

Controls

Quick Installation Guide

Wavin Sentio control system

For indoor climate management



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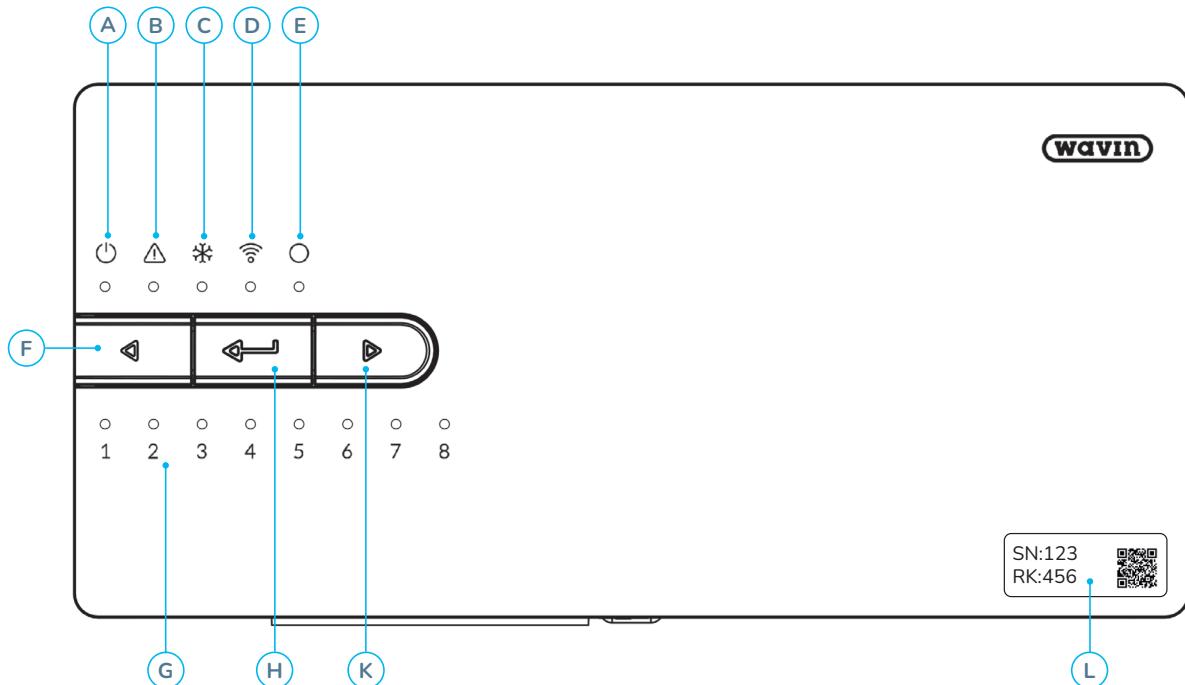
Find more information

Use the QR code to visit the Wavin Sentio website at <https://www.wavin.com/sentio>, where you can find this document in your language, as well as additional support tools, FAQs and troubleshooting tips.



Central control unit

Overview of buttons and LEDs



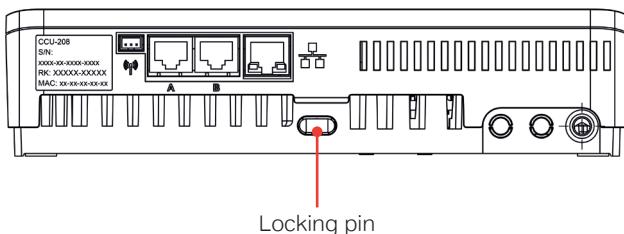
| Key | Icon | Function | LED Status | Explanation |
|-----|------|-----------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | | Status | Off | No power to the unit |
| | | | Green on | Power on and OK |
| | | | Red on | System is initialising |
| B | | Warning | Yellow flash | Error i.e. thermostat or sensor disconnected |
| | | | Yellow fast flash | System update in progress |
| C | | Cooling | Blue on | Cooling active |
| D | | LAN status | Green on | Connected to internet and cloud service |
| | | | Green flash | Connected to internet but not cloud service |
| | | | Green fast flash | Learn mode active for app registration |
| | | | Blue on | New firmware version found and ready to update |
| | | | Blue flash | Preparing to check for new firmware version |
| | | | Blue fast flash | Check for new firmware version in progress |
| E | | Peripherals | Green on | Global peripherals enrolled |
| | | | Red flash | Enrol mode active - new peripherals can be connected |
| F | | Select left | - | Press to select the next LED to the left |
| G | 1-8 | Actuator channels | Red on | Heating active |
| | | | Green on | Idle - no heating or cooling active |
| | | | Blue on | Cooling active |
| | | | Purple on | Idle - no actuator / radiator-only zone |
| | | | Red flash | Enrol mode active - new actuators can be connected |
| | | | White slow flash | Valve exercise routine in progress (preventative maintenance) |
| | | | Yellow on | Updating / restarting following a setting change |
| | | | Red-green flash | Heating blocked |
| | | | Blue-green flash | Cooling blocked |
| H | | Enter / Learn | - | Press to confirm a selection |
| K | | Select right | - | Press to select the next LED to the right |
| L | | Serial number sticker | - | Shows the unique serial number (SN) and registration code (RK) for the CCU. The QR code represents the registration code, and can be scanned from the Sentio app for easy setup |

