Software configuration

Software configuration is done during its first use, or occasionally if you want to change an overall software setting.

#### 3.1.1.1) General configuration

The overall settings of the software can be configured in the "General configuration" screen, accessible in the "Configuration" view .


**Electric current display** :

It is possible to choose the display of the applied power (% of nominal power or load current in Amperes). This mode chosen will be used in displaying the zones on the "Control" and "Alarms" pages.

**Temperature units** :

The preferred temperature units (°C or °F) will be used throughout the interface.

**Heating neutralization input action**  :

This option is used to select the action of the HEATING NEUTRALIZATION input (see §6.4 of the Operating instructions). This input makes the system switch to the ‘Stop’ or ‘Gradual stop’ states. To restart heating, changing the input is necessary, but not enough. The Operating mode selector of the screen must be used (except for the last option: see the list of options below).
Possible actions are:

- No action: the input is ignored.
- Stop if the input is open: the system enters 'Stop' mode if the input is set to 0.
- Stop if the input is closed: the system enters 'Stop' mode if the input is set to 1.
- Gradual stop if the input is open: the system enters 'Gradual stop' mode if the input is set to 0.
- Gradual stop if the input is closed: the system enters 'Gradual stop' mode if the input is set to 1.
- Stop if the input is open, ... Production if the input is closed: the system enters ‘Stop’ mode if the input is open, and ‘Production’ mode if the input is closed.

**Standby input action**  :

This option is used to select the action of the STANDBY input (see §6.4 of the Operating instructions).
Possible options are:

- No action: the input is ignored.
- Standby if the input is open: the system enters 'Standby' mode if the input is set to 0 AND current mode is 'Production'. Switching to' Production' mode is no longer possible via the display.
- Standby if the input is closed: the system enters 'Standby' mode if the input is set to 1 AND current mode is 'Production'. Switching to' Production' mode is no longer possible via the display. For a description of the operating modes, see §3.2.1.

**Priviledge on power-up**  :

This option is used to select the privilege level applied on power-up. Possible options are:

- Priviledge 0: The system will always start at priviledge level 0.
- Priviledge 1: The system will always start at priviledge level 1.
- Priviledge 2: The system will always start at priviledge level 2.
- Current level: The system will start at the priviledge level at which it was turned off.

For a description of priviledge levels, see §2.1.2.

#### 3.1.1.2) Regional parameters

Regional parameters are date, time and language settings used by the interface. They can be configured in the "Regional parameters" screen, accessible in the "Configuration" view  .

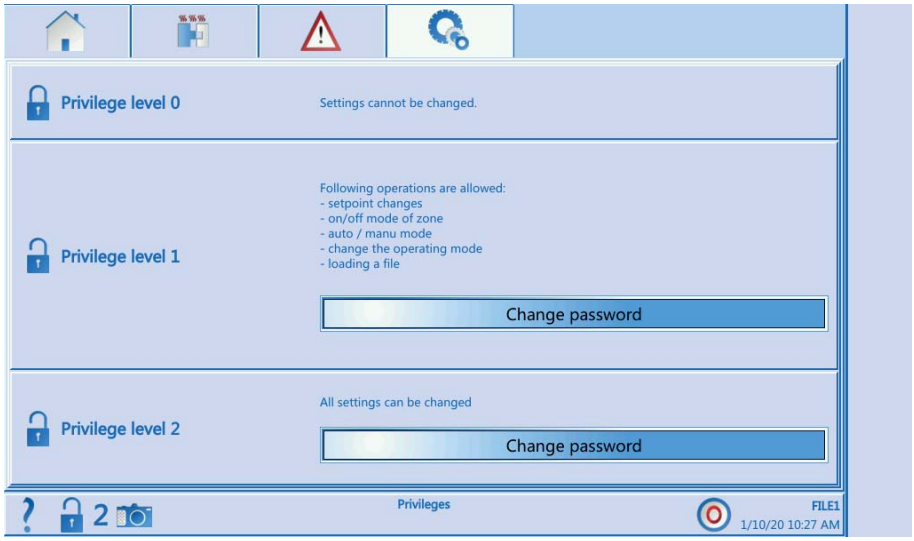

To change the date, press one of the fields (day, month, year), then use the up and down arrows to increase/decrease the value in this field.

To change the language of the interface, click on the corresponding flag.

The time zone parameter must be specified when a time server is used (§3.1.1.4) and for the automatic calculation of summer/winter time.
The modifications are confirmed when the icon is pressed. In case of language change, the interface is reloaded and the "System" view is displayed.

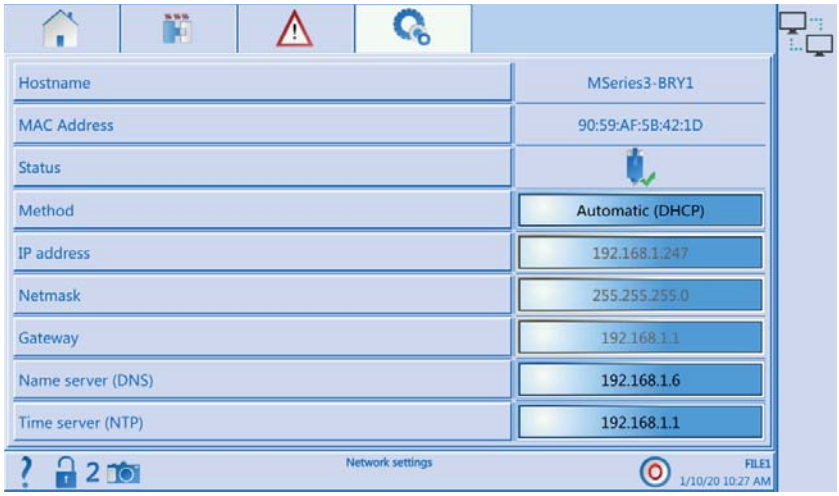
### 3.1.1.3) Changing the interface lock passwords

The password for privilege levels 1 and 2 can be changed in the "Priviledge" screen. The user will be asked for both the current and new passwords.



### 3.1.1.4) Network settings

Choose to assign an IP address automatically or manually, and configure network settings such as a Network mask or Gateway. Connect an ethernet cable between the unit and a PC or Injection Molding Machine to modify the network parameters.



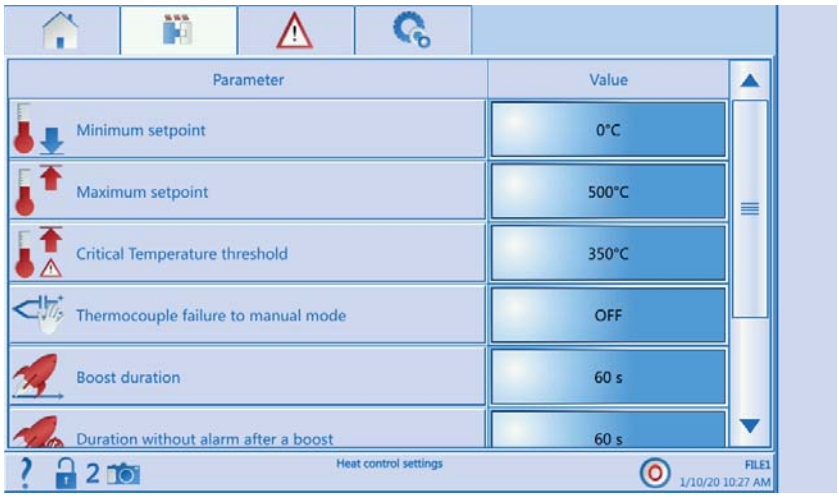

The  icon indicates that the system is connected and the network is working. The  icon indicates that the system is not connected.
When using a remote screen or VNC client display, network configuration will not be possible.

### 3.1.2) Temperature control configuration

The temperature control configuration is used to adapt software operation to the mold in use.
It is to be carried out during the first use of a mold.

#### 3.1.2.1) Temperature control configuration settings

The "Temperature control settings" screen, accessible in the "Control" view  , allows you to configure the parameters associated with temperature control.



**Minimum automatic mode setpoint** **and maximum automatic mode setpoint** :
Maximum and minimum setpoints can be specified for the automatic mode.

**Abnormally high temperature threshold** :
This value determines the temperature above which an Abnormally high temperature alarm is triggered, even if the zone involved is stopped.

**Changeover to manual mode if a thermocouple is cut** :
If a thermocouple is cut, the zone concerned switches to manual mode, with the last power percentage applied. This allows production to continue.

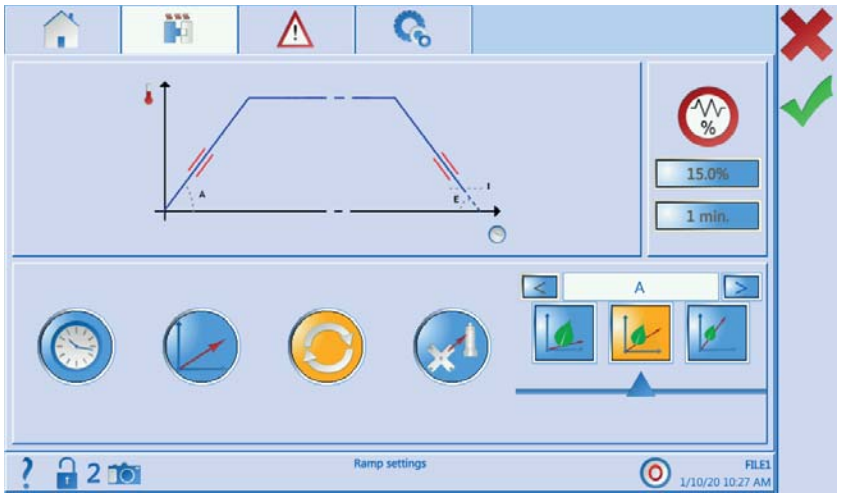
**Boost duration** :
The duration of the Boost function can be set in this field. For more information on this function, see §3.1.2.3 - Configuring Boost value and §3.1.2.5.
The Boost function can unblock an injection point where the material is too cold.

**Boost Duration without alarm** :
With this field, you can specify the duration during which no temperature alarm will be triggered after boosting.

**Start-up mode on power-up** :
This field allows you to specify the default operating mode of the system.
For a description of the operating modes, see §3.2.1.

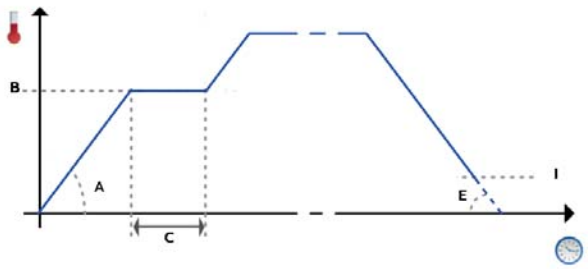
### 3.1.2.2) Ramp Softstart Settings

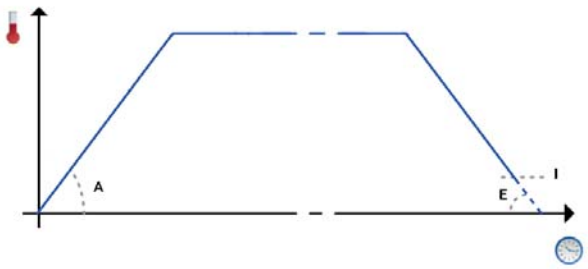
The "Ramp settings" screen, accessible in the "Control" view , allows you to set the heating ramp parameters.
Depending on the type of ramp selected, different parameters appear, along with a curve to visualize them.

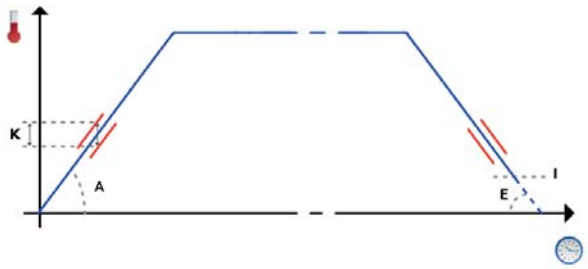


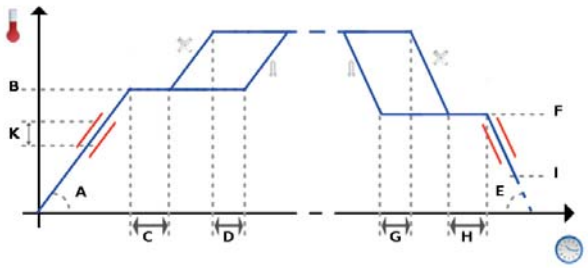
**Start-up ramps:**

On start-up, the zones in automatic mode are heated gradually until they reach their operating setpoint. There are four possible types of start-up ramps:

<table>
<tr>
<td>Duration ramp<br> 

The system heats at the maximum gradient of A, then maintains the temperature at B for a period of C minutes.<br>During cooling, gradient E will be applied down to temperature I, considered cold.</td>
<td>Gradient ramp<br> 

The system heats at the maximum gradient of A.<br>During cooling, gradient E will be applied down to temperature I, considered cold.</td>
</tr>
<tr>
<td>Synchronized ramp<br> 

The system automatically selects the zones which are working properly (no failed thermocouples or heating elements), and then starts heating these zones. An algorithm allows the fastest zones to follow the temperature evolution of the slowest zones, within the maximum gradient A.<br>During cooling, slope E will be applied down to temperature I, considered cold, and the fastest zones will follow the slowest zones.</td>
<td>Staggered ramp<br> 

This ramp uses the grouping of zones in manifold or nozzle groups (§3.1.2.4). Initially all the zones in "manifold" type groups are heated in a synchronized ramp, while the zones in "nozzle" type groups are kept at temperature B for a period of time C. When all the zones in the "manifold" groups have reached their particular setpoints, the system stabilizes their heating by means of a waiting time D, and then executes a synchronized ramp on the zones in the "nozzle" groups. The staggered ramp is terminated when all zones have reached their operating setpoints.<br>During cooling, the nozzles will be first cooled and then stabilized at temperature F for a period of time G, then the blocks will be cooled at the same temperature, then stabilized for a period H. Finally, all zones will be cooled down synchronously to temperature I, considered cold.</td>
</tr>
</table>

**A**  **and E**  **ramp gradients**:

A and E ramp gradients determine the heating / cooling gradient and thus the instantaneous power consumption. Settings will therefore be done according to criteria of technical necessity and the need to limit the peak current during heating.

