uponor

INDOOR CLIMATE

UPONOR CONTROL SYSTEM WIRED

Installation and Operation Manual

01 | 2011

Contents

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2 Preface

The Uponor Control System Wired installation manual describes how to install and operate the components of the system. Example applications and possible configurations of the system are also included.

2.1 Safety instructions

Warnings used in this manual

The following symbols are used in the manual to indicate special precautions when installing and operating any Uponor equipment:

WARNING!

Risk of injury. Ignoring warnings can cause injury or damage components.

CAUTION

Ignoring cautions can cause malfunctions.

Safety measures

Conform to the following measures when installing and operating any Uponor equipment:

- Read and follow the instructions in the installation and operation manual.
- Installation must be performed by a competent person in accordance with local regulations.
- It is prohibited to make changes or modifications not specified in this manual.
- All power supply must be switched off before starting any wiring work.
- Do not use water to clean Uponor components.
- Do not expose the Uponor components to flammable vapours or gases.
- We cannot accept any responsibility for damage or breakdown that can result from ignoring these instructions!

Power

WARNING!

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

Technical constraints

CAUTION

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

2.2 Disposal

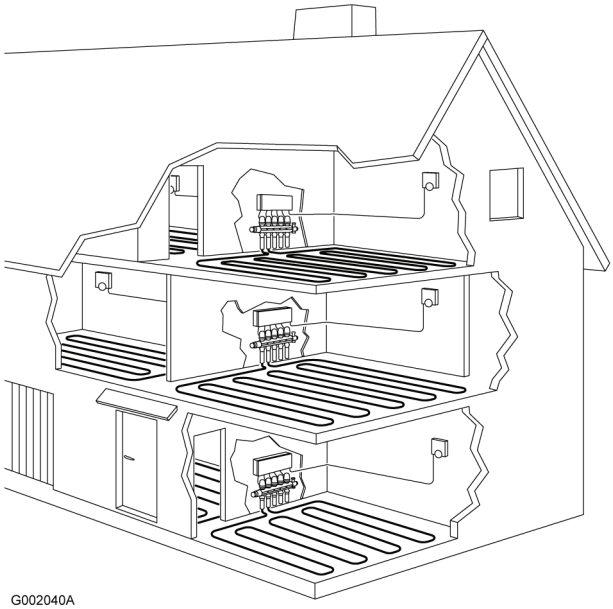
The Uponor Control System consists of various recyclable components. Uponor would be grateful if the components (batteries, plastics, and electric or electronic parts) are sorted and disposed of at a suitable recycling centre.

3 Description

Uponor Control System Wired is a management system for underfloor heating and cooling installations. Comfort, user-friendliness and temperature control for each individual room of a home can be combined through the use of thermostats or floor temperature sensors.

3.1 System overview

Uponor Control System Wired consists of a controller, thermostats, actuators and an optional timer. The controller manages the operation of the actuators when the thermostats detect a demand for heating or cooling.



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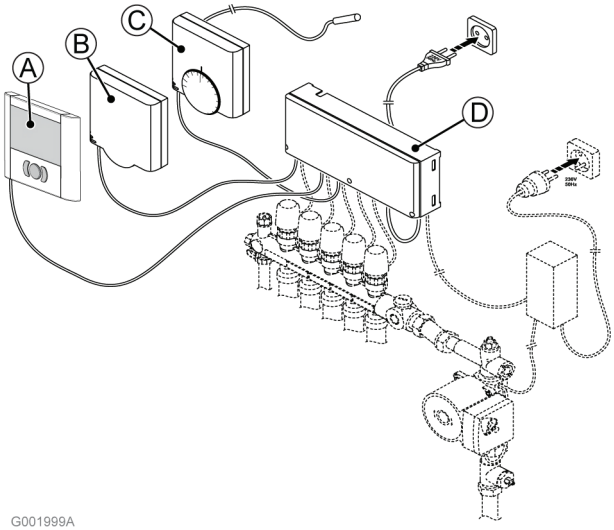
Uponor Control System Wired is controlled by different types of thermostats. Designed for maximum comfort, the thermostats communicate with the controller by non-polarized two wired cables. It is possible to mix the different types of Uponor wired thermostats in the same installation.

3.2 Example of a system



G001999A

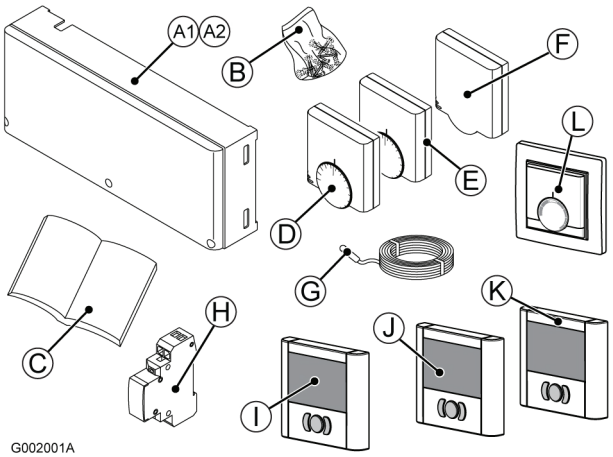
Pos.	Description
A	Uponor Thermostat T-36 wired with the option of adding a floor sensor
B	Uponor Thermostat Public T-33 wired with the option of adding a floor sensor
C	Uponor Thermostat T-37 wired with the option of adding a floor sensor
D	Uponor Controller, 6 Channels C-33 Wired or Uponor Controller, 12 Channels C-35 Wired

The floor sensor can be used for maximum or minimum limitation of the floor temperature, regardless of the room temperature. The floor sensor can be used with Uponor thermostats T-33,T-36, T-37 and T-38

For example, the maximum limitation can protect a sensitive floor covering from exposure to too high temperature when there is a high heating demand. The minimum limitation can keep a tiled floor warm even when there is a no general demand for heat supply to the room.

NOTE:
Auto-balancing is now possible with Uponor Control System Wired. If the auto-balancing function is used, it is recommended to use it for the whole system. Uponor Digital Thermostats T-36 and T-38 are equipped with the auto-balancing function.

3.3 Uponor Control System Wired components



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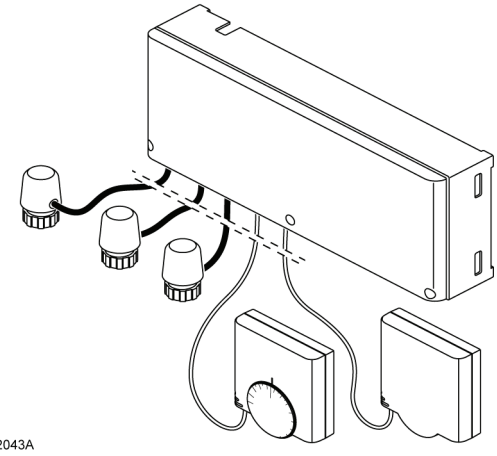
Pos.	Uponor designation	Description
A1	Uponor Controller, 6 Channels C-33 Wired	6-channel controller
A2	Uponor Controller, 12 Channels C-35 Wired	12-channel controller
B		Mounting screws and plugs
C		Installation and Operation Manual
D	Uponor Thermostat T-35	Thermostat
E	Uponor Thermostat T-37	Thermostat for floor sensor
F	Uponor Thermostat T-33	Public thermostat
G	Uponor Floor sensor	Floor sensor for Thermostats T-36,T-38, T-33 and T-37 (option)
H	Uponor Relay	Optional heating-cooling relay
I	Uponor Timer I-36	Optional timer
J	Uponor Thermostat T-38	Digital thermostat with timer functions
K	Uponor Thermostat T-36	Digital thermostat
L	Uponor Thermostat T-34	Thermostat flush

3.3.1 Controllers

There are two alternative controllers in Uponor Control System Wired. The figure below shows a controller with actuators and thermostats.



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Uponor Controller, 6 Channels C-33 Wired

The Uponor Controller, 6 Channels C-33 Wired controls up to 6 thermostats and 8 actuators connected to the hydraulic system of the installation.

The controller drives the actuators according to the information received from each thermostat and according to the system parameter settings.

The controller is typically located near the hydraulic system manifolds.

The window in the actuator shows when a valve is open or closed.

Uponor Controller, 12 Channels C-35 Wired

The Uponor Controller, 12 Channels C-35 Wired controls up to 12 thermostats and 14 actuators connected to the hydraulic system of the installation.

The controller drives the actuators according to the information received from each thermostat and according to the system parameters settings.

The controller is typically located near the hydraulic system manifolds.

The window in the actuator shows when a valve is open or closed.

Several extensions can be added on to the 12-channel controller:

- A timer can be used to add energy saving features in one or two independent timer zones
- If the installation is equipped with a cooling unit, Uponor Control System Wired can be run through a heating–cooling relay
- If the installation is equipped with a cooling unit, a dew point sensor can be connected to the control system

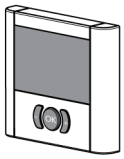
3.3.2 Thermostats

The following thermostats can be used in the system:

- Uponor Thermostat T-36 wired
- Uponor Thermostat T-38 wired
- Uponor Thermostat T-34 wired
- Uponor Thermostat T-35 wired
- Uponor Thermostat T-37 wired
- Uponor Thermostat T-33 Public wired

Uponor Thermostats T-36 and T-38 wired

Main characteristics:



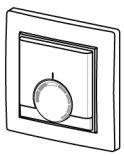
- Temperature setpoint is adjusted with buttons
- Room temperature regulation with internal sensor
- Optional floor sensor can be connected to the thermostat
- Minimum or maximum floor temperature is adjusted with buttons
- Programmable to switch between Comfort and ECO modes
- Can be set to auto-balancing mode
- Customer programmable ECO–comfort mode (T-38 only)
- Can be set to permanent override mode
- Hidden reset
- Powered by controller (no batteries)

Display shows:

- Setpoint temperature
- Room temperature
- Floor temperature
- Controller mode
- Balancing mode
- Comfort or ECO mode
- Heating/Cooling demand
- Holiday mode (T-38 only)
- Time and Date (T-38 only)
- Lock indication
- Standby mode

Uponor Thermostat T-34 wired

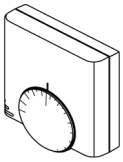
Main characteristics:



- Temperature setpoint is adjusted with a dial
- The dial is removed to set minimum and maximum setpoints on the thermostat
- The comfort zone is indicated by the non-filled (outlined) mark on the dial
- Powered by controller (no batteries)
- Flush mounted

Uponor Thermostats T-35 and T-37 wired

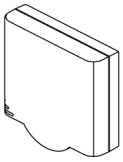
Main characteristics:



- Temperature setpoint is adjusted with a dial
- The dial is removed to set minimum and maximum setpoints on the thermostat
- The 21 °C position is marked with a longer mark on the dial
- Optional floor sensor can be connected to the thermostat (T-37 only)
- Minimum or maximum floor temperature is adjusted with a potentiometer behind the cover (T-37 only)

Uponor Thermostat T-33 Public wired

Thermostat T-33 is intended for public locations.
Main characteristics:



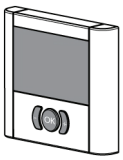
- Temperature setpoint is adjusted with an internal potentiometer behind the cover
- Optional floor sensor can be connected to the thermostat
- Minimum or maximum floor temperature is adjusted with a potentiometer behind the cover
- The cover is removed to set minimum and maximum setpoints on the thermostat

3.3.3 Timer

Uponor Timer I-36 can be connected to control the system.

Uponor Timer I-36 wired

Main characteristics:



- Two zones programming ECO–comfort mode
- Pre-recorded modifiable programs for working days/weekend/week
- Date and time, with summer-winter change, power failure proof
- Lock mode, standby mode
- Can be set to permanent override mode
- Programmable to switch between Comfort and ECO modes
- Hidden reset
- Dry contact input for forced ECO mode
- Powered by controller (no batteries)

Display shows:

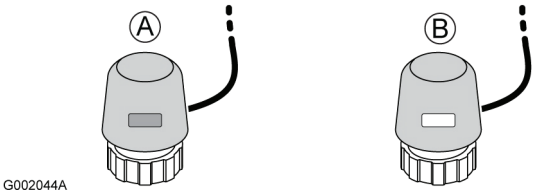
- Room temperature in two zones
- Comfort or ECO mode
- Holiday mode
- Time and Date
- Lock indication
- Standby mode

3.3.4 Uponor Actuators

Uponor actuators are mounted on top of the valves of the manifolds

When the thermostat senses that the temperature has fallen below the setpoint, the controller sends a signal to the actuator to open the valve. The indicator window on the actuator turns bright.

When the thermostat senses that the temperature has risen above the setpoint, the controller sends a signal to the actuator to close the valve. The indicator window on the actuator turns dark.



A Actuator has closed the valve – dark indicator

B Actuator has opened the valve – bright indicator

3.4 Function

Uponor Control System Wired is used to control an underfloor heating system in a house. It can also control a combined heating and cooling system.

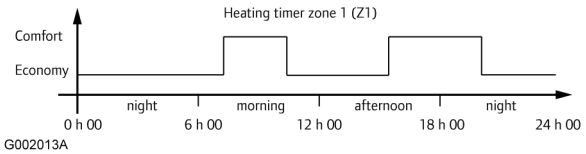
The thermostats that are connected to the controller control the actuators that are mounted on the manifolds.

For example in a heating system, if a thermostat senses that the temperature in a room falls below the setpoint, then the controller regulates the actuators to open more and increase the heat flow in the floor pipes in the room.

