



# Uponor Smatrix Base

UK QUICK GUIDE

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### NOTE!

This is a quick start guide to serve as a reminder for experienced installers. We strongly recommend reading the full manual before installing the control system. See QR-code for download link.



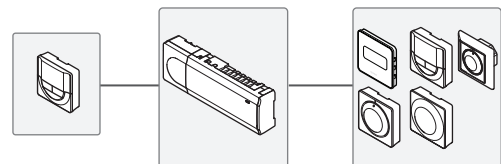
<https://www.uponor.co.uk/smatrix/downloads.aspx>

## Uponor Smatrix Base components

An Uponor Smatrix Base system may be a combination of the following components:

- Uponor Smatrix Base Controller X-145 (controller)
- Uponor Smatrix Base Timer I-143 (timer I-143)
- Uponor Smatrix Base Thermostat D+RH T-149 (digital thermostat T-149)
- Uponor Smatrix Base Thermostat Prog.+RH T-148 (digital thermostat T-148)
- Uponor Smatrix Base Thermostat Dig T-146 (digital thermostat T-146)
- Uponor Smatrix Base Thermostat Standard T-145 (standard thermostat T-145)
- Uponor Smatrix Base Thermostat Flush T-144 (flush thermostat T-144)
- Uponor Smatrix Base Thermostat Public T-143 (public thermostat T-143)
- Uponor Smatrix Base Slave Module M-140 (slave module M-140)
- Uponor Smatrix Base Star Module M-141 (star module M-141)
- Uponor Smatrix Transformer A-1XX (transformer A-1XX)

### System example



# Safety instructions

This quick start guide to serves as a reminder for experienced installers. We strongly recommend reading the full manual before installing the control system.

## Controller

**WARNING!**

The Uponor system uses 50 Hz, 230 V AC power. In case of emergency, immediately disconnect the power.

**WARNING!**

Electrical installation and service behind secured 230 V AC covers must be carried out under the supervision of a qualified electrician.

**WARNING!**

The transformer module is heavy and might detach if the controller is held upside down without the cover on.

**CAUTION!**

To avoid interference, keep installation/data cables away from power cables of more than 50 V.

**CAUTION!**

Ensure that each actuator is connected to the correct channel so that the thermostats are controlling the correct loops.

**NOTE!**

Wires between transformer and controller card needs to be disconnected prior to detaching.

**NOTE!**

Connect only one actuator for each channel. Channels 01 and 02 have double outputs (a and b) for two actuators.