 Optimized power consumption AND non-optimized heating time.

 Moderately optimized power consumption AND optimized heating time.

 Unlimited power consumption AND heating time reduced to a minimum.

 Uncontrolled cooling time.

 Optimized cooling time.

 Maximum cooling time.

**Power restriction**  :

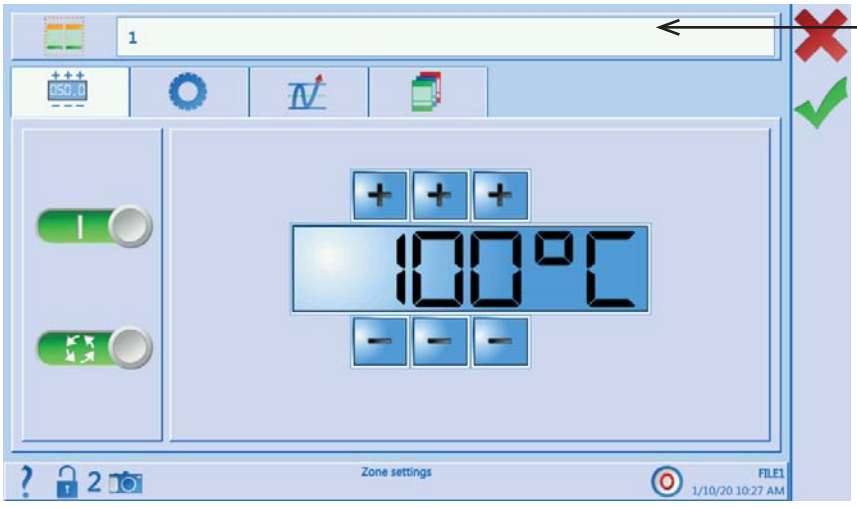
In all four start-up modes power is limited to 15% at the start of the ramp for 1 minute or until the zone reaches 100°C.

### 3.1.2.3) Heating zone configuration

Heating zones can be configured from the "Control" page or from the "Zone configuration table" (§3.1.2.5).

The "Control" screen is accessible in the "Control" view  .
To configure a heating zone, press it twice ("double-click" on it) or press the Zone configuration icon  .

To configure more than one heating zone simultaneously, select a number of zones (§2.3.3) and press one of them twice ("double-click"). This zone then becomes the "reference zone".
This brings up the Zone configuration screen:

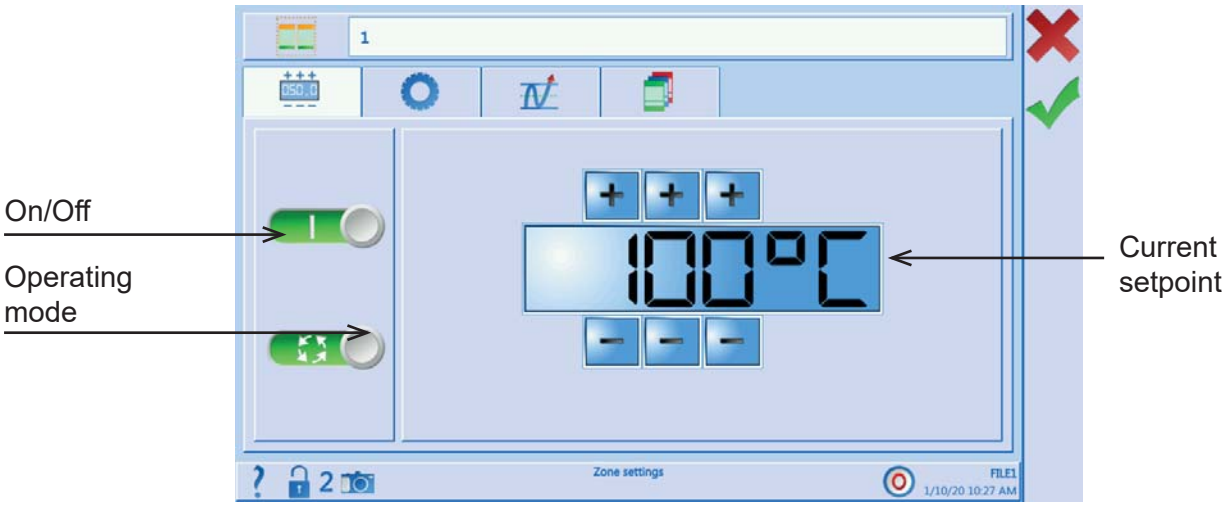



Selected zones

The values which appear on the screen are those common to the selected zones. For values which are not identical for all the selected zones, the following symbol will appear: ---.
Only changes in these values will be applied to the selected zones upon validation. Modified values appear in red.
This screen is divided into four sub-screens:

- One for quick zone modification
- One for operating mode configuration
- One for tolerance configuration
- One for naming zones and assignment to groups

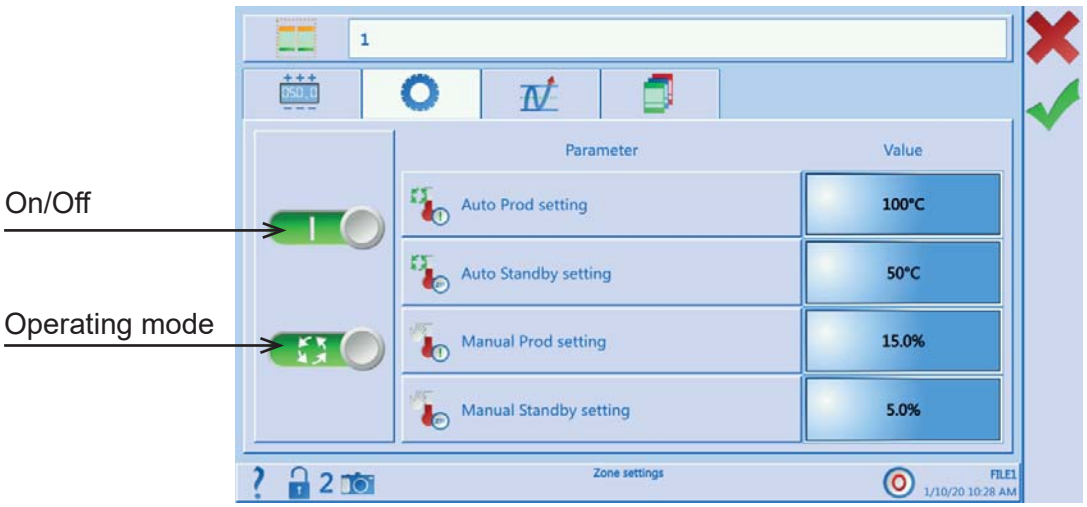
**Quick zone modification** :




You can change the setpoint value currently used for the selected zone(s).
According to the current Automatic or Manual mode of the zones and the current operating mode of the system (Stop - Standby - Production), the setpoint assigned will be the automatic production or automatic standby temperature setpoint, or the production or standby power percentage setpoint (§3.1.2.3 - Operating mode configuration).

The setpoint can be changed by pressing the '+' or '-' buttons for each digit, or by pressing the setpoint zone itself and entering a numerical value using the touch pad displayed.

**Operating mode configuration** :



**On/Off** :

The selected zones can be turned on or off by pressing the "ON" and "OFF" icons.

**Operating mode and setpoints** :

Heating zones can be controlled automatically or manually .

In automatic mode a setpoint is specified in °C or in °F and the control system automatically selects the power to be applied to the zone in order to bring that zone up to the selected temperature and keep it there. Automatic mode needs the zone to be fitted with a working thermocouple probe. If there isn't one, a back-up probe will have to be configured.

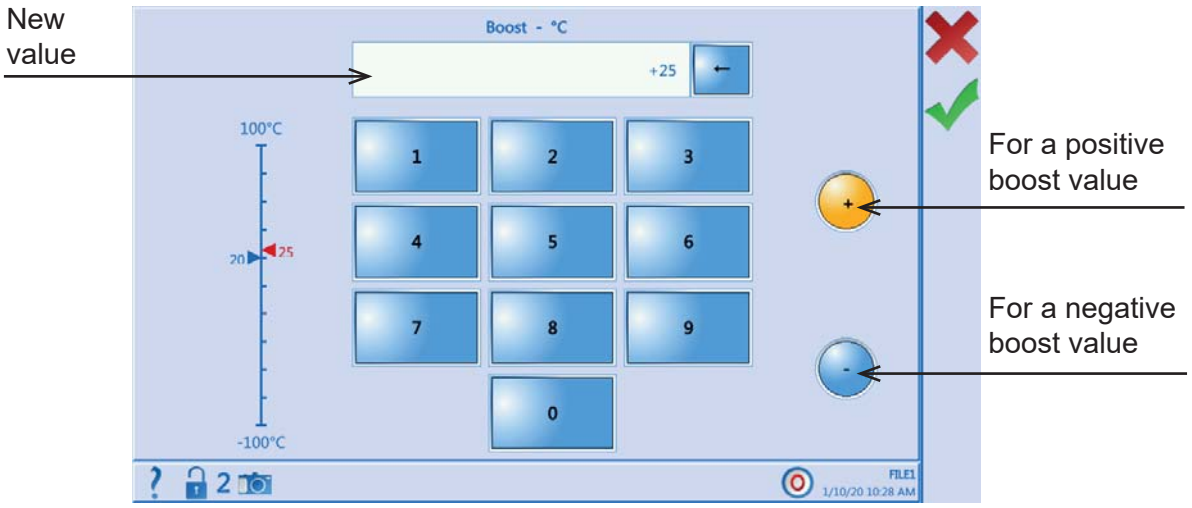
In manual mode, a power level to be applied can be specified manually. The temperature is not monitored at all in this case.
The control system allows the user to configure 2 temperature setpoints for the automatic mode ( and ) and 2 power levels to be applied for the manual mode ( and ). The choice between these two setpoints or these two power levels is made according to the setpoint mode chosen for the system (Production/Standby). See §3.2.1 for further details.

**Tolerance configuration** :


**Configuring Boost value** :

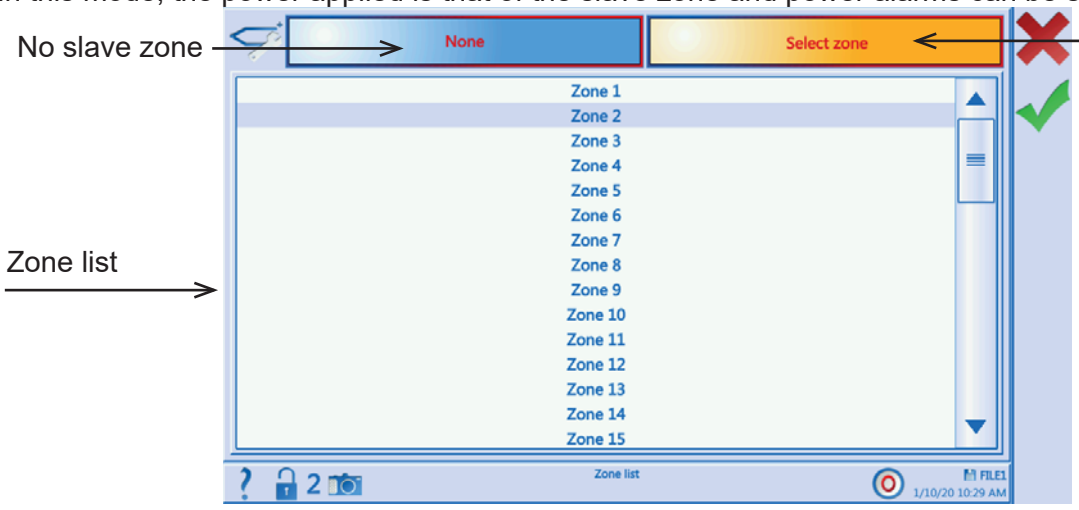
In automatic mode, the Boost function allows the user to momentarily increase or decrease the temperature setpoint of a zone in order to unblock a low temperature injection point (frozen tip).
The current setpoint is raised or lowered by the boost amount, which can be set in this screen.

**Note**: Boost duration, as well as the Duration without alarm after boosting, are the same for all heating zones and can be configured in the «Temperature control settings» screen (§3.1.2.1).




**Zone slaving** :

Configuring a back-up probe is a solution for coping with the problem of defective thermocouple probes. For instance, if the thermocouple of zone 1 malfunctions during production, the job can still be finished by configuring the zone 1 to use the thermocouple probe of zone 10, whose heating characteristics are known to be similar.
In this mode, the power applied is that of the slave zone and power alarms can be signalled (§2.3.1.2).




