<u>Operating Instructions</u>
Model: Osma RT-NV2

⚠ This product should be installed by a qualified electrician.
Improper installation may result in injury, death or property
damage.

Contents Page

Basic Settings

Advanced Settings

Display Icons Explained

Icon	Description
⊕	**Clock** *Shown when you are setting the clock*
♨	**Heat On** *Shown when the heating is on* *Flashing when the optimum start is in operation.*
❄	**Frost Protection On** *Shown when the heating is switched off and is protecting against frost only*
⚠	**Floor Temp Reached** *Shown when the floor temperature has been reached*
🔒	**Key Lock On** *Shown when the keypad is locked*

Temperature Display

Room Temp
This is the current room temperature, and is displayed during normal operation.

Floor Temp (Optional)
If your thermostat has been installed with a floor sensor, you can select to view the floor temperature at anytime, simply press and hold "A" for 3 seconds. To return to the room temperature display, press "H".

SET
This is the temperature you are trying to achieve in the controlled area. It is displayed temporarily while changing the set temperature, see **Temperature Override**.

4

Setting the Clock

To set the clock in your thermostat, follow the steps below.

- With the thermostat turned on, press ⏲ twice.
- Use ▼▲ to set the minutes.
- Press "H" to accept.
- Use ▼▲ to set the hour.
- Press "H" to accept.
- Use ▼▲ to set the day of the week.
- Press "A"

- to store and exit when finished

Comfort Levels Explained

Comfort levels allow you to set different temperatures throughout the day.

For example, in a house you may want it warm in the morning when you are getting ready for work, cooler during the day to save energy while the house is unoccupied, and then warmer in the evening when you are home relaxing.

There are 4 intervals per day, with separate settings for weekdays and the weekend.

Note: You can only preset the comfort levels when the thermostat is in programmable mode.

Pre-Programmed Comfort Levels

The following comfort levels are pre-programmed; however you can change them to match the heated areas occupancy.

Weekday Level	Time	Temp
Level 1 (Waking Up)	07.00	20°C
Level 2 (Going Out)	09.00	16°C
Level 3 (Arriving Home)	16.00	20°C
Level 4 (Sleeping)	23.00	16°C

Weekend Level	Time	Temp
Level 1 (Waking Up)	08.00	20°C
Level 2 (Going Out)	11.00	16°C
Level 3 (Arriving Home)	16.00	20°C
Level 4 (Sleeping)	23.00	16°C

Changing the Comfort Levels

If the pre-programmed comfort levels do not match the heated areas occupancy, they can be adjusted to suit as follows;

- Press ⊕ once.
  (You will see Mon-Fri appear and a large number 1. This is prompting you to program the 1st comfort level for the weekdays.)
- Use ⊙⊛ to set the time for the 1st comfort level
- Press "H" to accept
- Use ⊙⊛ to set the temperature in °C
- Press "H" to accept

8

- Repeat this process, setting periods 2, 3 & 4 for the weekdays

- You will now see Sa - Sun on the display

- Simply repeat the process for the weekend

- Press "A" to store and exit when finished

Tip! If you don't want to use all of the comfort levels, just set the time to --.-- and the thermostat will ignore that setting.

Temperature Override

Using ⊙⊙ allows you to adjust the set temperature. When you press either of these keys, **SET** will be displayed as well as the desired temperature. Press "A" to store and exit.

Note: If your thermostat is in programmable mode (you can see a clock on the display) the override temperature is only maintained only until the next programmed comfort level. At this time, the thermostat will revert back to its program.

Heating On/Off

Pressing "H" turns the heating on and off. The heating is off while ❄ is displayed on screen.

If the areas temperature falls below the frost protection temperature, while the heating is turned off, the heating will be brought on to prevent the temperature falling any further.

The default frost protection temperature is 12°C but it can be set between 7°C and 17°C. See **Advanced Settings**.

Locking the Keypad

The RT-NV2 has a key lock facility. To lock/unlock the keypad, press and hold "A" and ⊙ together for 10 seconds.

While the keypad is locked, you will see 🔒

Factory Reset

Performing a factory reset will change all settings back to their default values.