If a thermostat senses that the temperature in a room rises above the setpoint, then the controller regulates the actuators to close more and decrease the heat flow in the floor pipes in the room.

3.4.1 Comfort and economy modes

If a timer is connected to the controller, it is possible to regulate the temperature between two different temperatures, that is **comfort** mode and **economy** mode. See example below.



The diagram shows that the system delivers heating in comfort mode in the morning and afternoon, but the system enters economy mode during night and in the middle of the day, when the house normally is empty.

The controller can use two different timer patterns to regulate the temperature in different ways in different rooms.

4 Installing the Uponor Control System Wired

Installation procedure

Uponor recommends that you follow the steps described below to achieve the best possible installation:

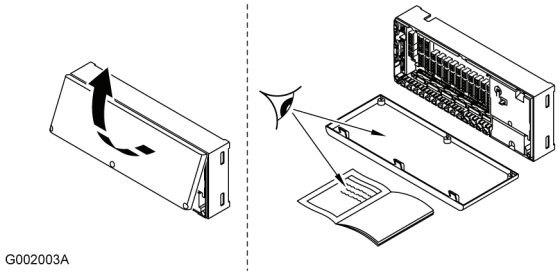
Section	Description
4.1	Preparing the installation
4.2	Installing Uponor Controller C-33 and Uponor Controller C-35
4.3	Connecting components to controller
4.4	Connection examples
4.5	Connecting the controller to AC power
5	Installing thermostats
6	Installing Uponor Timer I-36 for C-35
7	Finishing installation

4.1 Preparing the installation

Before starting the installation:

1. Verify the contents of the package with the packing list.

   See also section 3.3, page 7 for identification of the components.
2. Check whether a floor sensor has been mounted.
3. Study the wiring diagram in the foldout or inside the controller cover.



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4. Ensure that the controller can be installed close to the manifold pair.

   Note that each manifold pair must have its own controller.
5. Ensure that a power outlet is available for the connection of the controller to the mains.
6. Ensure that the mounting locations for Uponor Control System Wired components are protected from running and dripping water.
7. Include one thermostat for every room fitted with a floor heating (one thermostat can control several loops of the floor heating).

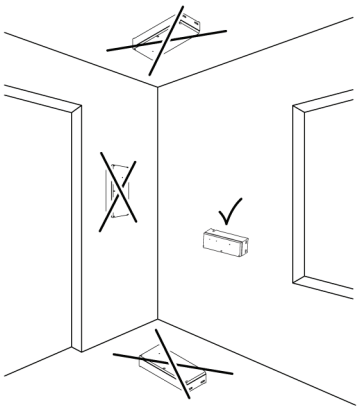
4.2 Installing Uponor Controller C-33 and Uponor Controller C-35

Selecting a mounting position

1. Check that the cover of the controller can easily be removed.
2. Check that the connectors and switches are easily accessible.

CAUTION

The Uponor Controllers C-33 and C-35 must be mounted horizontally. There is a risk for overheating if a controller is mounted vertically or on a horizontal surface.



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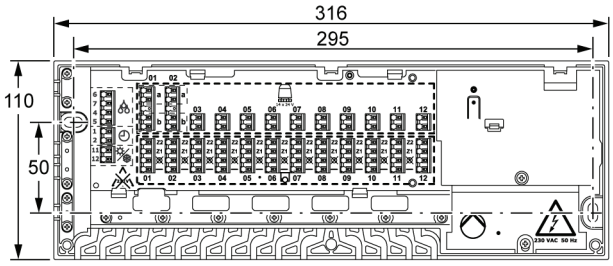
Mounting Uponor Controller C-33 and Uponor Controller C-35

Uponor Controller C-33 and Uponor Controller C-35 are delivered in kits including screws and wall plugs. The figure below shows unit dimensions and mounting hole positions.



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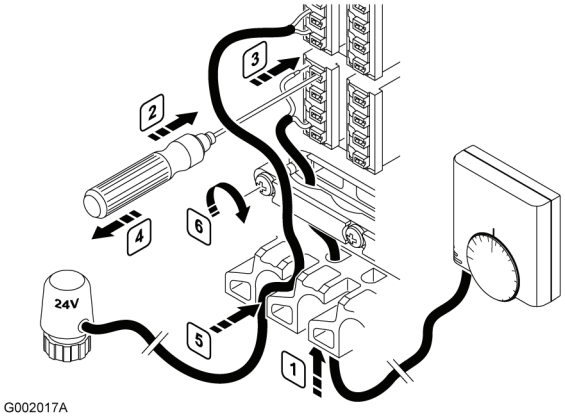
4.3 Connecting components to controller

This section describes how to connect Uponor Control System Wired components to the controller.

4.3.1 General directions for connecting devices to the controller

Connect thermostats, actuators and other components to the controller as follows. Use the figure below for guidance to the instructions.

1. Lead the cables from the devices through cable entries in the controller frame and if applicable, then through the cable clamps. See figure below.



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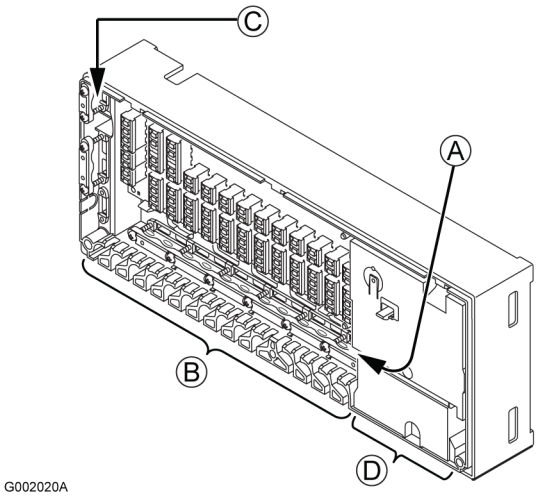
2. Press, without turning, with a thin screwdriver, on the white button of the quick connector.
3. Insert a wire in the quick connector.
4. Remove the screwdriver.
5. Lead the cables from the actuators through openings in the upper row of cable entries in the controller and connect the wires as described in steps 3. and 4.
6. Tighten the screws of the cable clamps to fix the thermostat cable.



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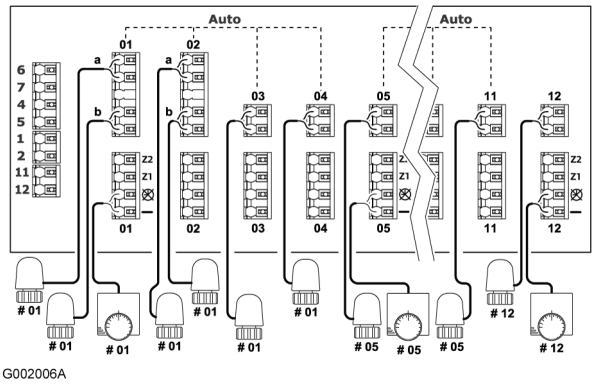
A	Cable entries and cable clamps for thermostats
B	Cable entries for actuators
C	Cable entries and cable clamps for heating/cooling relay, timer, and condense sensor
D	Cable entries and cable clamps for 230 V AC compartment

4.3.2 Auto linking

One thermostat can control of several actuators.

In the example below, the thermostat #01 is connected to the controller on connector row 01. All actuators on rows 01 to 04 are controlled from the same thermostat.

The next thermostat, #05, controls the actuators on rows 05 to 11 and thermostat #12 controls the actuator on row 12.



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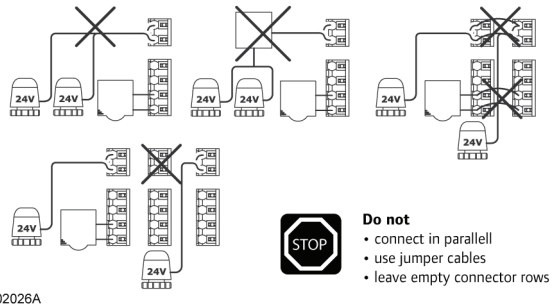
The controller senses automatically where the thermostats and the actuators are connected, this is called auto linking.

Auto linking rules

In order to make the auto linking of the controller to work correctly, the following restrictions apply:

- Actuators must not be connected in parallel
- Actuators must not be linked with jumper cables
- The first thermostat must always be connected to the controller on connector row **01**
- There must never be any empty connector row between groups of thermostats and actuators
- Empty connector rows are only allowed after the last actuator in the last group of thermostat and actuators, that is in the end of the connector field



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NOTE!
Any disregard to follow the auto linking rules will result in erroneous function of the controller.

4.3.3 Connecting thermostats and actuators to Uponor Controller C-33

Uponor Controller C-33 can only be used for heating. One to six thermostats and one to eight actuators can be connected to this controller.

To connect the first thermostat with actuators to the controller, do this:

1. Follow the general instructions in section 4.3.1 for connecting devices to the controller.
2. Ensure that the conditions for the auto-linking function are met when connecting the thermostats and actuators. See section 4.3.2 Auto linking, page 11.
3. See the wiring diagram on the foldout page for connector positions.
4. For each thermostat, connect one wire of the thermostat to position **1** and the other wire to position **2**. See table below.

   Use cables with 2×0.5 mm^2 wires for the thermostats.

Pos.	Label	Heating
1	—	Common terminal
2	⊗	No timer control

NOTE!
The two wires from the thermostat are non-polarized.

5. Connect actuators controlled by the same thermostat in groups. See the wiring diagram on the foldout page for connector positions.

NOTE!
The two wires from the actuator are non-polarized.

See section 4.4.1 Uponor Controller C-33 for a connection example.

4.3.4 Connecting thermostats and actuators to Uponor Controller C-35

Uponor Controller C-35 can be used for both heating and cooling. One to twelve thermostats and one to fourteen actuators can be connected to this controller.

To connect thermostats to the controller, do this:

1. Follow the general instructions in section 4.3.1 for connecting devices to the controller.
2. Ensure that the conditions for the auto-linking function are met when connecting the thermostats and actuators. See section 4.3.2 Auto linking, page 11.
3. See the wiring diagram on the foldout page for connector positions.
4. For each thermostat, connect one wire of the thermostat to position 1 and the other wire to one of the positions 2, 3, or 4. See table below.

   Use cables with 2×0.5 mm^2 wires for the thermostats.

Pos.	Label	Heating	Cooling
1	—	Common terminal	Common terminal
2	⊗	No timer control	No timer control
3	**Z1**	Timer control zone 1	Timer control
4	**Z2**	Timer control zone 2	No cooling for this room

NOTE!
The two wires from the thermostat are non-polarized.

Explanations to the different controller functions

—	Common terminal. One wire from the thermostat must always be connected to this position.
⊗	Thermostats must always be connected to this position with the second wire if the controller is not provided with a timer. This position must also be used for thermostats if the timer function is not to be used in the related room.
Z1	Thermostats can be connected to this position to use the timer function in the related room. The timer is used to switch the temperature between two temperature levels, **comfort** and **ECO** (economy level). See section 10 Operating Uponor Timer I-36, page 33 for programming details.
Z2	**Heating mode** The Z2 position is an alternative position for connecting thermostats to use the timer function. It is possible to have two different timer schemes for different rooms in a house. See section 10 Operating Uponor Timer I-36, page 33 for programming details. **Heating and cooling mode** When the thermostat is connected to position Z2, the cooling function is disabled in the related room. The heating function is working as described in **Heating mode** above.

See sections 4.4.2 Uponor Controller C-35 with three thermostats and without timer, 4.4.4 Uponor Controller C-35 with four thermostats and timer, and 4.4.5 Uponor Controller C-35 with four thermostats, timer and heating–cooling switch for connection examples.

4.3.5 Connecting a timer

Uponor Control System Wired can be equipped with a timer to add energy-saving features and define independent zones. The timer has two programming zones. Each zone offers four programming options, including one that can be personalized, thus enabling different programmes to be created for each day of the week.

NOTE!
The timer is not available for Uponor Controller C-33.

To connect a timer to the controller, do this:

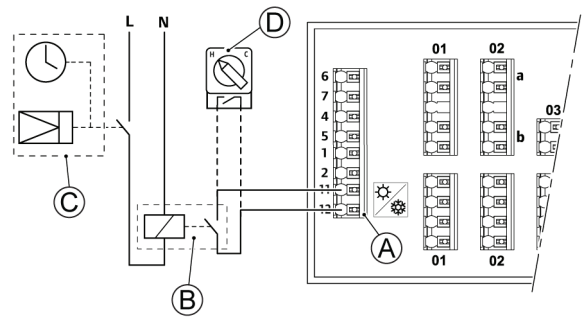
1. Follow the general instructions in section 4.3.1 for connecting devices to the controller.
2. See the wiring diagram on the foldout page for connector positions.
3. Connect the timer to positions 1 and 2, ⏲.
4. Tighten the screws of the cable clamps to fix the timer cable.

See section 4.4.4 Uponor Controller C-35 with four thermostats and timer for a connection example.

4.3.6 Connecting a heating–cooling switch

If the installation is equipped with a cooling unit, the Uponor Control System Wired can be run through a heating–cooling switch.

The controller heating–cooling input operates with the connection of a dry contact that can be realized with, for example, a relay controlled by an additional regulation system or a two-position switch. See figure below.



