



## Danfoss Thermostat User Manual

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# Danfoss Thermostat User Manual



## Programmable Thermostats 088L5130/5132

### Introduction

The Danfoss LX thermostat can switch on your heating system at predetermined times on different days of the week. For each day of the week, you can set individual temperatures for 4 periods, called events. The thermostat comes with a default schedule suitable for most installations. Unless you change the settings, the thermostat will operate in compliance with the default schedule. Lowering the temperature when the home is unoccupied will reduce your energy costs without reducing comfort.

Furthermore, the thermostat contains an adaptive preheat feature that automatically changes heating period start times so as to ensure that the required temperature is reached at the required time. After three days the adaptive preheat feature learns when the heating must be switched on.

### First Time Settings

The first time you turn on the thermostat, time and day must be set. The time flashes. Set the current time using the Up or Down buttons. Then press the OK button to confirm the time. The day of the week will then flash. Select the current day using the Up and Down buttons. Press the OK button. The thermostat is now ready for use and will control your heating according to the pre-programmed 4-event schedule (see Factory Settings for Automatic 5:2 Program).

### Ground Fault Circuit Interrupter (GFCI)

The thermostat is GFCI protected which ensures personal safety in case of ground faults. It is important that the GFCI is checked monthly.



## Checking the GFCI

Testing can only be performed while the thermostat is calling for heat.

Adjust the setpoint until the heating symbol ( ) appears. Use the Up button to increase the heating demand and then press the OK button. Wait 10 seconds to allow the thermostat to adjust to the new setpoint.

Then press the TEST button on the top of the thermostat.

The test is successful if the red light in the TEST button lights up and GROUND FAULT is shown on the display. If this does not occur, check the installation/contact your electrical installer.

Press the Standby/Reset button to reset the GFCI.

The red light should go out and the display returns to normal appearance.

Press the Down button to return to the original temperature setting. If the test fails, check the heating cable and thermostat.




If during normal operation the GFCI trips without the TEST button being pressed, there could be a ground fault! To check whether it is a ground fault or nuisance tripping, press Standby/Reset.

If this causes the red light to go off and stay off, it was nuisance tripping and the system is operating correctly. If this does not occur, there is a ground fault! Contact your electrical installer.

## 4-Event Program

I want the temperature to be controlled automatically in accordance with a program of individual temperature settings for four separate events during a day:

- When I wake up in the morning, ☀

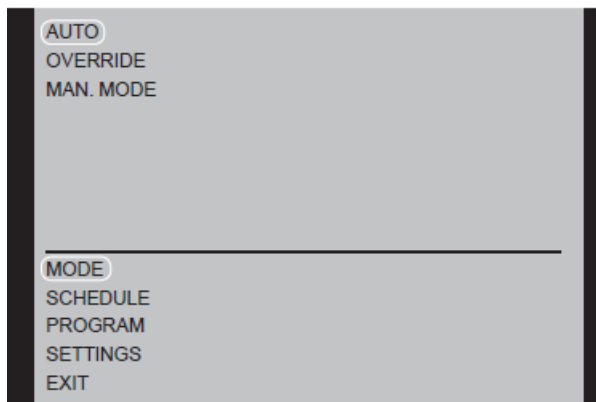
- When I am away at work, 
- When I come home, 
- and at night. 

**To do so, you must perform the following 3 steps:**

**Step 1: Select automatic temperature control.**

1. Press the OK button to activate the menu.
2. Press the Up or Down buttons until the Mode option flashes. 3 Press the OK button.
3. Press the Up or Down buttons until the Auto options flashes in the upper part of the display.
4. Press the OK button.