Safety



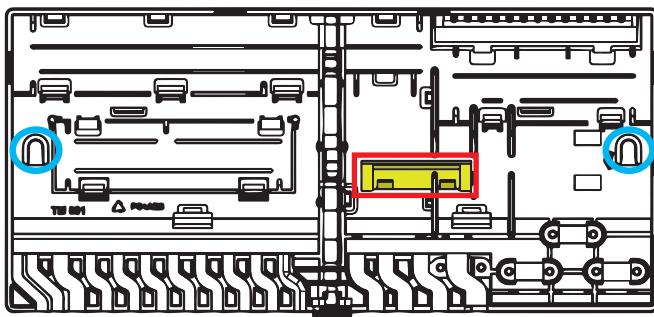
All electrical works **must** be undertaken by a qualified technician in possession of the relevant qualifications and training, as required by local law.

Remove the cover



Use a screwdriver or similar tool to loosen the locking pin on the bottom of the unit. Remove the front panel by sliding it up (if the unit is in front of you) or toward you (if it is already mounted on the wall).

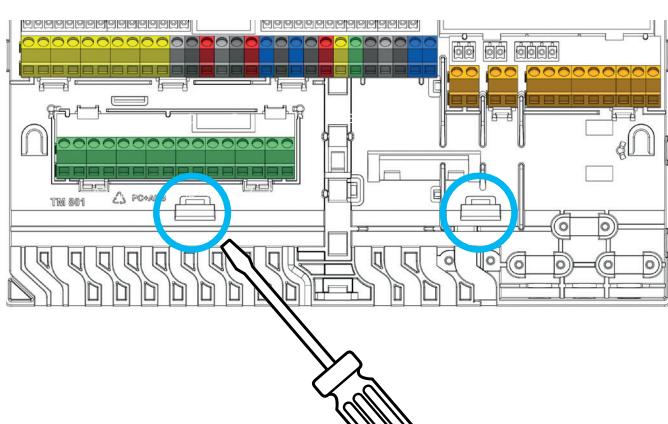
Mount to the wall



Mounting CCU and EU on the wall

The CCU central control unit, and EU extension units, can be mounted on a wall and are supplied with a built-in spirit level, screws, and wall plugs.

The built-in spirit level can be used for accurate wall mounting.



Mounting / Demounting CCU and EU on a DIN-rail

The bases of the units are suitable for mounting on a 35mm DIN rail (type O, EN50022). They can be clicked onto a mounted DIN rail, which can be inserted from the side. The connection elements must not be used when the units are mounted on a DIN rail.

The CCU has two DIN rail locks. A screwdriver can be used to unlock and release the units for removal.

