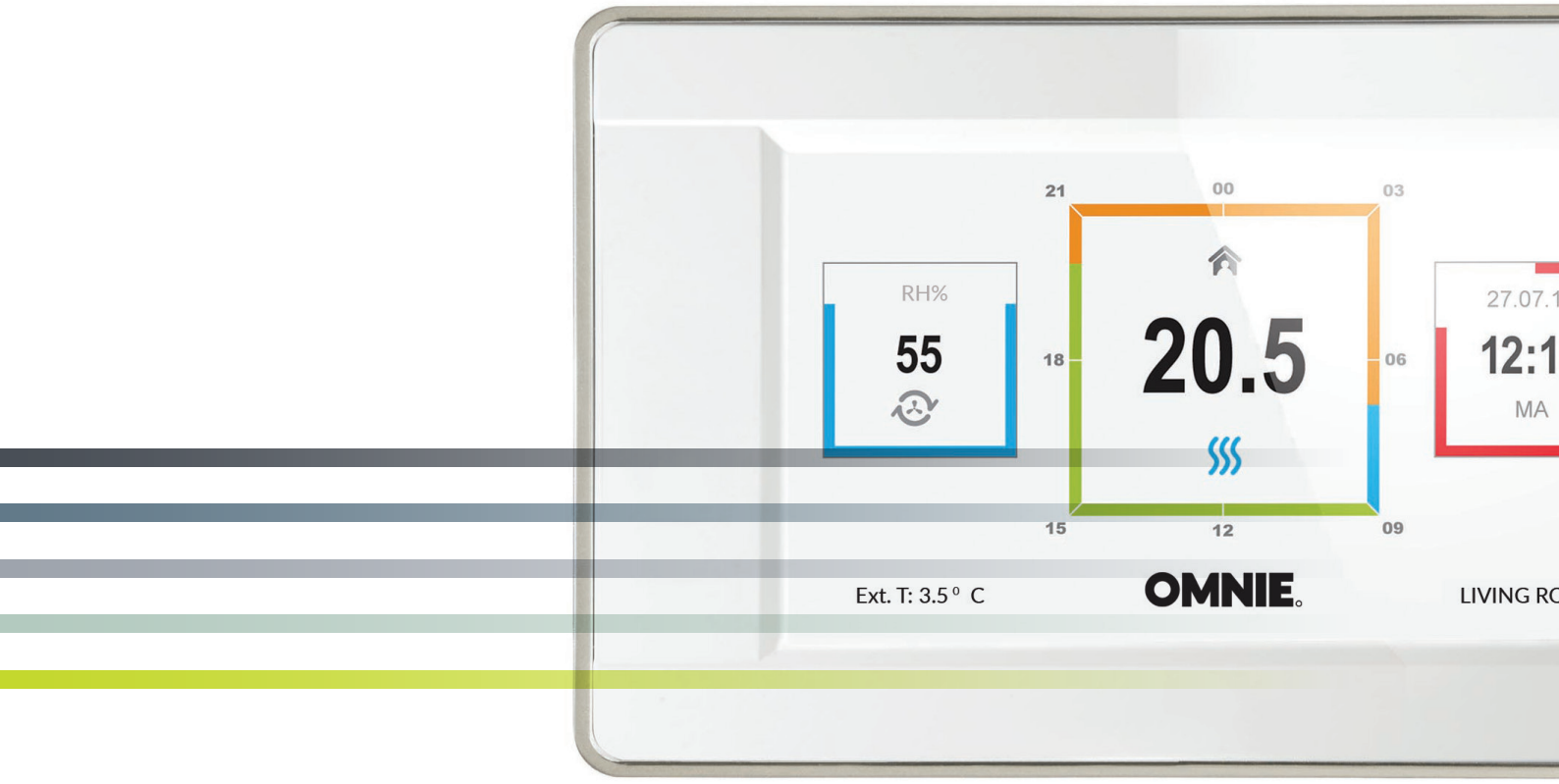
Control System

Mk2 WiFi Version
Installation and setup manual



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This manual refers to the following products and describes configuration and use according to the different user modes.