The zone is considered to be functioning properly once the back-up probe is configured.

**Temperature alarm trigger thresholds** :

Zone temperature is monitored in automatic mode. If this temperature rises above or falls below the setpoint, a High or Low Temperature Alarm is triggered. Alarm trigger thresholds can be configured in this screen.

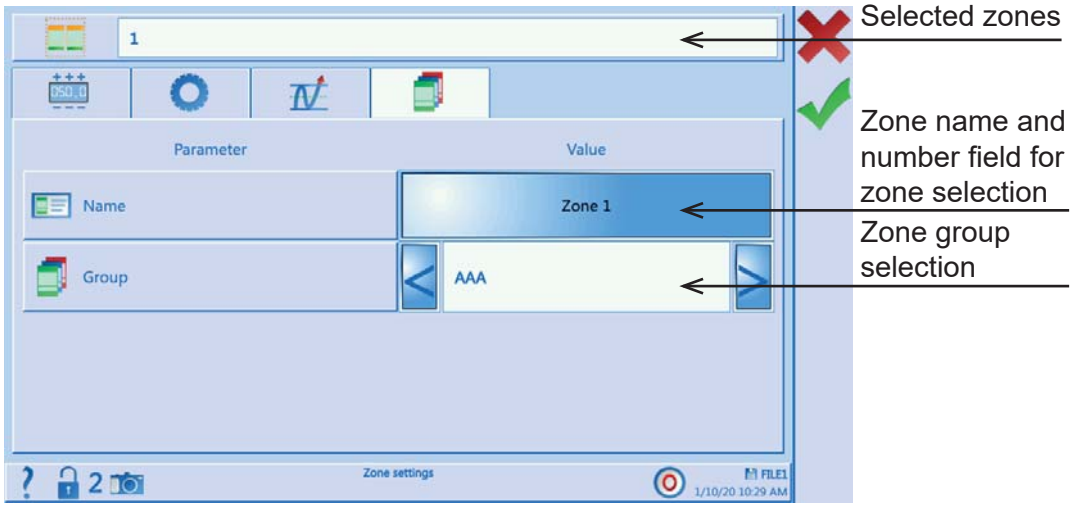
If these trigger thresholds are set at ± 5°C and the setpoint of the zone is 150°C, a Low Temperature alarm is triggered if the measured temperature of the zone falls below 145°C, and a High Temperature alarm if the temperature rises above 155°C.

**Power Monitoring Mode** :

In «control» mode, the zone controls the applied power in order to reach a setpoint.

In «monitor only» mode, no power is applied. Only the temperature is monitored, and associated alarms can be triggered.

**Naming zones and assignment to groups** :




You can change the name of the selected zone(s) by pressing the zone name and number field. If more than one zone is selected, the selection number is appended to the name entered. For instance, if zones 2, 5 and 7 are selected and the name «Manifold» is entered, the zones will be named «Manifold 1», «Manifold 2» and «Manifold 3».

Zones can be assigned to a group by pressing the «<» and «>» icons.
However, it is more convenient to use the Group management window (§3.1.2.4).

### 3.1.2.4) Zone Groups

Zone groups have two functions:

- Make it easier to configure the system by selecting the group of zones to modify
- Specify which zones are nozzles and which are manifold, necessary when using a staggered ramp.

Zone groups can be managed in the "Group management" screen, accessible in the "Control" view  .


You must first create a group  and then assign zones to it  . You can then display a selected group  to modify its contents, or delete a selected group  .

**Creating a zone group:**

To create a new group of zones, press  . The screen below appears:

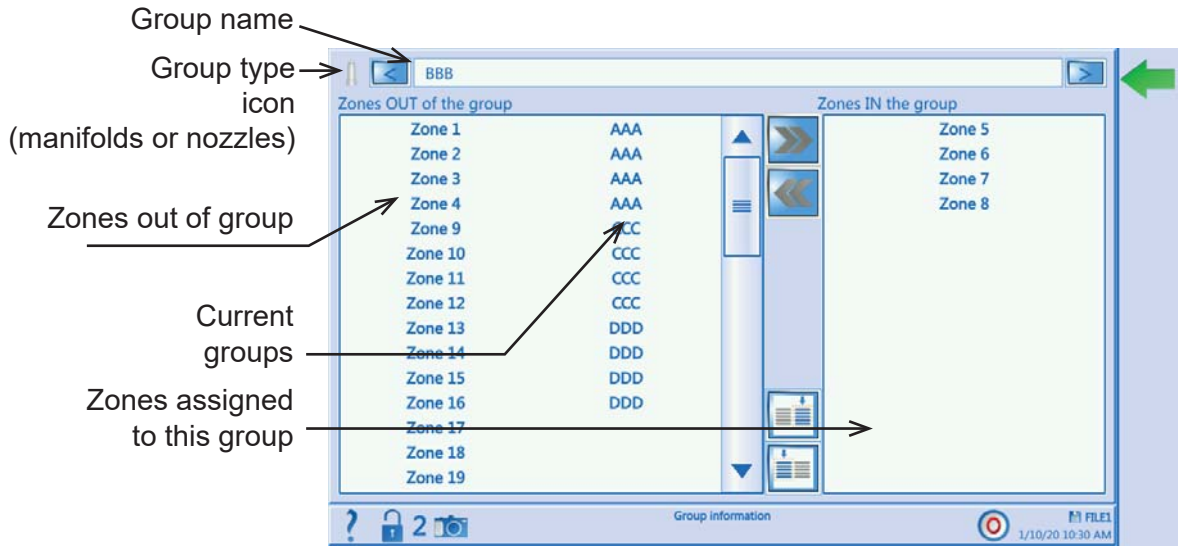

You can then specify a group name and a group type: Manifold Group or Nozzle Group.

**Warning: It is very important to specify the right group type in order to ensure the heating of the group zones is properly controlled.**

The group is created when the icon is pressed in the Action bar. Pressing the icon on the Action bar will cancel its creation.
Upon creating a group, the group zone display and assignment screen is displayed automatically.

**Group zone display and assignment :**

You can view or modify the contents of a group by selecting it in the list of groups and pressing the button or by double-clicking on it in the list of groups.
The screen below appears:




This screen shows which zones are assigned to each of the various groups.
The composition of the various groups can be seen by pressing the "<" and ">" icons.

The group type is represented by an icon: = manifold; = nozzle.

You can also choose the zones to assign to the group by selecting them in the list on the left (zones OUT of the group) and clicking on . To remove a zone from the list of the group, simply select it in the list on the right (zones IN the group) and click on .

Use the and icons to select all the left-hand list (zones OUT of the group) and the right-hand list (zones IN of the group) respectively.

Use the and icons to deselect all the zones in the list.
When a zone is removed from a group, it is not assigned to any group any more.

**Deleting a zone group:**

Delete a zone group by selecting it in the list of groups and pressing  .

You will be asked to confirm the deletion. The group will be deleted if the  icon is pressed in the Action bar. Pressing the  icon on the Action bar will cancel the deletion of the group.

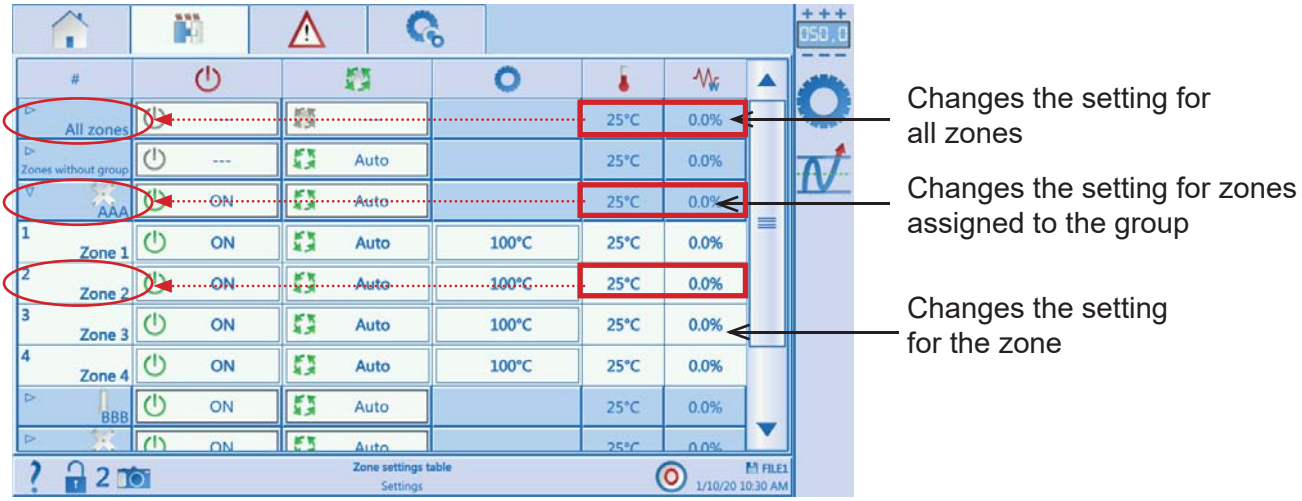
Once a group has been deleted its zones no longer belong to any group.

**Changing the group name:**

Change the name of a group by selecting it in the list of groups and pressing  .
Enter the new name in the entry screen which is displayed.

3.1.2.5) **Z**one configuration table

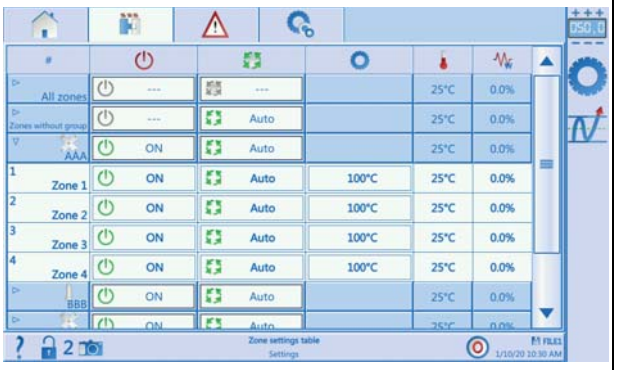
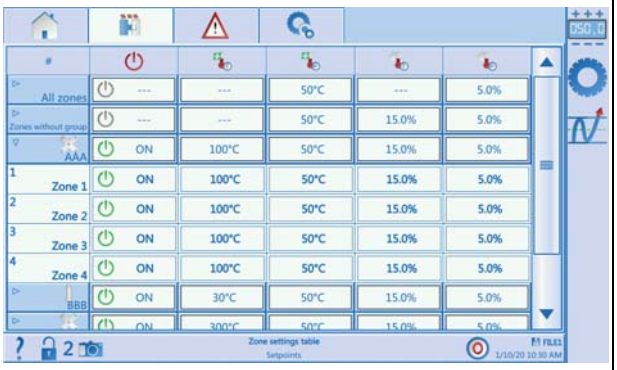
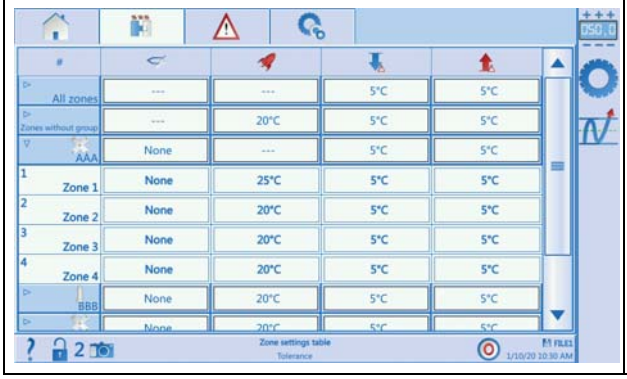
To access this screen, press the "Control" tab  twice and select the "Zone configuration table" screen.




This screen allows all the settings of all zones to be viewed and changed. Press a group arrow to view the settings zone by zone.

The setting for an individual zone can be changed (by pressing the setting for that zone), as well as the setting for a group of zones (by pressing the setting for the first member of that group), or the setting for all zones (by pressing the setting for the first member of the "All" group).

3 categories of settings can be displayed from this screen:

| Screen | Settings |
|---|---|
|  | Configuration settings  (On/Off, Auto/Manual, Setpoint, Current Temperature, Applied Power |
|  | Setpoint Parameters  (On/Off, Auto prod setpoint, Auto standby setpoint, Manual prod setpoint, Manual standby setpoint) |
|  | Tolerance Parameters  (Manual prod setpoint, Manual standby setpoint) |

These settings are accessible from the 'Quick change' action bar of the configuration.

### 3.1.3) Configuration files

Configuration files enable you to store the whole configuration of the hot runner system for a given mold and production. It includes the configuration of the control zones, the groups, the system's general configuration, the type of ramp and its configuration, and the electrical analysis of the mold (saved readings).

