

Thank you for purchasing a BN Thermic product. Manufactured to a high standard, this product will, if used according to these instructions and properly maintained, give you years of trouble free performance. Please ensure instructions remain with your customer for their reference.



REGISTER: PLEASE REGISTER THIS PRODUCT ONLINE TO ACTIVATE YOUR GUARANTEE AT www.bnthermic.co.uk



IMPORTANT: PLEASE READ THESE INSTRUCTIONS, NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS, AND CAUTIONS. USE THIS PRODUCT CORRECTLY, AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY.



SECTION A – USER INSTRUCTIONS.

For installation instructions go to page 4

1. INTRODUCTION & SPECIFICATION.

The W16C Wi-Fi Thermostat is an easy to install and use 7 Day, 6/1 Day or 5/2 Day Programmable Room Thermostat which offers six time and temperature changes per day. It is designed to provide automatic time and temperature control for underfloor heating using air temperature and a floor sensor. The thermostat works in conjunction with an app available on Google Play or the App Store. All settings are stored in the controller with battery back-up.



W16C- Programmable Heater Controller

Programming	7 Day, 6+1 Day or 5+2 Day (Default 5+2 Day)
Power Supply	230V ac 50 Hz 16A Maximum Load (Battery back-up)
Floor Temperature Sensor	NTC (10KΩ) +/- 0.5°C at 20°C
Temperature Range	1°C to 45°C (Default 5°C to 30°C)
Display	LED + Standby brightness setting.
No. Programs Per Day	6
Tamper Resistant	Facility for locking the screen or the screen except "On / Off".
Dimensions	86mm x 86mm x 16mm deep when recessed. Fits standard 35mm recess boxes.
Electrical Protection	Class II IP20
Complies with:	EN 301489-1, EMC Directive 2014/30/EU, EN60950-1:2006 + a11:2009 + a1:2010 + a12:2011 + a2:2013



2. OPERATING GUIDE.

		Wi-Fi Connection
Week Day Number		Time
Time Period		
		Actual Temperature
External Sensor		When Lit Heating On
Holiday Mode		Thermostat Locked
Auto Mode		Turn On / Off
Manual Mode		
Set		Increase
Time		Decrease

Touch Sensitive Area

Connecting Thermostat to Android or iPhone App

- 1) You will need a 4G / 5G mobile phone and wireless router.
- 2) Download "Smart RM"  app from Google Play (Android users) or the App Store (iPhone users).
- 3) If you cannot find "Smart RM" or already have "Smart  Life" app the thermostat can also be used with this.

If you are intending to use the thermostat with your mobile phone, we recommend you set up the app as soon as possible. Adjusting the settings of the thermostat is much quicker using your phones display and buttons. Most settings are available on the app. The time and day number are automatically sent from the app once paired.

Instructions for pairing your phone to the app are included but if you require a digital version or the latest update, just scan the correct QR code below for your phone type.



Android Phones



Apple Phones

MANUAL SETTING OF THE THERMOSTAT- When app is not available or not used

To Set Time and Week Day Number

- a) Turn thermostat on by pressing the screen in the touch sensitive area until all the buttons light up.
- b) Press the  button and the minutes will start to flash. Adjust the minutes by pressing the  or  buttons. When correct, press  button and the hours will flash. Set these by pressing the  or  buttons. When correct, press  button and the day number will flash. Set this by pressing the  or  buttons. When correct, press . Note that Monday is 1, Tuesday 2 etc. If you don't press a button for 5 seconds, display returns to standby mode and you will need to repeat section b above.

Programming - The controller is pre-set to the following times and temperatures:-

 1	 2	 3	 4	 5	 6
Period 1	Period 2	Period 3	Period 4	Period 5	Period 6
06:00 20°C	08:00 15°C	11.30 15°C	13.30 15°C	17:00 20°C	22:00 15°C

By default, the controller is set to 5+2 days. This means when programming Monday – Friday settings will all be the same and you can then program different settings for Saturday – Sunday. If you require 7 day or 6+1 day settings, go to “default settings” and adjust parameters first (See section 5).