SAFETY INSTRUCTIONS

Responsibilities

- The products described here must not be altered and can only be used just for the applications described in this document;
- Any other use is considered improper and dangerous;
- All specifications in the chapters Installation and setup and setup must be strictly followed, carefully following the Building and Electrical Regulations;
- Carefully check all the electrical connections and the respect of the polarities before connecting to the building electrical supply.;
- Failure to comply with the instructions above may compromise product safety and void the guarantee;
- At the end of useful life the product must be disposed of according to local regulations concerning the collection of electrical and electronic equipment

DESCRIPTION OF COMPONENTS

The OMNIE weather compensation system is a system for the management of:

- Underfloor/ceiling heating and cooling system
- Activation of heat pump/boiler
- Ventilation
- Domestic hot water (DHW) and electronic equipment

OMNIE is a modular system consisting of the fundamental units described below.

Control Hub

Control Hub unit allows for the management of underfloor heating, ceiling cooling, ventilation and Domestic Hot Water (DHW) systems. The unit consists of a touch screen display and a plastic shell, available in black or white with or without a chrome frame. The electrical connections are available on the rear side (power supply, RS485 BUS signal) through a quick plug (see Planning and installation).

The control unit features an LED indicator on its frame that indicates the system operation status: red light means heating (namely, winter mode) and blue light means cooling (namely, summer mode). The brightness level automatically decreases 5 minutes after the control unit being inactive. On the left side of the control unit there is a micro-SD card port. The Control Hub is shipped with a micro-SD card that contains the software, custom graphics and language dictionaries.

On the right side of the Control Hub, there is the micro-USB port for firmware updates.

Wiring Centre

The Wiring Centre is the actuator module of the heating system. It can manage up to a maximum of 8 rooms. Furthermore, it can manage:

- opening/closing of the thermoelectric actuators (heads) up to a maximum of 40 (this number could vary depending on heads type and voltage)
- opening/closing of the electric mixing valve and the activation of the circulation pump
- manual start/stop all the controlled ventilation system
- energy request output (e.g. to turn on/off the heat generator)
- heating/cooling output change from boiler to chiller

Sensor (point)

Room sensors (points) are available as Point T (temperature only) or Point TU (temperature/humidity) types. They must be installed in every room served by the heating/cooling system and connected to the Wiring Centre via the daisy chain comms BUS. Note that you will need Point TU room sensors installed in a room to get cooling mode enabled in that room to prevent condensation.

Room sensors (Points) are shipped with white covers (see pictures).

Other cover colours available on request or a primer can be applied to the cover before painting the same colour as the wall its mounted on.

External Sensor

The external temperature sensor should be connected to the end of the Wiring Centre/ Control Hub BUS line.

The external temperature sensor is mandatory for the operation of the OMNIE Control weather compensation. If the OMNIE system is configured without the electric mixing valve management, namely only for opening/closing the thermoelectric actuators (heads), then the external sensor is not needed for control purposes but provides temperature read out.. Please note: installation without external sensor is not advisable as the external temperature measurement will be unavailable to the Control Hub, eliminating future up grade to weather compensation. The planning of a suitable electrical conduit dedicated to the BUS cable up to the external wall on the north side of the building (including the closed external box) is recommended in order to avoid expensive and unaesthetic masonry works at a later stage, if you were to decide to have the mixing managed by OMNIE Control.

PLANNING AND INSTALLATION

Limitations

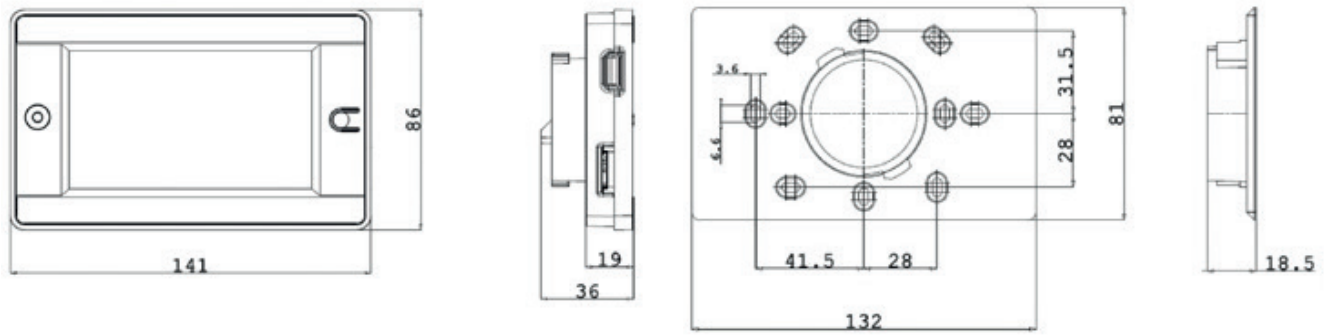
- Before installation, make sure that the devices are not connected to the electrical power;
- The devices must be powered up only once the installation has been completed. Failure to observe the instructions above may give rise to a short circuit risk, injuries and or damage
- The wiring must respect the Class II safety requirements, i.e. the BUS signal cables and the power supply network cables (230 Vac) MUST NOT run in the same electrical conduit or duct; allow a minimum separation of 50mm between the BUS cable and power cables.