Before creating a configuration file, you should therefore:

1. Configure the system: in the "Configuration" view  , "General configuration" screen,configure the different options and confirm 
2. Configure the zone groups: §3.1.2.3 or §3.1.2.4

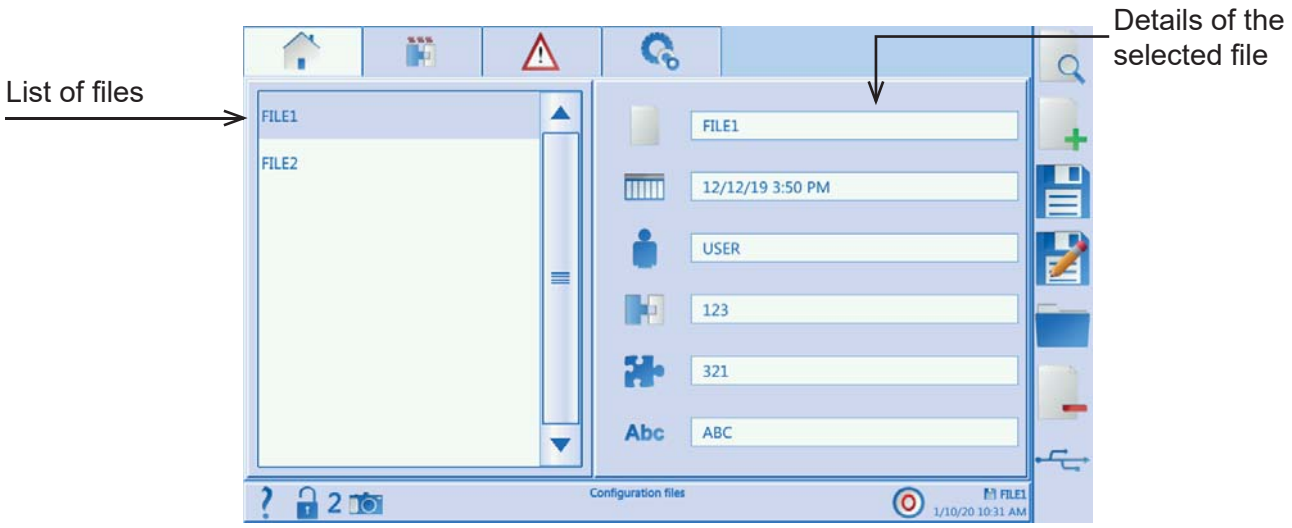
3. Configure the temperature control: §3.1.2.3 – §3.1.2.5.

4. Switch zone heating on: in the "System" view , "Operating mode selector" screen , switch to "Production" state .

5. Wait until all zones are in the column, then wait 5 minutes.

6. Apply reference values: "Control" view , "Mold monitoring" screen , "Power monitoring" table , in the sub-menu select "Save measurements" . (§3.2.4.3).

Once these operations have been completed a file can be created in the "Configuration files" screen ("System" view ).




3.1.3.1) **C**reating a configuration file

Pressing the icon brings up the file creation screen:

The fields below can be edited by clicking on each line:

- File name (mandatory): the name of the file as it will appear in the list of files
- Created by (optional): the name of the person who created the file
- Mold reference number (optional): the number of the mold
- Product reference number (optional): the number of the product
- Notes Abc (optional): notes on the configuration file

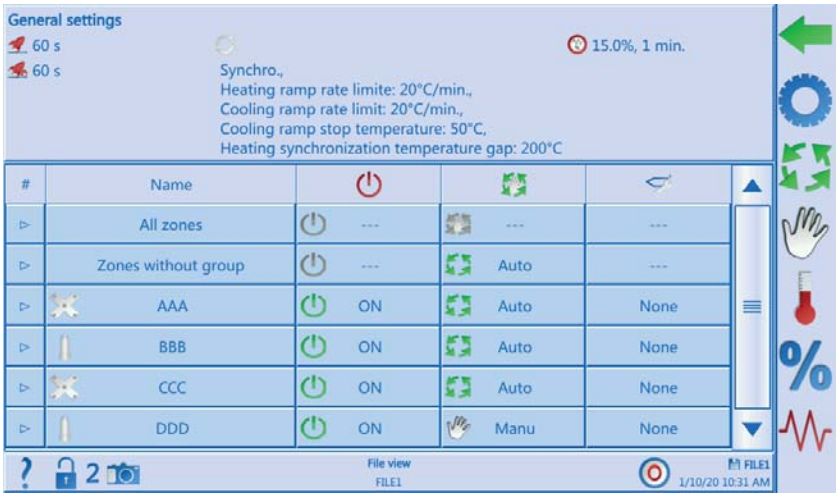
Finally, you must confirm .

Hundreds of files can be created.

### 3.1.3.2) Displaying a configuration file

It is possible to view the contents of a file without loading it.

1. Go to the "Configuration files" screen ("System" view ).
2. Choose the file to be displayed in the list on the left (the name of the file is highlighted and data relating to it appear in the fields to the right of the list).
3. Press . A new window appears with "General configuration" of the cabinet at the top. Below is a table showing all the zones in the file, with their settings.



### 3.1.3.3) Loading a configuration file

Load configuration files using the "Configuration files" screen  ("System" view  ): select a file in the left-hand list (the file name is highlighted and its details appear in the fields on the right of the list), then press the Load icon  .

Loading a file will delete and replace the current configuration of the system. A confirmation dialogue will appear as a precaution when a file is loaded.

### 3.1.3.4) Updating a configuration file

The contents of a file can be updated:

1. Go to the "Configuration files" screen  ("System" view  )
2. Load the file to be changed  .
3. Make the desired configuration changes
4. Go to the "Configuration files" screen  ("System" view  )
5. Press  .

Since changing a file involves irretrievably deleting the old configuration, a confirmation dialogue will appear each time a file is saved.

### 3.1.3.5) Deleting a configuration file

To delete a configuration file:

1. Go to the "Configuration files" screen  ("System" view  )
2. Select the file to be deleted from the list on the left (the file name is highlighted and its details appear in the fields on the right of the list)
3. Press  .

Since deleted files are irretrievable, a confirmation dialogue will appear each time a file is deleted.

### 3.1.3.6) Duplicating a configuration file

To copy a configuration file:

1. Go to the "Configuration files" screen  ("System" view  )
2. Load the file to be copied.
3. Press 
4. Complete the form with a different file name.
5. To confirm press 

### 3.1.3.7) Exporting and importing configuration files using a USB flash drive

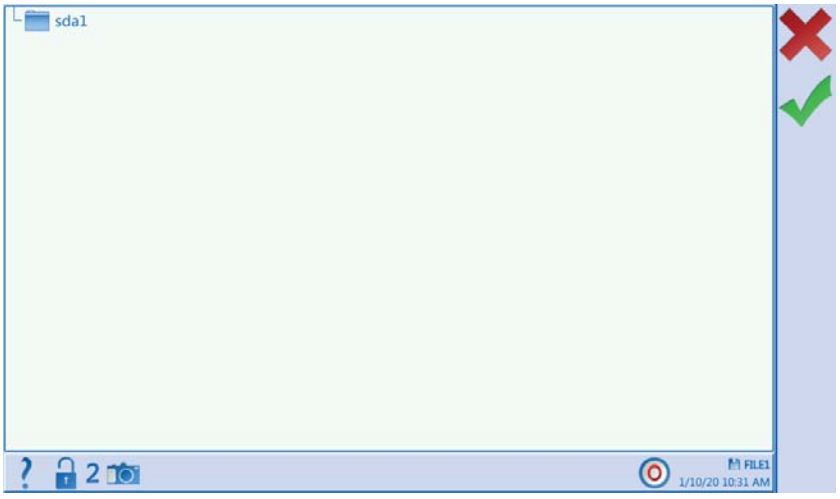
A configuration file can only be exported to or imported from a USB flash drive once the USB flash drive (or a USB hard disk) has been connected to the USB port on the front of the system.

Once the USB key has been connected, the icon will appear in the Action bar of the "Configuration files" screen ("System" view ). Press this icon to bring up the double bar of icons and give access to , and .

**Export a file**:

To export a configuration file:

1. Go to the "Configuration files" screen ("System" view )
2. Choose the file to be exported in the list on the left (the name of the file is highlighted and its details appear in the fields to the right of the list)
3. Open the "USB menu" and press the "Export via USB" icon
4. The navigation screen of the USB device appears. Only directories are displayed.




5. Choose the directory in which to export the file
6. Press .

**Import a file:**

To export a configuration file:

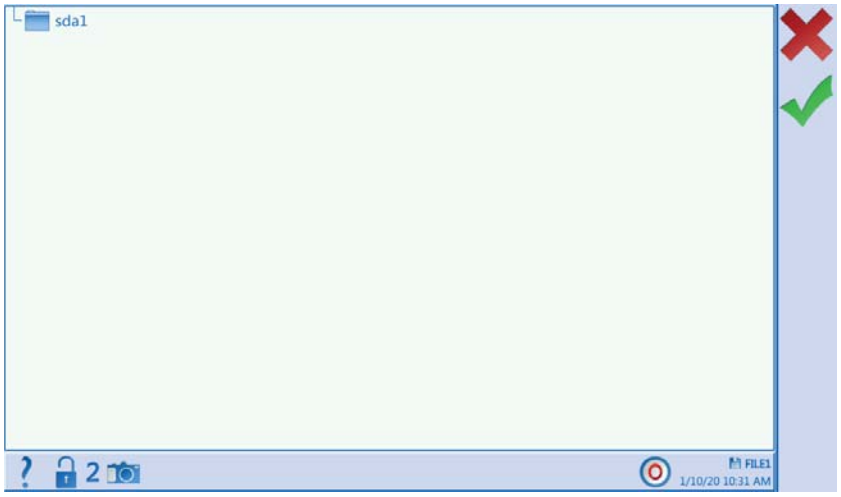
1. Go to the "Configuration files" screen ("System" view )
2. Open the "USB menu" and press the "Import via USB" icon .
3. The navigation screen of the USB device appears. Only directories and configuration files (which end in .sise) are displayed


4. Navigate the file list to choose the file to be imported
5. Press  .

The imported file is then present in the list of files.

**Export a configuration file to a USB flash drive in PDF format:**

To export a configuration file in PDF format
1. Go to the "Configuration files" screen  ("System" view  )
2. Choose the file to be exported as a PDF file in the list on the left (the name of the file is highlighted and its details appear in the fields to the right of the list)
3. Open the "USB menu"  and press 
4. The navigation screen of the USB device appears. Only directories are displayed.



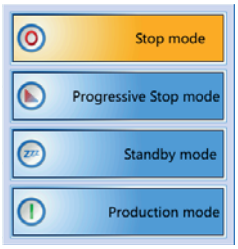

5. Choose the directory in which to save the file
6. Press  .

## 3.2) NORMAL USE

### 3.2.1) Selecting the operating mode

#### 3.2.1.1) Description of operating modes

The status bar contains an indicator showing which operating mode the system is in:  ,  ,  ,  or  .
This indicator is also an icon that opens a menu to change the mode.
It is displayed on all screens:




**Stable states:**
The appliance in stable operation is in one of the 4 following modes:

-  Production: Control is in progress, at the setpoint temperatures (automatic mode) or at the setpoint power set for this state (manual mode).
-  Standby: Control is in progress, at the setpoint temperatures (automatic mode) or at the setpoint power set for this state (manual mode).
-  Gradual stop: The system is in descending ramp until it reaches the temperature defined as' cold'. At this point, the system automatically switches to the "Stop" state. This state is a temporary state. §3.1.2.2)
-  Stop: No zone is heating, but the system is turned on. It is in this state that it is recommended to make all the pre-settings.

**Transitional states:**
When some state changes are requested, the system is in a transitional state:

-  Stop to Production and  Standby to Production:
  The appliance is in a heating ramp, depending on the behaviour of the chosen ramp, to reach the production state.
-  Stop to Standby:
  The appliance is in a heating ramp, depending on the behaviour of the chosen ramp, to reach the standby state.
-  Production to Standby:
  The system is in a descent ramp, depending on the behaviour of the selected ramp, to reach the standby state.
-  Production to Gradual stop and  Standby to Gradual stop:
  The appliance is in a descent ramp, depending on the behaviour of the chosen ramp, until the zones are cold. The system then switches to the Stop state.

Other state changes are instantaneous.
If the system is in heating mode (Production or Standby) and the Stop state is requested, it will not go through a descent ramp, but the heating of all zones is cut off abruptly.

**MoldScan state:**

This special test state is initiated only from its dedicated page and is displayed with the following icon:

-  MoldScan: The system is testing the previously selected zones one by one.

### 3.2.1.2) Setting the operating mode

By default, on power-up, the system is in the "Stop" state.

However, it can be set differently:
in the "Control" view, on the "Temperature control settings" page, the "Start-up mode on power-up" can be set. You can choose "Stop", "Standby" or "Production".
The mode at power-up will also depend on the mode of the of the system when it was turned off.

| mode before switching off / set mode | | | | |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

*System mode at start-up depending on the mode before switching off and the set mode.*

### 3.2.1.3) Changing the system mode

The system mode can be changed through:

- the "Operating mode selector" page:

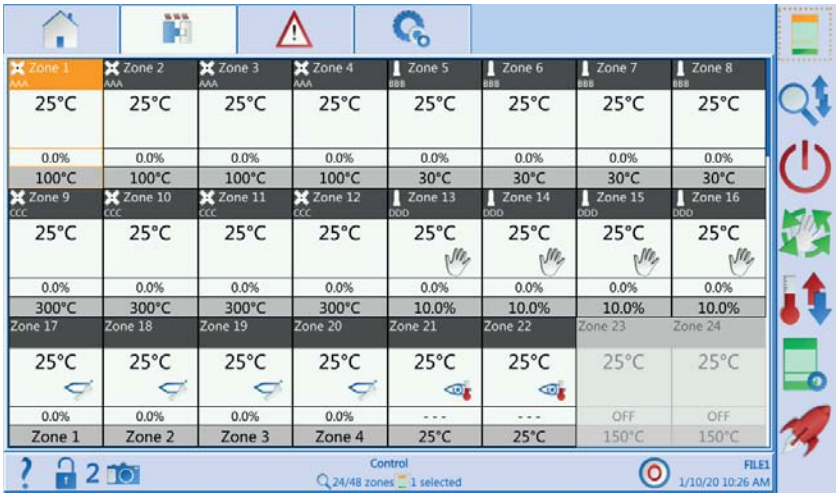

- the status bar, by clicking on the status icon (beginning of §3.2.1.1).