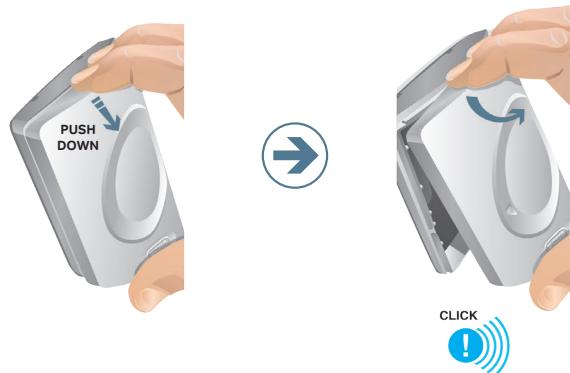
Internal components



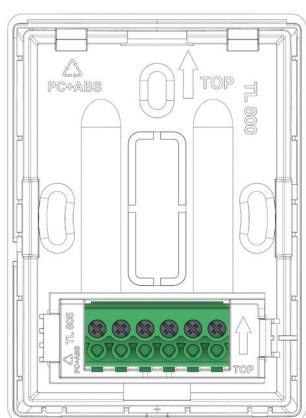
| Purpose | Label | Color | Description |
|-------------------------|-------|-----------|---------------------------------------------------------------------------------------------------|
| Thermoactuator 1-8 | A1-A8 | Green | Electronic output intended for 1 or 2 pcs of 24V DC 1W/PC Wavin thermoactuators |
| Temperature sensor 1 | T1 | Yellow | Input for NTC-10kΩ temperature sensor, (default outdoor thermometer or source temperature sensor) |
| Temperature sensor 2/4 | T2/T4 | Yellow | Input for NTC-10kΩ temperature sensor, default inlet temperature sensor mixing units |
| Temperature sensor 3/5 | T3/T5 | Yellow | Input for NTC-10kΩ temperature sensor, default outlet temperature sensor mixing units |
| ITC Servo output 1 | S1 | Grey | 0-10V output or S+ output for 3point for servo , maximum load 24V 2W |
| 24V 2W | C | Grey | Common terminal for servo ITC1 |
| | S2 | Red | +24V for 0-10V servo or S- signal for 3point servo maximum load 24V 2W |
| ITC Servo output 2 | S3 | Grey | 0-10V output or S+ output for 3point for servo maximum load 24V 2W |
| 24V 2W | C | Grey | Common terminal for servo ITC2 |
| | S4 | Red | +24V for 0-10V servo or S- signal for 3point servo maximum load 24V 2W |
| General Purpose I/O1 | IO1 | Dark Blue | ON/OFF universal Input / Output. Input 5V 5mA, output = O.C. 100mA |
| | GN | Grey | Common terminal for GPIO1 |
| General Purpose I/O2 | IO2 | Dark Blue | ON/OFF universal Input / Output. Input 5V 5mA, output = O.C. 100mA |
| | GN | Grey | Common terminal for GPIO2 |
| ROXI BUS connection | +U | Red | + 24V for ROXi BUS, maximum output current controlled by power management |
| wired Sentio components | A | Yellow | A data signal for ROXi BUS |
| | B | Green | B data signal for ROXi BUS |
| | GN | Grey | Ground for ROXi BUS |
| Analog output 0-10V | AO | Grey | Analog output 0-10V / "+" |
| | GN | Grey | Common terminal for AO, PO, PI / "-" |

| | | | |
|----------------------|------|--|-------------------------------------------------------------------------|
| PWM - out | PO | | PWM output 100Hz-5kHz, using common terminal GN with analogue output AO |
| PWM – in | PI | | PWM input 100Hz, using common terminal GN with analogue output AO |
| Voltage Free Relay 1 | VFR1 | | ON/OFF voltage free relay, AC 24-230V, 1A |
| Voltage Free Relay 2 | VFR2 | | ON/OFF voltage free relay, AC 24-230V, 1A |
| Mixing Pump 1 | P1 | | ON/OFF output for circulation pump 1, AC 230V 1A, switched to Mains L |
| | N | | Neutral for Pump 1, connected to mains N |
| | PE | | PE for Pump 1, connected to mains PE |
| Mixing Pump 2 | P2 | | ON/OFF output for circulation pump2, AC 230V 1A, switched to mains L |
| | N | | Neutral for Pump 2, connected to mains N |
| | PE | | PE for Pump 2, connected to mains PE |
| Mains / Power supply | L | | Main power input – Live (AC 230V) |
| | N | | Main power input – Neutral |
| | PE | | Main power input – PE |