ASSEMBLY

Control Hub

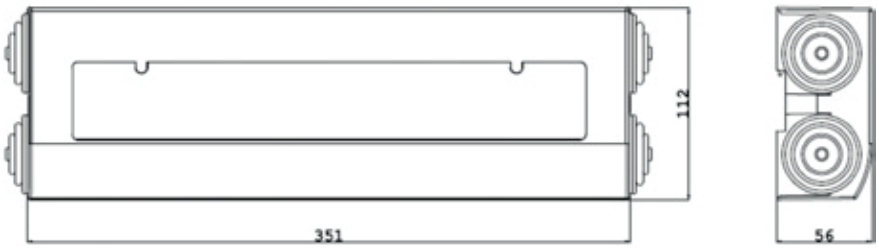
The Control Hub is fitted with an adaptor for a 70mm x 70mm x 47mm wall mount electrical boxes:

After fitting the adaptor to the electrical box and making the electrical connections through the specific terminals (see Electrical connections) the Control Hub can be attached/detached by inserting it into the adapter, engaging the two tabs and then twisting it clockwise until it is horizontal. A click is heard when in the correct position.

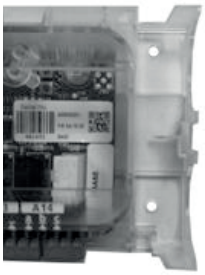


Wiring Centre

Wiring centres can be surface mounted using the lugs (image 1 below) or installed using DIN rails (image 2 below)



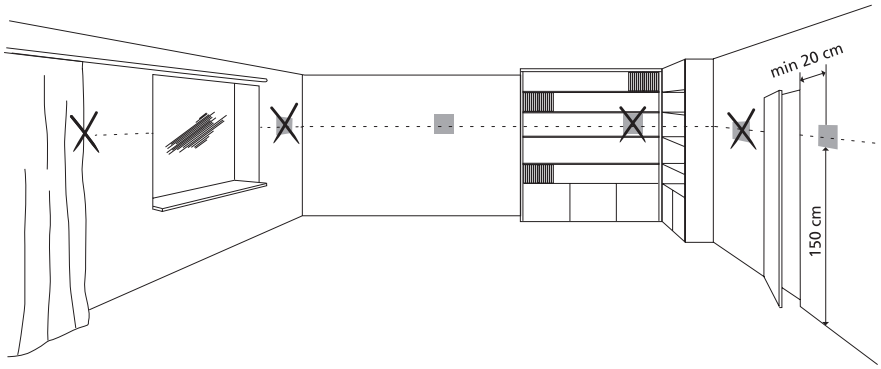
1)



2)

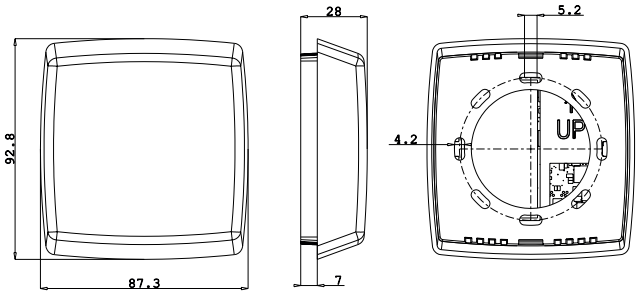
Room sensor

Room sensor must be placed about 1.5m from the floor, the location must allow the sensor to detect as accurately as possible the room relative humidity and temperature; it has to be placed away from direct sun light and other heat sources. The recommended positions and the incorrect ones (crossed) are illustrated in the following image.

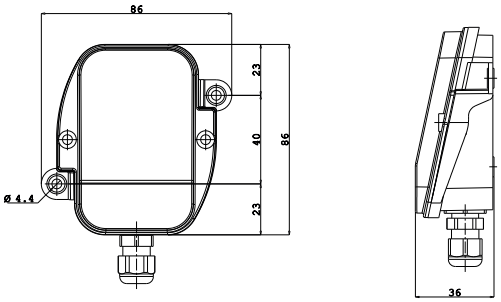


Wired room sensor

Wireless Room Sensor



External Sensor



External temperature sensor

The external sensor must always be positioned to the northern side of the building, away from direct sunlight; it must be fixed to the outer wall of the building by masonry screws through the eyelets.