**Factory setting: Auto mode**



**Step 2: Choosing the weekly schedule for your program.**

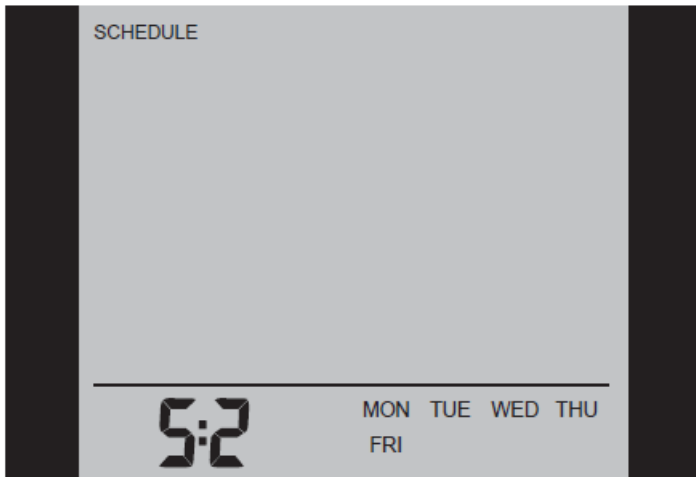
**You have the following options:**

**5:2** will give you 5 days (Monday to Friday) with the same four events (Morning, Out, Home, Night) and 2 days (Saturday and Sunday) with the same two events (Morning and Night).

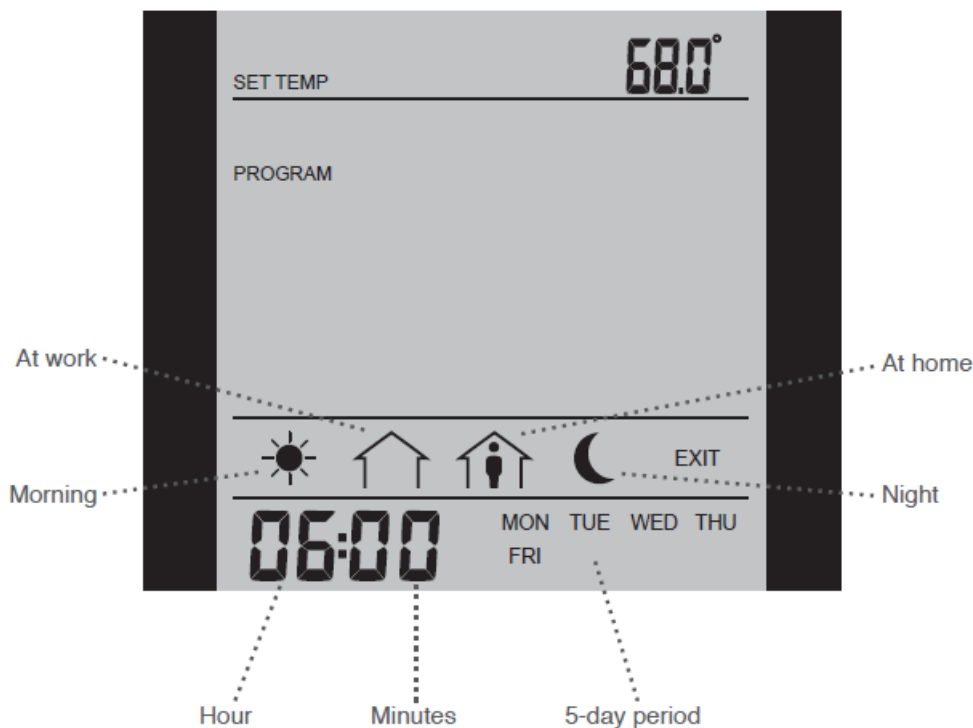
**6:1** will give you 6 days (Monday to Saturday) with the same four events (Morning, Out, Home, Night) and 1 day (Sunday) with the same two events (Day and Night).

**7:0** will give you individual settings for each day from Monday to Sunday.

1. Press the OK button to activate the menu.
2. Press the Up or Down buttons until the Schedule option flashes. 3 Press the OK button.
3. Press the Up or Down buttons until the required program (5:2, 6:1 or 7:0) flashes in the lower part of the display.
4. Press the **OK** button.



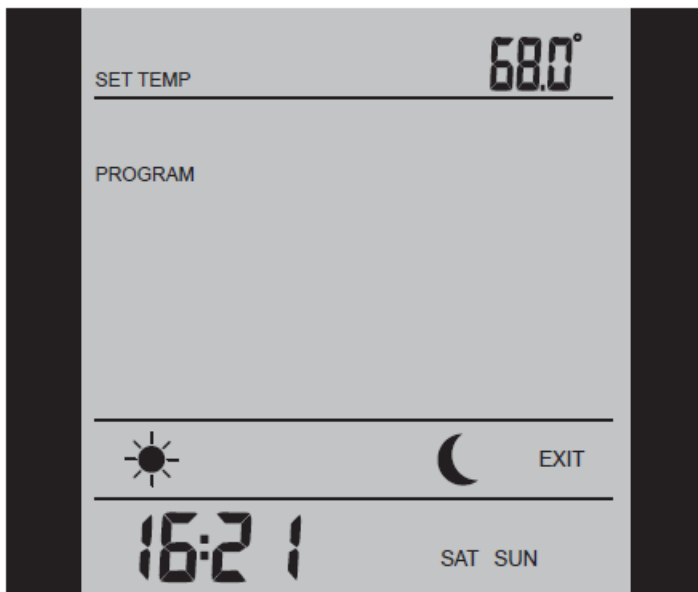
**Step 3: Select the time and temperature settings for each event in the program of days selected in the previous step.**



**Please note:** The following description illustrates an example in which settings are made for the daily events in a 5:2 program.