### 3.2.2) Heating zone management

#### 3.2.2.1) "Quick change" action bar

Various frequent actions can be carried out directly from the "Control" screen as well as in the zone configuration screen.
To do this, select one or more zones (§2.3.3).

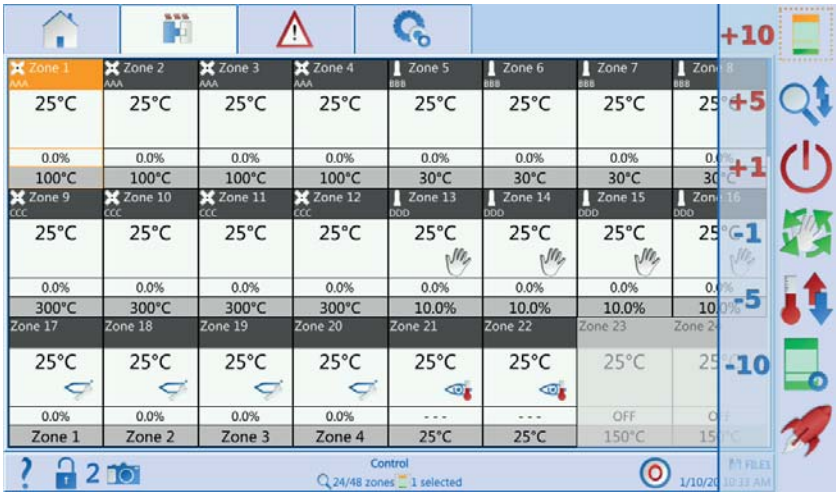
The  ,  ,  ,  and  additional buttons are displayed in the Action bar.




| Icon | Action |
|---|---|
|  | Activate/deactivate selected zones (§3.1.2.3) |
|  | Toggle selected zones between manual and automatic mode (§3.1.2.3) |
|  | Raise/lower setpoint of selected zones in stages. |
|  | Give access to the zone configuration screen (§3.1.2.3) |
|  | Activate Boost on selected zones (§3.1.2.3) |

**Increasing/decreasing setpoint:**

Upon pressing the  icon, the following sub-menu bar is displayed:




Press the **-10** to **+10** buttons to raise or lower the setpoints of the selected zones by the values written on the buttons in °C or °F if the zones are in automatic mode, or in % if the zones are in manual mode.

#### 3.2.2.2) Automatic and manual setpoint

For each zone, the control system accepts 2 setpoints for the Standby state and 2 setpoints for the Production state (§3.2.1), a temperature setpoint for automatic operation and a power setpoint for manual operation.

Each zone can be operated either manually or automatically .

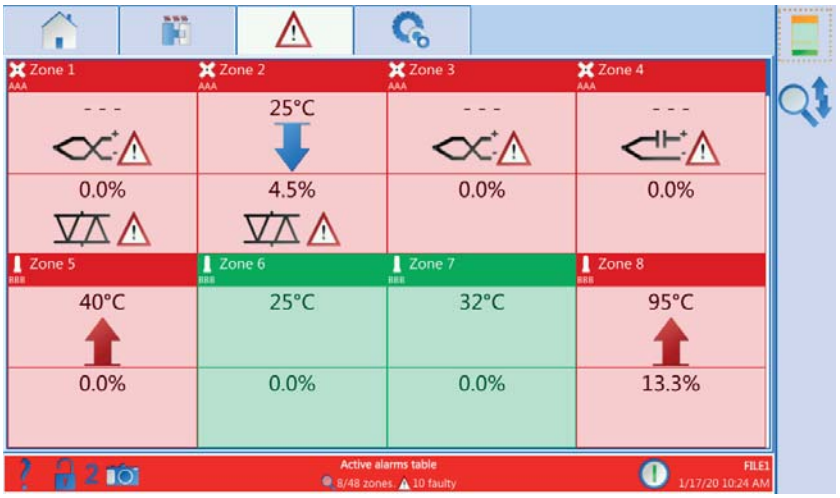
If the zone is configured in automatic mode and the system in Standby , the setpoint applied to the zone will be the temperature setpoint for the Standby state .

If the zone is configured in manual mode and the system in Production , the setpoint applied to the zone will be the power setpoint for the Production state. .

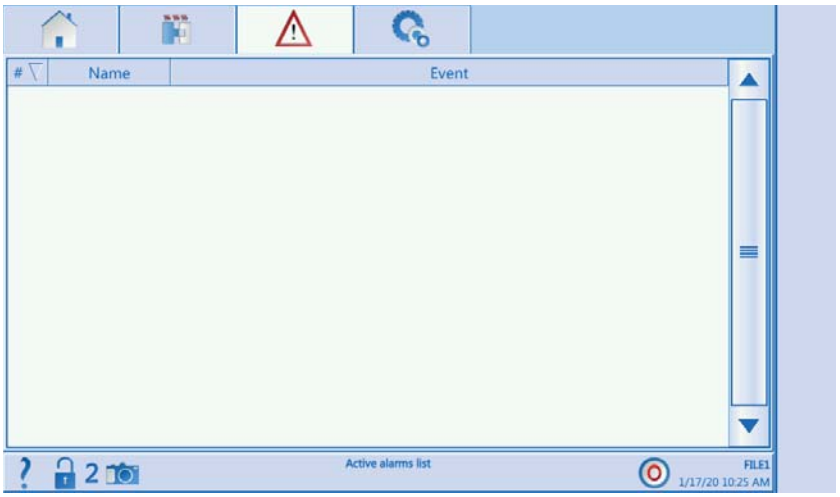
### 3.2.3) Alarms

#### 3.2.3.1) Viewing alarms

Current system alarms can be viewed in the "Alarms" view, "Table of active alarms" screen (§2.3.1.2).



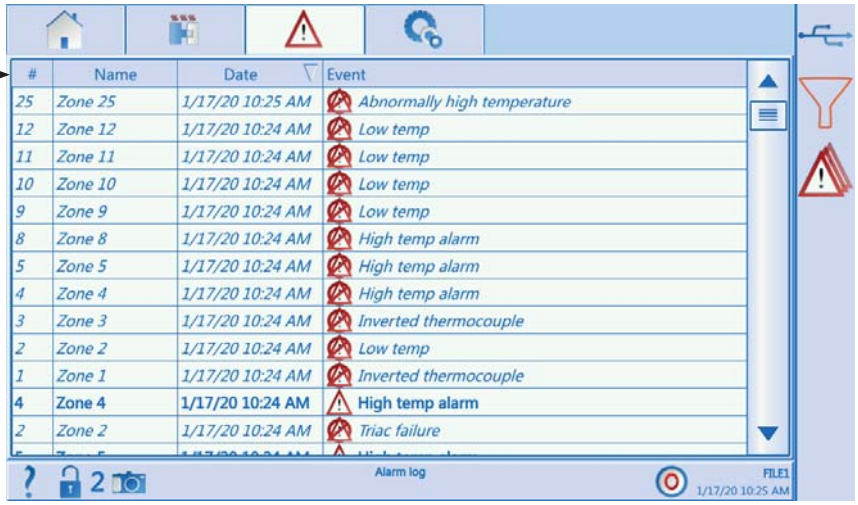

On the "List of active alarms" page, you will see a list of all current alarms, even system alarms. Zones without alarm, on the other hand, are not displayed. This page can be easier to read, especially for a large number of zones.



### 3.2.3.2) Alarm log

The log of alarms generated within the system can be viewed in the "Alarm log" view, "Alarms" screen.

In the example shown they are sorted by date

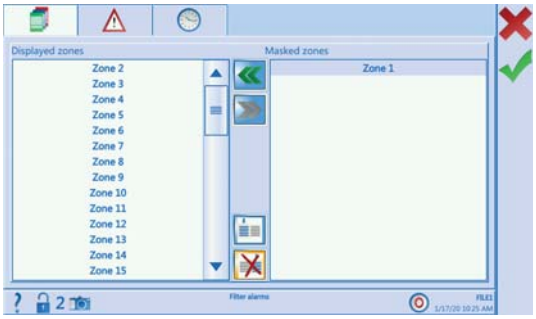



The list can contain up to 1000 alarms. Press the bar at the top of the list to view the alarms sorted by zone number, name, date or alarm type, in increasing or decreasing order. An upturned or downturned triangle marks the sort parameter and shows the direction of sorting (in increasing or decreasing order).

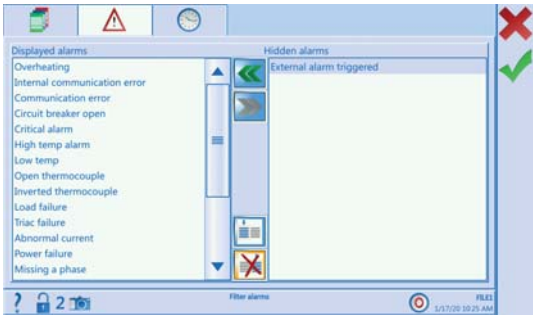
Any alarm may be deleted by pressing its row to select it and then pressing  .

It is also possible to delete all alarms (for example at the start of a production run): select all lines using the  icon, then press  .

A sort filter can be applied to this view to select only certain alarms by clicking on  . A filter can then be defined according to 3 criteria:




By Zone




By Alarm Type


By Date/Time

When a USB flash drive is plugged in, it is possible to export the alarm log for evaluation from a PC using the action icon and then . If a filter is in use, you will have the choice to export the filtered or unfiltered alarms.

### 3.2.3.3) Alarm Parameters

This page is for configuration for the use and action for various alarms


The table allows you to configure the following alarms :

- High Alarm: zone temperature is above the setpoint
- Low Alarm: zone temperature is below the setpoint
- Defective Load: installed power of a zone varies over time
- Open Thermocouple : thermocouple of a zone is not connected or if a wire is cut
- Reversed Thermocouple: wires of the thermocouple are reversed
- Defective Triac: triac is faulty on a zone
- Abnormal current: the current of the zone differs from the saved current reference value
- Lack of Phase: phase of the zone is not detected
- Abnormal Power: Applied power of the zone differs from the saved applied power reference value
- Abnormally High Temperature: temperature of a zone surpasses the abnormally high temperature threshold
- Power Card: faulty material: a power card is faulty
- Overvoltage: Power supply voltage is higher than the nominal voltage
- Thermocouple: faulty material: a temperature card is faulty
- Ignore the initial ramp: a zone is in alarm, except if the system in conducting its initial heating/ ramp period.

Alarm Settings :

- ON/OFF : Use/Do not use alarm
- Action : Activate/Deactivate one or several actions among the following:
  - 1 Activation of Output n°1
  - 2 Activation of Output n°2

### 3.2.4) Electrical analysis of the mold

Two types of mold analysis are available:

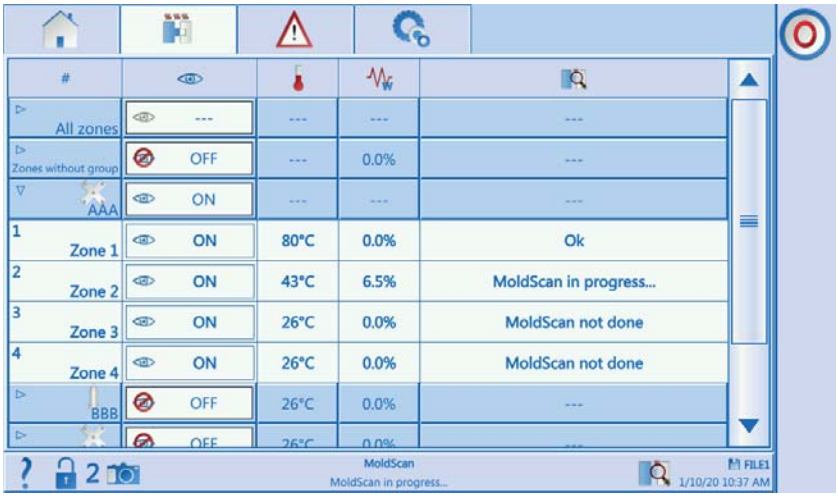
- MoldScan: one-time analysis when a mold is first installed or after mold maintenance, to check the integrity of the mold and its connections.
- Continuous mold analysis, based on measurements made during operation

From the continuous mold analysis, zone power consumption is calculated according to the power applied.

#### 3.2.4.1) **Mold verification (MoldScan)**

This is a one-time analysis when a mold is first installed or after mold maintenance, to check the integrity of the mold and its connections.

The screen to be used for this test can be found in the "Control"  view, "MoldScan"  screen.




This analysis consists of a zone by zone heating test. At the end of this test, various defects can be detected:

- No heating: the tested zone does not heat up at all.
- Zone crossing with zone X: the probe of the zone X detects the heating applied to the tested zone.