Remove the thermostat cover

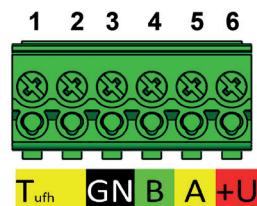


Thermostat/sensor terminals



Terminal block description

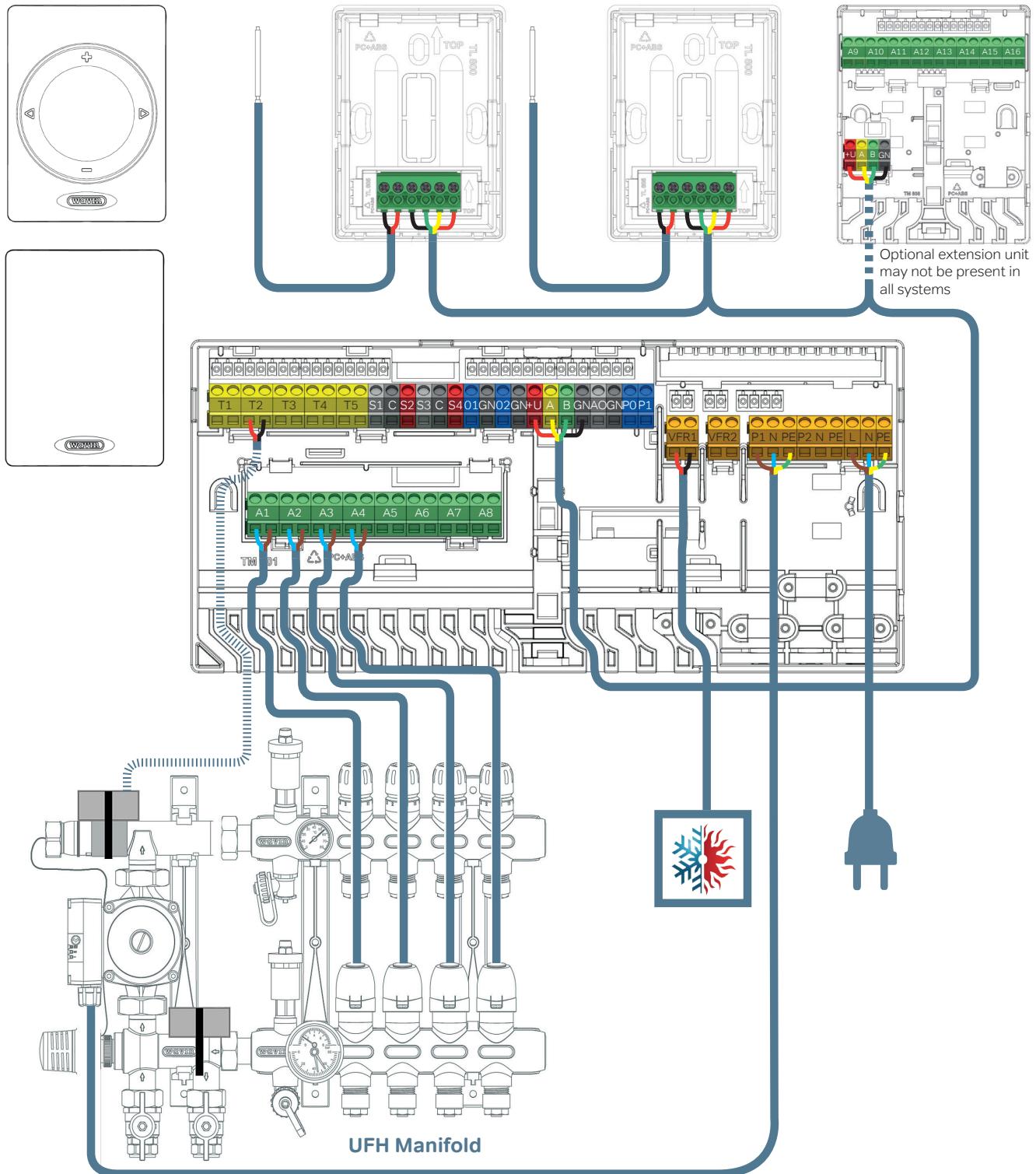
| | |
|---|-----------------------------|
| 1 | External temperature sensor |
| 2 | External temperature sensor |
| 3 | GND (BUS Roxi) |
| 4 | B channel (BUS Roxi) |
| 5 | A channel (BUS Roxi) |
| 6 | +U (BUS Roxi) |



Wiring diagram

Typical underfloor heating system arrangement

Visit the Wavin website for information on the wide range of other applications



Cable specification

| Wiring to | Cable type |
|-------------------------------|--------------------------------------------------------------------------------------------------|
| Thermostat/sensor BUS network | Recommended: Low voltage alarm/security cable with 4 cores Alternative: Cat5e/Cat6 or similar |
| Power supply | 1.5mm ² twin and earth |
| LCD touch screen | RS-485/ethernet cable with RJ45 connectors (supplied in box with LCD touch screen) |