To adjust or program the time & temperature periods

a) Make sure the thermostat is on or turn on by pressing the screen in the touch sensitive area until all the buttons light up.

b) Press and hold the  button for 3-5 seconds until the time starts to flash, display will also show “5” underneath the date symbol and the first period symbol will show. Adjust the hours by pressing the  or  buttons. When correct, press  button and the minutes will flash. Set these by pressing the  or  buttons. When correct, press  button and the temperature will flash. Set this by pressing the  or  buttons. When correct, press  and the second period symbol will show, and the hours will flash. Now repeat the above to set all 6 periods. Once set, the days will change to 2 and you repeat the above procedure to program Saturday and Sunday. Note “5” on the display while programming means you are setting all 5 weekdays “2” on the display while setting means you are programming Saturday & Sunday. If you change the default to 6+1, “6” on the display means you are setting Mon – Saturday and “1” is for Sunday. Lastly if you change the default settings to 7, “7” on the display means you are setting Mon – Sunday. If you don't press a button for approx. 5 seconds the controller will automatically store the settings and exit programming mode.

Run Modes

1 – Turn thermostat On or Off by pressing the  button.

2 – When “ON” press  to toggle between Auto mode  and Manual mode .

3 – When in Auto mode  you can override the set temperature by pressing the  or  buttons. This override will last until the next program period and is shown by both the  and  symbols.

4 – When in Manual mode  you can override the set temperature by pressing the  or  buttons. Note:- The thermostat will stay in Manual mode with the same set temperature until you switch it to Auto mode or turn the thermostat off.

At any time, you can return to the auto temperature set point by pressing the  button until only the Auto mode  shows.

All Modes - To view the floor sensor temperature (if present) press and hold the  button for about 3 seconds. The display will change to show “EXT” and show the floor temperature. When you release the button, the display will revert back to showing the air temperature.

Locking the controller

The controller has 2 lock settings selected in the default settings (see section 5). Half lock, when set only allows the On/Off  button to be pressed. Full lock disables all buttons except the unlock sequence. Putting the controller in lock mode, indicated by a  symbol on the screen is done by pressing and holding the  button until the  symbol appears. Unlocking is the reverse process.

Holiday Mode – Note: 1 day = 24 hours count down

Holiday days (count down) and temperature set point can be set so that the heating runs at a lower temperature whilst you are away and reverts back to normal when you return. To access, make sure controller is on and then press  button for 3-5 seconds until the screen displays “Off”. Change to “On” by using the  or  buttons. Then press  button to set the number of days you are away by using the  or  buttons. Then press  button to set the temperature required while you are away by using the  or  buttons. Finally press  button to set. Holiday mode is shown by a  symbol displayed on the screen. Once set and counting down, to exit holiday mode early press the  button.

SECTION B – INSTALLATION AND MASTER SETTINGS.

3. INSTALLATION SAFETY INSTRUCTIONS.

3.1 ELECTRICAL SAFETY

WARNING! It is the responsibility of the owner and the installer to read, understand and comply with the following:

You must check all electrical products, before use, to ensure that they are safe. You must inspect power cables, plugs, sockets and any other connectors for wear or damage. You must ensure that the risk of electric shock is minimised by the installation of appropriate safety devices. A Residual Current Circuit Breaker (RCCB) should be incorporated in the main distribution board. If in any doubt consult a qualified electrician.

You must also read and understand the following instructions concerning electrical safety.

- The Health & Safety at Work Act 1974 makes owners of electrical appliances responsible for the safe condition of those appliances and the safety of the appliance operators. If in any doubt about electrical safety, contact a qualified electrician.
- Installation should always be carried out by a qualified electrician or a competent person in accordance with current electrical regulation.
- Ensure that the cables are always protected against short circuit and overload.
- The unit should be protected by a suitably rated isolator and fuse or MCB.
- This controller is IP20 rated and is suitable for indoor use only.