- Press ⏻ to turn the RT-NV2 off

- Press and hold "H" for 10 seconds, all of the icons will appear on the display

- Press ⏻ twice to turn the power off and back on

Introduction to Advanced Settings

The RT-NV2 is designed to be "plug and play" for most installations, and therefore the basic settings are all that should be adjusted.

For installations where the systems control needs to be further customised, the advanced settings covered on the following pages can be changed.

Changing the Thermostat Mode

The RT-NV2 has 6 modes of operation. Its default mode is, Mode 03 - Programmable thermostat using air sensor.

You can change the mode to suit requirements;

- Press ⏻ to turn the thermostat off

- Press and hold 🕒 for three seconds until the display appears

- Press 🕒 repeatedly until 13 is displayed in the top right corner

- Use � ⊙ to change the mode,you will see the large number change

- Press "A" to store and exit when finished

Mode	Description
00	Digital thermostat using air sensor
01	Digital thermostat using floor sensor
02	Digital thermostat using both air and floor sensors
03	Programmable thermostat using air sensor
04	Programmable thermostat using floor sensor
05	Programmable thermostat using both air and floor sensors

Changing the Advanced Features

Please read the advanced feature descriptions before changing any values.

- Press ⓞ to turn the thermostat off

- Press and hold 🕐 for three seconds until the display appears

- Repeatedly press 🕐 until the appropriate feature number is displayed in the top right

- Use ⊙⊛ to change the setting, you will see the large number change

- If you wish to change more settings continue to press 🕐 until you reach the next feature that you wish to adjust

- Press "A" to store and exit when finished

Feature	Description	Setting
02	Switching Differential	01 = 1°C (Default) 02 = 2°C 03 = 3°C
03	Temperature Calibration	Enter value
04	Frost Protect	00 = Disabled 01 = Enabled (Default)
05	Frost Protect Temp	07-17°C (Default, 12°C)
06	Output Delay	Enter value (Default, 0 Minutes)
07	Comms #	Enter number 01-32
08	Optimum Start (Preheat)	00 = Disabled (Default) 01 = Up to 1 hour 02 = Up to 2 hours 03 = Up to 3 hours

09	Rate of Change	For information only
10	Air Sensor Selection	00 = Internal (Default) 01 = Remote
11	Floor Sensor	00 = Disabled 01 = Enabled
12	Floor Limit	20-45°C
13	Mode Select	00-05 (Default, 03)

Advanced Feature Descriptions

Feature 02 - Switching Differential:
This feature allows you to change the switching differential of the thermostat. The default is 1°C, which means the thermostat will switch on 1°C below the set temperature, and will switch off when the set temperature is achieved.

Feature 03 - Temperature Calibration:
The thermostat is calibrated at the factory, but this function allows you to adjust the thermostat display temperature should it not match your own thermometer.

Feature 04 - Frost Protect:
You can set whether the thermostat will maintain the frost temperature even when the thermostat is turned off. As a default, this is enabled.

Feature 05 - Frost Protect Temperature:
This is the temperature maintained when the heating is switched off. The default is 12°C and is suitable for almost all applications, but adjustable from 07-17°C.

Feature 06 - Output Delay:
To prevent rapid switching, an output delay can be entered. The default is 0 minutes which means there is no delay, however if this is increased the thermostat will not call for heat unless demand is sustained for the specified number of minutes.

Feature 07 - Comms #:
When installed on a system which utilises the thermostats network communication abilities the thermostat must be assigned a unique identification number in the range 1-32

Feature 08 - Optimum Start:
Enabling the thermostats optimum start feature will allow the thermostat to calculate what time it needs to turn the heating on, in order to reach the programmed temperature at the beginning of the programmed comfort level.
The RT-NV2 will automatically learn the required preheat time and will adjust itself as required, throughout the year, up to the maximum time you specify.

Feature 09 - Rate of Change:
Shows the temperature increase per hour as calculated and used in the **Optimum Start feature**. This feature is for your information only and cannot be adjusted.

