

## ATC-210 Manual

### Important

**Do not overload the device. Care must always be taken when working with electricity.**

**Any device that it used with the ATC-210 must have its own correctly rated fuse.**

**Any equipment with a short circuit or the potential to short circuit could damage this device. It is recommended that circuit breaker or plug in RCD is used for the power socket marked I on the extension otherwise a lamp blowing could cause permanent damage to the ATC-210 electronics.**

### Overview

The ATC-210 is an intelligent dimming heating thermostat with a built-in, battery backed up clock which allows 2 different temperatures to be maintained depending on the time of day. In addition to this the ATC-210 also has a second socket which will turn on and off depending on the time of day. This is ideal for controlling a light or a pump/filter for example.

The ATC-210 operates by reducing the current (amps) to the heating device which in turn reduces the amount of electricity it uses and the amount of heat it produces. The ATC-210 uses its intelligence to determine how much current to supply. When the sensor reading starts to get closer to the target temperature it will reduce the current so that the area will not over heat once the target has been reached. Also if the temperature starts to fall, the ATC-210 will start to send power to your heating devices to prevent the temperature dropping below the target temperature.

Even though the Heat light is indicating that power is being sent to the heating devices the current may be so low that it's only just keeping warm and no more.

You can check the temperature setting without having to enter the main menu. During normal operating mode press the **UP** key to display the 1<sup>st</sup> Temperature setting (F01) and press the down key to display the 2<sup>nd</sup> Temperature setting (F02).

The current time can also be checked by pressing the **ENT** key.

### Sockets

The ATC-210 extension lead has 2 sockets marked as **I** & **II**. The socket used for your heating devices is marked as **I** and the timing socket is marked as **II**. Please note that the red panel on the extension sockets does not illuminate.

### The Indication lights

The front of the ATC-210 contains 3 small LED lights. When illuminated these mean the following:

- **Heat:** This indicates that the heater is receiving power through the socket marked **I**. Since this is a dimming thermostat the Heat LED's brightness changes with the amount of power that is being fed to the heat source. IE the more power the brighter the LED.
- **Set:** This indicates when you are in the Time or Main Menu. When you exit any of these menus the LED will turn off.
- **Timer:** This indicates when the timer is sending power to the socket marked as **II**.

### Specifications

Size: 150 long by 85mm wide by 45mm deep

Controlling Range: 0c to 50c (32-122F)

Resolution: 0.1c (1F)

Power Supply: 220v AC +/- 10% 50 to 60Hz

Power Consumption: less than 4W

**Output Capacity: Heating Max: 600w : Timer Max: 5amps 1.2kw**

Storage Condition & Humidity: -30 to 75C, RH 20 to 85%

Sensor Cable Length: 2 metre approx

Sensor Diameter: 6mm approx

Sensor Type: NTC

### Error Messages

**E00:** this indicates that you need to check the Time Clock.

**E01:** This indicates a sensor problem.

## Operating Instructions

There are 2 different menus which are accessed in different ways.

**Time Clock:** The clock is set in hours and minutes. To set the time clock press and hold the **ENT** key for approx 3 seconds. The display will change to read **HUr**. If you now press the **SET** key it will display the current hour setting in 24 hour format (ie 0 to 23). Using the **UP** and **Down** keys select the current hour. Once you have selected the correct hour press the **SET** key again to accept this.

The ATC-210 will now automatically move onto the minutes setting by displaying **nin**. Again using the **UP** and **Down** keys select the minute from 0 to 59. Once selected press the **SET** again. Now to save and store these new time changes you must press and hold the **ENT** key of approx 3 seconds. If no key is pressed for 30 seconds the new time will not be saved.

**Main Menu:** This menu is where you set up the rest of the settings as below. The code in the left hand column is the code the ATC-210 will display so that you know what option you are changing.

Code	Description	Range
F01	1 <sup>st</sup> Time Temperature Setting	0-50c (32-122F)
F02	2 <sup>nd</sup> Time Temperature Setting	0-50c (32-122F)
F03	Temperature Alarm	0-15c (0-27F)
F04	Calibration	0-15c (-18-18F)
F05	Celsius or Fahrenheit	0 or 1
F06	1 <sup>st</sup> Time Temperature Setting Start	Hr.10Min
F07	1 <sup>st</sup> Time Temperature Setting End	Hr.10Min
F08	1 <sup>st</sup> Timer Start Time	Hr.10Min
F09	1 <sup>st</sup> Timer End Time	Hr.10Min
F10	2 <sup>nd</sup> Timer Start Time	Hr.10Min
F11	2 <sup>nd</sup> Timer End Time	Hr.10Min

To enter the Main Menu press and hold the **SET** key for approx 3 seconds and the display will read F01. From here you use the **UP** and **Down** keys to select the F code for the setting you wish to change. Once you have selected the F code you wish to change you then press the **SET** key again to show that setting. Then simply use the **UP** and **Down** keys to change the setting. Once you're happy with the setting press the **SET** key again to accept it. The display will now read the next F code on the list.