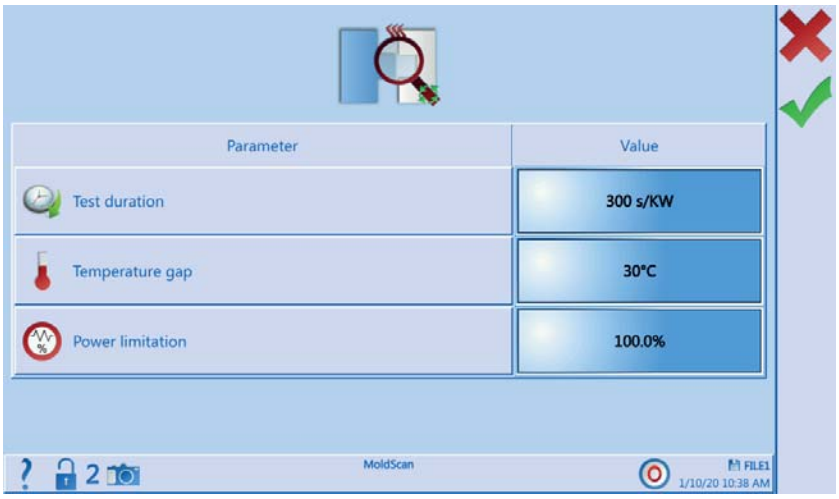
Other states are:

- Test not performed: the zone has not been tested.
- OK: the zone responds positively.
- Test in progress: the zone is being tested.

For the analysis, the zones to be tested must first be selected by pressing 

, then MoldScan can be started by pressing the  button in the action bar.

The screen for setting / confirming the test parameters is displayed:




3 parameters must be set:

- Test duration: the value is given in s/kW. For example, for zones of 250W and 1.2kW, with a value of 300s/kW, at a maximum the test will take, respectively, 75s (0.250x300=75s) and 6 minutes (1.2x300=360s=6min°. If no heating is detected once the time has elapsed, the result of the test will be 'No heating'.
- The expected temperature gap: the value is given in °C or °F. This parameter allows you to determine for each zone the minimum temperature rise which makes the test result be 'OK'.
- Power limitation: the value is given in % of applied power. This value allows you to limit the power sent, in order to protect fragile zones.

Once the parameters have been set or checked, press the button.
The system switches then to the MoldScan state. At the end of the analysis, the system switches to the Stop state.

You can stop the MoldScan in progress by switching manually to another operating mode (§3.2.1) or using the button.

#### 3.2.4.2) **R**eadings

The electrical analysis of the mold provides readings for the mold's various zones:

- Power of the zone's heating element (in Watts)
- Resistance of the zone's heating element (in Ohms)
- Maximum current in the zone's heating element (in Amperes)

This analysis is performed automatically during production. It detects the following faults if monitoring is enabled:

- Load interruption fault
- TRIAC short-circuit
- Current difference fault (only if readings from an earlier analysis have been previously saved).

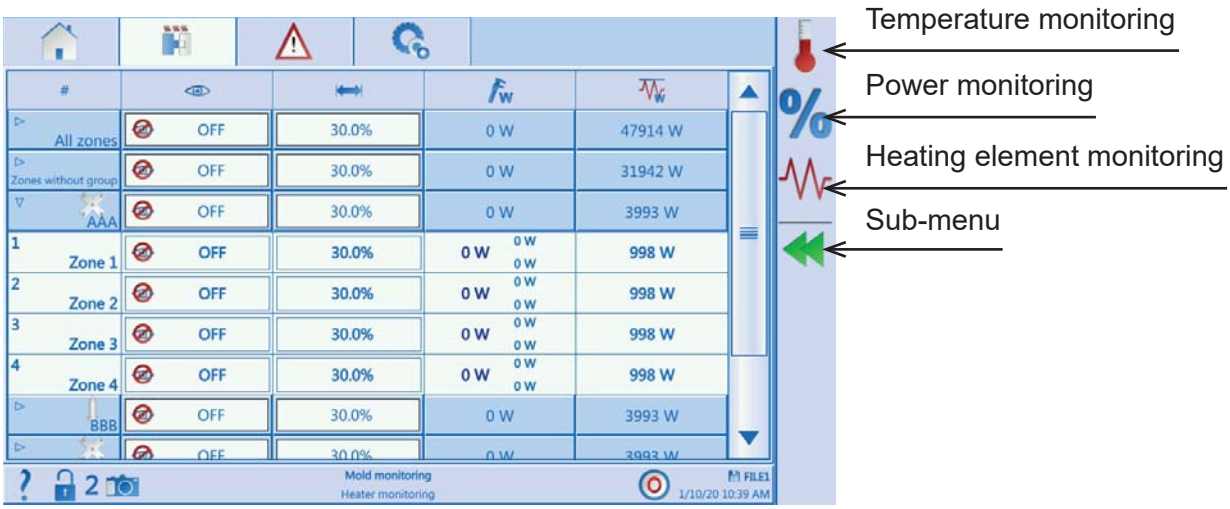
Instantaneous zone consumption can be viewed at any time in the "Control" view, "Consumption" page .

#### 3.2.4.3) **M**old monitoring

Through the mold monitoring screen the user can quickly assess the operation and consumption of the control system.

For monitoring to be effective, the calculated values must be taken as reference values.

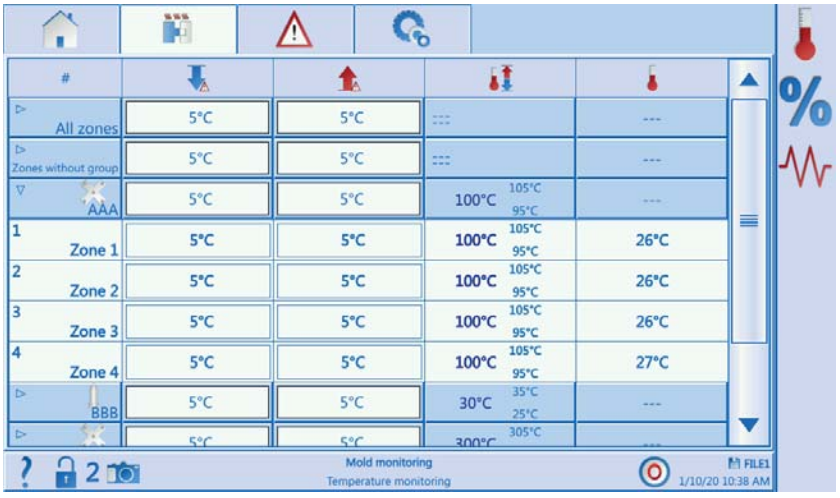
The mold monitoring screen is accessible in the "Control" view .




Mold monitoring offers 3 tables, the first column of which contains the zones by groups.
These details can be viewed zone by zone, by pressing "▷" on the line of a particular group.
The "Zones without group" line is associated with zones which have not been assigned to a group.
The "All zones" line gives details of all the zones of the system, providing information on the system's total consumption.

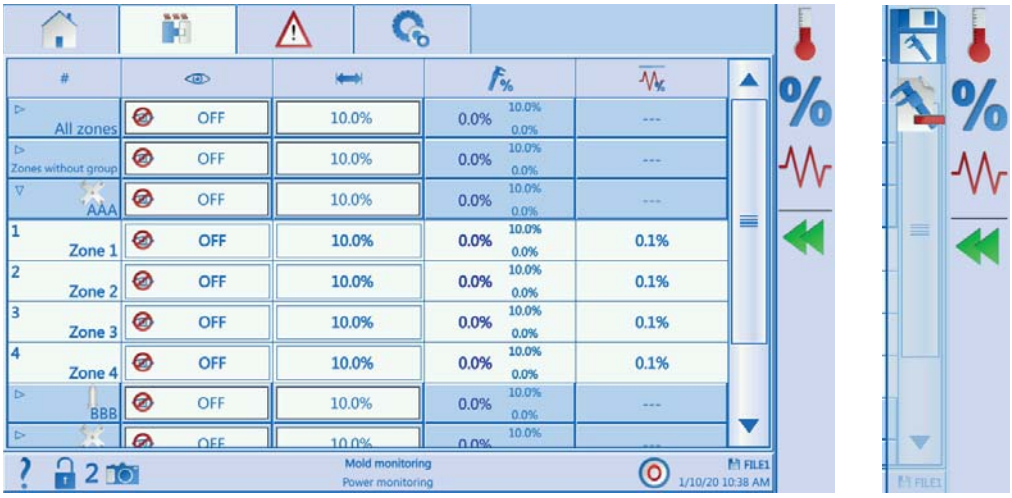
**"Temperature monitoring" table** :

Low and High Temperature Alarms can be viewed and set in this table. Temperature monitoring limits and current temperature are shown. The latter is colored red in case the zone is outside its tolerance.



"**Power monitoring**" table :

Power monitoring tolerances can be set/activated/deactivated in this table. Power monitoring limits in relation to the reference power, as well as the current power are displayed. The latter is colored red when outside its tolerance.




From this page you access the sub-menu for applying reference values.

The basic idea is to monitor the power applied to the load in order to detect if any of various parameters drifts from its proper value (for example: excessive power consumption, etc.). A change in the power percentage signals an abnormal physical change in the zone under control.

To monitor a control zone, a reference power value must be determined during an optimum stable operating phase.

Once the control zone is monitored, drift is detected by comparing the applied power values with safety tolerances set by the user.

When the monitoring system detects an anomaly it displays an alarm symbol for the faulty zone and triggers an alarm signal at the back of the system, allowing a visual alert (alarm indicator light) and / or deactivation of the machine cycle (IMM alarm).

The level is expressed as a percentage of the power normally applied to the zone. For example, if the percentage of power applied to keep the zone at 180°C is 35% and the tolerance has been set at 10%, the system will generate an alarm if the power applied to maintain the temperature exceeds 45% or falls below 25%.

"**Heating element monitoring**" table :

Heating element monitoring tolerances can be set/activated/deactivated in this table. Power monitoring limits and the current power of the heating element are displayed. The latter is colored red when outside its tolerance.


From this page you access the sub-menu for applying reference values.

Using the  button, you can also change the display system of quantities: ohms, watts, amperes.

**Applying reference values:**

To have valid reference values, the values must be saved in the "Save measurements" sub-menu.

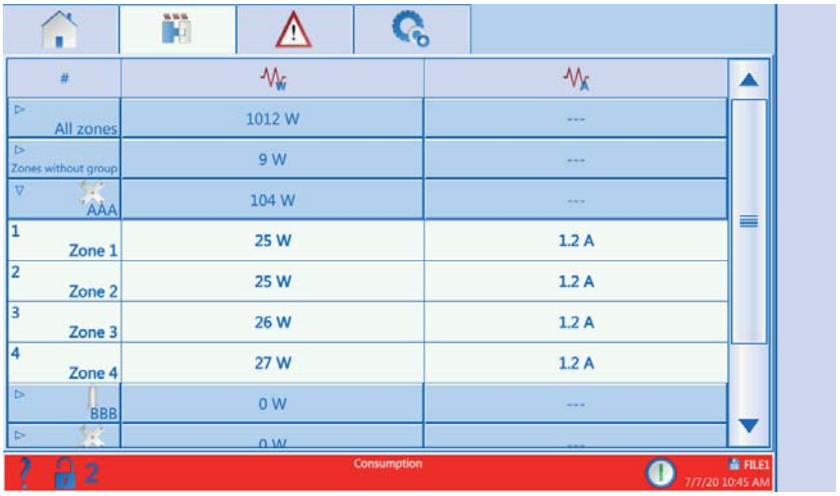
Actions that can be performed from the  sub-menu are as follows:

| Icon | Action |
|---|---|
|  | Set current readings as reference values. |
|  | Remove reference values. |

Without this action, comparisons during monitoring cannot be performed, therefore anomalies cannot be detected.

#### 3.2.4.4) Consumption

This screen displays consumption in real time for each zone. The value is expressed in Watts or Amperes .




### 3.3) ADVANCED FEATURES

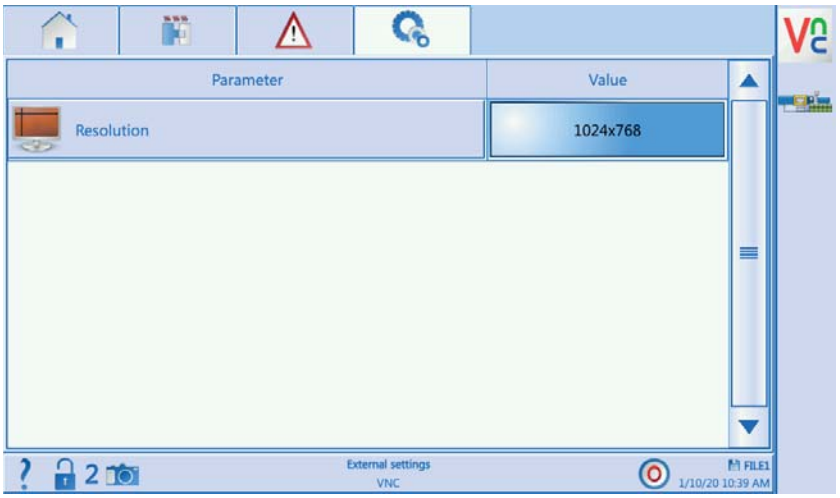
#### 3.3.1) Remote log-in

Users can log in to the interface via Ethernet using a VNC client (example on PC, available at: «http://www.realvnc.com/download/viewer/»
There can only be one connection at a time.

When the application has started up, enter the interface's IP address available on the Network Configuration screen (§3.1.1.4) or an address in the format <hostname>.local, with <hostname> being also available in the Network Configuration screen.