Wiring
BUS

The signal cable must be a shielded cable with 2x with twisted pairs. Ethernet Cat5/6 is NOT suitable and must not be used. See the cable specification below (see following picture). The connections must be daisy chained. Link the components together using the same terminals.

Technical Data
Main power supply – 230V 3A
Communication BUS – ModBUS RS485
Boiler Contacts (volt free) – 230V – 2.0A Max
Pump Contacts (volt free) – 230V – 2.0A Max
Actuator output - 230V >0.5A
BUS Voltage - 12V DC

BUS Cable Specification – YE00906LSZH/LSZH Belden Equivalent EIB-H(ST)H 2 x twisted pairs 0.8mm, aluminium foil screen, 90pF/m.

It is always necessary to provide an independent conduit or duct for the two BUS signal cables present in the individual system:

- Connecting cable for Wiring Centre/sensor BUS;
- Connecting cable for Wiring centre/Control Hub/External temperature sensor BUS.

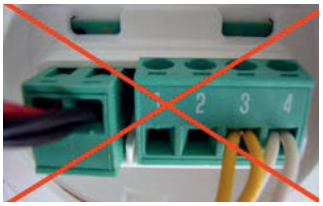
Power supply

A B6 MCB is recommended (see technical data) for the electrical supply. Connection to the main electrical supply must only be carried out by a qualified technician following BS7671 Wiring Regulations.

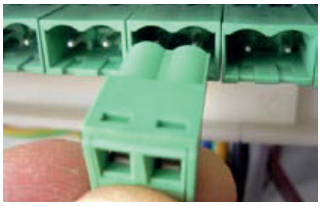
Connection
Make sure that the screws of the green connectors are correctly tightened. Fit bootlace ferrules when twisted copper wires are used (see picture below).

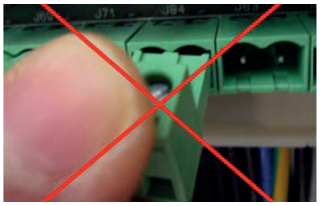
Pay attention when inserting the connectors into their housing as they have a pre-set direction; pay special attention to the two cases illustrated below and concerning the wiring of Control Hub and Wiring Centre modules. **DO NOT REVERSE THE POLARITY.**

Wired Room Sensor



Wiring Centre





SYSTEM CONFIGURATION

When the system is ready to be configured, there will be 3 green solid lights and one 1 red flashing light in the wiring centre. There will be 1 red flashing light in the each of the room sensors.

1

Press the OMNIE logo or O at the bottom of the control hub to take the control hub to the homepage.

2

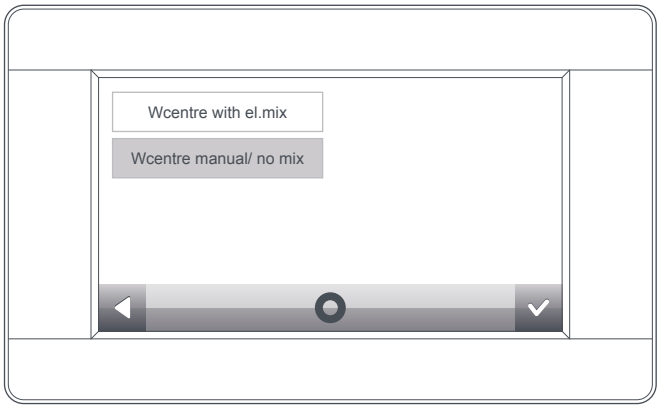
Press the padlock icon. Enter the Installer Pass Code 323232 then confirm with the tick.

Remember to lock the controls after configuration with 111111, enter it twice and confirm to lock the screen then enter a third time to unlock in User Mode.