Repeat this process until you are happy with all the settings. Now to save and store these new settings you must press and hold the **ENT** key for approx 3 seconds. If no key is pressed for 30 seconds the new settings will not be saved.

## Menu Settings

Please note that all the time setting on the Main Menu are changed in Hours and 10 minutes intervals, in other words you can only set the minutes in 10 minutes steps (i.e. 00,10,20,30,40 & 50)

For example 6:20 in the evening is displayed as "18.2" and 8:50 in the evening is displayed as "20.5"

Also you will notice that there is only a **1<sup>st</sup> Time Temperature Setting Start & End** (F06 & F07) and not one for the **2<sup>nd</sup> Time Temperature Setting Start & End**. This means that any time during the **1<sup>st</sup> Time Temperature Setting Start & End** setting (F06 & F07) is classed as the **1<sup>st</sup> time setting** and, any time out with that setting is simply classed as the **2<sup>nd</sup> Time Temperature Setting**. So as soon as the **1<sup>st</sup> Time Temperature Setting End** (F07) time is reached it then automatically becomes the **2<sup>nd</sup> Time Temperature Setting Start**. This will continue as the **2<sup>nd</sup> Time Temperature Setting** until the **1<sup>st</sup> Time Temperature Setting Start** time is reached.

**F01- 1<sup>st</sup> Time Temperature Setting:** Sometimes called the Day Temperature Setting. When you have configured the time **1<sup>st</sup> Time Temperature Setting Start & End (F06 & F07)** this is the temperature that your heat source will heat to during these times.

**F02 - 2<sup>nd</sup> Time Temperature Setting:** Sometimes called the Night Temperature Setting. When you have configured the time **1<sup>st</sup> Time Temperature Setting Start & End (F06 & F07)** this is the temperature that your heat source will heat to **out with these times**.

**F03 - Temperature Alarm:** This setting is the difference in temperature above or below the current Temperature setting (F01 or F02) as to when a warning alarm will sound. If set to 0 the alarm function is cancelled. For example if your current setting is 25c and you have the **Temperature Alarm** set to 5c then, the alarm would sound if the temperature reached 30c (i.e. Temperature Setting + Temperature Alarm) or if it reached 20c (i.e. Temperature Setting minus Temperature Alarm). The alarm will stop sounding by itself when the temperature is back within its tolerance or it can be silenced by pressing any key on the ATC-210. There is a 10 minute delay in the alarm sounding only when the ATC-210 is changing from operating between **Time Temperature Setting** to **Time Temperature Setting**. This delay is to stop any alarm sounding and to give the temperature a chance to adjust to its new settings.

**F04 – Calibration:** Here you can adjust the current reading to compensate for any interference that the ATC-210 may pick up from other equipment. This also allows you to extend the sensor cable and adjust the temperature reading to compensate for any differences that a longer cable may create.

**F05 - Celsius or Fahrenheit:** Select 0 to operate in Celsius and 1 to operate in Fahrenheit.

**F06 - 1<sup>st</sup> Time Temperature Setting Start:** As explained at the top of this section (Menu Settings) the time is entered in hours and 10 min intervals. This is the starting time of the **1<sup>st</sup> Time Temperature Setting**.

**F07 - 1<sup>st</sup> Time Temperature Setting End:** As explained at the top of this section (Menu Settings) the time is entered in hours and 10 min intervals. This is the end time of the **1<sup>st</sup> Time Temperature Setting**.

**All times before F06 & after F07 are classed as the 2<sup>nd</sup> Time Temperature Setting.**

**F08 to F11: Relates to the timer:** These are set in hours and 10 min intervals as explained at the top of this section (Menu Settings). F08 is the time you would like the timer socket (marked as II on the socket) to turn on at and F09 is the Finish Time that you would like it to turn off at. If you only require 1 On and Off time the just ensure that the 2<sup>nd</sup> time settings (F10 & F11) are programmed to start and end before the end time of the first setting (F09). In other words if you have F09 set to end at 8 o'clock at night then just make sure the 2<sup>nd</sup> time settings (F10 & F11) are programmed to both start and finish before 8 o'clock at night and the ATC-210 will only use the 1<sup>st</sup> time settings.

### **Specifications**

Size: 150 long by 85mm wide by 45mm deep

Controlling Range: 0c to 50c (32-122F)

Resolution: 0.1c (1F)

Power Supply: 220v AC +/- 10% 50 to 60Hz

UK Standard Plug & Sockets

Power Consumption: less than 4W

Output Capacity: Heating Max: 600w & Timer Max: 5amps 1.2kw

Storage Condition & Humidity: -30 to 75C, RH 20 to 85%

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Sensor Diameter: 6mm approx

Sensor Type: NTC