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Pos.	Description
A	Connectors for the heating–cooling switch
B	Heating–cooling switch realized with a relay
C	Circuitry with timer controlling the relay C
D	Alternative heating–cooling switch using a manual

To connect a heating–cooling switch to the controller, do this:

1. Follow the general instructions in section 4.3.1 for connecting devices to the controller.
2. See the wiring diagram on the foldout page for connector positions.
3. Connect the heating–cooling switch to positions 11 and 12, ☼/❄.
4. Tighten the screws of the cable clamps to fix the heating–cooling cable.

See section 4.4.5 Uponor Controller C-35 with four thermostats, timer and heating–cooling switch for a connection example.

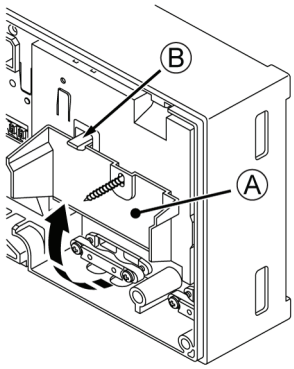
4.3.7 Connecting a circulation pump

Uponor Control System Wired can operate a circulation pump on heating–cooling demand. The pump will stop when there is no heat or cooling demand.

The controller controls the circulation pump via connection on terminal block (dry contact). There is no power for the pump in the box, only the dry contact.

To connect a circulation pump to the controller, do this:

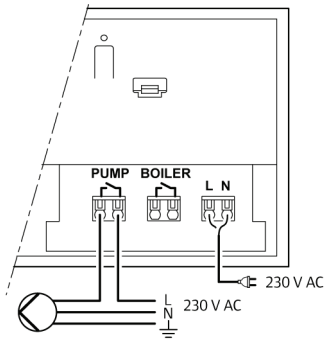
1. Follow the general instructions in section 4.3.1 for connecting devices to the controller.
2. See the wiring diagram on the foldout page for connector positions.
3. Ensure the power is disconnected from the controller and the circulation pump.
4. Open the lower lid (**A**) of the 230V compartment in the controller and fix it to the latch (**B**)on the upper part of the lid.



G002024A

5. Connect the circulation pump to connectors labelled **PUMP**.

NOTE!
There is no power in the controller to supply the pump. The pump connector in the controller provides only a dry contact to switch off and on the power connection to the pump.



G002023A

6. Tighten the screws of the cable clamps to fix the pump cable.
7. Close the lid and tighten the fixing screw.

4.3.8 Connecting a boiler

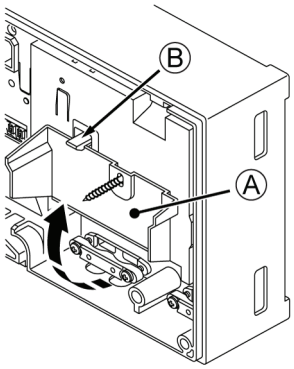
If the Uponor Controller C-33or C-35 includes a boiler relay, it can be used to either directly fire the heat source or power open a two port motorised zone valve positioned on the flow to the underfloor heating manifold. If the relay is used to power open a zone valve then the volt free auxiliary contacts on the zone valve should be used to fire the heat source.

Alternatively, the boiler relay can be used to send a demand signal to an electrically operated water temperature controller. The additional contacts on the water temperature controller should then be used to fire the heat source.

To connect a boiler to the controller, do this:

1. Follow the general instructions in section 4.3.1 for connecting devices to the controller.
2. See the wiring diagram on the foldout page for connector positions.
3. Ensure the power is disconnected from the controller and the boiler.

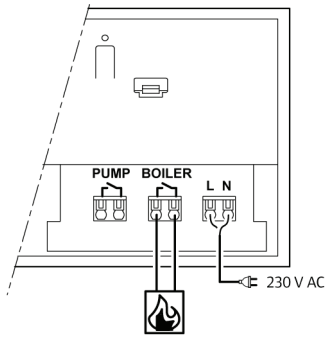
4. Open the lower lid (**A**) of the 230V compartment in the controller and fix it to the latch (**B**)on the upper part of the lid.



G002024A

5. Connect the boiler to connectors labelled **BOILER**.

NOTE!
There is no power in the controller to supply the boiler. The boiler connector in the controller provides only a dry contact to switch off and on the power connection to the boiler.



G002502A

6. Tighten the screws of the cable clamps to fix the boiler cable.
7. Close the lid and tighten the fixing screw.

4.4 Connection examples

The following sections describe a few connection examples:

4.4.1 Uponor Controller C-33

A connection example of Uponor Controller C-33 is shown in the figure below.

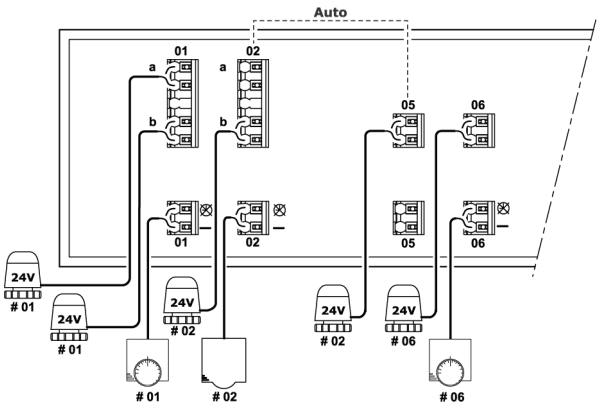
- Thermostat #01 controls the actuators on channels 01a and 01b
- Thermostat #02 controls the actuators on channels 02b, and 05
- Thermostat #06 controls the actuator on channel 06

NOTE!
The timer is not available for the 6-channel controller.

NOTE!
The economy mode (ECO) is not available for the 6-channel controller.

The installation will work in a standard way with the thermostats regulating each room according to their set temperatures.

See also the wiring diagram on the foldout page.



G002007A

NOTE!
When connecting thermostats and actuators to the Uponor Controller, the auto-linking rules must always be followed strictly. See section 4.3.2 Auto linking, page 11

Any disregard to follow the auto linking rules will result in erroneous function of the Uponor Controller.

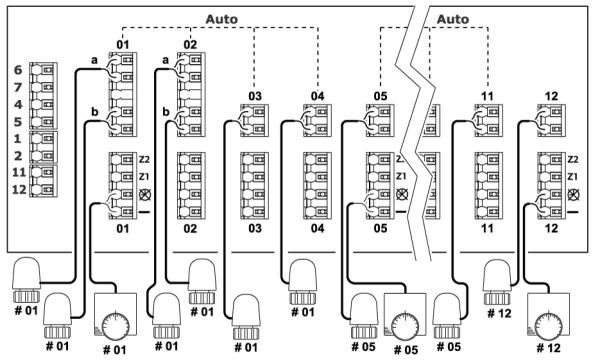
4.4.2 Uponor Controller C-35 with three thermostats and without timer

A connection example of Uponor Controller C-35 using three thermostats is shown in the figure below.

- Thermostat #01 controls the actuators on channels 01a, 01b, 02a, 02b, 03 and 04
- Thermostat #05 controls all actuators on channels 05 to 11
- Thermostat #12 controls the actuator on channel 12

The installation will work in a standard way with the thermostats regulating each room according to their set temperatures.

See also the wiring diagram on the foldout page.



G002006A

NOTE!
When connecting thermostats and actuators to the Uponor Controller, the auto-linking rules must always be followed strictly. See section 4.3.2 Auto linking, page 11

Any disregard to follow the auto linking rules will result in erroneous function of the Uponor Controller.

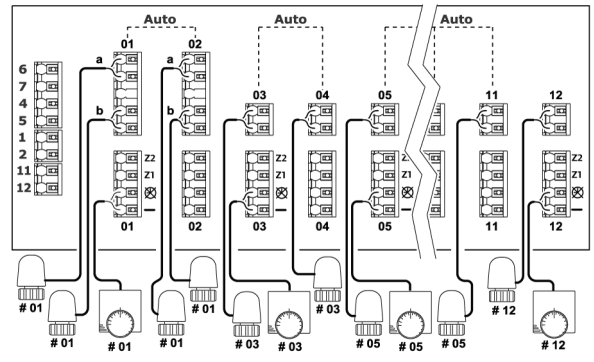
4.4.3 Uponor Controller C-35 with four thermostats and without timer

A connection example of Uponor Controller C-35 using four thermostats is shown in the figure below.

- Thermostat #01 controls the actuators on channels 01a, 01b, 02a,and 02b
- Thermostat #03 controls the actuators on channels 03 and 04
- Thermostat #05 controls all actuators on channels 05 to 11
- Thermostat #12 controls the actuator on channel 12

The installation will work in a standard way with the thermostats regulating each room according to their set temperatures.

See also the wiring diagram on the foldout page.



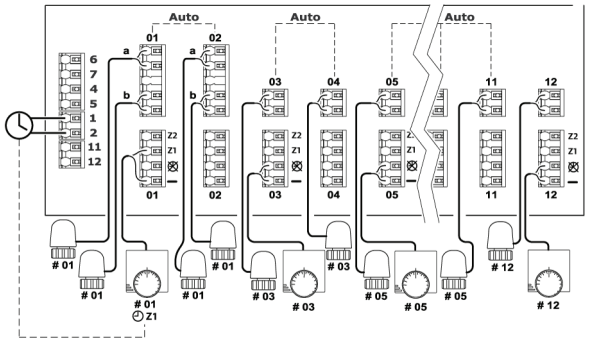
G002008A

NOTE!
When connecting thermostats and actuators to the Uponor Controller, the auto-linking rules must always be followed strictly. See section 4.3.2 Auto linking, page 11

Any disregard to follow the auto linking rules will result in erroneous function of the Uponor Controller.

4.4.4 Uponor Controller C-35 with four thermostats and timer

A connection example of Uponor Controller C-35 using four thermostats is shown in the figure below.



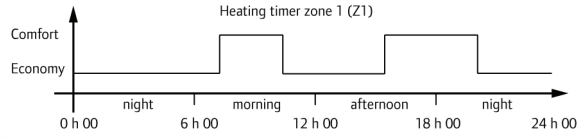
G002011A

Thermostats and actuators

- Thermostat #01 controls the actuators on channels 01a, 01b, 02a,and 02b
- Thermostat #03 controls the actuators on channels 03 and 04
- Thermostat #05 controls all actuators on channels 05 to 11
- Thermostat #12 controls the actuator on channel 12

Timer

- The timer controls the switching between comfort and economy modes for Thermostat #01, see example diagram below



G002013A

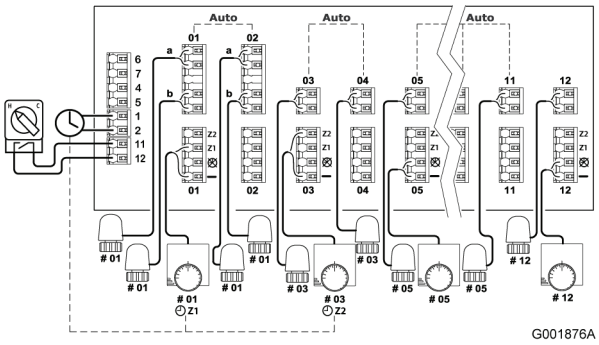
See also the wiring diagram on the foldout page.

NOTE!
When connecting thermostats and actuators to the Uponor Controller, the auto-linking rules must always be followed strictly. See section 4.3.2 Auto linking, page 11

Any disregard to follow the auto linking rules will result in erroneous function of the Uponor Controller.

4.4.5 Uponor Controller C-35 with four thermostats, timer and heating–cooling switch

A connection example of Uponor Controller C-35 using four thermostats, a timer, and a heating–cooling switch is shown in the figure below.



See also the wiring diagram on the foldout page.

Thermostats and actuators

- Thermostat #01 controls the actuators on channels 01a, 01b, 02a,and 02b and is connected to timer zone 1 (Z1)
- Thermostat #03 controls the actuators on channels 03 and 04 and is connected to timer zone 2
- Thermostat #05 controls all actuators on channels 05 to 11
- Thermostat #12 controls the actuator on channel 12

Heating–cooling switch

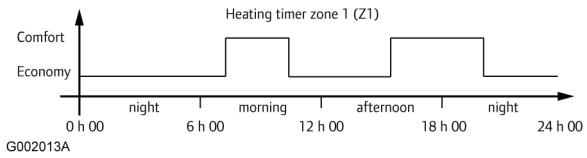
The heating–cooling switch is manually or automatically controlled and is used to switch the operation of the controller between heating and cooling modes.

Timer

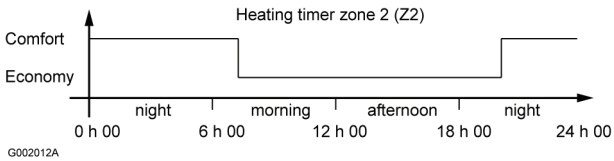
The timer controls the switching between comfort and economy modes in timer zone 1 (Z1), to which thermostat #01is connected, and timer zone 2 (Z2), to which thermostat #03 is connected.

Heating mode

- Thermostat #01 is connected to the ▬ (Common terminal) and **Z1** connectors. The heating will switch between comfort and economy mode according to timing pattern Z1.



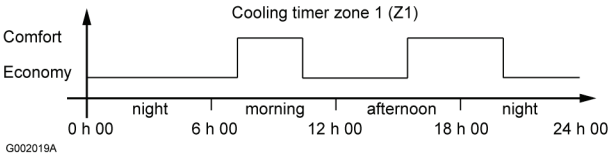
- Thermostat #03 is connected to the ▬ (Common terminal) and **Z2** (cool off) connectors. The heating will switch between comfort and economy mode according to timing pattern Z2.