1. Press the **Up or Down** buttons until the Program option flashes.
2. Press the **OK** button.
3. Press the **Up or Down** buttons until the day(s) that you wish to program flash in the lower part of the display, e.g. Mon Tue Wed Thu Fri.
4. Press the **OK** button. The symbol for the first event (e.g. morning) will now flash.
5. Press the **OK** button. The hour will flash, allowing you to set the hour at which you want the morning period to begin.
6. Press the Up or Down buttons until the required hour is displayed.
7. Press the **OK** button. The minutes will flash.
8. Press the Up or Down buttons until the required minutes are displayed.

9. Press the OK button. The temperature setting will now flash in the upper part of the display.
10. Press the Up or Down buttons to set the required temperature.
11. Press the OK button. The symbol for the next event (e.g. at work) will now flash, allowing you to set the time and temperature for this period of the day by repeating steps 6-12.
12. Once time and temperature have been set for the four events applicable for the 5-day period Monday to Friday, Exit will flash.
13. Press the OK button. The next 2 days, Sat Sun, will then flash.  
Please note that now only two events (Day and Night) are displayed.
14. Press the OK button. The symbol for the first event will flash.
15. Set the time and temperature for this event, and for the following event, by repeating steps 6-12.
16. Finally, select Exit to exit the Program for a 5:2 schedule.



## Quick Set Temperature

I want to permanently change the temperature for the event currently active in the automatic program.  
To do so, you must:

1. Press the Up or Down buttons to set the required temperature for the event currently active.
2. Press the OK button.

The new temperature setting will then be saved and used for this event in the future.

**Example:** If you change the temperature on a Tuesday morning while the thermostat is running a 5:2 program, the new temperature will apply to all mornings from Monday to Friday.

## Adaptive Preheat Feature

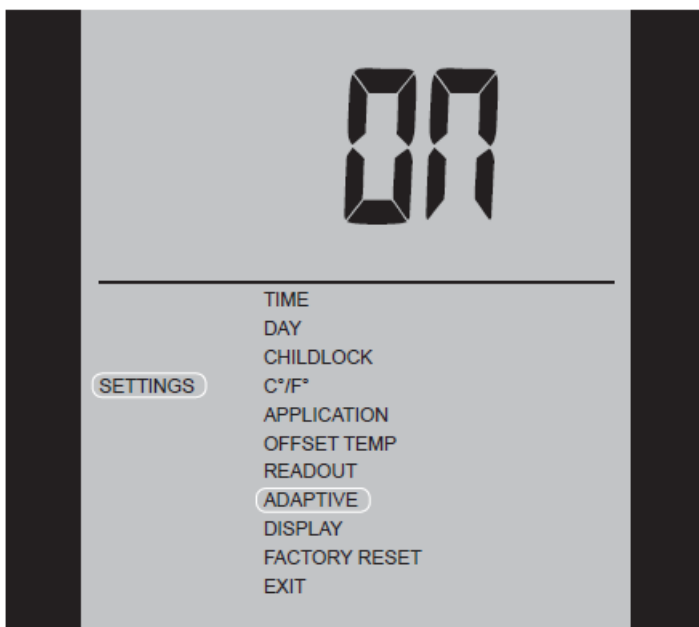
I want to ensure that the required temperature has already been reached when I get up in the morning or come home from work.

**To do so, you must activate the adaptive function:**

1. Press the OK button to activate the menu.
2. Press the Up or Down buttons until the Settings option flashes.
3. Press the OK button.
4. Press the Up or Down buttons until the Adaptive option flashes.
5. Press the OK button. On or Off will now flash in the upper part of the display.
6. Press the Up or Down buttons until On flashes.
7. Press the OK button.
8. Select Exit to exit the option.

