INSTRUCTIONS FOR:-

TWO TEMPERATURE THERMOSTAT

Model:- PROSTAT4

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.

1. SAFETY INSTRUCTIONS

1.1 ELECTRICAL SAFETY

WARNING! It is the responsibility of the owner and the operator 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 insulation of all the cables on the appliance is undamaged and safe, before connecting it to the power supply.
- Ensure that the cables are always protected against short circuit and overload.
- Regularly inspect the power supply cables for wear or damage and check all connections to ensure that none are loose.
- Important: Ensure that the voltage marked on the appliance matches the power supply to be used and that a correctly rated fuse is fitted.
- DO NOT use worn or damaged cables or connectors. Immediately have any faulty item repaired or replaced by a qualified electrician.
- The unit should be protected by a suitably rated isolator and fuse or MCB.
- This thermostat is suitable for indoor or outdoor use.

1.2 GENERAL SAFETY INSTRUCTIONS

- ✓ Remove all packaging and store it away from children.
- ✓ Familiarise yourself with the applications and limitations of the thermostat.
- X **DO NOT** use in areas where hazardous gasses or dusts may be present.
- X **DO NOT** disassemble the thermostat for any reason. This thermostat must be checked by qualified personnel only.
- X **DO NOT** use this thermostat to perform a task for which it has not been designed.

2. INTRODUCTION & SPECIFICATION

The PROSTAT4 thermostat is a highly accurate electronic temperature controller suitable for heavy duty use in public areas. There are two temperature settings switchable through a push button and integral countdown timer. Optional remote sensors are available if temperature control is required away from the controller.

Applications

Industrial heater control where two temperature settings are required (e.g. comfort and frost-protection settings). This would be achieved by setting temperature one to 5°C and temperature two to 20°C. Normally the thermostat will switch the heating on and off maintaining 5°C but when the front switch is pressed, the heating will then turn on and off raising the temperature to 20°C. Once the timer "times out", the thermostat switches back to the first set point until the timer button is pressed again. The timer button also incorporates a blue LED indicating when the second temperature setting has been selected. For other features see section 4.

Typical applications include Shops, Schools, Restaurants, Warehouses, Church Halls and Workshops.

Optional Remote Sensor
Part No. BBS

Specification

Model	PROSTAT4
Input Supply	220-240V 50Hz ac
Maximum Power	7200W 32A
Contacts	Single pole, single throw
Dimensions (W x H x D)	125 x 140 x 78mm Deep
Ingress Protection	IP65
Weight	0.38kg
Temperature Set Point One	0ºC to 20ºC
Temperature Set Point Two	10ºC to 30ºC
Differential	1ºC
Count Down Timer (If required)	0 - 7½ Hours
Sensor	Integral 'black bulb'
Three Methods for Selecting Temperature Set Point Two	1- Push button on front face of thermostat activates built-in run-down timer 2- Remote-mounted push button (CS-5) activates built-in run-down timer 3- Remote-mounted volt-free programmable timer (PROTIM-7)
Special Features	Front panel light indicates when Temperature Setting Two selected. Window opening option. Supplied with 2 x M20 cable glands Electronic soft start – Stops the relay contacts arching when turning on and off. This often occurs when switching high currents, so prolongs relay life.