Feature 10 - Air Sensor Selection:
Allows you to select whether the air sensor used is the one built into the thermostat, or a remote probe. (Only available in modes 2&5)

Feature 11 - Floor Sensor:
Enables or disables the floor sensors ability to turn the heating off once the floor limit temperature is reached. (Only available in modes 2&5)

Feature 12 - Floor Limit:
The maximum floor temperature allowed can be changed from 20-45°C. The default is 28°C. (Only available in modes 2&5)

WIRING DIAGRAM FOR NETWORK THERMOSTATS

MODE 00 AND MODE 03

RECOMMENDATIONS

MAX CABLE SIZE 1.5 mm2
MAX LOAD 3 Amps
BACK BOX DEPTH 35MM

We recommend 8 core Belden 9538 cable to take advantage of the network facilities these thermostats offer.
CAT 5 FTP can be used for cable runs less than 30 meters. Where the TouchPad, TR1, Netmonitor, PCLink are to be fitted, this type of cable is essential.

+ A1 A2 - RT1 RT2

Y B

COMMS CABLE

B
Y
+
-
TR1 OR PS1 AS REQUIRED

VOLT FREE OUTPUT
(240V 3amps)

WIRING DIAGRAM FOR NETWORK THERMOSTATS

MODE 01 AND MODE 04
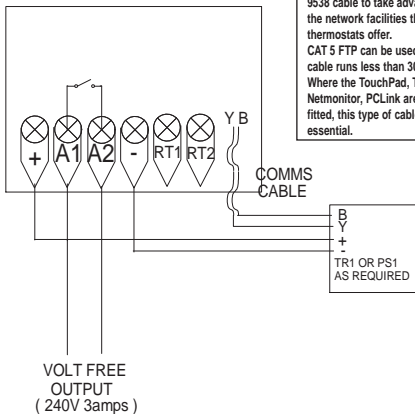
RECOMMENDATIONS

MAX CABLE SIZE 1.5 mm2
MAX LOAD 3 Amps
BACK BOX DEPTH 35MM

We recommend 8 core Belden 9538 cable to take advantage of the network facilities these thermostats offer.
CAT 5 FTP can be used for cable runs less than 30 meters. Where the TouchPad, TR1, Netmonitor, PCLink are to be fitted, this type of cable is essential.

+ A1 A2 - RT1 RT2

Y B

COMMS CABLE

B
Y
+
-
TR1 OR PS1
AS REQUIRED

FLOOR PROBE

VOLT FREE OUTPUT
(240V 3amps)

WIRING DIAGRAM FOR NETWORK THERMOSTATS
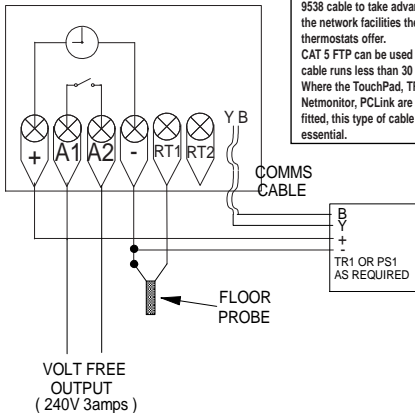
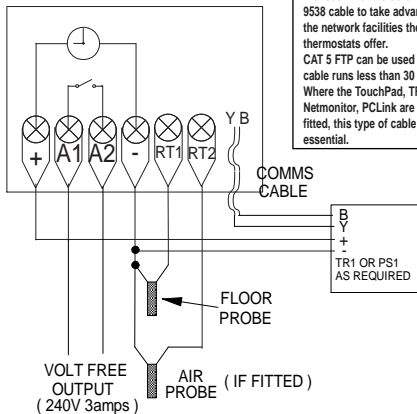## MODE 02 AND MODE 05

RECOMMENDATIONS

MAX CABLE SIZE 1.5 mm2
MAX LOAD 3 amps
BACK BOX DEPTH 35MM

We recommend 8 core Belden 9538 cable to take advantage of the network facilities these thermostats offer.
CAT 5 FTP can be used for cable runs less than 30 meters. Where the TouchPad, TR1, Netmonitor, PCLink are to be fitted, this type of cable is essential.

+ A1 A2 - RT1 RT2

Y B

COMMS CABLE

B
Y
+
-
TR1 OR PS1 AS REQUIRED

FLOOR PROBE

AIR PROBE (IF FITTED)

VOLT FREE OUTPUT (240V 3amps)

Support Tel: 01254 776343