**Please note:** The adaptive preheat function is only related to the 4-event program and only works in connection with going from one event to another where the temperature is going to be raised.

The adaptive preheat feature calculates when the thermostat must start the heating system to ensure that the required temperature is reached at the set time. Three days after the adaptive preheat feature has been activated, it has learned when the heating must be switched on to attain the required temperature.



## Manual Mode

I want to temporarily cancel the automatic 4-event program and manually select temperature.

**To do so, you must use manual mode:**

1. Press the OK button to activate the menu.
2. Press the Up or Down buttons until the Mode option flashes. 3 Press the OK button.
3. Press the Up or Down buttons until Man. mode flashes in the upper part of the display. The temperature will begin to flash. 5 Press the Up or Down buttons until the required temperature flashes.
4. Press the OK button.

**Please note:** This feature can be useful for instance if you are going on holiday and want to maintain a frost protection temperature (e.g. 41°F) while you are away.

To return to the automatic 4-event program, you must select Auto. Please refer to page 2 for instructions.



## Temporary Override

I want to temporarily set a comfort temperature for a single event, e.g. because I am not at work one day and want to maintain a higher temperature or because I am having a party.

**To do so, must use override mode:**

1. Press the **OK** button twice to activate the menu.
2. Press the **Up or Down** buttons until the Mode option flashes. 3 Press the OK button.
3. Press the **Up or Down** buttons until Override flashes in the upper part of the display. The temperature will begin to flash.
4. Press the **Up or Down** buttons until the required temperature flashes.
5. Press the **OK** button.

**Please note:** Override mode is a temporary temperature setting that is cancelled automatically by the next event in the scheduled 4-event program.



## Child Lock

I want to lock the thermostat menus to prevent the settings from being changed.

**To do so, you must activate the child lock:**

1. Press the **OK** button twice to activate the menu.
2. Press the **Up or Down** buttons until the Settings option flashes. 3 Press the OK button.
3. Press the **Up or Down** buttons until the **Child lock** option flashes. A padlock symbol will appear in the menu area and Off will flash in the upper part of the display.
4. Press the **Up or Down** buttons until On flashes.
5. Press the **OK** button.

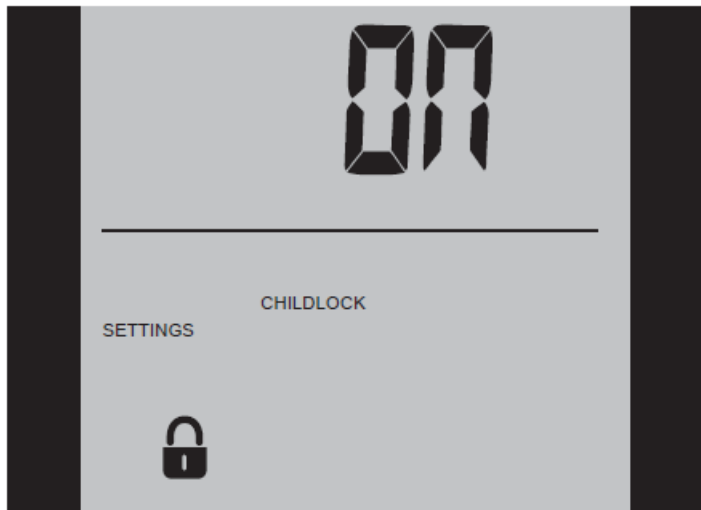


6. Select **Exit** to exit the option.

**To unlock the child lock again, proceed as follows:**

1. Press the OK button to activate the menu.
2. Then press and hold the Up and Down buttons simultaneously for three seconds.

**Factory setting: Celsius**



## Temperature Unit

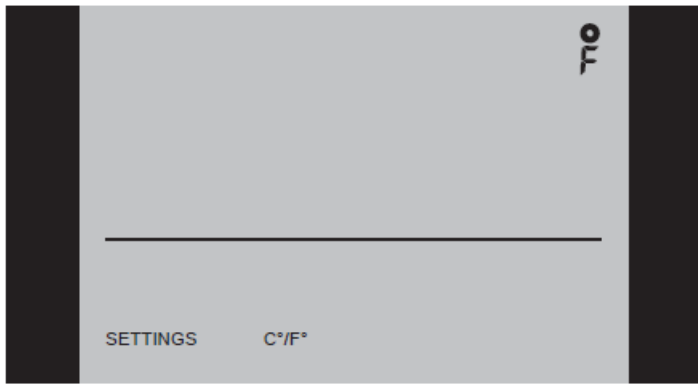
I want to change the temperature unit (°C/°F) used in the display.