Optional Remote Air Sensor
Part No. CXS

Optional IP65 Remote Air Sensor
Part No. CXSIP

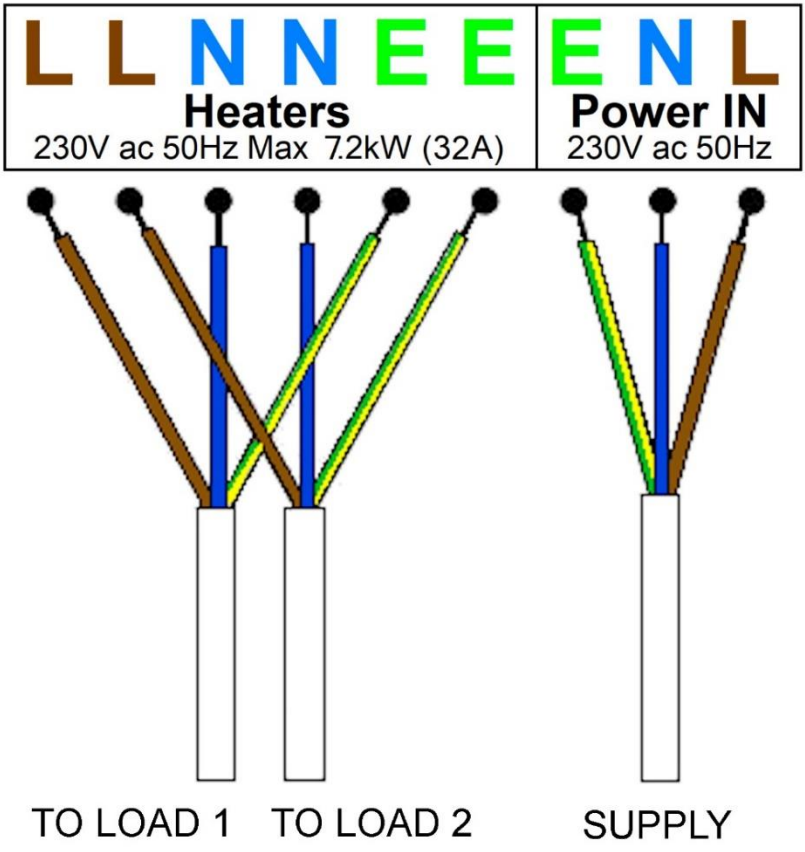
Optional IP65 Remote Sensor
Part No. BBSIP

3. MOUNTING / ELECTRICAL CONNECTIONS

Do NOT use power tools to undo or do up electrical terminal screws or front cover screws.

Please Note:- This Thermostat will only switch a maximum load of 32A (7.2kW), if you require it to switch a greater load a contactor MUST be used in the circuit (contactors available from BN Thermic).

1) Remove front cover by undoing the four corner screws. Remove lid with care as there is a flexible cable link between the switch and circuit board.
2) Do not hang the lid by the flexible cable. To remove the lid from the back box disconnect the plug from the circuit board by gently pulling the white plug towards you.
3) Use the 4 holes in the corners to attach the controller to a suitable surface as these will maintain the IP65 rating.
4) Drill box to accept cable glands. We supply 2 x M20 cable glands with each controller these require a 20mm hole to be drilled for them. If you have to drill additional holes remember to waterproof these holes or use suitable IP rated cable glands to maintain the IP65 waterproof rating (should you require).
5) Connect wiring as shown in diagram below.
6) Do NOT use power tools to tighten up the terminal screws but ensure the screws are correctly tightened.



4. CONFIGURATION.

There are three different configurations for switching the thermostat between the 2 different temperature settings.
Standard (See section5). Uses the push button on front face of thermostat to activate internal run-down timer.
Remote-mounted push switch (See section 6). Uses remote push switch (CS-5) to activate internal run-down timer.
Remote volt-free programmable timer (See section 7). Uses a remote programable timer (PROTIM-7) to control the length of time the thermostat is set to temperature two.

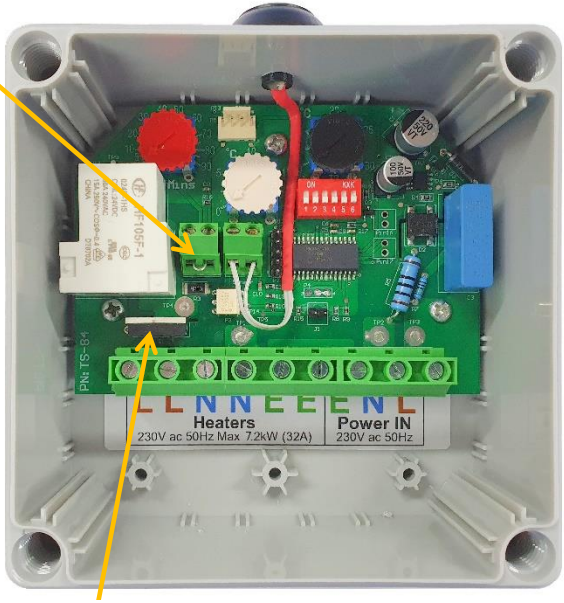
5. STANDARD CONFIGURATION.

