

The controller is designed in accordance with current product standard EN 60730-2-9, and hereby fulfills the requirements to both LVD and EMC directives. **CE**

The controller must not be put into operation until it has been ascertained that the entire installation complies with current legislation applying to electrical installations.

The warranty is only valid if the controller has been put into operation in accordance with the operating and installation instructions supplied with this controller.

The HT01-16RF is an electronic on/off thermostat for control of temperature by means of an NTC sensor either placed externally or internally in the thermostat.

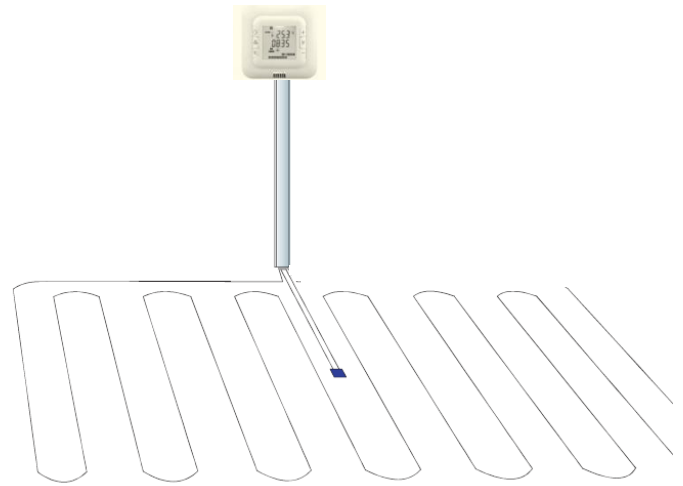
Mounting of the floor sensor

The floor sensor should be installed within an approved non conductive installation pipe in accordance with EN 61386-1, which is embedded in the floor. The pipe (flexible conduit) should be placed as high as possible in the subfloor. The floor sensor should be located equidistant between two runs of the heating element with the tip at least 300mm away from the outside edge of the heater.

The enclosed 3 meter sensor cable can be extended up to 50m by means of a separate cable. If the extension cable is lighter than H05VV-F, it shall equally be installed in an unbroken installation pipe. The installation pipe must not contain any other cables, such as the supplies to the heating wire. The switching peaks of such current supply lines may create interfering signals that prevent optimum thermostat function. The heating supply cable should be placed in a separate pipe.

In the event of sensor failure, replacement of the sensor can be carried out with ease providing the sensor is installed within flexible conduit.

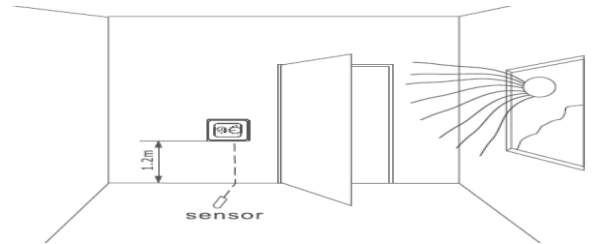
The floor sensor should never cross the heating element.



Controller Installation

Placement of Thermostat

The thermostat is to be mounted on the wall with free air circulation around it. Furthermore it has to be placed where it is not influenced by any other heating sources (e.g. the sun), draft from doors or windows, or by the temperature of an exterior wall. The thermostat must be installed outside of rooms containing a bath or shower. (Protective housing – IP20)



Electrical Connection

Electrical connections are to be made as detailed on diagram.

The circuit supplying this controller must be protected by a 30mA RCD.

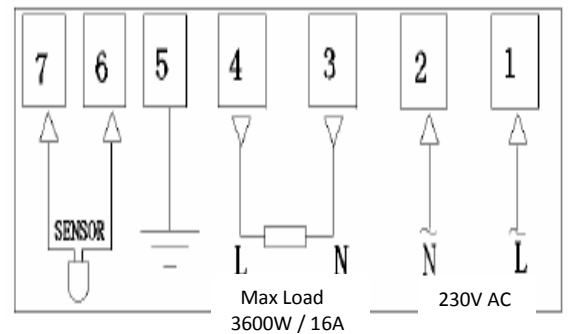
All electrical connections must be performed by a fully qualified and part P certified electrician.

Any doubts surrounding the installation of this controller should be passed to the distributor prior to installation.

Testing of all under-floor heating systems should take place prior to floor coverings being installed.

- 1 Live from mains
- 2 Neutral from mains
- 3 Neutral to heaters
- 4 Live to heaters
- 5 Earth from heaters & mains
- 6 White wire from sensor
- 7 Black wire from sensor

Remove this sensor from circuit before performing any high voltage insulation tests.



IMPORTANT: ALWAYS DISCONNECT THE MAINS SUPPLY VIA THE SWITCH IN THE MAIN FUSE BOARD, CONSUMER UNIT BEFORE COMMENCING ANY ELECTRICAL WORK. WHEN CONNECTING CABLES TO THE THERMOSTAT, ENSURE THAT ALL TERMINAL SCREWS ARE FULLY TIGHTENED AND THAT EARTH WIRES ARE SLEEVED AND THAT NO BARE WIRES ARE SHOWING.