In the VNC client options, uncheck the "Adapt to network speed" setting and select "Best quality". Confirm the changes you have made and click "Connect". The application displays the interface and you can operate the system.

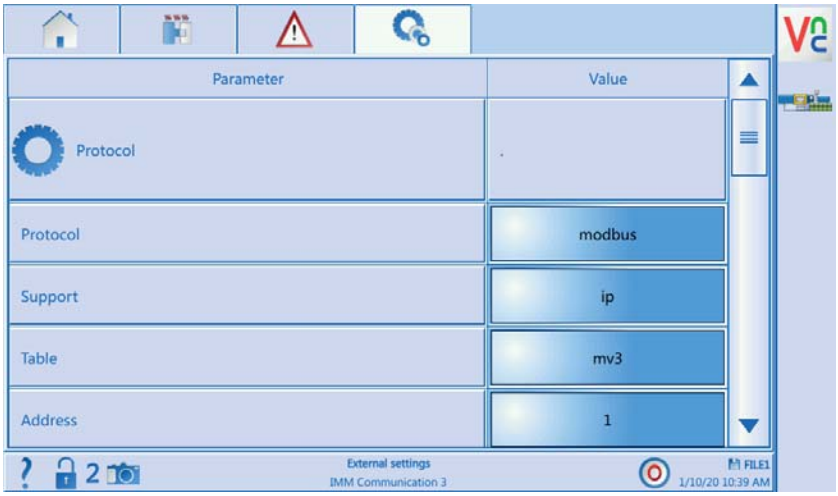
Remote PC display resolution can be set in the "Configuration" view , "External parameters" screen , by clicking .



### 3.3.2) Communication

The system can be connected to an injection molding machine or another external machine.

Communication can be set in the "Configuration" view , "External parameters" screen .

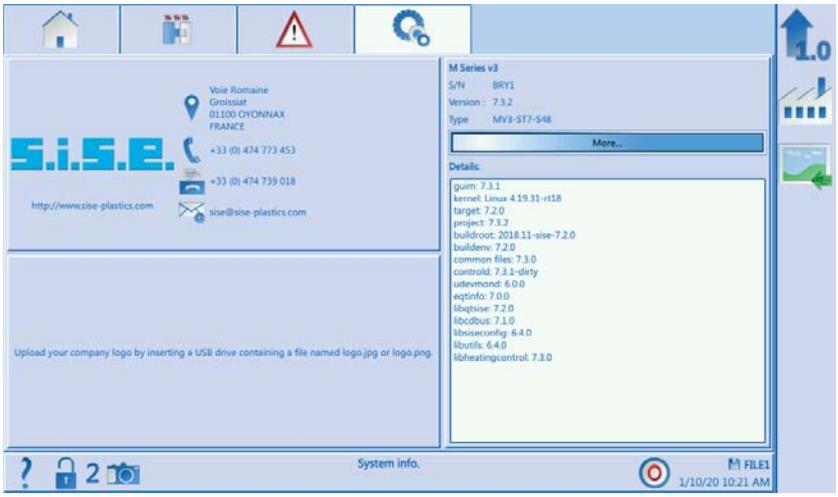



Up to 3 simultaneous communication channels can be configured.

### 3.3.3) System information

System information gives details of the company and of the system's configuration. It also contains information on the software version.

The "System info" screen , "Configuration" view displays these data.



By pressing "More...", you can view detailed system information:


This information (serial number, embedded software version, etc.) can be requested in case of a call to our after-sales service.

### 3.3.3.1) Restoring factory settings

The action icon will restore the system to its original factory settings. All control settings will be reset. Upon pressing this button, the interface resets completely.

### 3.3.3.2) Loading a company logo

When connecting a USB device, the "Import company logo" icon appears. Use this icon to import your logo. All you need is to have a file named logo.jpg or logo.png on the USB drive. Once loaded, the logo appears in the "System info" screen, but it will also feature at the top of generated PDF files (§3.1.3.7)

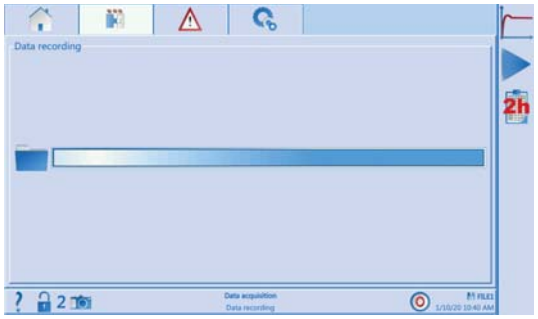
The logo can be removed at any time by pressing .

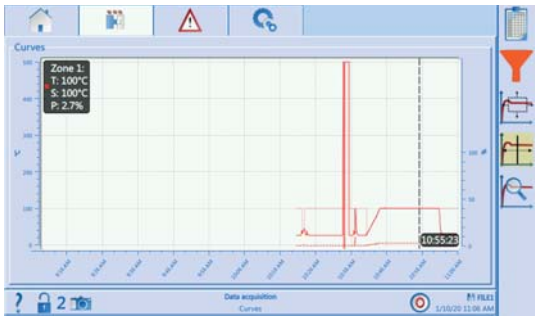
### 3.3.4) Data acquisition

Beginning at start-up, the, setpoint, applied power and temperature data are stored using the last two hours of operation.

They can be exported and even viewed in the "Control" view , "Data acquisition" page . Depending on the orientation of the screen, the layout of this page will be different:

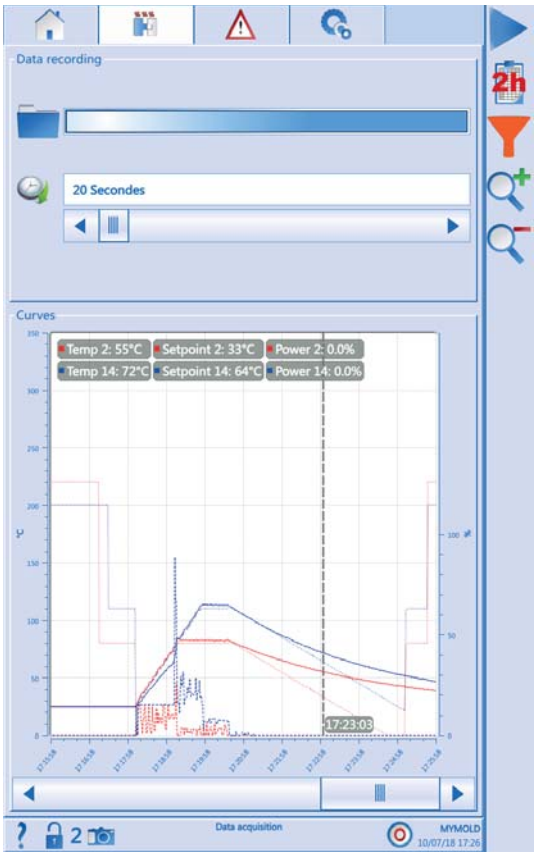
landscape screen




You can toggle between displays by clicking on "Data recording" or "Curves" .

portrait screen




The two displays are one above the other.

#### 3.3.4.1) Data recording

The "Data recording" screen includes a sub-menu containing 2 icons:

Exporting data from the last 2 hours :

This action exports data from the last 2 hours of acquisition providing 1 value every 20 seconds in a table in .csv format to a USB flash drive. A USB flash drive must therefore be plugged in to use this function.

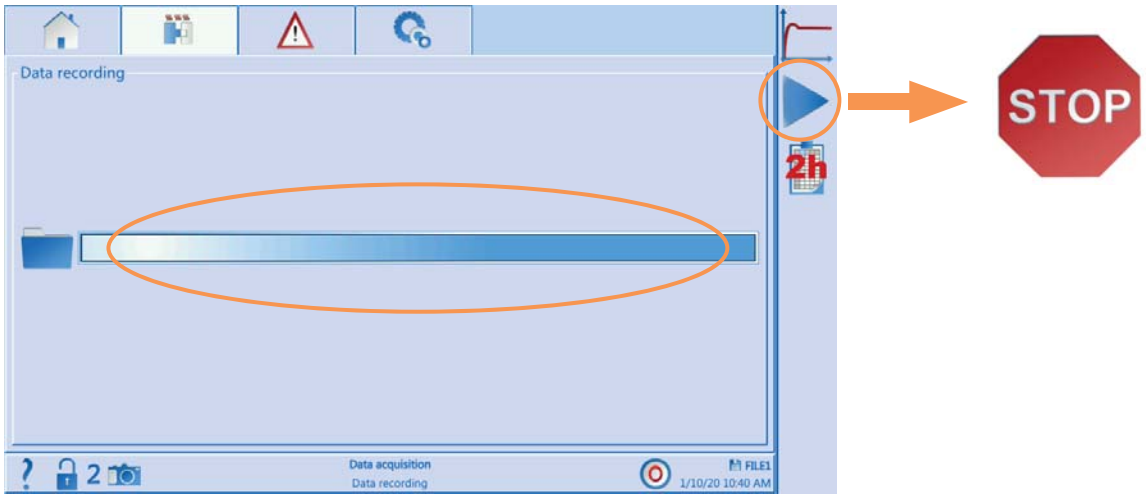
After the data has been exported to the flash drive, a confirmation message is displayed.

**Customizable recording** :

: starts recording.

To start recording, a USB flash drive must be detected by the system. A location and filename must be selected by clicking on the "File selection" input field and completing it. If necessary, time between two samples must be changed by clicking on the 'Time between two samples' input field by moving the ‘Time between two samples’ cursor.

You can then start the acquisition by pressing .




: stops recording.

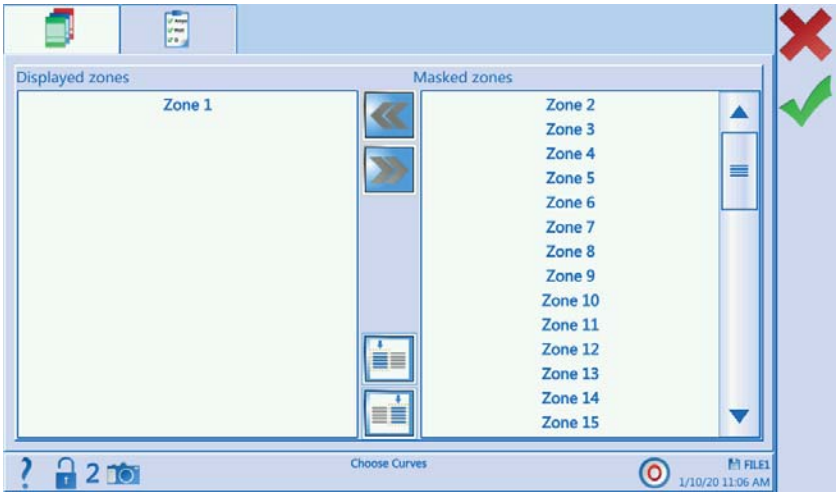
Once the recording is in progress, the "Start recording" icon is hidden and the "Stop recording" icon appears.

Pressing this icon makes the recording stop and a confirmation message appears.

**Warning! For the acquisition to run smoothly, the USB flash drive must have enough space for the file.**

### 3.3.4.2) Curves

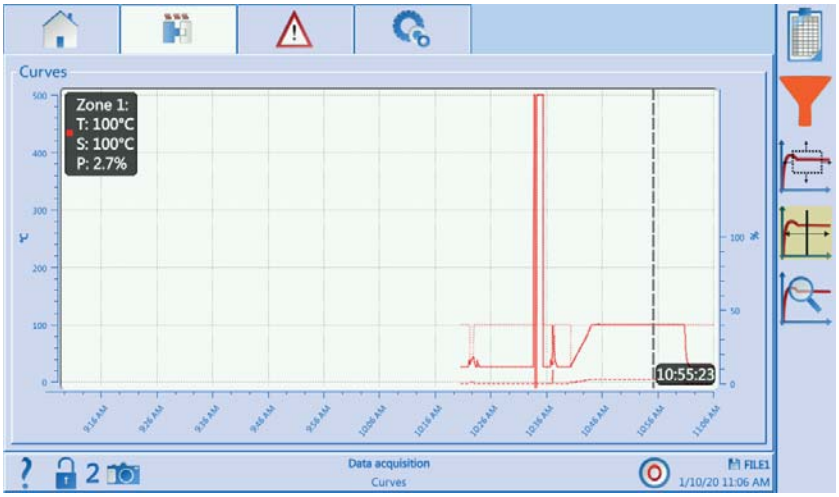
This page allows you to view the data as curves.
By default, no curve is shown. To select the curves to be displayed, click on the 'Select curves' button. A filter setting screen is then opened, where zones to be displayed (max. 2) and types of data to be displayed (Temperature - Setpoint - Power) can be selected.




For each zone, the temperature, setpoint and power applied are displayed in the same color. Temperature is displayed as a solid line, the setpoint as a fine dotted line and the power applied as dashes.

Time scale can be changed using the «Zoom in» and «Zoom out» icons.
A scroll bar located under the curve allows you to move along the zoomed curve.

By clicking on the curve, a cursor and a box are displayed showing the time and the curve values corresponding to the point indicated by the cursor.

