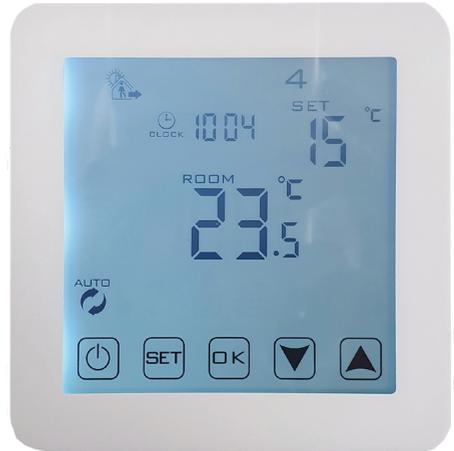


ATC HeatStat Underfloor Heating Thermostat Installation And Operation Manual

Thank you for purchasing the ATC HeatStat wall mounted heating controller, your thermostat is equipped with five touch sensitive buttons across the bottom of the thermostat for easy control and a large easy to read screen that is optimised for viewing from above.

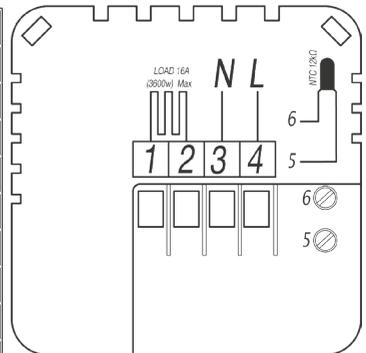
The HS500 is designed for both underfloor heating control with the supplied floor sensor and normal room control using the built in highly accurate room sensor.



HS500

Specifications:

Power	220-240V AC 50/60Hz
Temperature Range (Display)	0° to 40°
Temperature Range (Adjustment)	5° to 35°
Temperature Display accuracy	0.5°C
Sensor type	Internal 10kΩNTC External 12kΩNTC @25°C
Program type	4 on/off per day (5+2)
Switching capacity (Relay)	16A Resistive. 1A Inductive
Working environment temperature	0° to 90°
Installation type	Wall Mounted



Connection Diagram

IMPORTANT SAFETY INSTRUCTIONS

1. Read all instructions prior to installing this thermostat, failure to follow the instructions could damage the product or cause a hazardous condition.
2. Check the loading of the product you intend to connect to this thermostat to ensure that the device is capable of switching the intended load. Do not connect the load if it is rated higher than 16A.
3. After product installation is complete, follow the instructions given below to ensure that the thermostat functions correctly.
4. This product must be installed by a qualified electrician.

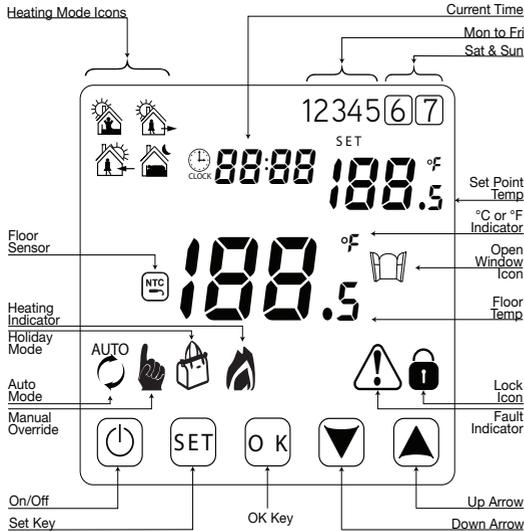


Always disconnect power before installation, Risk of Electric Shock or Equipment Damage.



MAIN SCREEN LAYOUT INFORMATION

Main Thermostat Screen



Touch to turn the thermostat on and off.



1. Short touch to switch between Auto and Manual mode.
2. Long touch with Stat turned on enters into Programming mode.
3. Long touch with Stat turned off enters into the Configuration mode.



1. Short touch to enter the time setting mode.
2. Long touch to enter holiday mode configuration.



1. Touch to decrease the temperature set-point.
2. Long touch to lock or unlock the thermostat.



1. Touch to increase the temperature set-point.
2. Long touch to find out the external temperature probe (when in room sensor mode - see *R4* in advanced functions).
3. When in Auto mode, touch up or down arrow to change the temperature set-point and enter into Manual mode (touch set to return to auto mode).

SETTING THE TIME

To set the current time and day touch the **OK** key and the time will start to flash; set the current minutes using the **▲** or **▼** and touch **OK**, the hours can now be set in the same way. When the time is correct touch the **OK** key and the days of the week will flash starting at 1 (Monday). Change to the correct day of the week and touch **OK** to save the time.

PROGRAMMING

The ATC HeatStat is factory set in a 5+2 configuration (Monday to Friday & Saturday/Sunday), it can also be set for 6+1 and 7 days all the same (see *RE* in the advanced functions). The factory program is set as follows:

Heating Mode Icon		Wake Up		Leave Home		Return Home		Go to Bed	
Time	Temp	06:00	20°C	08:00	15°C	17:00	15°C	22:00	15°C

In order to customise the program touch and hold the **SET** key and the display will change to show the time for the First heating period flashing and the "12345" at the top of the screen. These numbers show that the weekdays are being programmed. Use the **▲** & **▼** keys to adjust the time (hours then minutes); to move to the next set-point use the **SET** key each time. Once the time is set, then the "Set Point Temp" will begin to flash, set to the required value and press **SET** to store.