3.2 GENERAL SAFETY INSTRUCTIONS

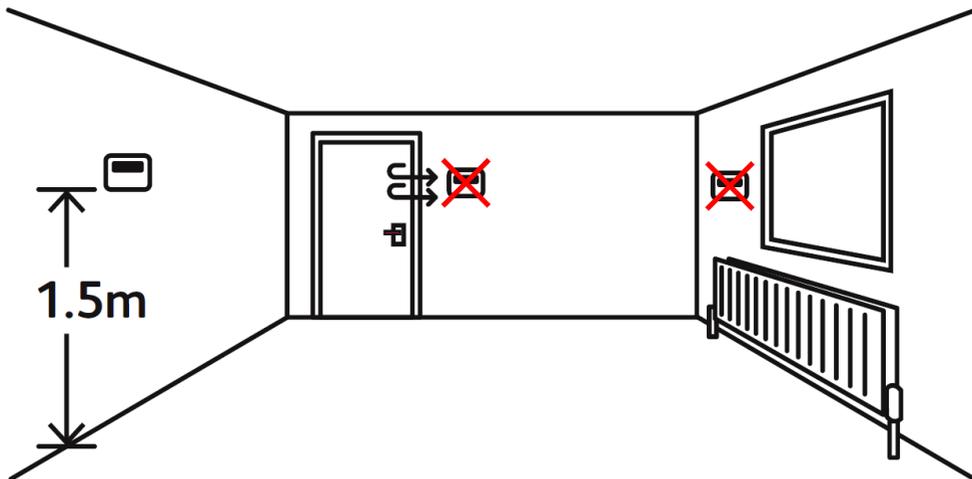
- ✓ Remove all packaging and store it away from children, check the package and controller for visible damage or tampering.
- ✓ Familiarise yourself with the applications and limitations of the controller.
- ✓ Only use recommended attachments and parts. To use unauthorised parts may be dangerous and will invalidate your warranty.
- X **DO NOT** use in areas where hazardous gasses or dusts may be present.
- X **DO NOT** disassemble the controller for any reason. There are no user serviceable parts inside.
- X **DO NOT** use this controller to perform a task for which it has not been designed.

Please leave the user instructions with the end user where they should be kept in a safe place for further reference.

4. INSTALLATION.

4.1 CHOOSING A LOCATION FOR YOUR W16C

The W16C controller should be mounted on an internal wall approximately 1.5 meters from floor level and should be in a position away from draughts, direct heat and sunlight.



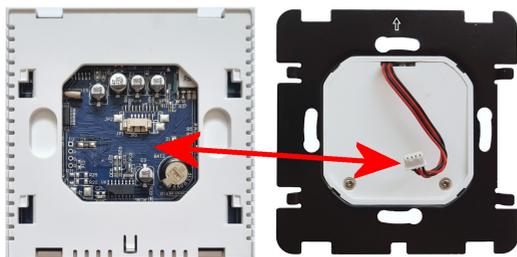
4.2 INSTALLING THE W16C

The thermostat requires a one gang back box having a minimum depth of 35mm.

- 1) Remove the front screen from the back of the thermostat by turning over so it looks like picture A. Now with your fingers holding the white front screen gently push the back down using your thumbs. The black metal plate and the wire connection block should move together and end up like picture B.
- 2) The back and front will now gently pull apart (NO FORCE REQUIRED) exposing the connecting plug and cable. Gently remove the plug and cable from the back of the front screen. You will now have two parts looking similar to picture C below.



Picture A



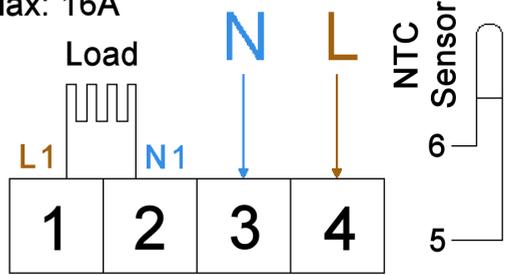
Picture C



Picture B

- 3) Wire the thermostat as per wiring diagram to the right making sure all the terminals are done up tightly. An underfloor sensor (supplied) must be used, and this MUST only be wired to terminals 5 and 6. Polarity of the sensor does not matter. Do NOT exceed total load of 16A. Loads greater than 16A should be controlled via a suitably rated contactor or relay box.

230V ac 50/60Hz
Max: 16A



- 4) Once all the connections have been made, make sure the arrow on the back plate faces upwards and secure to the back box using two screws. See picture 1 to the right.
- 5) Reconnect lead to the front screen. Note:- The plug only fits one way around so don't force it. Place the front screen onto the back plate so that the bottom of the back plate is showing as per picture 2 below.



Picture 1



Picture 2



Picture 3

- 6) Slide down the front screen until it clips into position. See picture 3 to the right.

5. CHANGING THE MASTER / DEFAULT SETTINGS.

There are various master / default settings that can be changed by entering the default settings. To enter these settings, turn off the thermostat by pressing the  button. Now press the screen in the touch sensitive area until all the buttons light up. Then press and hold the  button for 3-5 seconds until the A1 appears on the screen. You are now in settings mode and if you don't press any button for 5 seconds the display reverts back to off mode.