3

Adding a wiring centre

On the homepage click the gears icon for Settings > Install params > System set up > Wcentre settings > Add Wcentre,

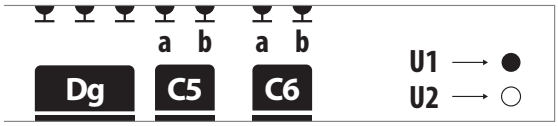


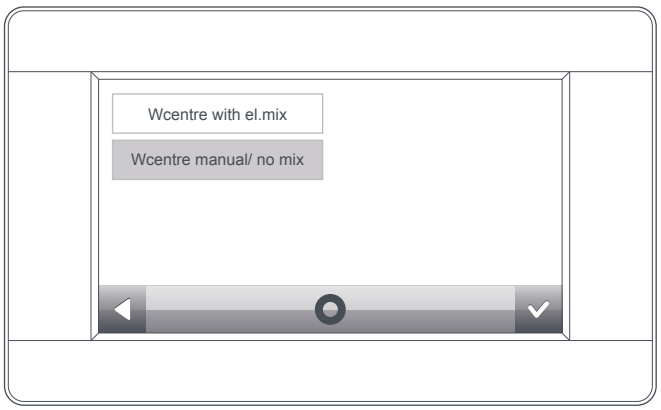
Choose ‘with mix’ for all mixer types with a circulator or No mix if the manifold is arms only with no circulator.

A pop up box will appear [Add New Wiring Centre?] Press YES. On the wiring centre, press the U1 button. The pop up box on the control hub should disappear within 10 seconds, if the pop up box does not disappear, press the button again.

If the screen does not change after 30 seconds check that the wiring is correct and the links are in the correct places.

Wiring centre





The screen will be back on the page where you chose ‘With mix’ or ‘No mix’ when the pop up box disappears. Press the back arrow twice.

4

Adding a sensor

Using the Installation Record Form at the back of these instructions record the Wiring Centre Nr., Room Name, Room Sensor Serial Number and the actuator terminals. You will need to enter this information to set up the controls.

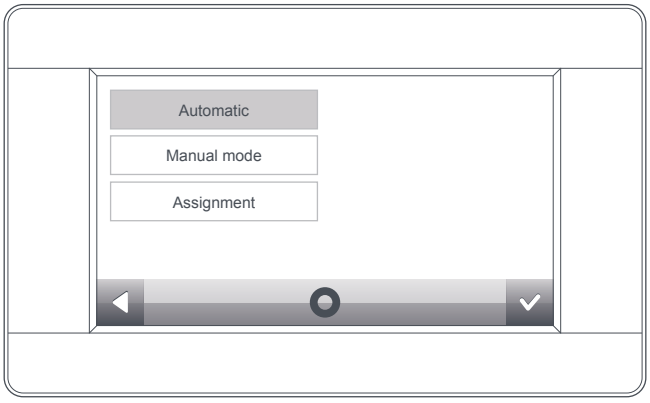
The Automatic Option will be blanked out.

Please note that if installing wireless sensors with a bridge, before assigning any sensors choose Add Bridge and follow the same steps as the wired sensors except for the assignment and selecting a relay. Next Assign the Wireless Sensors; repeat the process but press the button on the rear of the sensor to wake it up BEFORE pressing OK on the screen . After about 5 seconds the LED will flash for 2 seconds to indicate success.

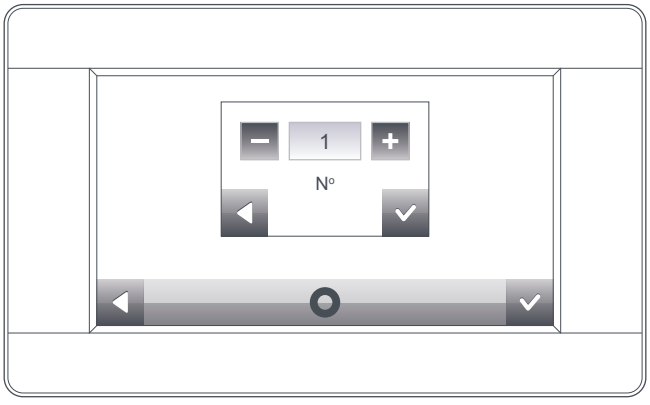
Repeat stage 4 for all sensors on the first wiring centre. Repeat stages 3 & 4 for the remaining wiring centres and sensors.

Always complete 1 wiring centre with all its sensors before moving onto the next wiring centre.

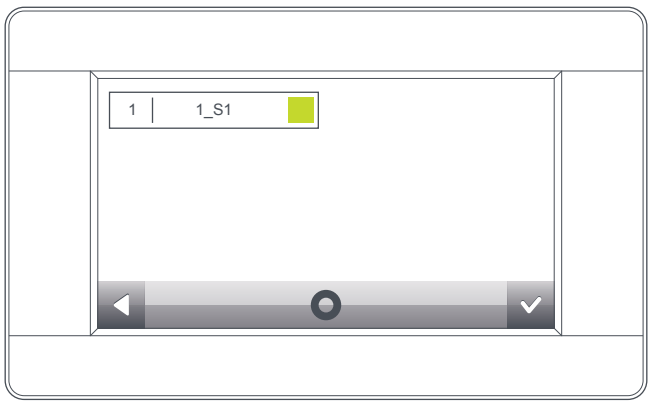
Example: assign wiring centre 1 and configure its sensors. Then assign wiring centre 2 and configure its sensors. So on...