**To do so, you must:**

1. Press the OK button twice to activate the menu.
2. Press the Up or Down buttons until the Settings option flashes. 3 Press the OK button.
3. Press the Up or Down buttons until °C/°F flashes in the menu area. The unit currently selected will flash in the upper part of the display.
4. Press the Up or Down buttons until the required unit °C/°F flashes.
5. Press the OK button.
6. Select Exit to exit the option.

**Please note:** Temperatures are displayed in Celsius with a resolution of 0.5 degree and in Fahrenheit with a resolution of 1 degree.

**Factory setting: OFF**



## Setting Time

I want to change the time.

### To do so, you must:

1. Press the OK button twice to activate the menu.
2. Press the Up or Down buttons until the Settings option flashes.
3. Press the OK button.
4. Press the Up or Down buttons until the Time option flashes.  
The currently selected 12 or 24 hour clock will flash in the lower part of the display.
5. Press the Up or Down buttons to select either 12 or 24 hour clock.
6. Press the OK button. The hour will begin flashing in the lower part of the display.
7. Press the Up or Down buttons to set the hour.
8. Press the OK button. Now the minutes will flash.
9. Press the Up or Down buttons to set the minutes.
10. Press the OK button.
11. Select Exit to exit the option.

**Factory setting: 24 hour clock**



## Setting Day

I want to change the day of the week.

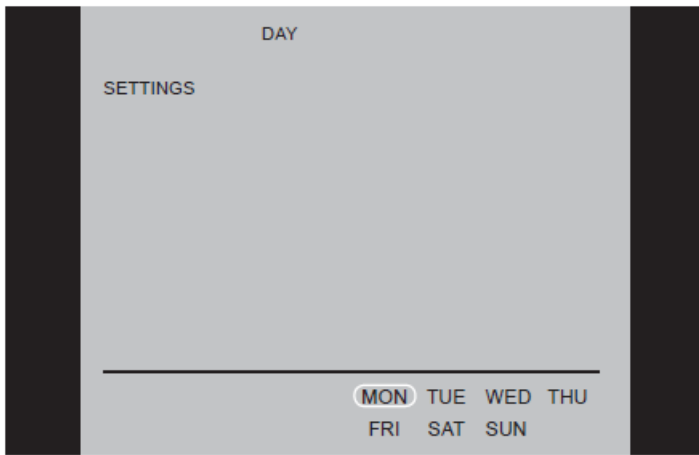
### To do so, you must:

1. Press the OK button twice to activate the menu.
2. Press the Up or Down buttons until the Settings option flashes.
3. Press the OK button.
4. Press the Up or Down buttons until the Day option flashes.

The currently selected day of the week will flash in the lower part of the display.

5. Press the Up or Down buttons until the required day of the week flashes.
6. Press the OK button.
7. Select Exit to exit the option.

**Please note:** Usually, the electrician who installed the thermostat will have set the correct time and day of the week.



## Read Out

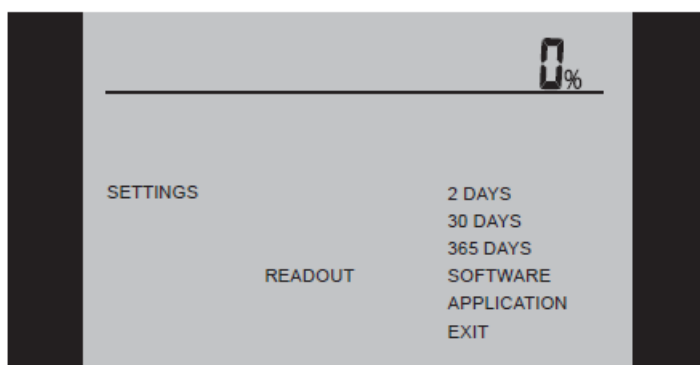
I want to know the amount of time (in percent) that the heating has been turned on within a certain period.

### To do so, you must:

1. Press the OK button twice to activate the menu.
2. Press the Up or Down buttons until the Settings option flashes.
3. Press the OK button.
4. Press the Up or Down buttons until the Readout option flashes.
5. Press the Up or Down buttons to select the period of interest: 2 days, 30 days or 365 days. The percentage of time that the heating has been turned on will then be indicated in the upper part of the display.