Connecting Wired Room Thermostats and Sensors

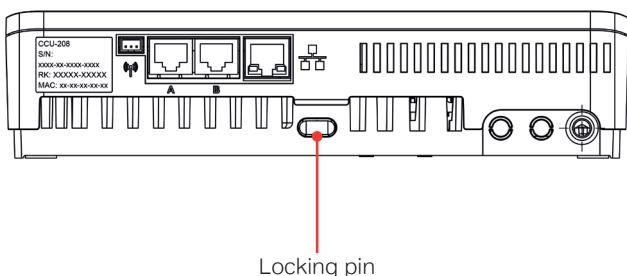
- Thermostats require a 4 core low-voltage data cable.
- Maximum supported cable length is 200m.
- Minimum wire diameter 0.5 mm, minimum wire cross section 0.2mm².
- Do not use mains power cable to connect thermostats.
- Use of a branching radial circuit will minimize cable usage.
- If preferred, each thermostat can use a dedicated cable (star configuration), however it may be necessary to use a 3rd party junction box at the CCU to connect them all together before connecting to the CCU itself.

Component capacity

The maximum number of components that can be connected to a single CCU is as follows:

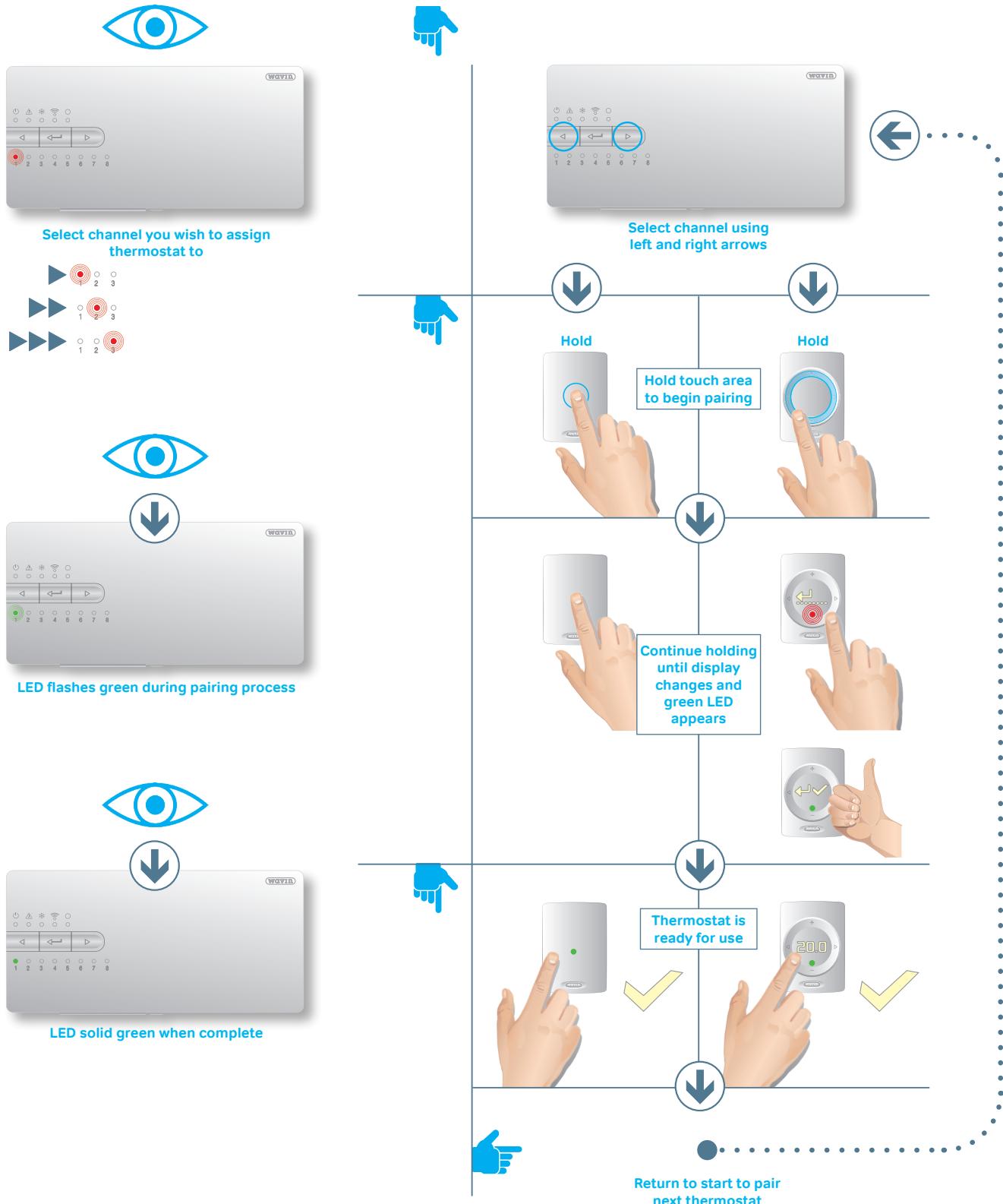
| Component | Quantity |
|-------------------------------------|----------|
| Thermostat / Sensor / Room | 24 |
| Thermal actuator 24V | 16 |
| Outdoor temperature sensor | 1 |
| Extension unit (EU-A) | 2 |
| Extension unit with VFR (EU-VFR) | 2 |
| LCD touch screen commissioning tool | 2 |
| Smart Radiator Thermostat | 16 |
| Dehumidifier | 4 |