- Thermostats #05 and #12 are connected to the ▬ (Common terminal) and ⊗ connectors (No timer control). Heating is generated in comfort mode constantly.

Cooling mode

- Thermostat #01 is connected to the ▬ (Common terminal) and **Z1** connectors. The cooling will switch between comfort and economy mode according to timing pattern Z1.



- Thermostat #03 is connected to the ▬ (Common terminal) and **Z2** (cooling off) connectors. In cooling mode no cooling will be applied in this room.
- Thermostats #05 and #12 are connected to the ▬ (Common terminal) and ⊗ connectors (No timer control). Cooling is generated in comfort mode constantly.

NOTE!
When connecting thermostats and actuators to the Uponor Controller, the auto-linking rules must always be followed strictly. See section 4.3.2 Auto linking, page 11

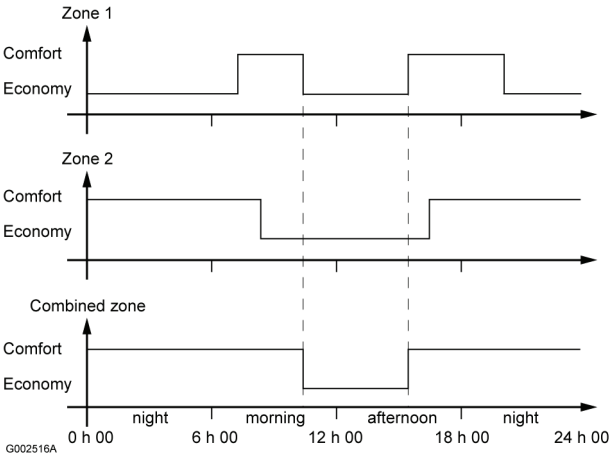
Any disregard to follow the auto linking rules will result in erroneous function of the Uponor Controller.

Cooling mode with Uponor Timer I-36

If a Uponor Timer I-36 is connected to the Uponor Controller C-35 and the system is operating in cooling mode, then zone 1 and zone 2 will automatically be combined to a single zone. The combined zone thus covers both zone 1 and zone 2.

In this combined zone, the comfort mode always has priority over the economy mode. Whenever either zone 1 or zone 2 is programmed for comfort mode, the combined zone will operate in comfort mode.

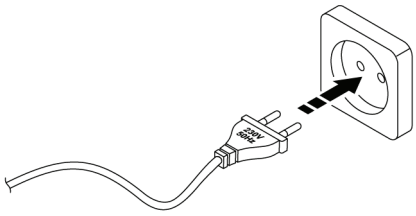
The combined zone will operate in economy mode only if both zones 1 and 2 are programmed for economy mode. See diagram below.



4.5 Connecting the controller to AC power

To conclude the installation of the controller:

1. Check that all wiring is complete and correct:
   - Thermostats
   - Actuators
   - Timer
   - Heating–cooling switch
   - Circulation pump
2. Ensure that the 230 V AC compartment of the controller is closed and the fixing screw is tightened.
3. Connect the power cable to a 230 V AC wall socket.



G002027A

5 Installing thermostats

The following thermostats can be connected to Uponor Control System Wired:

- Uponor Digital Thermostat T-36 Wired
- Uponor Programmable Digital Thermostat T-38 Wired
- Uponor Thermostat Flush T-34 Wired:
- Uponor Thermostat T-35 Wired:
- Uponor Thermostat T-37 Wired:
- Uponor Thermostat Public T-33 Wired:

Analog thermostats

- Uponor Thermostats T-34 and T-35:

  The temperature is adjusted with the dial. The dial must be removed to set the minimum and maximum setpoints on the thermostat.

  The two thermostats are identical in function but differ in design.

- Uponor Thermostat T-37:

  The temperature is adjusted with the dial. The potentiometers used for the settings are protected with a cover. The dial and the cover must be removed to set the minimum and maximum setpoints on the thermostat.

  The thermostat can also be used to connect an optional floor sensor.

- Uponor Thermostat T-33:

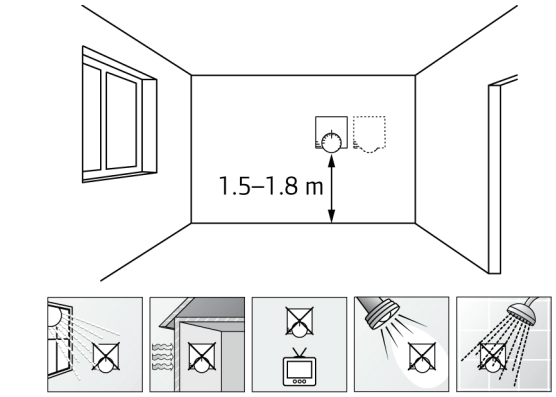
  This thermostat is designed for public location. The potentiometers used for the settings are protected with a cover.

  The thermostat can also be used to connect an optional floor sensor.

5.1 Selecting locations for thermostats

To select a good location for a thermostat:

1. Select an indoor wall and a position 1.5 m to 1.8 m above the floor.
2. Ensure that the thermostat is away from direct solar radiation.
3. Ensure that the thermostat will not be heated through the wall from sunshine.
4. Ensure that the thermostat is away from any source of heat, for example television set, electronic equipment, fireplace, spotlights, and so on.
5. Ensure that the thermostat is away from any source of humidity and water splashes. (IP20)



G002031A

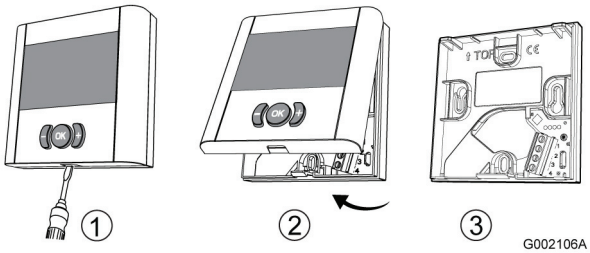
5.2 Installing Uponor Thermostats T-36 and T-38

Uponor Thermostats T-36 and T-38 are digital thermostats with three buttons on the front to set the setpoint temperature.

For instructions to operate the thermostats, see section 9 Operating digital thermostats, page 26.

5.2.1 Opening the thermostats

1. Gently press the tab at the bottom of the thermostat housing.
2. Lift off the top part from the mounting frame.

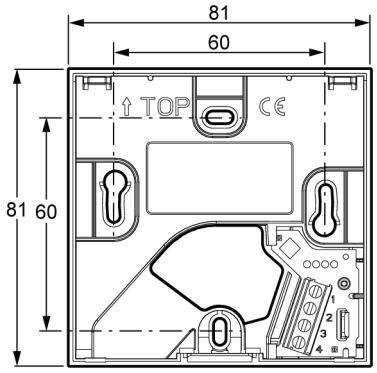


G002106A

5.2.2 Mounting the thermostats

Uponor Thermostats T-36 and T-38 are delivered in kits including screws and plugs.

The figure below shows required space for the thermostats and mounting hole positions.

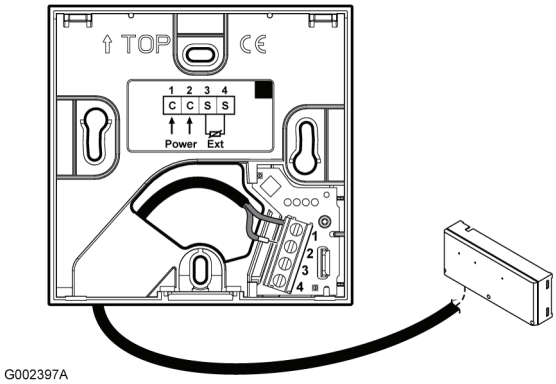


G002396A

5.2.3 Connecting thermostat to controller

To connect the thermostat to the controller:

1. Insert the two wires of the thermostat cable into the connector terminals labelled **1** and **2**.
2. Tighten the screws fixing the wires in the terminal block.



G002397A

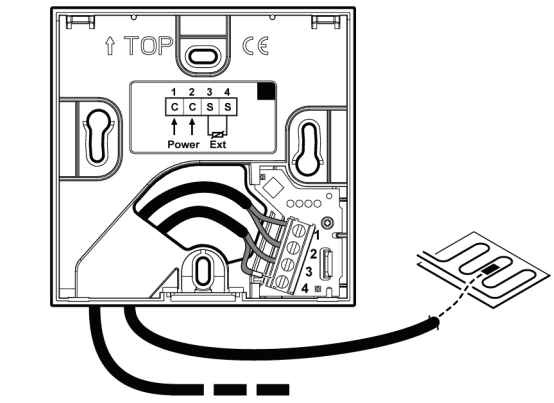
Connecting the cable to the controller is described in section 4.3 Connecting components to controller, page 10.

5.2.4 Connecting an optional external sensor

It is possible to connect a floor sensor or a remote indoor sensor to Uponor Thermostats T-36 and T-38.

1. Insert the two wires of the sensor cable into the connector terminals labelled **3** and **4**.
2. Tighten the screws fixing the wires in the terminal block.

   The figure below shows how to connect a floor sensor.



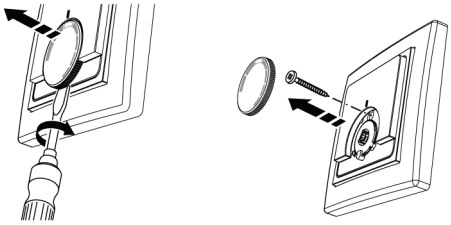
G002398A

5.3 Installing Uponor Thermostat T-34

Uponor Thermostat T-34 is a flush mounted, analog thermostat with a dial on the front to set the setpoint temperature.

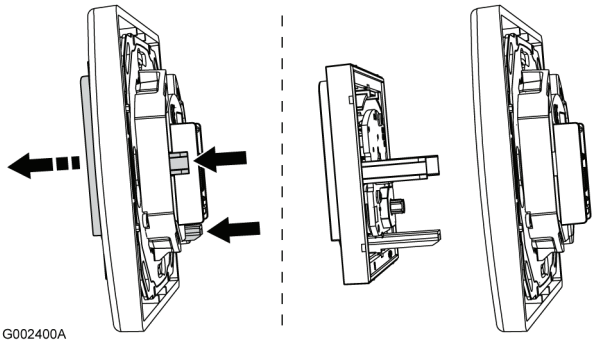
5.3.1 Opening the thermostats

1. Remove the dial and unscrew the fixing screw, see illustration below.



G002485A

2. At the back of the thermostat, gently push the three guides (two indicated in the figure below) to separate the electronics part from the mounting frame.

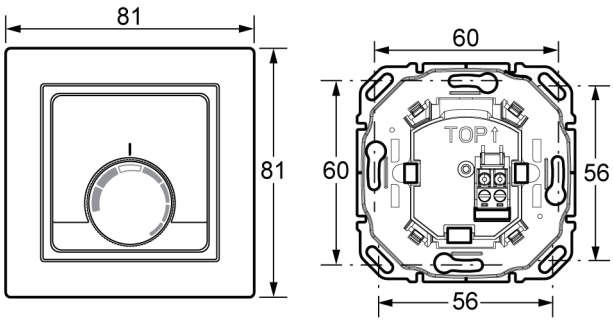


G002400A

5.3.2 Mounting the thermostats

Uponor Thermostat T-34 is delivered in a kit including screws and plugs.

The figure below shows required space for the thermostat and mounting hole positions.

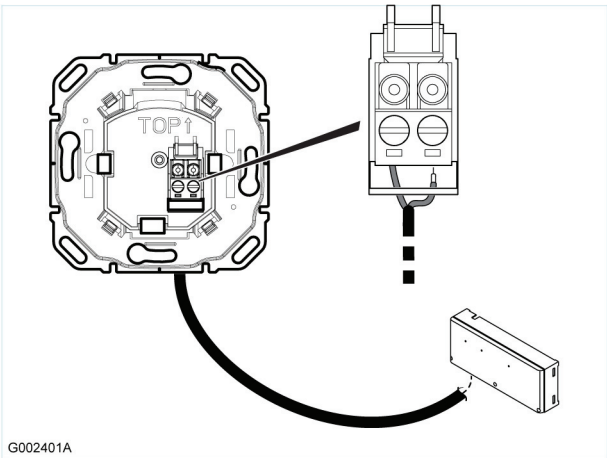


G002399A

5.3.3 Connecting thermostat to controller

To connect the thermostat to the controller:

1. Insert the two wires of the thermostat cable into the connector terminals.
2. Tighten the screws fixing the wires in the terminal block.



Connecting the cable to the controller is described in section 4.3 Connecting components to controller, page 10.

5.4 Installing Uponor Thermostats T-35, T-33, and T-37

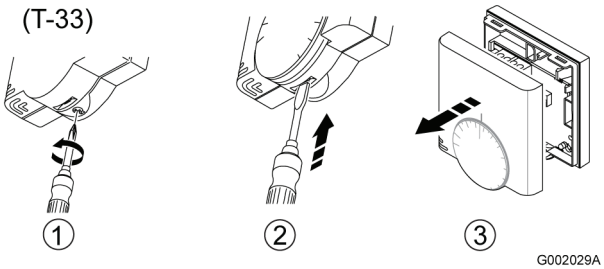
The three thermostat types Thermostat T-35, T-33 Public, and T--37 are similar in design but have the following differentiatng characteristics:

Characteristic	T-35	T-33	T-37
Setpoint adjusted with dial	Yes	No	Yes
Setpoint adjusted with internal potentiometer	No	Yes	No
Optional connection of floor sensor	No	Yes	Yes

5.4.1 Opening the thermostats

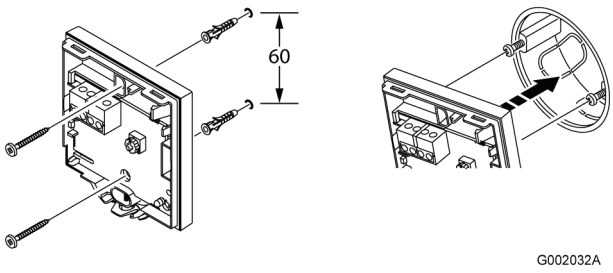
To open the thermostats:

1. (T-33 only) Unscrew the screw fixing the cover to thermostat box.
2. Insert a flat-bladed screwdriver from underneath and push it gently to release the latch.
3. Pull off the thermostat cover.