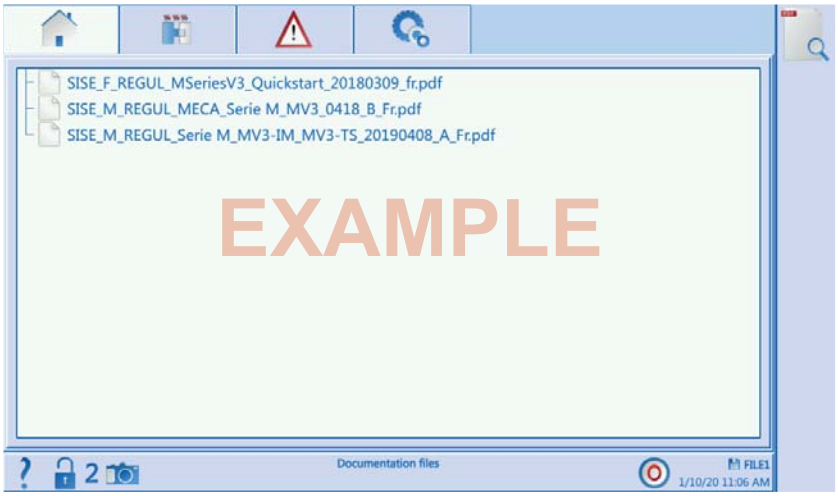



| Icons | Description |
|---|---|
| | The panoramic mode allows you to move the curve area along the x or y axes |
| | The cursor mode allows you to verify values at one point for one or several curves. The values are displayed below the curves |
| | Allows you to zoom in on curves by drawing a rectangle on the curves |

### 3.3.5) Documentation files

The "Documentation files" screen  , "System" view  , allows you to display various factory-installed documents like:

- Operating instructions.
- Connection diagrams.



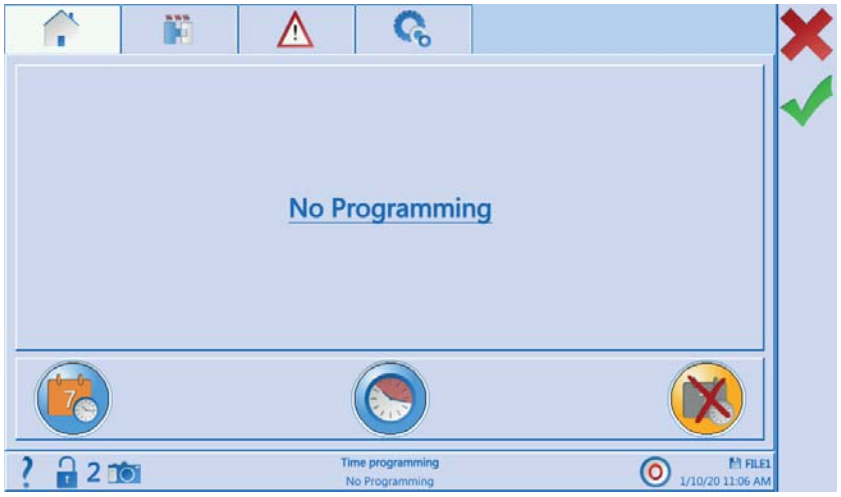

Double-click on the name of the document you wish to view to open the reading screen:


Use the buttons of the action bar to navigate.

### 3.3.6) Programmable Clock

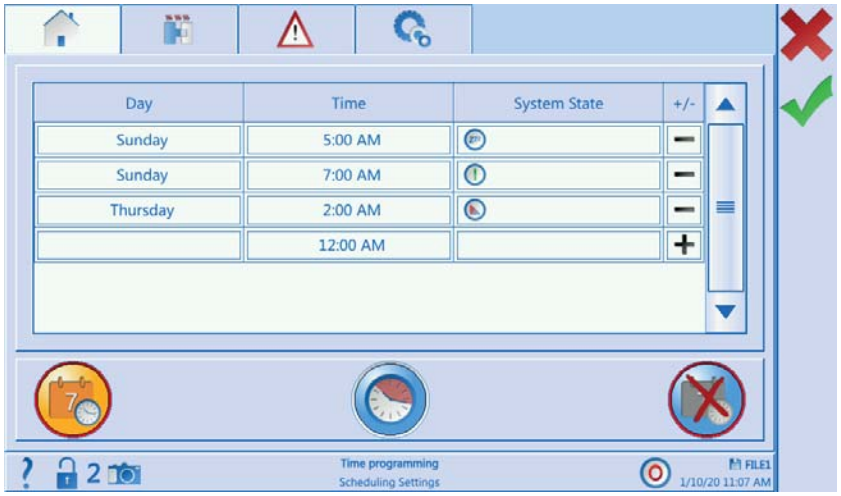
The "Programmable Clock" screen  , "System" view,  allows you to program the system so that it behaves in a specific way:

-  Weekly planning. * Planning state changes during the week.
-  Duration programming. * Programming a maximum production duration.
-  No programming: * Basic system behaviour.




### 3.3.6.1) Weekly Planning 

The  action button activates the 'Planner settings' tab:




This table shows the list of actions planned for the week (max. 14 actions), with their details (day - time - state wanted).

The  sign at the end of a line allows you to delete the action from the list.

To add a new action, click on the  sign of the last line and choose the day - time - state of the action.

To change an element of the action (for ex. the time), click on the time box of the line to be modified.

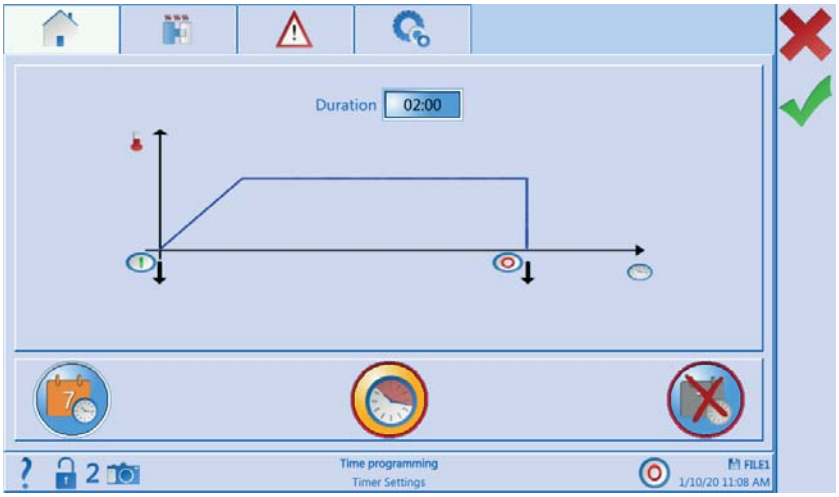
Once the actions have been set, you must confirm them by clicking on in order to save the modifications and activate the weekly planning.

A line like 'MONDAY - 06:00 - ' will make the system switch to production without any user action every Monday at 06.00, provided that the system is powered on and the Weekly Planning is activated.

When the controller is powered on after a planned date, the start-up mode applied will be the one set as 'Start-up mode on power-up' (see §3.1.2).

#### 3.3.6.2) **Duration Programming**

The action button activates the 'Programming Settings' tab:




The 'Duration' field allows you to enter an operating duration in 'hours:minutes'.

Once the duration has been set, you must confirm it by clicking on in order to save the modifications and activate the programming.

When the system switches to 'Production' next time, a timer will be triggered, which will switch the system to the 'Stop' state once the time has elapsed, provided that the Duration Programming is activated.

## 4) MAINTENANCE INSTRUCTIONS

For further information on the system please see the Operating Instructions.

### 4.1) TROUBLESHOOTING

| Effects on tooling | Indicators, display | Defect | Protections | Solutions |
|---|---|---|---|---|
| Decrease in applied power |  and the status bar blinks red | Thermocouple cut. | Low temperature alarm activated. Heating ceases. | - Remedy the cut by testing the thermocouple with an ohmmeter.<br>- Switch to manual mode if you do not have time to repair, or activate zone slaving allowing you to control with the probe of a nearby zone. |
| Increase in applied power | Temperature is constant and lower than the desired setpoint. Being in low temperature alarm, the  symbol appears for the zone in question and the status bar blinks red | Thermocouple pinched. | Low temperature alarm activated. | - Remove the pinching.<br>- Switch to manual mode if you do not have time to repair or activate zone slaving allowing you to control with the probe of a nearby zone. |
| Drop in temperature. |  and the status bar blinks red | Reversed thermocouple. | Low temperature alarm activated. | - Reverse the polarities, then set the zone to OFF and then to ON to acknowledge the alarm. |
| Drop in temperature. | The  symbol appears on the screen at the zone in question and the status bar blinks red. | Heater completely cut. | Low temperature alarm activated. | - Check connections.<br>- Change the heater. |
| Drop in temperature. | Drop in real temperature display and indication of power different from expected. The  symbol appears on the screen at the zone in question and the status bar blinks red. | Heater partially cut. | Low temperature alarm activated. The percentage of power increases. | - Check connections.<br>- Change the heating. |
| Drop in temperature. | Cut in controller dealing with the defective zone. The  symbol appears on the screen and the status bar blinks red. Applied power increases. | Grounded Heater. | Low temperature alarm activated. | - Too much humidity: dry the heater and replace it if necessary.<br>- With the system, check defective fuses using fusion indicators. With the system switched off, replace fuses where the indicator has remained lit. Replace with same type of fuse. |

| Effects on tooling | Indicators, display | Defect | Protections | Solutions |
|---|---|---|---|---|
| Real temperature is unstable | Real temperature display is unstable, the  or  symbols may appear on the screen and the status bar blinks red. | Temperature oscillations. | High and low temperature alarms activated. | - Material problem.<br>- Mold problem.<br>- Check zone crossing with the Moldscan function §3.2.4.1 |
| Drop in temperature. | The zone in question is in low temperature alarm. The  symbol appears on the screen and the status bar blinks red. The percentage of power increases. | Clean short-circuit at heater. | Low temperature alarm activated. Fuse blown | - Too much humidity: dry the heater and replace it if necessary.<br>- With the system, check defective fuses using fusion indicators. With the system switched off, replace fuses where the indicator has remained lit. Replace with same type of fuse. |
| Temperature increases | Real temperature increases rapidly. The  or  symbols appear and the status bar blinks red. No power is applied. | Triac or heater short-circuit. | Abnormally high temperature or triac fault alarm activated. Disconnected power section. | - If the power applied is equal to 0% and the element heats permanently, that means that the triac or the heater is in short-circuit.<br>- Switch off the system immediately<br>- Check the triac or the control card in question.<br>- Check all connections as well as the heating element.<br>- Send the controller for repair (within 24H). |
| Drop in temperature. | The zone in question is at fault on the screen of the appliance.  | Fuse blown. | Low temperature alarm activated. | - With the system, check defective fuses using fusion indicators. With the system switched off, replace fuses where the indicator has remained lit. Replace with same type of fuse. See Operating instructions. |
| Zones in question do not heat | No display for the zones in question. | The zone does not work on appliance start-up. | Low temperature alarm activated. | - Check the thermocouple card by exchanging it with another zone which works.<br>- Check the fuses. |
| Zones in question do not heat | The  symbol appears and the status bar blinks red. | The power card is not powered. | “No Phase” alarm is activated | - Check the fuses.<br>- Check the circuit-breaker.<br>- Check the power supply voltage. |
| No zone heats within the mold | The general alarm "Circuit-breaker open" is displayed.   | The main circuit-breaker will trip on power-up. | Disconnected power section. | - Check the supply voltage.<br>- Check the presence of the earth if you are in 400V TRI.<br>- Check total installed power. |

| Effects on tooling | Indicators, display | Defect | Protections | Solutions |
|---|---|---|---|---|
| The temperature does not increase | The  symbol appears and the status bar blinks red. | Defective load | "Load fault" alarm activated. | - Check connections.<br>- Change the heater. |
| Abnormal applied power | The  symbol appears and the status bar blinks red. | Material infiltration | "Power monitoring" alarm activated | - Check the mold |
| Drop in temperature. | The  symbol appears and the status bar blinks red. | Load partially deteriorated | "Heating element fault" alarm activated. | - Replace the heating element. |
| Temperature increases | The  symbol appears and the status bar blinks red. | Abnormally high temperature: electrical fault in the mold, or thermocouple fault | “Abnormally high temperature” alarm activated.<br>Disconnected power section. | - Check zone crossing with the Moldscan function §3.2.4.1<br>- Check the mold status in the Mold monitoring screen §3.2.4.3 |
| No zone heats within the mold | The  symbol appears and the status bar blinks red. | Supply voltage too high | Disconnected power section.<br>“Overvoltage” alarm activated. | - Check the supply voltage.<br>- Check the presence of the earth if you are in 400V TRI.<br>- Check the terminal boards of the controller |

## 5) CONTACT US

For all further information, the after-sales service of our company is at your disposal:

| | France | USA | Germany |
|---|---|---|---|
| Tel: | +33 4 74 77 34 53 | +1 404 495 5968 | +49 621 5458 1654 |
| Fax: | +33 4 74 73 90 18 | +1 404 795 0849 | +49 621 5458 2086 |
| e-mail: | sise@sise-plastics.com | sales.us@sise-plastics.com | verkauf.de@sise-plastics.com |
| web: | www.sise-plastics.com | www.sise-plastics.com | www.sise-plastics.com |

# S.i.S.E.


S.i.S.E.
Voie Romaine - Groissiat
01100 OYONNAX - FRANCE
Tel: +33 4 74 77 34 53
Fax: +33 4 74 73 90 18
sise@sise-plastics.com

With 2 subsidiaries
and a large international sales network,
SISE is your worldwide partner

**www.sise-plastics.com**