## Thermostat/System device

**NOTE!**

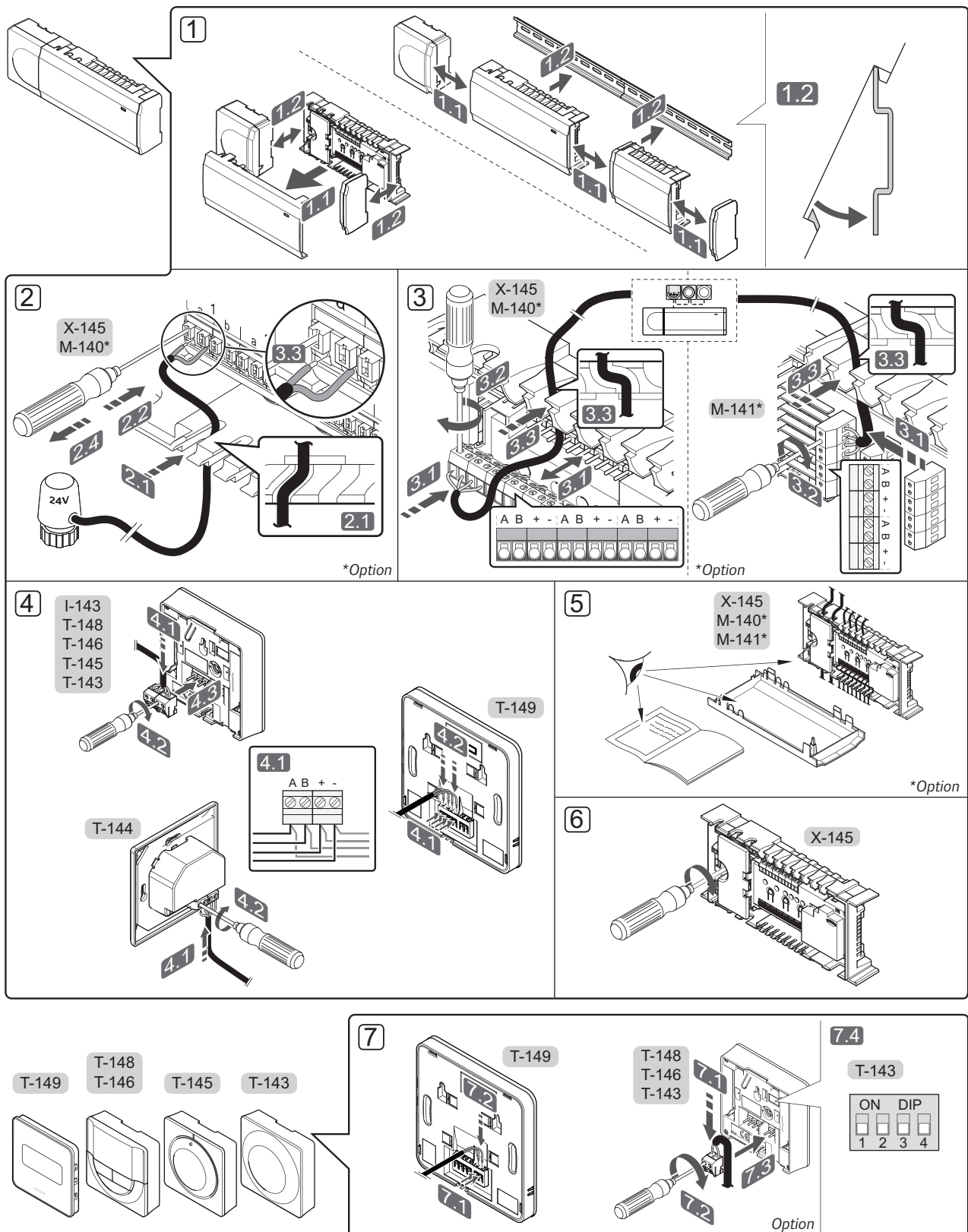
Registration of at least one thermostat must be done before registering a system device.

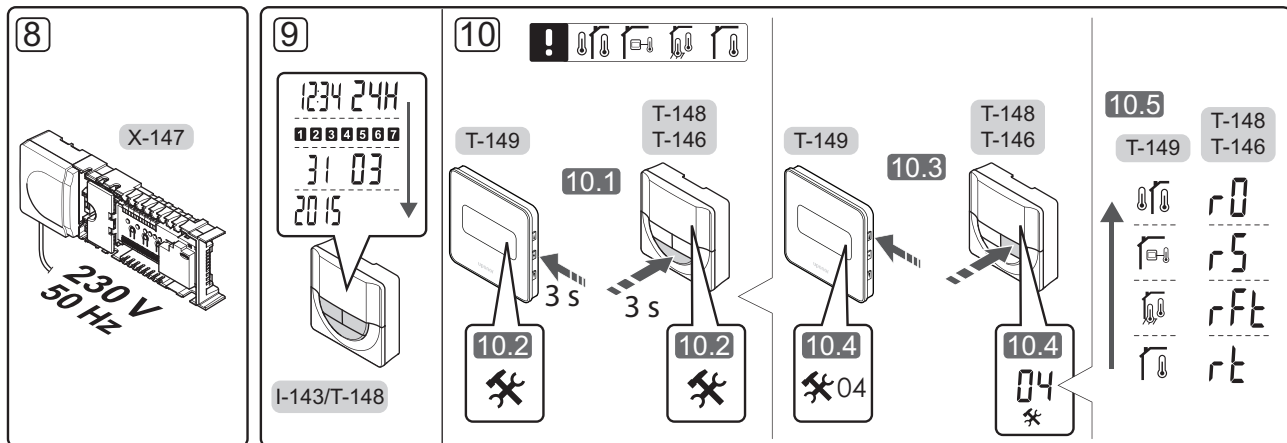
**CAUTION!**

The switches in the public thermostat must be set before the thermostat is registered.

**CAUTION!**

The switches, in the public thermostat, must be set to one of the available functions, otherwise it cannot be registered.