5.4.2 Mounting thermostats onto a wall

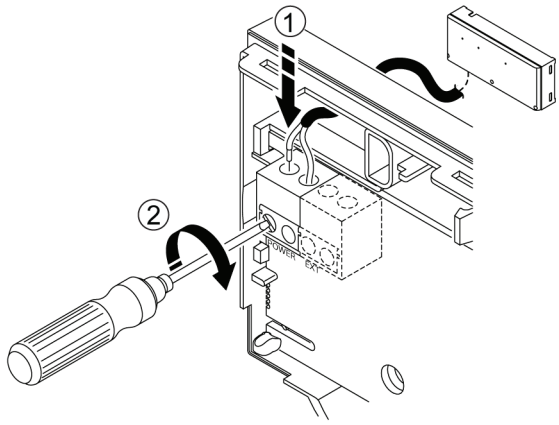
The Uponor thermostats are delivered in kits including screws and wall plugs. The Uponor thermostats can be mounted either directly onto a wall or using a 60 mm European wall box. See figure below.



5.4.3 Connecting thermostats to controller

To connect the thermostat to the controller:

1. Insert the two wires of the thermostat cable into the connector labelled **POWER**.
2. Tighten the screws fixing the wires in the connector.



Setting the room temperature potentiometer in Uponor Thermostat T-33

In Uponor Thermostat T-33 the temperature setpoint is adjusted with a potentiometer.

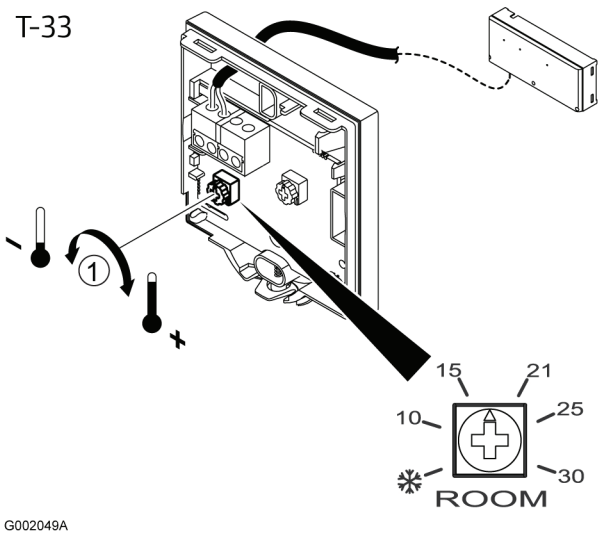
- Minimum temperature range: +5 °C to +30 °C

NOTE!

The frost protection symbol, ❄, denotes the minimum temperature, +5 °C.

To set the room sensor potentiometer:

1. Use a cross-headed screwdriver to set the potentiometer. See figure below.



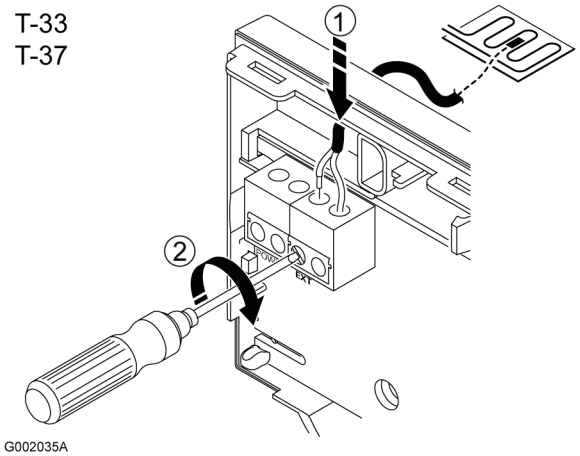
G002049A

5.4.4 Connecting optional floor sensor

Uponor Thermostats T-33 and T-37 allow a floor sensor to be fitted to the system. The temperatures thus measured ensure a more efficient management of the system.

Wiring the floor sensor

1. Insert the two wires of the floor-sensor cable into the connector labelled **EXT**.
2. Tighten the screws fixing the wires in the connector.



G002035A

Setting the floor sensor potentiometer

When a floor sensor is connected to the thermostat to control the temperature of the floor, the limitation of the floor temperature can be adjusted with a potentiometer. The floor sensor setting overrides the thermostat.

It is possible to set the floor sensor for either a maximum temperature or a minimum temperature:

- Minimum temperature range: +5 °C to +30 °C

NOTE!

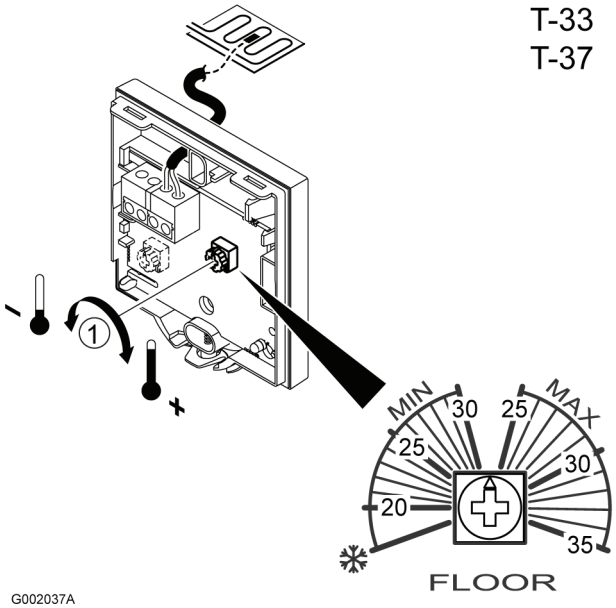
The frost protection symbol, ❄, denotes the minimum temperature, +5 °C.

- Maximum temperature range: +25 °C to +35 °C

When the maximum temperature setting is used, the frost protection is also active. This means that the floor temperature will never fall below +5 °C.

To set the floor sensor potentiometer:

1. Use a cross-headed screwdriver to set the potentiometer. See figure below.



G002037A

6 Installing Uponor Timer I-36 for C-35

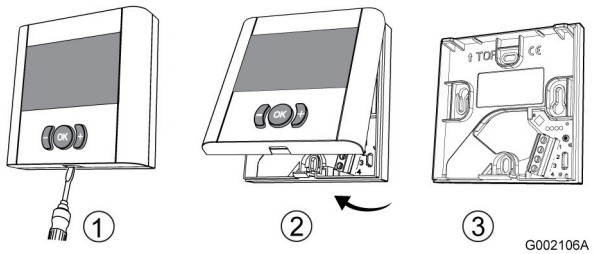
Uponor Timer I-36 for C-35 is a digital timer with three buttons on the front to adjust various timing functions.

For instructions how to operate the thermostats, see section 9 Operating digital thermostats, page 26.

6.1 Opening Uponor Timer I-36

To open Uponor Timer I-36:

1. Gently press the tab at the bottom of the thermostat housing.
2. Lift off the top part from the mounting frame.

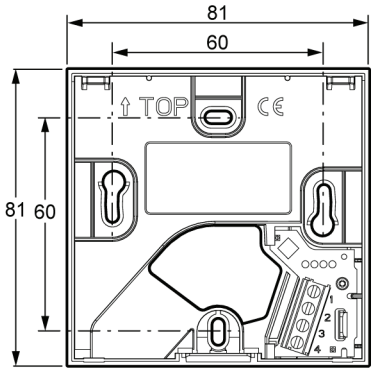


G002106A

6.2 Mounting Uponor Timer I-36

Uponor Timer I-36 is delivered in a kit including screws and plugs.

The figure below shows required space for the thermostats and mounting hole positions.

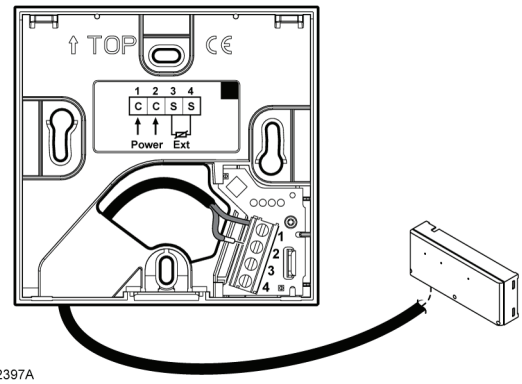


G002396A

6.3 Connecting Timer I-36 to controller

To connect Uponor Timer I-36 to the controller:

1. Insert the two wires of the timer cable into the connector terminals labelled **1** and **2**.
2. Tighten the screws fixing the wires in the terminal block.



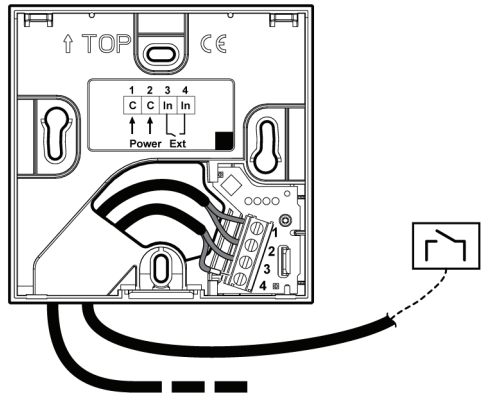
G002397A

Connecting the cable to the controller is described in section 4.3 Connecting components to controller, page 10.

6.4 Connecting an optional dry contact

It is possible to connect a dry contact input to Uponor Timer I-36, for example a Uponor Remote Access Module R-56.

1. Insert the two wires of the dry contact cable into the connector terminals labelled **3** and **4**.
2. Tighten the screws fixing the wires in the terminal block.



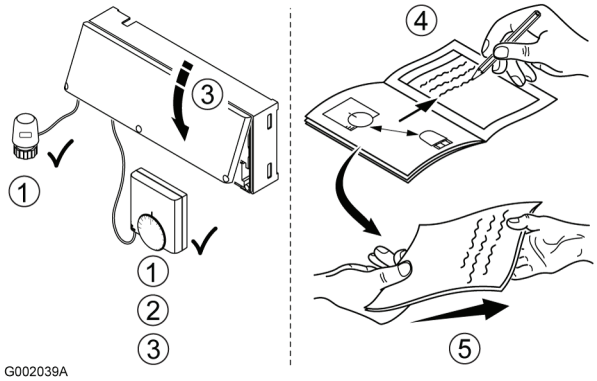
G002406A

7 Finishing installation

Make a complete check up of the installation:

1. Check that the thermostats are working correctly.

   Turn thermostat setpoints to maximum to obtain a heating demand and make sure that the actuators are running.
2. Reset the thermostats to the defined operating settings.
3. Close the covers of the controller and the thermostats.
4. Fill in the "Installation report" on the centre pages of booklet.
5. Give the manual and all information about the system to the user.



G002039A

8 Operating Uponor Control System Wired

The Uponor Control System Wired controls the floor heating/ cooling installation according to customer needs. Temperatures are adjusted with thermostats located in each room.

8.1 Principle of operation

As soon as the temperature measured at a thermostat is lower (heating mode) or higher (cooling mode) than the setpoint temperature, it sends this information to the controller, which opens the actuators for this room. Once the set temperature is reached, this information is sent and the actuators are closed.

8.2 Normal operation without optional timer

When the system is running in normal mode:

In Heating mode, the actuators are open when room temperatures are lower than the temperatures set on the thermostat.

In Cooling mode, the actuators are open when room temperatures are higher than the temperature set on the thermostat.The actuator position can be seen in the small windows of the actuators.

8.3 Operation with optional timer

The use of an optional timer optimizes the installation and conserves energy.

For information about operating the timer, see section 10 Operating Uponor Timer I-36, page 33.

8.4 Setting analog thermostats

The room temperature set point can be adjusted with a dial on Uponor Thermostats T-34, T-35, and T-37. See sub-sections below.

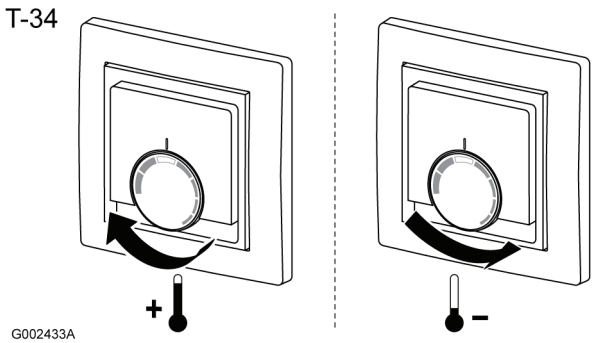
The room temperature set point can be adjusted with a potentiometer on Uponor Thermostat T-33. This requires that the cover is removed, see section 5.2.3 Connecting thermostat to controller, page 19.