The **Readout submenu** also contains information about the Software version and the type of control (Room, Floor, Regulator or Room limit) selected for the Application.

(See Application for more information).



## Offset Temperature

I want to adjust the difference in temperature between the thermostat and my room thermometer.

### To do so, you must:

1. Press the OK button twice to activate the menu.
2. Press the Up or Down buttons until the Settings option flashes.
3. Press the OK button.
4. Press the Up or Down buttons until the Offset Temp option flashes.
5. Press the Up or Down buttons to set the offset temperature (in steps of 1°).
6. Press the OK button.
7. Select Exit to exit the option.

Offset is used to compensate for any difference between the thermostat and a room thermometer. It is possible to adjust the offset by up to +/- 10°C or +/- 18°F. Once the offset has been set correctly, the thermostat will display the same temperature as the thermometer.

If, for example, the thermostat shows 1° too much, the offset should be set to 1°. The temperature will then be set 1° lower.



## Application

I want to select the type of temperature control.

### To do so, you must:

1. Press the OK button twice to activate the menu.
2. Press the Up or Down buttons until the Settings option flashes.
3. Press the OK button.
4. Press the Up or Down buttons until the Application option flashes.
5. Press the Up or Down buttons to select one of the four types of control:

**Room:** The air sensor is used. Only room temperature is controlled.

**Floor:** A floor sensor is used. Only floor temperature is controlled. (Factory default for 088L5132)

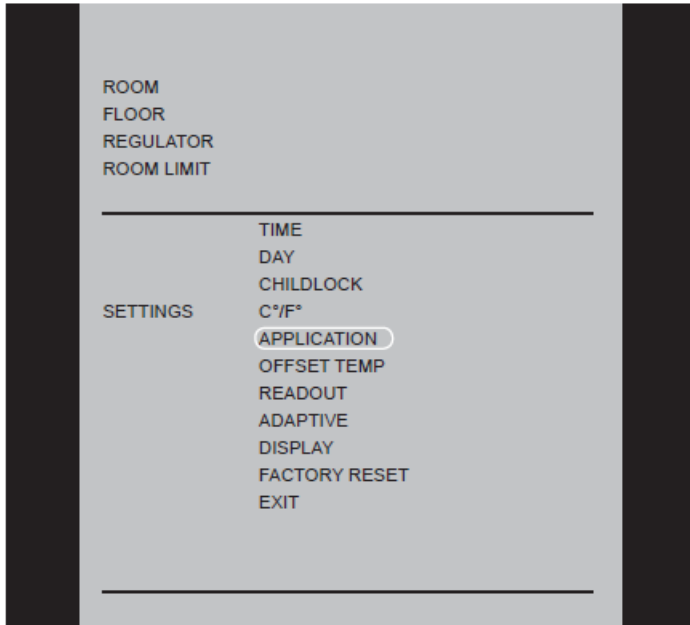
**Regulator:** The thermostat functions as a simple regulator and no sensors are used.

**Room limit:** The thermostat controls room temperature while using the floor sensor as a limit sensor. If you choose this option, you must set a maximum and minimum temperature for the limit sensor, so that the thermostat will switch the heating off or on if the temperature on the floor reaches the maximum or minimum temperature respectively. This can, for instance, be used to avoid excessively high temperatures on wooden

flooring (maximum limit) or excessively cold temperatures on tiled/stone flooring (minimum limit). (Factory default for 088L5132)

6. Press the OK button.
7. Select Exit to exit the option.

**Please note:** Usually, the electrician who installed the thermostat will have selected the correct type of temperature control for your application.



## Display

I want to choose the information to be shown on the thermostat display.

### To do so, you must:

1. Press the OK button twice to activate the menu.
2. Press the Up or Down buttons until the Settings option flashes.
3. Press the OK button.
4. Press the Up or Down buttons until the Display option flashes.
5. Press the Up or Down buttons to select whether or you wish to:

- Display the Clock or not (On/Off),
- Display the Set temperature or not (On/Off).