Replace the front cover



Before you begin, make sure the locking pin is still in the extended position. Align the front panel with the base panel and insert gently to avoid misalignment or damage to connector pins and terminals. Push the locking pin in until you hear a click to lock.

Enrol thermostats

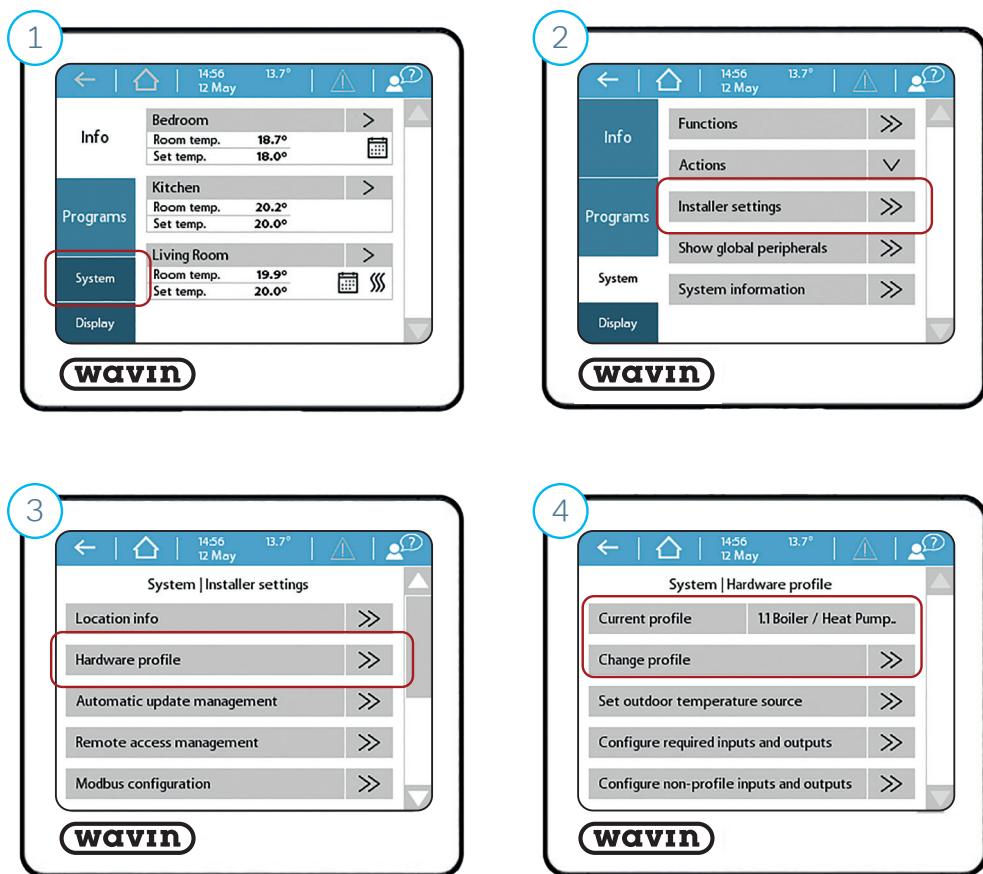


Profile setting

Default profile

During the start-up of the Sentio system you must select the type of system (profile) that the Sentio unit is to control. By default the Sentio unit comes with profile 1.1 as active. To change the profile and/or set all parameters a Sentio commissioning touch screen is required.