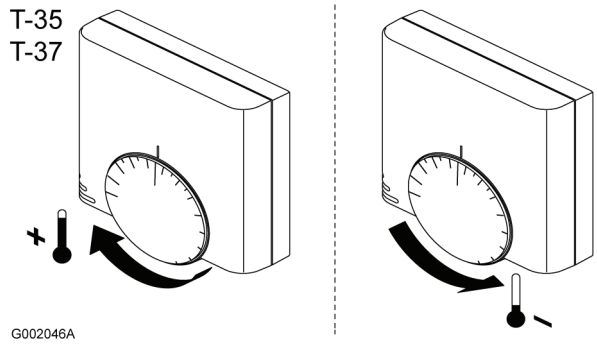
The floor temperature set point can be adjusted with a potentiometer on Uponor Thermostats T-33 and T-37. This requires that the cover is removed. See section Thermostat installation.

8.4.1 Changing the room temperature setpoint

To change the thermostat setpoint:

1. Turn the dial clockwise to get a higher temperature setpoint.
2. Turn the dial counter-clockwise to get a lower temperature setpoint.



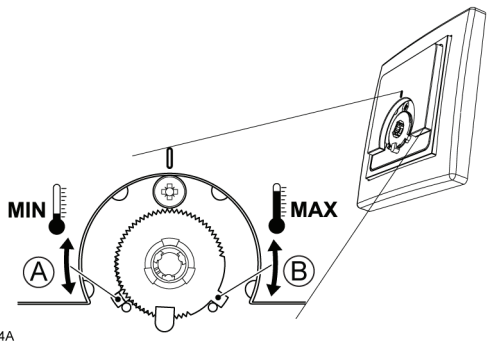


8.4.2 Setting minimum and maximum temperature limits

It is possible to set the minimum and maximum limits of the temperature adjustment. Inside the dial there are two plastic devices that can be set to limit the turning of the dial. See illustrations below.

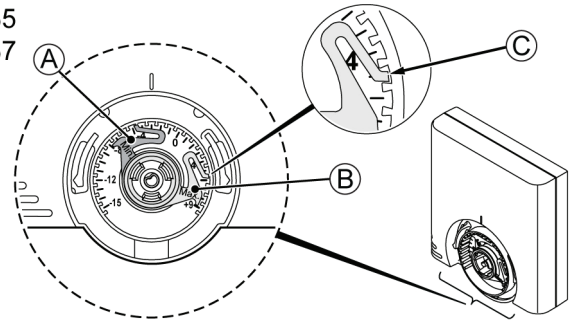
- The default temperature setpoint is 21 °C
- The minimum temperature setpoint of the blue stopper is +6 °C (21 - 15 = 6)
- The maximum temperature setpoint of the red stopper is +30 °C (21 + 9 = 30)
- If both stoppers are set to their extreme positions, then the dial can be set between +6 °C and +30 °C
- If both stoppers are set to the same position, then the dial is fixed and the temperature setpoint cannot be changed

T-34



G002434A

T-35
T-37

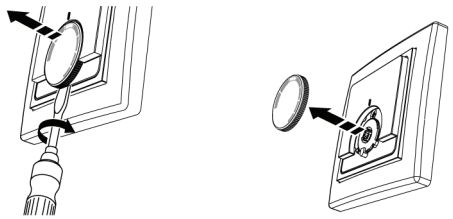


G002047A

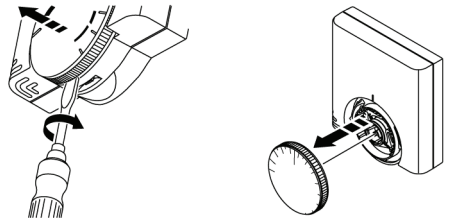
Pos.	Description
A	Minimum temperature setpoint stopper
B	Maximum temperature setpoint stopper
C	Notch in the thermostat housing for setting the stoppers in the selected stopping positions (T-35 and T-37 only)

1. Carefully remove the dial using a small, flat-bladed screwdriver.

T-34



T-35
T-37



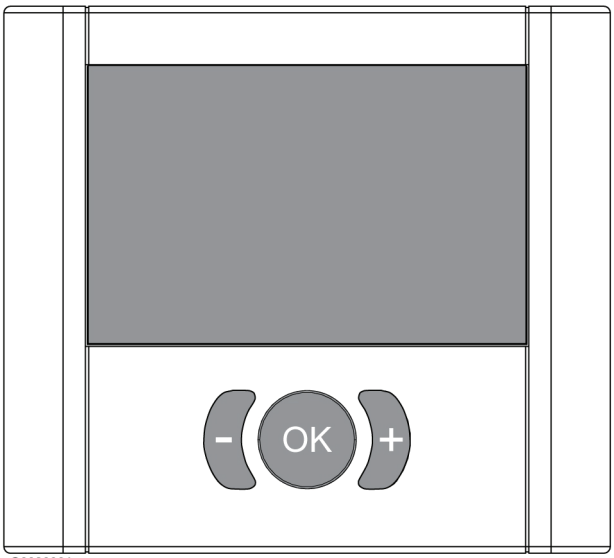
G002048B

2. Set the minimum temperature limit with the blue stopper (A).
3. Set the maximum temperature limit with the red stopper (B).

9 Operating digital thermostats

The digital thermostats T-36 and T-38 have a screen with a number of symbols for displaying different messages.

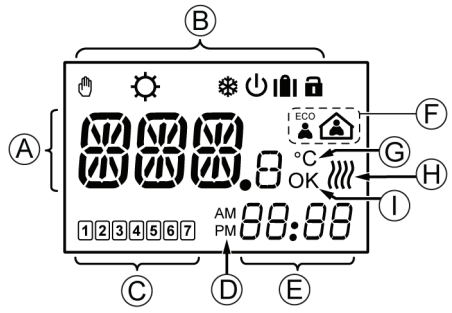
Below the screen there are three buttons for operating the thermostats.



G002098A

9.1 Screen layout

The figure below shows all possible symbols and characters that can be displayed on the screen:



G002440A

Pos.	Icon	Description
A	888	Message field using three alphanumerical characters
	888.8	Temperature reading using a + or - sign, two digital characters, a decimal point and a character showing either 0 or 5

Pos.	Icon	Description
B		Manual override. For example forced comfort or economy mode. Also used as a warning when defining the Min cooling temperaure in RFT mode.
		Heating mode
		Cooling mode
		Standby mode
		Holiday mode Used with empty house icon, see pos. **F** below.
		Lock mode. The three navigation buttons below the screen are locked.
C	1	T-38 only Weekday selected indicators 1 = Monday 7 = Sunday
	1	T-38 only Weekday deselected indicators
D	AM PM	T-38 only Indicator showing AM or PM when the thermostat is set to 12 h mode
		No indication when the thermostat is set to 24 h mode
E	88:88	T-38 only Digital clock
	88.88	Software version
F	ECO	Economy mode
		Comfort mode
		Holiday mode Used with suitcase icon, see pos. **B** above.
G	°C	Temperature unit, shown when the character group **A** shows a temperature

Pos.	Icon	Description
H		Heating/Cooling demand • 0 waves are shown if manual balancing is selected and the heating or cooling demand is off • 4 waves are shown if manual balancing is selected and the heating or cooling demand is on • 0 to 3 waves alternating sequentially if autobalancing is selected
I	OK	OK indicator. Confirms an activated function.

9.2 Operating buttons

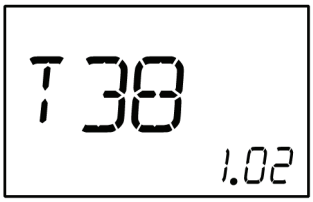
The following three buttons are used to operate the thermostats Uponor Thermostat:

Button	Description
	The OK button is used to: • Enter and exit the settings menu • Confirm a setting • Enter and exit comfort or economy mode
	The minus and plus sign buttons are used to: • Set the temperature setpoint • Toggle between comfort and economy modes • Modify settings in the settings menus • Enter and exit the lock mode (press and hold simultaneous for 3 seconds)

9.3 Power-up

At power-up the thermostat designation, T-36 or T-38, and the software version is shown for three seconds. Then the thermostat enters into run mode..

Example:



9.4 Run mode

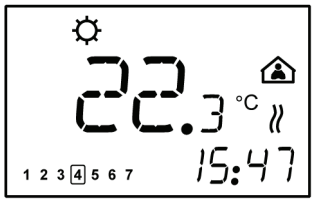
Run mode display description

In run mode the screen displays the following:

Note: The different modes given in the list below are explained in sections 9.5 to 9.15 below.

- Room temperature in degrees Celsius
- Heating or cooling icon depending on system working mode
- ECO or comfort mode icon depending on system working mode
- Heating/Cooling demand icon if a demand is present
- Standby icon if the system is set in standby mode
- Holiday mode icon and remaining days if system is set in holiday mode
- Lock mode icon if the thermostat is set in lock mode
- Manual override icon if the system is set in forced comfort or ECO mode
- If a connected floor sensor is faulty, this is indicated by a flashing star ✳ to the left of the displayed room temperature
- (T-38 only) Weekday and time

Example:



In the example above the following is displayed:

- System works in heating mode
- Room temperature is 22.3 °C
- System works in comfort mode
- System works in auto-balancing mode, heating demand is on
- Today is Thursday
- Time is 15:47

Changing temperature setpoint

To adjust the temperature setpoint of the current mode from the run mode screen:

1. Press the + or - button once.

   The screen shows the current setpoint flashing.
2. Press the + or - button repeatedly to adjust the setpointtemperature.

   When the new sepolnt is set, the screen returns to run mode after a few seconds, showing the room temperature.

Setting forced ECO or comfort mode

To set the system in forced ECO or comfort mode:

1. Press the **OK** button.

   The house icon starts flashing.
2. Press the + or - button to change from comfort to ECO mode or the other way around.
3. Press the **OK** button.

   The screen returns to run mode displaying the selected ECO or comfort mode and the manual override icon ✋.

To remove forced mode:

1. Press and hold the **OK** key for 3 seconds.

   The manual override icon ✋ disappears and the system returns to the mode, ECO or comfort, as defined by the programming.

9.5 Parameter and mode settings menu

To enter the parameter and mode settings menu:

1. Press and hold the **OK** button for three seconds to enter the settings menu.
   - T-38: The first menu, **CLK** (clock), is displayed
   - T-36: The first menu, **MOD** (mode), is displayed
2. Press the **+** button repeatedly to reach the other menus.

   The menus are presented in the following order:

   Uponor Thermostat T-36
   - **MOD** (regulation choices)
   - **BAL** (balancing mode)
   - **ECO** (economy mode)
   - **CAL** (calibration)
   - **OFF** (standby mode)

   Uponor Thermostat T-38
   - **CLK** (clock)
   - **PRG** (programming)
   - **HOL** (holiday mode)
   - **MOD** (regulation choices)
   - **BAL** (balancing mode)
   - **T °C** (temperature setpoint)
   - **CAL** (calibration)
   - **OFF** (standby mode)
3. Press the **-**button to run the menu sequence in opposite order.
4. Press and hold the **OK** button for three seconds to exit the settings menu.

9.6 CLK – Clock settings (T-38 only)

The clock menu is used to set date and time.

To set the clock parameters:

1. Press and hold the **OK** key for 3 seconds.

   The next screen displays **CLK** (clock).
2. Press **OK** to enter the clock menu.

   The screen displays **YR** (year) and four digits designating the year are blinking.
3. Press the **+** and - buttons to change the setting.
4. Press **OK** to confirm the setting.

   The screen displays **MTH** (month) and two digits designating the month are blinking.
5. Press the **+** and - buttons to change the setting.
6. Press **OK** to confirm the setting.

   The screen displays **DAY** (day) and two digits designating the date are blinking.
7. Press the **+** and - buttons to change the setting.
8. Press **OK** to confirm the setting.

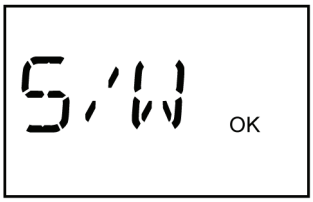
   The screen displays **TME** (time) and either **24:H** or **AM/PM 12:H**, designating the time format are blinking.
9. Press the **+** and - buttons to change the setting.
10. Press **OK** to confirm the setting.

    The screen displays **TME** (time) and four digits designating the time are blinking.
11. Press the **+** and - buttons to change the setting:
    - Press once and the time setting increments with a 1 minute step.
    - Press continuously and the time setting increments with 1 minute steps, after a few seconds increments are made with 10 minute steps and then 1 hour steps.
12. Press **OK** to confirm the setting.

    The screen displays **S/W** (summer-winter time).

    Two alternatives are selectable:
    - **S/W** and **OK** displayed: Automatic change of summer-winter time activated
    - **S/W** only displayed: Automatic change of summer-winter time dis-activated

    Example: Automatic summer-winter time change selected.



13. Press **OK** to confirm the setting and proceed to the next menu, **PRG**.

9.7 PRG – Programming (T-38 only)

The programming menu is used to adjust the settings for comfort and economy modes.

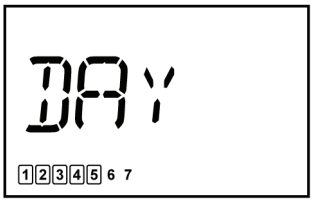
To change the programming:

1. When **PRG** is displayed, press **OK** to enter the menu.

   The next screen displays one of the following:
   - **ON**, programming is enabled (default setting)
   - **OFF**, programming is disabled
2. Press the **+** and - buttons to select the setting **ON** or **OFF**.