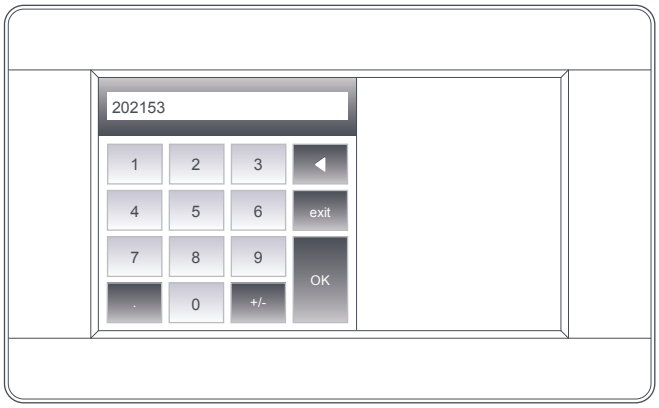
From the Wcentre settings page press 'Add sensor > Manual mode'. Select the Wiring Centre [1 if working on the first]; press the tick on the right then increase the number displayed to equal the number of room sensors attached to the wiring centre then press the tick in the box.



Now you have told the Controller how many room sensors there are the next stage is to assign them.

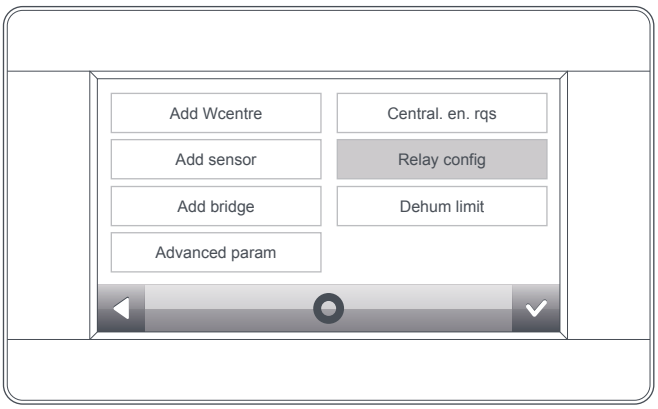


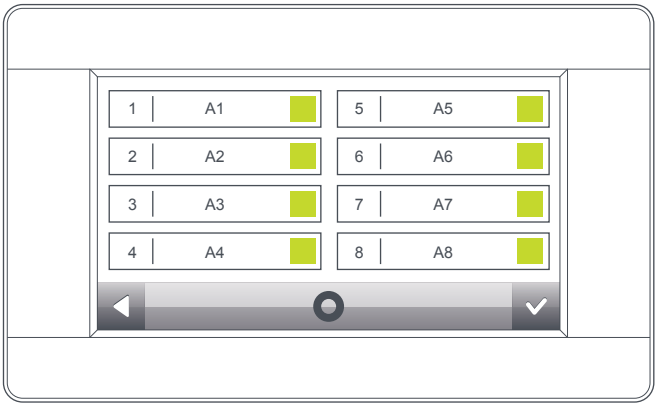
Press [Assignment] then select Room 1 and the tick on the right.



Highlight the first room and select the tick, refer to the installation Record Form and enter the serial number of the Room Sensor (which is found on the room sensor itself) using the keyboard and press the tick. Repeat for the rest of the rooms on that wiring centre.

Now you need to configure the relays. Go to Settings > General Parameters > System Set Up > Wiring Centre Settings > Relay Config.



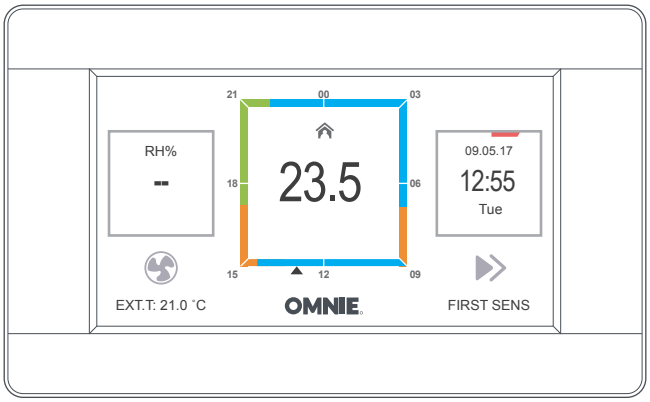


Highlight the first room and press the tick; all the relay outputs A1 to A8 are displayed, select the relay or relays that operate the ports serving that room then tick.