Sensor failure

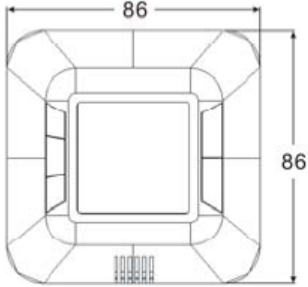
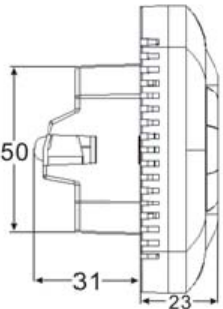
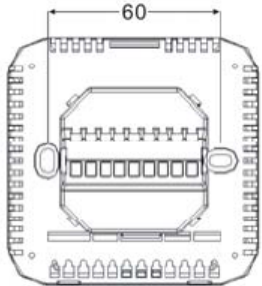
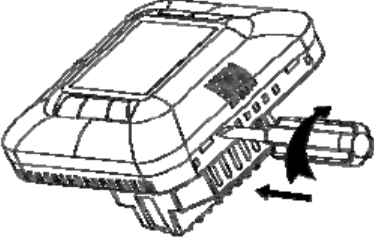
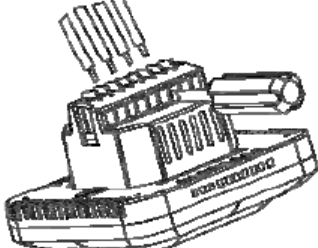
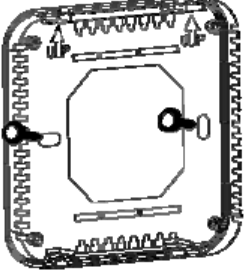
In the event of a possible sensor failure, the sensor can be checked according to the table of resistance values below.

Sensor Resistance Values			
Temperature °C	Resistance Ohms	Temperature °C	Resistance Ohms
5	22070.600	25	10000.000
10	17960.000	30	8312.400
15	14696.200	35	6943.400
20	12091.100	40	5827.250

Technical Data

Voltage:	AC230V ± 10% 50/60HZ
Power Consumption:	5W
Setting Range:	5 ~ 30°C
Floor overheating	30 ~ 80°C (factory set @ 65°C)
Protection:	
Protective housing:	IP20
Housing Material:	ABS + PC fire-resistant
Certification:	CE
Floor Sensor:	Rubber-Thermoplastic NTC 10K Sensor
Internal Sensor:	NTC 10K

Mounting & Installation

<p>Front (unit:mm)</p> 	<p>Thickness (unit:mm)</p> 	<p>Mounting Hole (unit:mm)</p> 
<p>1</p> 	<p>2</p> 	<p>3</p> 
<p>1. Release the front of the thermostat by inserting a small flat screwdriver into the 2 slots on the base.</p>	<p>2. Make electrical connections as detailed in previous section.</p>	<p>3. Mount base part of thermostat onto either a BS recessed or surface mounted box.</p>

Operating Instructions

Sensor Selection

The HT01-16RF is factory preset to use the room and floor temperature sensors. The following options are available. To change, press **M** for 3 seconds then **M** once more. Option can then be selected by the **+ / -** buttons.







rS	Room sensor ONLY	Heating will be switched on by the thermostat when the room temperature falls below the programmed temperature. There is NO LIMIT on the temperature the floor can reach.
FS	Floor sensor	Heating will be switched on by the thermostat when the floor temperature falls below the programmed temperature.*
rFS	Room and floor sensor	Heating will be switched on by the thermostat when the room temperature falls below the programmed temperature. The thermostat will cut power to the heating if the floor reaches a temperature higher than the programmed level. This is factory set at 65°C This can re-programmed by the user at a level between 30°C & 80°C. RECOMMENDED MAX: 40°C

* If this thermostat is to be used with any under floor heating system designed for floor coverings other than ceramic, porcelain or stone floor tiles, the 'floor sensor only' option should be selected.

The ☀ (Comfort) 🌙 (Energy save) and 🏠 (Holiday) modes all need to be checked to ensure that the operating temperatures do not exceed the values given by your heating / floor covering supplier. These temperature levels can be amended by holding 🌙 for 3 seconds. The first value that can be changed is the holiday mode. Press once more (quickly) to amend the energy save value, and once more for the comfort value.




Thermostat Programming

Your new thermostat has the following 3 modes. To manually select a specific mode press **M**.


Comfort mode		Select this mode to turn the under floor heating on. The heating will operate at the preset temperature. To alter the preset temperature hold  for 3 seconds then press again twice. Factory preset temperature : 25°C
Energy-saving Mode		Select this mode to turn the under floor heating down to a lower preset temperature. This temperature can be set low enough to mean the heating is effectively turned off. To alter the preset temperature hold  for 3 seconds then press once again. Factory preset temperature : 15°C
Holiday Mode		Select this mode to set the heating to a very low level whilst the room is unoccupied for a long period of time. This mode should be selected to avoid frost damage whilst on holiday. To alter the preset temperature hold  for 3 seconds. Factory preset temperature : 5°C



Whilst the thermostat is operating in any of the modes above, the temperature can be manually altered by pressing the + or – buttons. The set temperature will then revert back to the pre-set level at the next change of mode.