   Then select one of the following alternatives to proceed:
   a. From setting **ON**, press **OK** to start the programming, see step 3. below.
   b. From setting **OFF**, press **OK** to proceed to the next menu, see section 9.8 HOL – Holiday mode (T-38 only), page 29
3. When **PRG** is displayed, press **OK** to enter the menu.

   The group of days flashes (day numbers with frames).



4. Press + or - successively to select the group of days.

   There are three alternatives:
   - 1 2 3 4 5 6 7 Monday till Friday, default setting
   - 1 2 3 4 5 6 7 Monday till Saturday

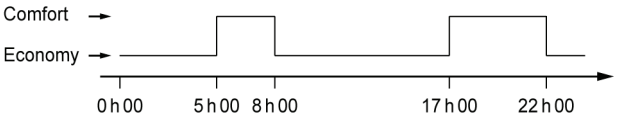
- 1 2 3 4 5 6 7 Monday till Sunday

5. Press **OK** to confirm the setting.

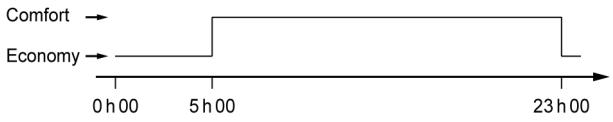
   The digital clock starts flashing.

6. Press and hold the **OK** key for 3 seconds to select the default schedule.

   The diagram below shows the default schedule for Monday till Friday or Monday till Saturday programming groups.



   The next diagram shows the default schedule for Monday till Sunday prgramming group.

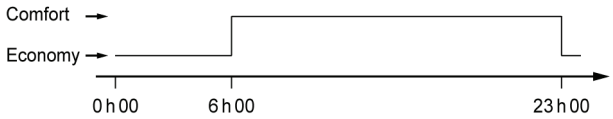


7. Press the **+** and - buttons to modify the default clock setting:
   - Press once and the time setting increments with a 1 minute step.
   - Press continuously and the time setting increments with 1 minute steps, after a few seconds increments are made with 10 minute steps and then 1 hour steps.
   - Set the clock to the time for the first comfort/economy changeover.
8. Press the **OK** key to change between comfort and economy mode at the desired time.

   Continue to the next comfort/economy changeover with the + button. Up to 5 changes in 24 hours are permitted.

9. Continue stepping the clock until midnight is passed.

   Depending on the selection made in step 4. above, the screen displays the following:
   - If the group Monday till Friday was selected, then 1 2 3 4 5 6 7 Saturday till Sunday is displayed.
   - If the group Monday till Saturday was selected, then 1 2 3 4 5 6 7 Sunday is displayed.
   - If the group Monday till Sunday was selected, then the screen displays the next menu, **HOL**, see section 9.8 HOL – Holiday mode (T-38 only).
10. Press and hold the **OK** key for 3 seconds to select the default schedule.



11. Press the **+** and - buttons to modify the default clock setting:
    - Press once and the time setting increments with a 1 minute step.
    - Press continuously and the time setting increments with 1 minute steps, after a few seconds increments are made with 10 minute steps and then 1 hour steps.
    - Set the clock to the time for the first comfort/economy changeover.
12. Press the **OK** key to change between comfort and economy mode at the desired time.

    Continue to the next comfort/economy changeover with the + button. Up to 5 changes in 24 hours are permitted.

13. Continue stepping the clock until midnight is passed.

    The screen displays the next menu, **HOL**.

9.8 HOL – Holiday mode (T-38 only)

The holiday mode menu is used to set a temperature setpoint that is used for a defined period when the house is empty.

Entering holiday mode

1. When **HOL** is displayed, press **OK** to enter the menu.

   The screen displays the following:
   - Heating ☼ or cooling ❄ icon depending on mode
   - Holiday suitcase icon
   - Ambient temperature
   - Empty house ⌂ icon flashing
   - 1 d flashing, designating the number of days the holiday mode is active
2. Press the **+** and - buttons to set the number of days the hday mode shall be active.
3. Press **OK** to confirm the setting.

   The holiday mode temperature setpoint and the empty house icon are flashing.

4. Press the **+** and - buttons to change the holiday mode temperature setpoint.

   Default setting: 18 °C

   Setting range: 10 – 30 °C

5. Press **OK** to confirm the setting.

   The screen enters run mode.

   The thermostat starts to countdown the days when holiday mode is active.

   The holiday mode ends automatically at 00:00 the day 0.

Exiting holiday mode

1. Press and hold the **OK** button for three seconds.

   The holiday mode is canceled and the run mode is entered.

9.9 MOD – Regulation choices

The regulation choices menu is used to set the regulation mode of the thermostat.

1. When **MOD** is displayed, press **OK** to enter the menu.

   The next screen displays one of the following:
   - **RT** – room sensor regulation
   - **RFT** – room sensor regulation with floor sensor limitation
   - **RS** – remote sensor regulation
2. Press the **+** or - button to change the setting.
3. Press **OK** to confirm the setting.

   If RT or **RS** regulation mode is selected, the next menu is displayed, see section 9.10 BAL – Balancing mode.

   If RFT regulation mode is selected, the next regulation setting, is displayed.

4. (Heating mode only)

   The symbol ☼ (heating mode) and **MAX** is displayed (maximum floor temperature limitation).

   4.1. Press **OK** to display the limitation temperature.

   4.2. Press the **+** and - buttons to change the setting.

   Default setting: 26 °C

   Setting range: 20 – 45 °C

   4.3. Press **OK** to confirm the setting.

5. (Heating and cooling modes)

   The heating ☼ or cooling ❄ icon and **MIN** is displayed (low floor temperature limitation).

   5.1. Press **OK** to display the limitation temperature.

   5.2. Press the **+** and - buttons to change the setting.

   Default setting: 20 °C

   Setting range: 10 – 30 °C

NOTE!
In cooling mode, if the **MIN** value is set below 14 °C, the hand ✋ and cooling ❄ icons will flash to indicate a warning for condensation.

   5.3. Press **OK** to confirm the setting and proceed to the next menu, **BAL**.

9.10 BAL – Balancing mode

The balancing mode menu is used to select between manual and auto-balancing.

The auto-balance function removes the need for manual balancing of the manifold at installation. The principle for automatic balancing is that the energy required by each loop is distributed in pulses. The length of the pulses in each loop is calculated from the actual heat demand of the room.

1. When **BAL** is displayed, press **OK** to enter the menu.

   The screen displays one of the following:

   - **MAN** – manual balancing
   - **AB** – automatic balancing

2. Press the **+** or - button to change the setting.
3. Press **OK** to confirm the setting and proceed to the next menu.

9.11 ECO – Economy mode (T-36 only)

The economy mode menu is used to set the setback temperature for economy mode.

In heating mode, the setback temperature is negative, in cooling mode it is positive.

Activation and deactivation of the economy is done from the run mode screen, see section 9.4 Run mode, page 27.

1. When **ECO** is displayed, press **OK** to enter the menu.

   The screen displays the setback temperature.

2. Press the **+** or - button to change the setting.

   Default setting: 4 °C

   Setting range: 0 – 11 °C

   Setting accuracy: 0.5 °C

3. Press **OK** to confirm the setting and proceed to the next menu.

9.12 T°C – Comfort and economy mode temperatures (T-38 only)

The menu for comfort and economy mode temperatures is used to set the setpoint temperature in comfort mode and the setback temperature in economy mode.

The settings will apply to the mode the system is set to work in, heating or cooling.

The default comfort and economy settings are used unless the user changes a setpoint from the run mode screen. In that case the latest setpoint setting will be applied.

Adjusted settings are saved in the thermostat.

1. When **T °C** is displayed, press **OK** to enter the menu.

   The screen displays the setpoint temperature and the comfort icon.

2. Press the + or -button to change the setting.

   Default setting, heating mode: 21 °C

   Default setting, cooling mode: 26 °C

   Setting range: 5 -30 °C

   Setting accuracy: 0.5 °C

3. Press **OK** to confirm the setting.

   The screen displays the economy setpoint temperature and the ECO icon.

4. Press the + or - button to change the setting.

   Default setting, heating mode: 17 °C

   Default setting, cooling mode: 30 °C

   Setting range: 5 - 30 °C

   Setting accuracy: 0.5 °C

5. Press OK to confirm the setting and proceed to the next menu, CAL

9.13 CAL – Calibration

The calibration menu is used to adjust the temperature sensor in the thermostat.

1. When **CAL** is displayed, press **OK** to enter the menu.

   The room temperature is displayed.

2. Press the **+** and - buttons to change the setting in 0.1 °C steps.

   Setting range: -3 °C to +3 °C

3. Press **OK** to confirm the setting and proceed to the next menu.

9.14 OFF – Standby mode

In standby mode, the regulation of the room temperature is disabled, but thermostat still displays the current room temperature.

Entering standby mode

1. Press **OK** to confirm the standby mode.

   The standby icon ⏻ and the room temperature is displayed.

Exiting standby mode

1. Press and hold **OK** for three seconds.

   The thermostat name and software version are displayed for two seconds. Then the thermostat enters run mode.

9.15 Lock mode

The three operating buttons can be locked to prevent unintentional use.

Entering lock mode

1. Press and hold the **+** and - buttons simultaneuously for three seconds.

   The lock icon appears. Other displayed information remains and the thermostat operates as set-up.

Exiting lock mode

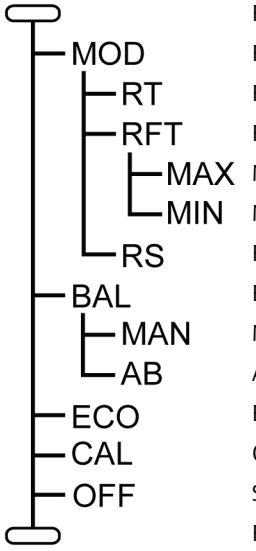
1. Press and hold the **+** and - buttons simultaneuously for three seconds.

   The lock icon disappears.

9.16 Menu trees

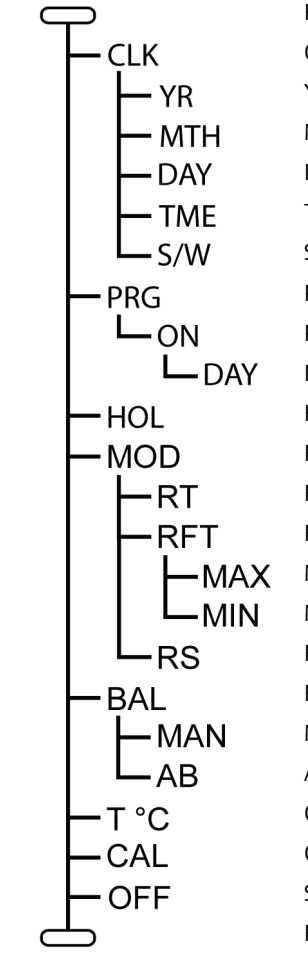
The following sections show the menu trees for Uponor Thermostats T-36 and T-38

9.16.1 Uponor Thermostat T-36



Run mode, see section 9.4, page 27
Regulation choices, see section, see section 9.9, page 29
Room sensor regulation, see section 9.9, page 29
Room sensor regulation with floor sensor limitation, see section 9.9, page 29
Maximum floor temperature limitation, see section 9.9, page 29
Minimum floor temperature limitation, see section 9.9, page 29
Remote sensor regulation, see section 9.9, page 29
Balancing mode, see section 9.10, page 30
Manual balancing, see section 9.10, page 30
Automatic balancing, see section 9.10, page 30
Economy mode, see section 9.11, page 30
Calibration, see section 9.13, page 30
Standby mode, see section 9.14, page 30
Run mode, see section 9.4, page 27

9.16.2 Uponor Thermostat T-38

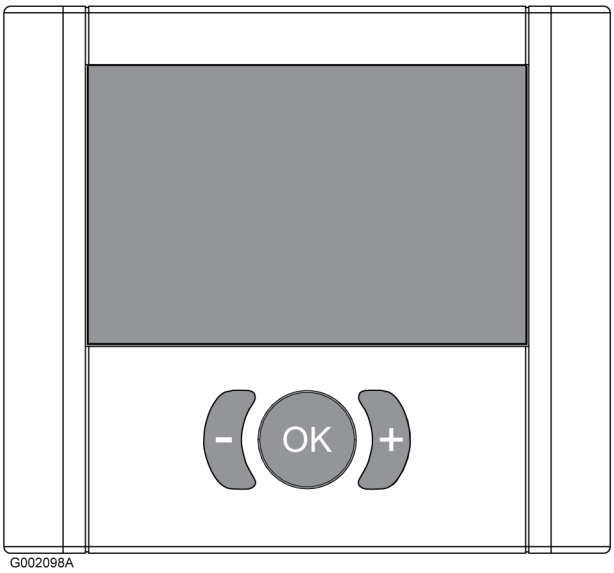


Run mode, see section 9.4, page 27
Clock settings, see section, see section 9.6, page 28
Year, see section, see section 9.6, page 28
Month, see section, see section 9.6, page 28
Day, see section, see section 9.6, page 28
Time, see section, see section 9.6, page 28
Summer-winter time, see section, see section 9.6, page 28
Programming mode, see section 9.7, page 28
Programming enable/disable, see section 9.7, page 28
Day group selection, see section 9.7, page 28
Holiday mode, see section 9.8, page 29
Regulation choices, see section, see section 9.9, page 29
Room sensor regulation, see section 9.9, page 29
Room sensor regulation with floor sensor limitation, see section 9.9, page 29
Maximum floor temperature limitation, see section 9.9, page 29
Minimum floor temperature limitation, see section 9.9, page 29
Remote sensor regulation, see section 9.9, page 29
Balancing mode, see section 9.10, page 30
Manual balancing, see section 9.10, page 30
Automatic balancing, see section 9.10, page 30
Comfort and economy mode temperatures, see section 9.12, page 30
Calibration, see section 9.13, page 30
Standby mode, see section 9.14, page 30
Run mode, see section 9.4, page 27

10 Operating Uponor Timer I-36

Uponor Timer I-36 has a screen with a number of icons and symbols for displaying messages.