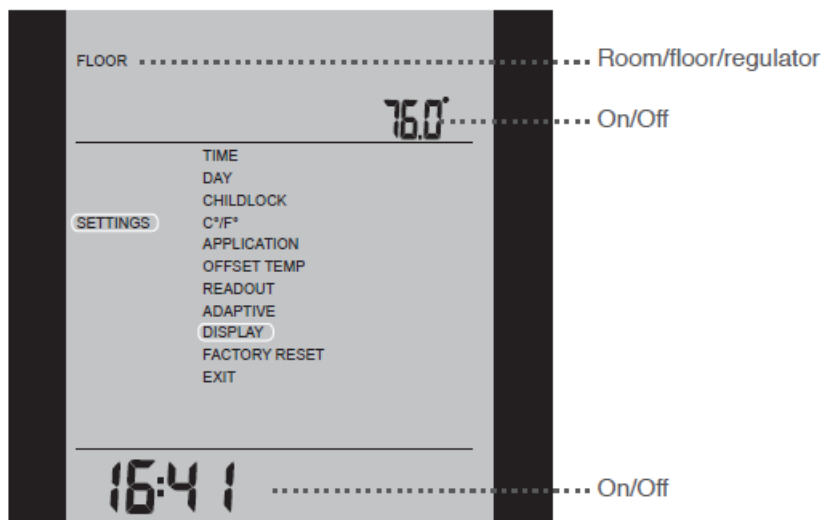
You can also decide whether the temperature displayed is:

- the Room temperature,
- the Floor temperature (if a floor sensor is used), or
- the Regulator temperature.

6. Press the OK button to confirm the settings as you work your way through the various options in the Display submenu.
7. Select Exit to exit the option.

## Factory settings:

- TIME: ON
- Set temp.: ON
- Floor temperature is shown

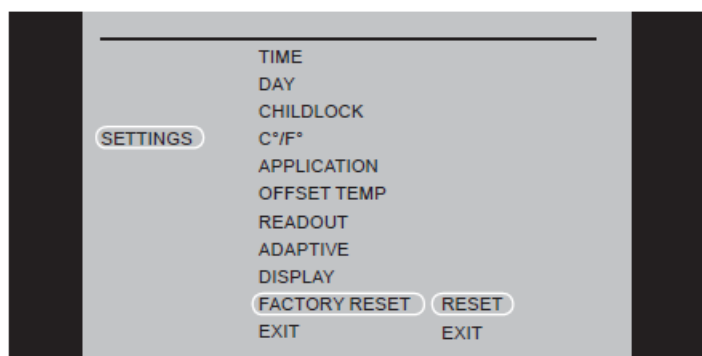


## Factory Reset

I want to return to the factory settings.

### To do so, you must:

1. Press the OK button twice to activate the menu.
2. Press the Up or Down buttons until the Settings option flashes.
3. Press the OK button.
4. Press the Up or Down buttons until the Factory Reset option flashes.
5. Press the OK button. A submenu will appear.
6. Press the Up or Down buttons until the Reset option flashes.
7. Press the OK button.
8. Select Exit to exit the option.



## Exit Menu

I want to exit a menu.

### To do so, you must use the Exit option:

The various menus and submenus contain an Exit option.

1. Press the Up or Down buttons until Exit flashes.
2. Press the OK button. You may have to repeat steps 1 and 2 to return to the final Exit option.

**Please note:** When you activate a menu, the menu item last selected will begin flashing. This allows you to view the latest setting. If, for example, you activate the Mode menu, Man. mode will flash if you used Man. mode the last time.

This principle also applies to current temperature/time settings. When you enter the various menus, they always display the value that was last selected. This allows you to check the current settings.

Should you enter a menu by mistake, you can exit it again without changing the setting by simply confirming the current setting, i.e. by clicking the OK button.

## Error Messages

E0 = Internal failure. Replace thermostat.

E1 = Air sensor defective or short-circuited. Replace thermostat. E2 = Floor sensor defective or short-circuited. Check floor sensor.

## Factory Settings for Automatic 5:2 Program

Days 1-5 (Monday - Friday)		
Event	Time	Temperature
Morning	6:00 a.m. - 8:00 a.m.	77°F / 25°C
Out	8:00 a.m. - 4:00 p.m.	68°F / 20°C
Home	4:00 p.m. - 10:00 p.m.	77°F / 25°C
Night	10:00 p.m. - 6:00 a.m.	68°F / 20°C
Days 6-7 (Saturday - Sunday)		
Event	Time	Temperature
Day	8:00 a.m. - 11:00 p.m.	77°F / 25°C
Night	23:00 p.m. - 08:00 a.m.	68°F / 20°C