## Quick Guide

### Installation

1. Attach the full assembly, or parts of it, to the wall either with a DIN rail or by using wall screws and plugs.
2. Connect the actuators.
3. Connect a thermostat communication cable to the controller, slave module, and/or the optional star module. **Note:** Daisy chain bus topology is recommended. See page 8, *Communications protocol for more information*.
4. Connect a communication cable to the thermostat/timer.
5. Check that all wiring is complete and correct:
  - Actuators
  - Heating/cooling switch
  - Circulation pump
6. Ensure that the 230 V AC compartment of the controller is closed and the fixing screw is tightened.

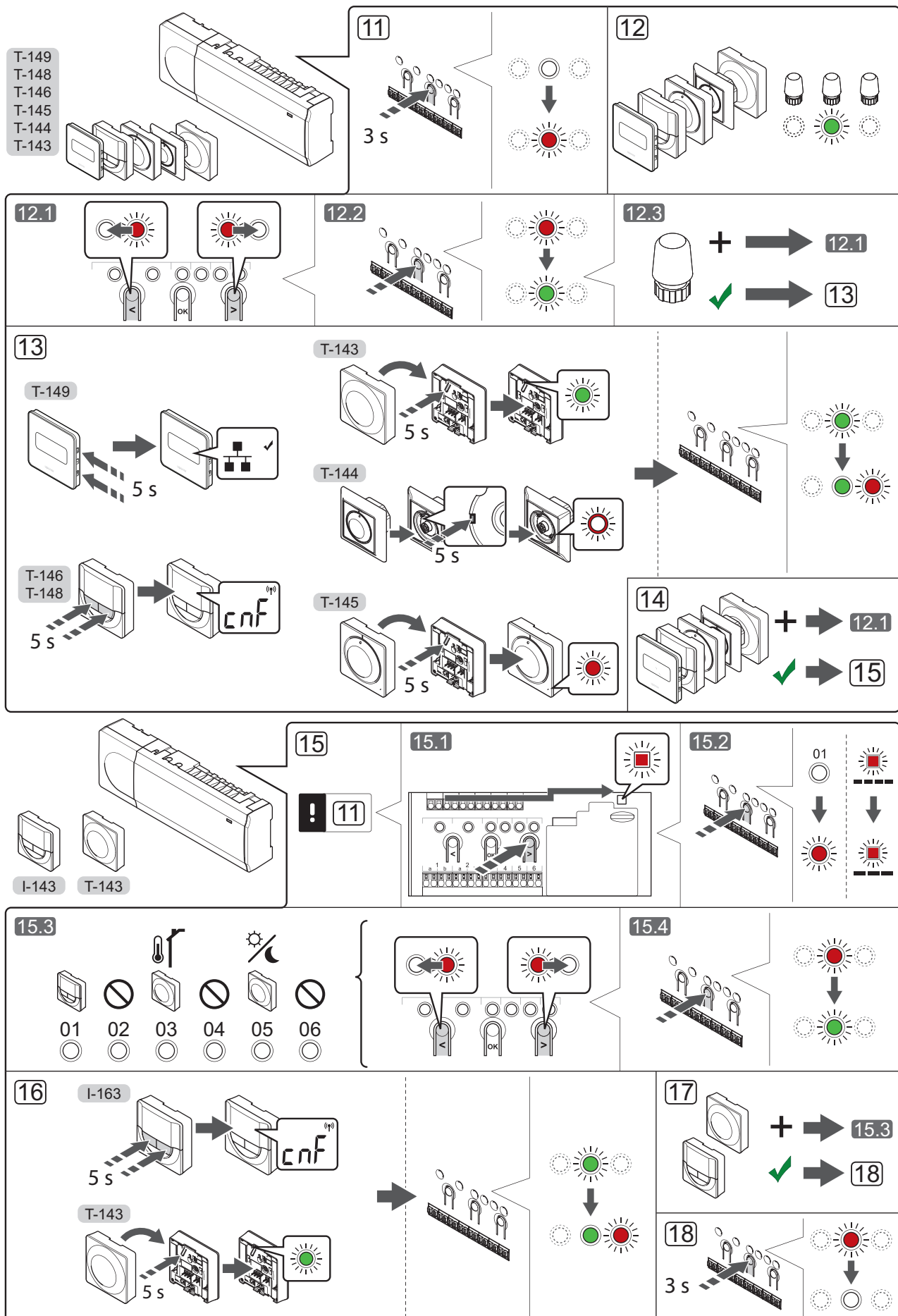
7. Connect optional external sensor (compatible thermostats only) and set the DIP switch (public thermostat T-143 only).