Changing the profile



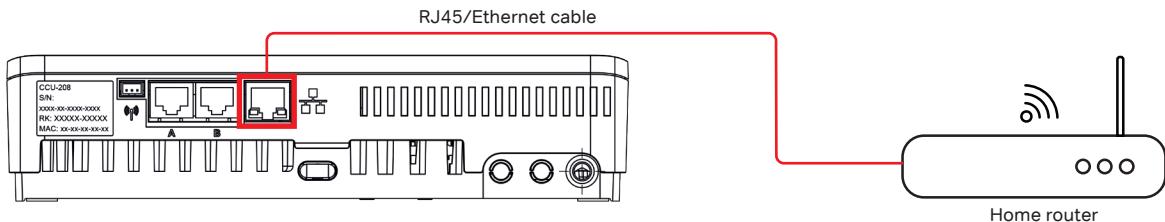
Profile options

Refer to the Sentio application manual for detailed information

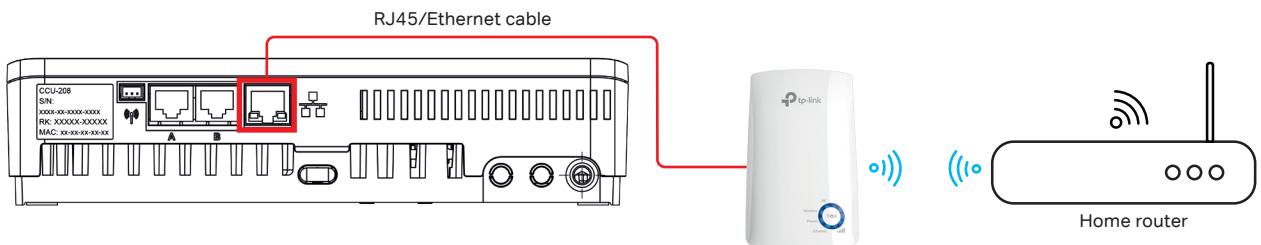
| Source serving underfloor heating/cooling system | | | |
|--------------------------------------------------|------------------------------|---------|---------------------------------------------|
| | With | Profile | Required |
| District heating | None | 1.0 | |
| | 1 ITC loop | 1.3.1 | Inlet sensor, outlet sensor |
| | 2 ITC loops | 1.3.2 | Inlet sensor, outlet sensor |
| Boiler/Heat pump | None (On/off control) | 1.1 | |
| | 0-10V control | 1.2 | |
| Condensing boiler | 0-10V control, 1 ITC loop | 2.2.1 | Inlet sensor, outlet sensor |
| | 0-10V control, 2 ITC loop | 2.2.2 | Inlet sensor, outlet sensor |
| Heat pump UFH/UFC | Heat/Cooling switch | 3.3.0 | Inlet sensor |
| | Automatic switch | 3.3.1 | Outdoor Sensor, Inlet sensor |
| | 1 ITC + Heat/Cooling switch | 3.3.2 | Inlet sensor, outlet sensor |
| | 1 ITC + Automatic switch | 3.3.3 | Outdoor Sensor, Inlet sensor, outlet sensor |
| Any single source (+ optional dehumidifiers) | 2 Heat/cooling circuits | 4.1.1 | Inlet sensor |
| | 1 ITC | 4.1.2 | Inlet sensor, outlet sensor |
| | 1 ITC + heat/cooling circuit | 4.1.3 | Inlet sensor, outlet sensor |
| | 2 ITC + heat/cooling circuit | 4.1.4 | Inlet sensor, outlet sensor |
| | Reference room | 4.2 | Inlet sensor |

Connect to the internet

Connect the LAN cable



If a direct cable to the router is not possible, a plug-in WiFi bridge (sold separately) can also be used:

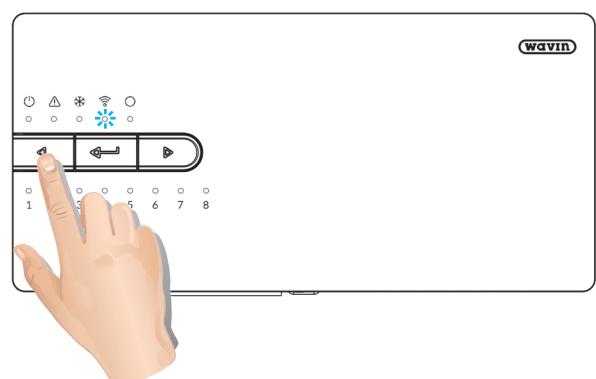


Update the system

We recommend that a firmware update is run as soon as the system is installed. This ensures that the system is fully up-to-date with the latest features and fixes. This process will also automatically run once per month.