Date & Time Settings

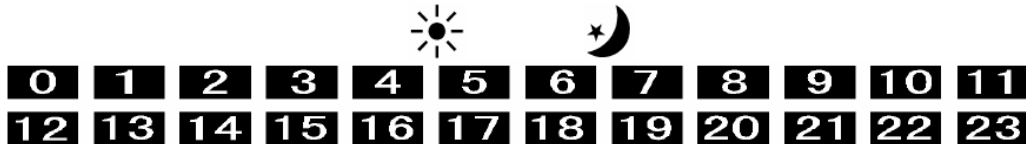
To set the correct date & time press and hold  for 3 seconds. Minutes will flash, press + / – to alter. Press  once again to alter hours (24 hour clock). Press  once again to change week day. The numbers from 1 to 7 at the top of the screen represent Monday to Sunday.


7 Day Automatic mode

To select the 7 day timer mode press **M** until  is displayed on the LCD screen. The thermostat will then switch between comfort & energy saving mode (On/Off) automatically according to the day & time settings. Each day of the week can be programmed with individual settings.

To set up the automatic mode, press & hold  for 3 seconds. To select the day of the week to be programmed press .

The bottom of the screen will show the following pattern of 24 numbered squares. Each square represents a 1 hour period of a 24 hour cycle. Each of these 1 hour periods can be programmed to comfort or energy-save (On/Off) mode.



To make changes to the timed program, press + / – to select the 60 minute period. Then press  to select the mode. Pressing + or – will copy the selected mode from the previous 60 minute period.

Whilst programming, inactivity of 5 seconds will save the settings entered & the thermostat will return to normal operational mode.

Advanced Settings

To enter advanced settings press and hold **M** for 3 seconds. Press **M** once again for each numbered function.

1. Temperature Calibration. If an accurate temperature read out from the room or floor differs from the read out on the thermostat, providing the sensor has been checked against the stated resistance values, the thermostat can be calibrated using this function. The range is -8°C ~ +8°C
2. Sensor Selection. See beginning of the Operating Instructions section for details.
3. When operating the thermostat with the rFS sensor selection, the room temperature will display on the thermostat. This function allows the user to see the current floor temperature.
4. When operating the thermostat with the rFS sensor selection, this function allows the user to amend the maximum temperature the floor can reach. If the floor temperature exceeds this over-heating protection set-point, ALARM will flash on the screen and the heating output will cut out.

Safety Information



WARNING: RISK OF ELECTRIC SHOCK. Disconnect power supply before making electrical connections. Contact with components carrying hazardous voltage can cause electrical shock and may result in severe personal injury or death.

This thermostat is not a safety device and should only be used with safety certificated floor heating systems suitable for their specific purpose. In order to avoid damaging your flooring, ensure the correct sensor selection & operating temperatures are selected during the programming process.

Thermostat Load and Contact Life:

We strongly recommend that you do not load the thermostat to the full extent of its 16A relay contact rating. It is good practice to restrict the load to 2kW~2.4kW (10A~12A). The relay is rated according to the requirements of EN 61810-1:2004 and EN60730-1 which are not representative of 'real life' applications but an arbitrary test method. Critically, relay contact life is affected by loading. At 10A~12A the contact life is more than double its life at 16A. In addition, measurement accuracy and control of room temperature is optimal at loads below 2kW~2.4kW. The relay contacts have resistance proportional to current passed and greater currents cause greater losses across the relay contacts. These losses can increase the internal temperature of the thermostat and affect the internal sensor used for air temperature control.

Warranty

Hiwell warrants this product, to be free from defects in the workmanship or materials, under normal use and service, for a period of one (1) year from the date of purchase by the consumer. If at any time during the warranty period the product is determined to be defective, Hiwell shall repair or replace it, at Hiwell's option.

If the product is defective, please return it, with a bill of sale or other dated proof of purchase, to the place from which you purchased it. Hiwell will determine whether the product should be returned, or replaced.

This warranty does not cover removal or reinstallation costs, and shall not apply if it is shown by Hiwell that the defect or malfunction was caused by damage which occurred while the product was in the possession of a consumer.

Hiwell's sole responsibility shall be to repair or replace the product within the terms stated above.

HIWELL SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF ANY WARRANTY, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT. THIS WARRANTY IS THE ONLY EXPRESS WARRANTY HIWELL MAKES ON THIS PRODUCT. THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS HEREBY LIMITED TO THE ONE-YEAR DURATION OF THIS WARRANTY.

This Warranty does not affect your statutory rights.

For any questions regarding product installation or operation, please contact the retailer you purchased this product from.

Recycling of obsolete appliances



NW107LW-A Appliances with this label must not be disposed of with general waste. They must be collected separately and disposed of according to local regulations.