1. Ensure the metal link is present in the small green terminal block marked J2.

2. Rotate the White Knob - 1st Temperature setting to required temperature (0-20°C).

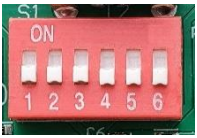
3. Rotate the Black Knob – 2nd Temperature setting to required temperature (10-30°C).

4. Now set the time you wish the 2nd temperature to operate for once the button on the front cover is pressed. Once the selected time period has elapsed the thermostat reverts back to the first temperature setting.



Triac

Setting of this time is achieved by using the Red Knob and or using the switches on the PCB.



Red Knob gives 0 – 90 Minutes.

With Switch 3 ON – Gives additional 2 Hours.

With Switch 4 ON – Gives additional 4 Hours.

(ON is when the button is in the upwards position).

Some examples:

To set 60 minutes – Make sure switch 3 and 4 are both set to OFF then rotate Red Knob to 60.

To set 2H 30 minutes – Make sure switch 3 is ON and switch 4 to OFF then rotate Red Knob to 30.

To set 4H 45 minutes – Make sure switch 4 is ON and switch 3 to OFF then rotate Red Knob to 45.

To set 6Hours – Make sure switch 3 and 4 are both set to ON then rotate Red Knob to 0.

To set 7Hours – Make sure switch 3 and 4 are both set to ON then rotate Red Knob to 60.

NOTE:- SWITCH No.5 MUST BE OFF OTHERWISE THE THERMOSTAT WILL NOT OPERATE

Switch 2 operates window opening feature (see section 9) Switch 1 and 6 are disabled.

Operation

Fit cover securely ensuring flexible cable from lid is plugged into PCB and does not sit on top of the triac (metal topped component on printed circuit board in base) as this can get hot (See picture above).

When the power is turned on, the thermostat will start to turn the heating ON / OFF maintaining temperature 1.

When the push switch is pressed on the front cover, the LED will turn blue and the thermostat will start to turn the heating ON / OFF maintaining temperature 2.

You can only top up time by pressing the push button 2 minutes before the timer is due to run out. This is indicated by the blue LED flashing.

Should you wish to end temperature 2 early, just hold the push button in for 3 seconds and the LED will turn off indicating the thermostat has switched back to temperature 1.

6. USING WITH A REMOTE MOUNTED PUSH SWITCH.

1. Remove the metal link in the small green terminal block marked J2.

2. Connect our CS-5 or similar zero-volt momentary push switch instead of the link so that when the push button is pressed it makes a circuit.

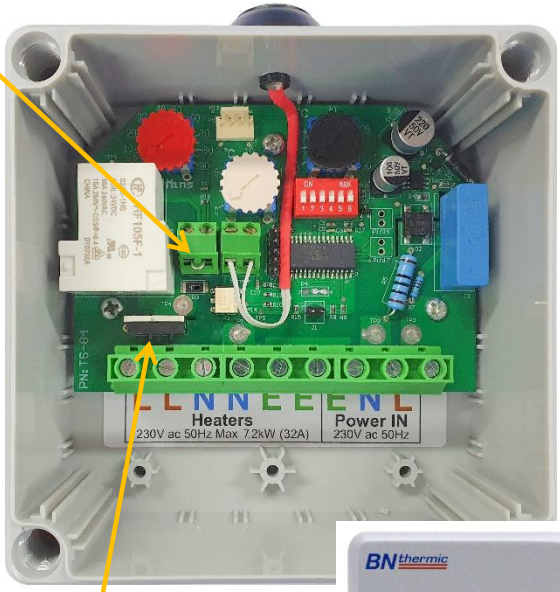
Please note there is only 5V DC present so doorbell wire can be used to connect the push switch.

3. Set switch 5 to ON (up position).

4. Rotate the White Knob - 1st Temperature setting to required temperature (0-20°C).

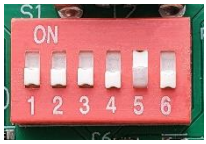
5. Rotate the Black Knob – 2nd Temperature setting to required temperature (10-30°C).