Repeat for the rest of the rooms on that wiring centre.

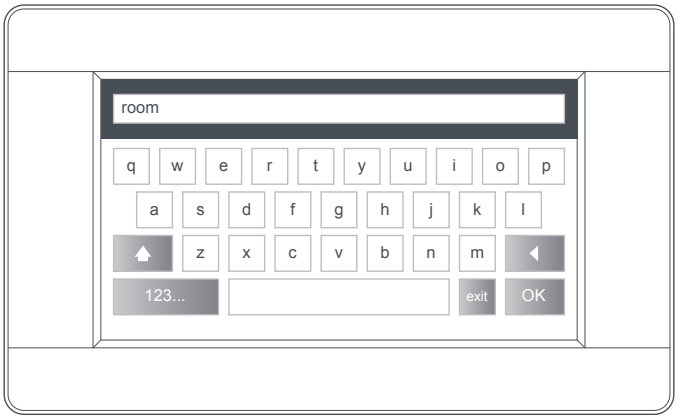
5

When you have finished assigning all wiring centres and sensors, press the the ‘O’ at the bottom of the screen to take you back to the Home page.



Press the OMNIE or ‘O’ at the bottom of the control hub again then the Setting Menu > Install params > System set up>System start.

Go back to the home page with the O on the bottom of the screen and wait while the controls wake up over about 10 seconds.



Now enter the room names in the User config menu. Refer to the User Manual for this.

Press the OMNIE or ‘O’ at the bottom of the control hub to go to the homepage. Choose the gear icon > User Config > Room Name.

Highlight the first blank room and press the tick on the right.

Type the first room name using the pop up keyboard and press OK when complete. Please note that only 10 characters are allowed. Repeat this process for the rest of the rooms.

If you need to remove a room sensor repeat as though adding a sensor but reduce the number of sensors on the Wiring Centre as required. The rooms can be reassigned with the correct serial numbers and the relays reconfigured if necessary.

If you have wireless sensors, you need to take one of the batteries out, press and hold the button on the wireless sensor and insert the battery back in while holding the button. The LED will flash for a few seconds then stop. Repeat for each Wireless Sensor.

If changes to the set up configuration need to be made after the system has been started it may be necessary to reset the system. Go to [System set up] and press [Reset system]. Wait for the window to close and the screen returns to be start.

Remember to Start the System in System set up.

Remember to lock the system once you are happy with the set up by entering the Installer Passcode on both lines. Unlock the User Access by entering 111111 in the Passcode entry line.

6

Domestic Hot Water connection and set up

With the exception of heat pumps and combi boilers which manage the DHW generation independently the OMNIE Network controls include a programme for hot water management with an indirect cylinder. The controls do not regulate the water temperature, this is done using a cylinder mounted thermostat with an integrated high limit stat. Any one of the wiring centres can be used to control the DHW, each WC has an A9 terminal that can be programmed to operate at any time of the day. Refer to the wiring diagrams for further details.

Decide which Wiring Centre is to control the DHW, output A9 provides a 230V signal to activate the DHW heating. A two port zone valve controls the water flow from the boiler circuit to the indirect cylinder coil, this is wired through a high limit and control thermostat mounted on the cylinder.

Setting up

Enter the Set up menu by pressing the O on the bottom of the screen then press the tap symbol. Next choose the wiring centre that has the DHW valve connected to A9 by tapping to highlight. Press the tick to enter the programme screen.

See the User manual for full instructions.