Repeat this process for each of the times and temperatures required for each day. Once the Monday to Friday times have been set the **6 7** will begin to flash to indicate that Saturday and Sunday are being programmed. Complete the times and temperatures required. Once the programming has been completed then the thermostat will return to Auto mode as shown by: , leaving the thermostat alone for 20 seconds will also return to the previous mode of operation.

At any time the temperature setting can be adjusted with the  &  keys and the display will change from Auto to show the Manual Override symbol: . To return to automatic operation touch the **SET** key.

HOLIDAY MODE

To set the thermostat into holiday mode where it will override the standard program for a number of days (1-30 days) touch and hold the **OK** key until the time changes to “OFF”, use either  or  to change the display to “ON” and touch **OK**. The Main Temperature display will show “0” change this to the number of days Holiday mode should be active for and touch **OK**. Now the Set Point Temperature will start to flash, change the set-point to the temperature to be maintained for the holidays and touch **OK**. The display will change to show the Holiday Icon: . To return to normal operation touch **SET**.

KEY-LOCK

To lock the keys to prevent any accidental changes touch and hold the  key. The display will show the lock icon: . To unlock hold the  key until the lock icon disappears.

ADVANCED FUNCTIONS

To configure the thermostat in a different mode to the factory setting, turn the unit off with the  key, and touch and hold the **SET** key, there are 14 settings from *R1* to *R9* and *RR* to *RE* as outlined below. To adjust the setting use the  or  and **SET** to save the value and move onto the next setting. If the thermostat is left for 20 seconds the menu will revert to off. **Note: Manual Mode available in Item RE**

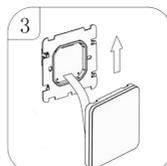
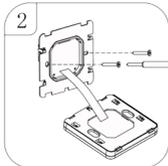
Item	Function	Description of function and range of information.	Factory Default
<i>R1</i>	Display temperature offset.	-9°C to +9°C. Default will display current temp with 0.5°C Accuracy	Current Temp
<i>R2</i>	Temperature control return difference.	0.5°C to 2.5°C.	1°C.
<i>R3</i>	External sensor, limit temperature control difference	1°C to 9°C.	2°C.
<i>R4</i>	Control type options.	<i>N1</i> : Internal sensor with high temperature protection to turn stat off. (Room Stat) <i>N2</i> : External sensor with high temperature protection to turn stat off (Floor Stat) <i>N3</i> : Internal sensor with external sensor as high level limit (<i>RE</i>). When external temperature exceeds value, relay is turned off. (Room and Floor Stat).	<i>N2</i>
<i>R5</i>	Key Lock.	0 : Does not include Power key. 1 : Includes Power key.	0

<i>R6</i>	High Limit value for external sensor.	Only available when <i>R4=N3</i> Range 25°C→75°C, when set to less than 25°C setting shows "--" and protection is turned off. If the high limit setting is exceeded the relay is turned off and the heating symbol will flash until the temperature falls below the setting.	45°C 
<i>R7</i>	External sensor Low Limit.	Range 1°C→10°C, (anti freeze protection). When set to more than 10°C setting shows "--" and protection is turned off.	5°C
<i>R8</i>	Lowest settable temperature.	1°C to 10°C.	5°C
<i>R9</i>	Highest settable temperature.	20° to 90°C. (Use this setting for wooden floors, set to 28°C).	35°C
<i>RR</i>	Descaling function.	0: Descaling function off. 1: Descaling function on. If output is continuously closed for 100 hours or more, contact is open for 3 minutes.	0
<i>Rb</i>	Power and memory function.	0: Always retain program memory. 1: Reset program memory after removing mains power. 2: Reset program memory when making mains power connection.	0
<i>RC</i>	Type of Programming selection.	0: 5+2 (Mon→Fri, Sat & Sun). 1: 6+1 (Mon→Sat, Sun). 2: 7 (7 Days all the same). 3: Manual mode, No program functions, only  for time and arrows for temperature.	0
<i>Rd</i>	Open Window mode- off duration.	5 to 60 minutes. If temperature drops 3°C in 30 minutes the relay is deactivated for the set duration and display shows  . To reset whilst function is active turn stat off and on again. (If setting is set to less than 5 minutes, shows "--" and function is disabled).	30
<i>RE</i>	Factory Reset.	Display shows <i>Rd</i> , press and hold  . Display shows all icons and then switches off. All settings apart from time are lost.	<i>Rd</i>

SENSOR FAULT

The thermostat may show an *E1* or *E2* on the display. This is because the sensor is not connected correctly; it may be due to an open circuit or the heat mat may be connected in terminals 5 and 6. Check the resistance of the sensor, it should be 12kΩ@25°C. If the mat was inadvertently connected in 5&6 the resistance would be between 21Ω and 756Ω, these low resistances will cause the thermostat to display an error. Once the resistances are checked, replace the sensor or mat as appropriate.

INSTALLATION METHOD



WARRANTY

ATC Electrical and Mechanical provides a limited one year warranty for the HS500 thermostat as long as the unit has been installed, used and maintained in accordance with the information provided in this manual. In order to arrange a replacement thermostat, the information listed below is required. It is recommended to write this information below and keep this instruction manual in a safe place.
Date of Purchase: _____ -4- Location Purchased: _____