Function	Switch
Standard room thermostat	
Standard room thermostat together with a floor temperature sensor	
Standard room thermostat, or system device, together with an outdoor temperature sensor	
System device where the sensor input is used for Comfort/ECO switch over function *	
Remote sensor	

\* Closed = ECO

8. Connect the power cable to a 230 V AC wall socket, or if required by local regulations, to a junction box.
9. Set time and date on thermostats or timer (digital thermostat T-148 or timer only).
10. Select thermostat control mode (settings menu **04**, in digital thermostats only). Default: **RT** (standard room thermostat).

Register thermostats, the timer and other system devices, in that order (next page).



## Register thermostat and/or system device to a controller



### NOTE!

At least one thermostat must be registered before registering a system device.

To register room thermostats and system devices (interface etc.) to the controller:

### Enter registration mode

11. Press and hold the **OK** button on the controller, for about 3 seconds, until the LED for channel 1 (or the first unregistered channel) flashes red.

### Register a thermostat

12. Select a thermostat channel.
  - 12.1 Use buttons < or > to move the pointer (LED flashes red) to a preferred channel.
  - 12.2 Press the **OK** button to select the channel for registration. The LED for the selected channel starts flashing green.
  - 12.3 Repeat steps 12.1 and 12.2 until all channels to be registered with the thermostat are selected (LEDs flashing green).

**Note!** It is recommended to register all channels to the thermostat at the same time.

13. Select a thermostat.

#### THERMOSTAT T-143 AS A THERMOSTAT, WITH VARIOUS FUNCTIONS

- 13.1 Gently press and hold the registration button on the thermostat, release when the LED starts flashing green (located in the hole above the registration button).  
The selected channel LED in the controller turns fixed green and the registration is complete.

#### THERMOSTAT T-144

- 13.1 Using a pointed instrument, gently press and hold the registration button on the thermostat, release when the LED above the dial starts flashing.  
The selected channel LED in the controller turns fixed green and the registration is complete.

#### THERMOSTAT T-145

- 13.1 Gently press and hold the registration button on the thermostat, release when the LED on the front of the thermostat starts flashing.  
The selected channel LED in the controller turns fixed green and the registration is complete.

#### THERMOSTATS T-146, T-148 AND T-149

- 13.1 Press and hold both - and + buttons (T-149 = ▼ and ▲) on the thermostat until the text **CnF** (configure) and a communication icon is displayed.  
The selected channel LED in the controller turns fixed green and the registration is complete.

14. Repeat steps 12 and 13 until all available thermostats are registered.

### Register a system device

15. Make sure to be in registration mode (step 11).
  - 15.1 Use buttons < or > to move the pointer to the power LED (LED flashes red).
  - 15.2 Press the **OK** button to enter system channel registration mode. The power LED flashes according to the pattern long blink, short pause, long blink and channel 1 LED flashes red.
  - 15.3 Select a system channel, see list below.
    - 1 = Timer
    - 2 = Not used
    - 3 = Public thermostat with outdoor sensor
    - 4 = Not used
    - 5 = Public thermostat with Comfort/ECO switch
  - 15.4 Press the **OK** button to select system device channel. The channel LED starts flashing green
16. Select a system device matching the system channel.

#### TIMER I-143

- 16.1 Press and hold both - and + buttons on the thermostat until the text **CnF** (configure) and a communication icon is displayed.  
The selected channel LED in the controller turns fixed green and the registration is complete.

#### THERMOSTAT T-143 AS A SYSTEM DEVICE, WITH VARIOUS FUNCTIONS

- 16.1 Gently press and hold the registration button on the thermostat, release when the LED starts flashing green (located in the hole above the registration button).  
The selected channel LED in the controller turns fixed green and the registration is complete.

17. Repeat steps 15 and 16 until all available system devices are registered.

### Exit registration mode

18. Press and hold the **OK** button on the controller, for about 3 seconds, until the green LEDs turn off to end registration and return to run mode.