6. Now set the time you wish the 2nd temperature to operate for once the remote button is pressed. Once the selected time period has elapsed, the thermostat reverts back to the first temperature setting.



Triac

Setting of this time is achieved by using the Red Knob and or using the switches. on the PCB.



Red Knob gives 0 – 90 Minutes.

With Switch 3 ON – Gives additional 2 Hours.

With Switch 4 ON – Gives additional 4 Hours.

(ON is when the button is in the upwards position)

Optional CS-5 Push Switch

Some examples:

To set 60 minutes – Make sure switch 3 and 4 are both set to OFF then rotate Red Knob to 60.

To set 2H 30 minutes – Make sure switch 3 is ON and switch 4 to OFF then rotate Red Knob to 30.

To set 4H 45 minutes – Make sure switch 4 is ON and switch 3 to OFF then rotate Red Knob to 45.

To set 6Hours – Make sure switch 3 and 4 are both set to ON then rotate Red Knob to 0.

To set 7Hours – Make sure switch 3 and 4 are both set to ON then rotate Red Knob to 60.

NOTE:- SWITCH No.5 MUST BE ON OTHERWISE THE THERMOSTAT WILL NOT OPERATE CORRECTLY

Switch 2 operates window opening feature (see section 9) Switch 1 and 6 are disabled.

Other than the LED showing when temperature setting 2 has been selected the front push switch is disabled.

Operation

Fit cover securely ensuring flexible cable from lid is plugged into PCB and does not sit on top of the triac (metal topped component on printed circuit board in base) as this can get hot (See picture above).

When the power is turned on, the thermostat will start to turn the heating ON / OFF maintaining temperature 1.

When the remote push switch is pressed, the LED on the front cover will turn blue and the thermostat will start to turn the heating ON / OFF maintaining temperature 2.

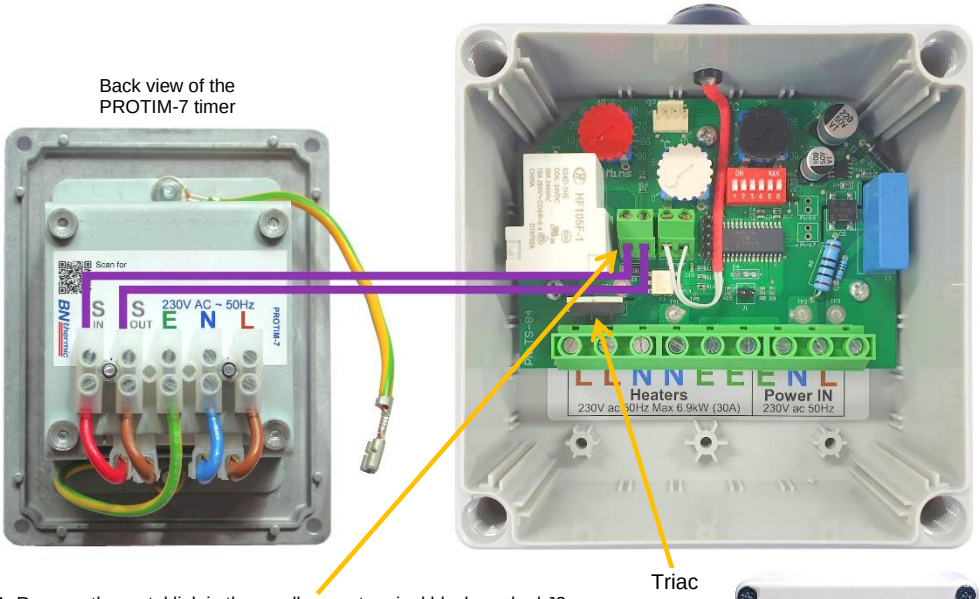
You can only top up time by pressing the remote push button 2 minutes before the timer is due to run out. This is indicated by the blue LED flashing.

Should you wish to end temperature 2 early just hold the remote push button in for 3 seconds and the LED will turn off indicating the thermostat has switched back to temperature 1.

7. USING WITH A REMOTE VOLT-FREE TIMER OR BMS.

The time switch takes over controlling when the thermostat is set to temperature 1 or 2.