Press  button to switch to next option and press  or  buttons to adjust the data. If you wish to exit the settings without waiting 5 seconds press the  button.

No.	Setting Options	Data Setting Function	Default
A1	Temperature calibration.	-9°C to +9°C in 0.5°C steps. (Can be used to fine tune temperature reading so it matches another thermostat).	0°C
A2	Differential between set point and On and Off.	0.5°C - 2.5°C in 0.5°C steps.	0.5°C
A3	lock settings.	0 = half lock 1 = full lock	0
A4	Power Cut function.	0 = Power heating as per controller memory. 1 = Shut down controller after power cut. 2 = Shutdown heating but turn controller on after power cut.	0
A5	Display Standby Brightness.	0 = Off 1 = Half brightness 2 = Full brightness	1
A6	Programming selection.	0 = 5 + 2 (same settings Mon-Fri + Sat-Sun) 1 = 6 + 1 (same settings Mon-Sat + Sun) 2 = 7 days same	0
A7	Minimum set point of internal sensor if BN set to N1 or N3 or floor sensor if BN set to N2.	1°C - 10°C	5°C
A8	Maximum set point of internal sensor if BN set to N1 or N3 or floor sensor if BN set to N2.	20°C - 45°C	30°C
A9	Minimum set point of floor sensor if BN set to N3.	1°C - 10°C or -- (-- = Not active)	5°C
AA	Maximum set point of floor sensor if BN set to N3.	20°C - 70°C or -- (-- = Not active) NOTE:- We recommend this is left at 27°C for underfloor heating.	27°C
AB	Floor sensor differential only used if BN set to N3.	1°C - 9°C in 1°C steps.	1°C
AC	Window Opening detection.	-- = Not active 10 - 20°C = Sudden drop set point at which heating turns off.	--
AD	Window Opening OFF period.	10 - 20 minutes (only if AC above is set to a temperature and not --).	10
AE	Factory Reset.	Press & hold  key until whole screen shows. <u>Note:</u> - This also resets the Wi-Fi Connections.	

6. ADVANCE DEFAULT SETTINGS.

To enter the advance settings, turn off the thermostat by pressing the  button. Now press the screen in the touch sensitive area until all the buttons light up. Then press and hold the  button for 3-5 seconds until the advance options appears on the screen. You are now in settings mode and if you don't press any button for 5 seconds the display reverts back to off mode.

Press  button to switch to next option and press  or  buttons to adjust the data. If you wish to exit the settings without waiting 5 seconds press the  button.

No.	Setting Options	Data Setting Function	Default
BN	Sensors used.	N1= Built in sensor only. N2= Floor sensor only N3= Built in sensor and floor sensor. If floor sensor temperature is higher than its set point (A6) load will turn off (indicated by ) until temperature drops when heating will continue until room temperature is reached.	N3
BC	DO NOT USE - leave set at 0	DO NOT USE - leave set at 0	0
BO	Product Version	Cannot be changed	

7. SENSOR FAULT CODES.

E1 or E2 fault codes are displayed if the sensors are faulty or are not connected. The thermostat will stop heating until the fault is corrected.



E1 = Internal Sensor faulty.
E2 = External sensor faulty or not present.



If in the master settings shown overleaf, you have selected N2 or N3 for option BN (Sensors used) you **MUST** have a floor sensor present and working otherwise the display will show fault code E2 and will not work.

NOTE: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.



WEEE REGULATIONS:

This appliance bears the symbol of the crossed waste bin. This indicates that, at the end of its useful life, it must not be disposed of as domestic waste, but must be taken to a collection centre for waste electrical and electronic equipment. It is the user's responsibility to dispose of this appliance through the appropriate channels. Failure to do so may incur penalties established by laws governing waste disposal.

REGISTER: Activate your warranty by registering online at www.bnthermic.co.uk and retain this installation data for future reference.

IMPORTANT: No liability is accepted for incorrect use of this product.

WARRANTY: Your BN Thermic product is guaranteed for one year from date of purchase. We will repair or replace at our discretion any part found to be defective. We cannot assume any consequential liability. This guarantee in no way prejudices your rights under common law and is offered as an addition to consumer liability rights.

BN Thermic Ltd,
34 Stephenson Way,
Crawley, RH10 1TN
Tel: +44 (0) 1293 547361
sales@bnthermic.co.uk
www.bnthermic.co.uk