## Unregister one channel or system device

When a channel or system device is inaccurately registered or if a thermostat registration needs to be redone, it is possible to remove the current registration from the controller.

To unregister a channel:

1. Enter registration mode. Channel 1 LED flashes red/green, or the first unregistered channel flashes red.
2. If a system device (timer etc) is to be unregistered, enter system channel registration mode. The power LED flashes according to the pattern long blink, short pause, long blink and channel 1 LED flashes red/green.
3. Use buttons < or > to move the pointer (LED flashes red) to the selected channel (flashes green if registered) to unregister.
4. Press the < and > buttons simultaneously for about 5 seconds until the LED for the selected channel starts flashing red.

## Unregister all channels

When one or more channels are inaccurately registered, it is possible to remove all registrations at the same time.

To cancel all channel registrations:

1. Enter registration mode. Channel 1 LED flashes red/green, or the first unregistered channel flashes red.
2. Press the < and > buttons simultaneously for about 10 seconds until the LEDs for all channels except one turn off. The one remaining flashes red.

## Communications protocol

The system is based on a bus communications protocol (requires the thermostats unique ID to be registered to the controller), utilising daisy chain, direct or star topology connections. This allows serial and parallel connections, makes wiring and connection of thermostats and system devices much easier than connecting one thermostat per connection terminal.

The wide array of connection possibilities presented with this communications protocol can be combined in any way best suited for the current system.

## Miscellaneous functions

See full manual for more information about Autobalancing of actuators (eliminating the need of manual balancing, on by default), Cooling, and Comfort/ECO settings etc.



# Technical data

## General

IP	IP20 (IP: degree of inaccessibility to active parts of the product and degree of water)
Max. ambient RH (relative humidity)	85% at 20 °C

## Thermostat and timer

CE marking	
ERP (thermostat only)	IV
Low voltage tests	EN 60730-1* and EN 60730-2-9***
EMC (electromagnetic compatibility requirements) tests	EN 60730-1
Power supply	From controller
Voltage	4.5 V to 5.5 V
Operating temperature	0 °C to +45 °C
Storage temperature	-10 °C to +70 °C
Connection terminals (I-143, T-143, T-144, T-145, T-146, and T-148)	0.5 mm <sup>2</sup> to 2.5 mm <sup>2</sup>
Connection terminals (T-149)	0.25 mm <sup>2</sup> to 0.75 mm <sup>2</sup> solid, or 0.34 mm <sup>2</sup> to 0.5 mm <sup>2</sup> flexible with ferrules

## Controller

CE marking	
ERP	IV
Low voltage tests	EN 60730-1* and EN 60730-2-1**
EMC (electromagnetic compatibility requirements) tests	EN 60730-1
Power supply	230 V AC +10/-15%, 50 Hz or 60 Hz
Internal fuse	T5 F3.15AL 250 V, 5x20 3.15A quick acting
Operating temperature	0 °C to +45 °C
Storage temperature	-20 °C to +70 °C
Maximum consumption	40 W
Pump and boiler relay outputs	230 V AC +10/-15%, 250 V AC 8 A maximum
General purpose input (GPI)	Only dry contact
Valve outputs	24 V AC, 4 A max.
Power connection	1 m cable with europlug (except UK)
Connection terminals for power, pump, GPI and boiler	Up to 4.0 mm <sup>2</sup> solid, or 2.5 mm <sup>2</sup> flexible with ferrules
Connection terminals for bus communication	0.5 mm <sup>2</sup> to 2.5 mm <sup>2</sup>
Connection terminals for valve outputs	0.2 mm <sup>2</sup> to 1.5 mm <sup>2</sup>

\*) EN 60730-1 Automatic electrical controls for household and similar use  
-- Part 1: General requirements

\*\*) EN 60730-2-1 Automatic electrical controls for household and similar use  
-- Part 2-1: Particular requirements for electrical controls for electrical household appliances

\*\*\*) EN 60730-2-9 Automatic electrical controls for household and similar use  
-- Part 2-9: Particular requirements for temperature sensing controls



Usable in all Europe



Declaration of conformity:

We hereby declare under our own responsibility that products dealt with by these instructions satisfy all essential demands linked to the information stated in the Safety instruction booklet.



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Uponor reserves the right to make changes, without prior notification, to the specification of incorporated components in line with its policy of continuous improvement and development.

# Uponor