TROUBLESHOOTING & FAQS

The Control hub is blank	Check that the power is on at all the Wiring Centres. Check the plug on the rear of the Control Hub Check that the red wire is in the + and the black wire in the – terminals
Can the setup be amended after start up	Yes but remember to stop the system before making changes and restart after.
There is a red LED flashing rapidly on one or more Wiring Centres	The Wiring Centre has not been assigned to the Control Hub. Carry out the Wiring Centre set up for that unit. If the LED continues to flash after the set up check the wiring.
A red light is flashing on the room sensor	The room sensor is not assigned to the Wiring Centre. Carry out the set up for the room.
Can I add more than 8 rooms to a Wiring Centre	No, each Wiring Centre can only control up to 8 rooms and up to 8 outputs. It is possible to operate two or more rooms in tandem using one room sensor by configuring the relays.
Can I use two or more relay outputs for one room sensor	Yes, select the outputs A1 to A8 you want in the Relay Config menu.
How do I know that I am selecting the relays on the right Wiring Centre	You associated the rooms with the wiring centre when you added the sensors, the relays selected in Relay Config will be on that Wiring Centre.
I have added more sensors than I have rooms, how can I remove a sensor	General Params > System Set up [system stop] Wait 10 seconds > Wcentre Settings > Add sensor > Assignment > Select the room > Delete the Serial Number/s > Back Arrow > Manual mode > {Wcentre1/2/3/4} > Reduce the number to that required and tick, this has deleted the Sensor/s.
Can I delete the set up with a Factory Reset	Yes, Install params > System set up > [Reset system]. This will take it back to the start, a full set up will be required.
Why does the heating start up hours before the programme time	On earlier versions the controls use Early Activation to anticipate the time it takes to raise the room temperature, this is self-learning so may take a few days of operating to adjust to your room characteristics. Sometimes this is not useful with radiators or timber floors UFH and can be turned off; General params > Wcentre settings > Parameters > Choose the Wcentre > Early activation > Algorithm > Off > tick to confirm and return. Later WiFi versions have this function turned off but can be activated, inquire for instructions.
The heating will not run and the light on the Control Hub is blue	The system is in Summer Mode, press the O then Settings (gears) menu > User config > Operating Mode, choose Heating, return using the 'O'.
The actuator relays close before the room is up to temperature	The system anticipates the time it takes to raise the room temperature and will close the actuators for a few seconds before reaching the set temperature, if the temperature rise slows too much it will open them again for a few seconds. This helps prevent overheating and saves energy.
How can I lock the keypad to prevent tampering	Press the O then the padlock icon, enter a 6 digit number in both rows and press the tick. The keypad is now locked. To deactivate it see the next FAQ. Do not lose of forget the code. The default code is 111111.
All the menus are grey and won't respond	The Keypad lock is on. The default code is 111111, enter this after pressing the padlock icon. If the code has been changed you need the new code.
I changed the user code and have lost/forgotten it how can I reset it	This requires the Technician code, call your installer or OMNIE to ask about resetting the code.

TROUBLESHOOTING & FAQS

How do I prevent floors from overheating	Thermostatic mixer valves should be set to the right temperature, they are fitted with a safety device to limit to 50˚C. If the flooring is sensitive to high temperature adjust the temperature setting on the mixer valve to the required value.
Do I need the outdoor sensor	The outdoor sensor is not necessary but advisable. if the manifolds are fitted with thermostatic mixer valves but if any WC are electric mix an outdoor sensor is essential for it to work.
Can I fit the Control Hub at the end of the communication bus without an Outdoor Sensor	This is not recommended but it is possible by wiring a 120 Ohm resistor across b+ and b-.
I want to replace a faulty Room Sensor	In Install Params > System set up > System stop > Back to System set up. Wcentre > Add Sensor > Assignment > delete the serial number. Replace the sensor with the new sensor then enter the new serial number in Assignment. Return to the System set up menu wait 5 seconds then press System Start. Return to the home screen and wait at least 30 seconds for it to load up the data.
How can I turn the heating off for the summer	Simply put the system in cooling operation; from the settings menu > User config > Operating mode > Cooling > Switch to Summer. Remember to change back to heating when you want it on again.
Can I control a towel rail with the system	If A9 is not being used to operate the DHW operation it can be used to activate a zone valve to a wet towel rail or to activate a contactor for an electric towel rail. To programme the operation press the tap icon and select Wiring Centre you connected to then adjust the on/off times in the same way as the DHW.

APPENDIX 1: ASSIGNMENT TABLE

Wiring Centre	Wireless Rec. Room Name	Serial No.	A1	A2	A3	A4	A5	A6	A7	A8
1	Wireless Rec.									
1	1									
1	2									
1	3									
1	4									
1	5									
1	6									
1	7									
1	8									
2	Wireless Rec.									
2	1									
2	2									
2	3									
2	4									
2	5									
2	6									
2	7									
2	8									
3	Wireless Rec.									
3	1									
3	2									
3	3									
3	4									
3	5									
3	6									
3	7									
3	8									
4	Wireless Rec.									
4	1									
4	2									
4	3									
4	4									
4	5									
4	6									
4	7									
4	8									

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