Press the left arrow twice to navigate to the Network LED and press the Enter/Learn button. If the LED turns solid blue, there is an update ready to be installed. Press Enter/Learn again to start the installation. The LED will flash yellow during the installation and turn solid green once complete.

If any issues occur during the update, the system will revert to the previous firmware version.



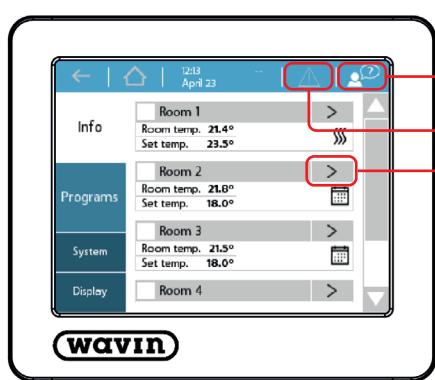
Commissioning tool

Commissioning with the touch screen

The touch screen can be used for easy commissioning of the Sentio system. One touch screen can be used for several CCUs, and is connected to the CCU via an ethernet cable, which is supplied in the box with the screen.

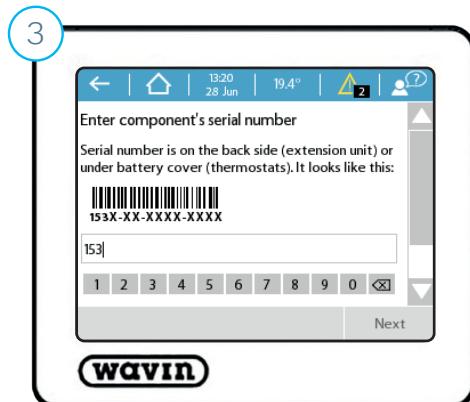
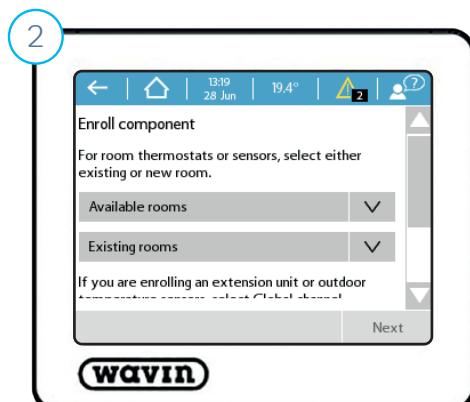
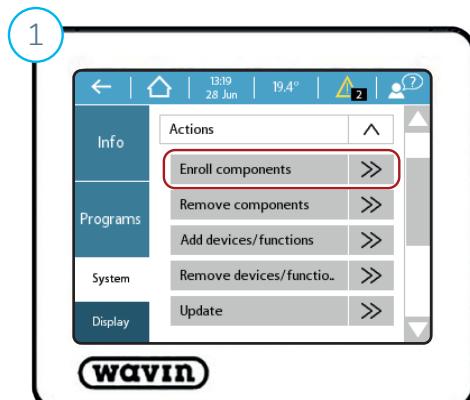
In addition to checking the thermostats have been correctly enrolled, the screen will also allow you to rename rooms and set initial time and temperature schedules. The screen also provides access to a wealth of detailed installer settings, allowing for additional fine tuning and the configuration of more complex systems.

It is not necessary for the daily use of the Sentio system to have a touch screen, although it does offer additional insights of the system behaviour.



- ① Help icon: Show guidance and tips specific to the menu screen currently showing on the display.
- ② Error icon: If there are any errors in the system operation, this warning icon will turn yellow and display a number representing the number of errors. Selecting the warning icon will take you to a screen with the error details.
- ③ More info: Go to the full details for that room, allowing access to more details about the current operation conditions, temperatures, scheduling and additional options.

Enroll components using the touch screen



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Wavin B.V. | World Trade Center (WTC) | Wavin Tower F9 Schiphol Boulevard 425 | 1118 BK Schiphol The Netherlands | Internet www.wavin.com | E-mail info@wavin.com

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