Back view of the
PROTIM-7 timer

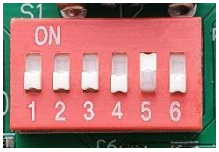


1. Remove the metal link in the small green terminal block marked J2.

2. Connect the PROTIM-7 so that one wire runs between S-in to one of the green J2 terminal blocks and another wire between S-out and the other J2 green terminal as shown in picture above. DO NOT CONNECT THESE 2 WIRES TO A 240V SUPPLY.

Please note there is only 5V DC present so doorbell wire can be used to connect between the controllers.

3. Wire PROTIM-7 to suitable fused supply as per timer's instructions.



4. Set Switch 5 on Thermostat to ON (up position).

5. Set Switch 3 and 4 to OFF (down Position).

6. Rotate the White Knob - 1st Temperature setting to required temperature (0-20°C).

7. Rotate the Black Knob – 2nd Temperature setting to required temperature (10-30°C).

Optional PROTIM-7
7 Day Time Switch

NOTE:- SWITCH No.5 MUST BE ON OTHERWISE THE THERMOSTAT WILL NOT OPERATE CORRECTLY

Switch 2 operates window opening feature (see section 9) Switch 1 and 6 are disabled.

Operation

Fit cover securely ensuring flexible cable from lid is plugged into PCB and does not sit on top of the triac (metal topped component on printed circuit board in base) as this can get hot. (See picture above)

When the time switch is OFF the thermostat uses temperature set point 1.

When the time switch is ON the thermostat uses temperature set point 2. This is shown by the LED turning blue on the front switch. Other than the LED working, the front push switch is disabled.

BMS – Building management system

The controller can also be connected to a zero-volt relay controlled by a building management system. When the relay is open thermostat uses temperature set point 1, when relay is closed thermostat uses set temperature point 2.

8. INSTALLING A REMOTE SENSOR.

If you wish to place the thermostat in a separate area such as an adjacent room or cupboard from the room you are heating, a remote sensor will be required to detect the temperature.
There are four different sensors available.

1) Black Bulb Sensor – Used for detecting the infrared heat given out by your heaters.

Optional Remote Sensor
Part No. BBS

2) Black Bulb Sensor IP Rated – Used for detecting the infrared heat given out by your heaters but is rated IP65 for use in damp, wet conditions.

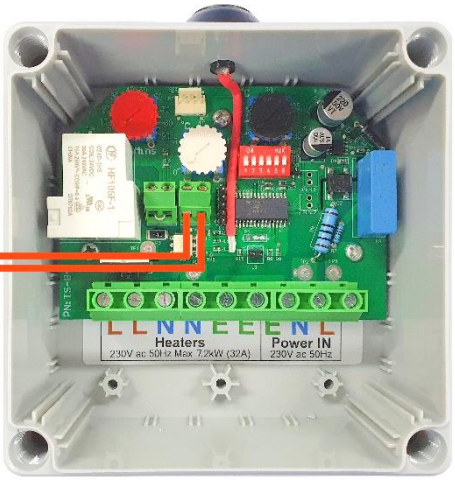
Optional IP65 Remote Sensor
Part No. BBSIP

3&4) Air Sensor – Used for detecting the air temperature.
IP version is water resistant to IP65

Optional Remote Air Sensor
Part No. CXS and CXSIP

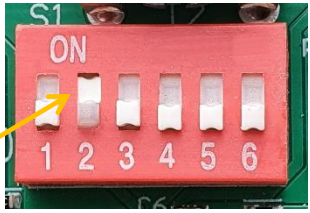
Connecting a Remote Sensor

1) Disconnect the thermostat's built-in sensor wires making sure the wire ends cannot come into contact with anything live by insulating them.
2) Using any insulated copper wire connect the remote sensor to the green sensor terminals marked J3 on the circuit board as per picture.



9. WINDOW OPENING.

There is an energy saving feature built into this controller if required. Should the temperature suddenly drop indicating that an outside window or door is open, the heaters will turn off for a short period of time before returning to full power. This may be useful if you are using a single heater in a small room. By default, this function is OFF but if you require it, just move switch No.2 to the ON position on the circuit board when setting the thermostat.



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.

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