Below the screen there are three buttons for operating Uponor Timer I-36.



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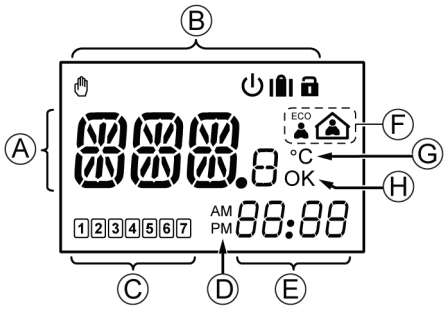
10.1 Screen layout

The figure below shows all possible symbols and characters that can be displayed on the screen:



G002483A

Pos.	Icon	Description
A	888	Message field using three alphanumerical characters
	888.8	Temperature reading using a + or - sign, two digital characters, a decimal point and a character showing either 0 or 5
B		Manual override. For example forced comfort or economy mode.
		Standby mode
		Holiday mode Used with empty house icon, see pos. **F** below.
		Lock mode. The three navigation buttons below the screen are locked.
C	1	Weekday selected indicators 1 = Monday 7 = Sunday
	1	Weekday deselected indicators
D	AM PM	Indicator showing AM or PM when the thermostat is set to 12 h mode
		No indication when the thermostat is set to 24 h mode
E	88:88	Digital clock
	88.88	Software version
F	ECO	Economy mode
		Comfort mode
		Holiday mode Used with suitcase icon, see pos. **B** above.
G	°C	Temperature unit, shown when the character group **A** shows a temperature
H	OK	OK indicator. Confirms an activated function.

10.2 Operating buttons

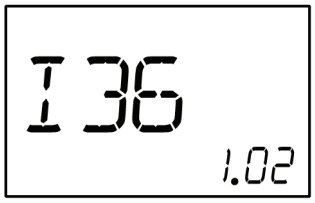
The following three buttons are used to operate the Uponor Timer I-36:

Button	Description
OK	The OK button is used to: • Enter and exit the settings menu • Confirm a setting • Select comfort or economy mode
- +	The minus and plus sign buttons are used to: • Toggle between comfort and economy modes • Modify settings in the settings menus • Enter and exit the lock mode (press and hold simultaneous for 3 seconds)

10.3 Power-up

At power-up the timer designation I-36 and the software version is shown for three seconds. Then the timer enters into run mode.

Example:



10.4 Run mode

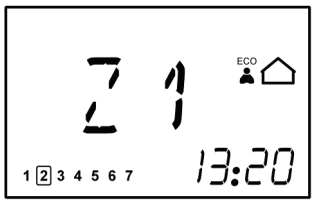
Run mode display description

In run mode the screen displays the following:

Note: The different modes given in the list below are explained in sections 10.5 to 10.10 below.

- Zone, **Z1** or **Z2**
- ECO or comfort mode icon depending on system working mode
- Standby icon if the system is set in standby mode
- Holiday mode icon and remaining days if system is set in holiday mode
- Lock mode icon if the timer is set in lock mode
- Manual override icon if the zone is set in forced comfort or ECO mode
- Weekday and time

Example:



In the example above the following is displayed:

- Zone Z1 is in economy mode
- Today is Tuesday
- Time is 13:20

Changing zone to be displayed

To change the zone to be displayed:

1. Press the + or - button.

   The screen changes to display the other zone, that is, from zone Z1 to Z2 or the other way around.

Setting forced ECO or comfort mode

To set the system in forced ECO or comfort mode:

1. Press the **OK** button.

   The house icon starts flashing.
2. Press the + or - button to change from comfort to ECO mode or the other way around.
3. Press the **OK** button.

   The screen returns to run mode displaying the selected ECO or comfort mode and the manual override icon.

To remove forced mode:

1. Press the **OK** button.

   The manual override icon disappears and the system returns to the mode, ECO or comfort, as defined by the programming.

Remote system controlled forced economy mode

Forced economy mode ina zone can be set from a remote external system such as the Uponor R-56 SMS module. Then the empty house and hand icon are flashing. In this case it is not possible to cancel the forced mode from the timer.

10.5 Parameter and mode settings menu

To enter the parameter and mode settings menu:

1. Press and hold the **OK** button for three seconds to enter the settings menu.

   The first menu, **CLK** (clock), is displayed
2. Press the **+** button repeatedly to reach the other menus.

   The menus are presented in the following order:
   - **CLK** (clock)
   - **PRG** (programming)
   - **HOL** (holiday mode)
   - **CAL** (calibration)
   - **OFF** (standby mode)
3. Press the **-**button to run the menu sequence in opposite order.
4. Press and hold the **OK** button for three seconds to exit the settings menu.

10.6 CLK – Clock settings

The clock menu is used to set date and time.

To set the clock parameters:

1. Press and hold the **OK** key for 3 seconds.

The screen displays **CLK** (clock).

2. Press **OK** to enter the clock menu.

   The screen displays **YR** (year) and four digits designating the year are blinking.

3. Press the **+** and - buttons to change the setting.
4. Press **OK** to confirm the setting.

   The screen displays **MTH** (month) and two digits designating the month are blinking.

5. Press the **+** and - buttons to change the setting.
6. Press **OK** to confirm the setting.

   The screen displays **DAY** (day) and two digits designating the date are blinking.

7. Press the **+** and - buttons to change the setting.
8. Press **OK** to confirm the setting.

   The screen displays **TME** (time) and either **24:H** or **AM/PM 12:H**, designating the time format are blinking.

9. Press the **+** and - buttons to change the setting.
10. Press **OK** to confirm the setting.

    The screen displays **TME** (time) and four digits designating the time are blinking.

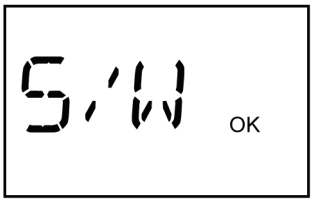
11. Press the **+** and - buttons to change the setting:
    - Press once and the time setting increments with a 1 minute step.
    - Press continuously and the time setting increments with 1 minute steps, after a few seconds increments are made with 10 minute steps and then 1 hour steps.
12. Press **OK** to confirm the setting.

    The screen displays **S/W** (summer-winter time).

    Two alternatives are selectable:

    - **S/W** and **OK** displayed: Automatic change of summer-winter time activated
    - **S/W** only displayed: Automatic change of summer-winter time dis-activated

    Example: Automatic summer-winter time change selected.



13. Press **OK** to confirm the setting and proceed to the next menu, **PRG**.

10.7 PRG – Programming

The programming menu is used to adjust the settings for comfort and economy modes.

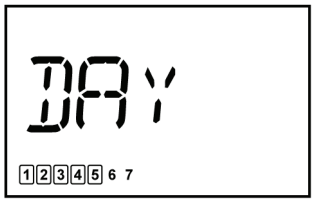
To change the programming:

1. When **PRG** is displayed, press **OK** to enter the menu.

   The screen displays the same zone, **Z1** or **Z2**, that was displayed in run mode.

2. If required, press the + or - button to change zone.
3. Press **OK** to start the programming.

   The group of days flashes (day numbers with frames).



4. Press + or - successively to change the group of days.

   There are three choices:

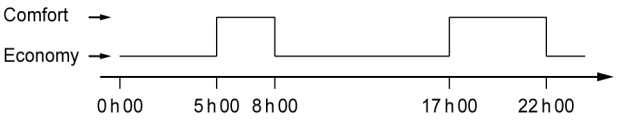
   - 1 2 3 4 5 6 7 Monday till Friday, default setting
   - 1 2 3 4 5 6 7 Monday till Saturday
   - 1 2 3 4 5 6 7 Monday till Sunday

5. Press **OK** to confirm the setting.

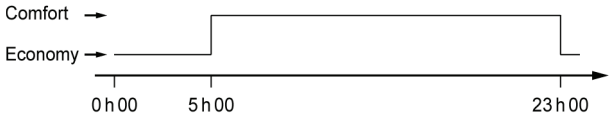
   The digital clock starts flashing.

6. Press and hold the **OK** key for 3 seconds to select the default schedule.

   The diagram below shows the default schedule for Monday till Friday or Monday till Saturday programming groups.



   The next diagram shows the default schedule for Monday till Sunday prgramming group.



7. Press the **+** and - buttons to modify the default clock setting:
   - Press once and the time setting increments with a 1 minute step.
   - Press continuously and the time setting increments with 1 minute steps, after a few seconds increments are made with 10 minute steps and then 1 hour steps.
   - Set the clock to the time for the first comfort/economy changeover.
8. Press the **OK** key to change between comfort and economy mode at the desired time.

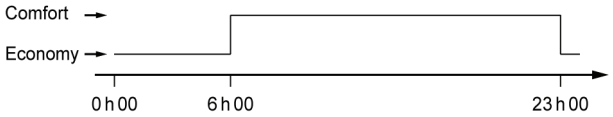
   Continue to the next comfort/economy changeover with the + button. Up to 5 changes in 24 hours are permitted.

9. Continue stepping the clock until midnight is passed.

   Depending on the selection made in step 4. above, the screen displays the following:

   - If the group Monday till Friday was selected, then 1 2 3 4 5 6 7 Saturday till Sunday is displayed.
   - If the group Monday till Saturday was selected, then 1 2 3 4 5 6 7 Sunday is displayed.
   - If the group Monday till Sunday was selected, then the screen displays the next menu, **HOL**, see section 10.8 HOL – Holiday mode.

10. Press and hold the **OK** key for 3 seconds to select the default schedule.



11. Press the **+** and - buttons to modify the default clock setting:
    - Press once and the time setting increments with a 1 minute step.
    - Press continuously and the time setting increments with 1 minute steps, after a few seconds increments are made with 10 minute steps and then 1 hour steps.
    - Set the clock to the time for the first comfort/economy changeover.
12. Press the **OK** key to change between comfort and economy mode at the desired time.

    Continue to the next comfort/economy changeover with the + button. Up to 5 changes in 24 hours are permitted.
13. Continue stepping the clock until midnight is passed.

    The screen displays the next menu, **HOL**.
14. Press the - key to get back to the **PRG** screen.
15. Press **OK** to enter the menu.
16. Press the + or - button to change zone.
17. Repeat steps 1. to 13. above for the other zone.
18. Continue stepping the clock until midnight is passed.

    The screen displays the next menu, **HOL**.

10.8 HOL – Holiday mode

Entering holiday mode

1. When **HOL** is displayed, press **OK** to enter the menu.

   The screen displays the following:
   - Holiday suitcase icon
   - Empty house icon flashing
   - 1 d flashing, designating the number of days the holiday mode is active
2. Press the **+** and - buttons to set the number of days the holiday mode shall be active.
3. Press **OK** to confirm the setting.

   The screen enters run mode.

   The timer starts to countdown the days when holiday mode is active.

   The holiday mode ends automatically at 00:00 the day 0.

Exiting holiday mode

1. Press and hold the **OK** button for three seconds.

   The holiday mode is canceled and the run mode is entered.

10.9 OFF – Standby mode

Entering standby mode

1. Press **OK** to confirm the standby mode.

   The standby icon ⏻ is displayed.

Exiting standby mode

1. Press and hold **OK** for three seconds.

   The timer name and software version are displayed for two seconds. Then the timer enters run mode.

10.10 Lock mode

The three operating buttons can be locked to prevent unintentional use.

Entering lock mode

1. Press and hold the **+** and - buttons simultaneuously for three seconds.

   The lock icon appears. Other displayed information remains and the timer operates as set-up.

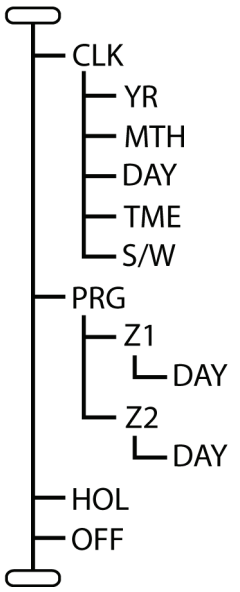
Exiting lock mode

1. Press and hold the **+** and - buttons simultaneuously for three seconds.

   The lock icon disappears.

10.11 Menu tree

The structure below illustrates the menu tree of Uponor Timer I-36.



Run mode, see section 10.4, page 34

Clock settings, see section, see section 10.6, page 34

Year, see section, see section 10.6, page 34

Month, see section, see section 10.6, page 34

Day, see section, see section 10.6, page 34

Time, see section, see section 10.6, page 34

Summer-winter time, see section, 10.6, page 34

Programming mode, see section 10.7, page 35

Zone 1, see section 10.7, page 35

Day group selection, see section 10.7, page 35

Zone 2, see section, see section 10.7, page 35

Day group selection, see section 10.7, page 35

Holiday mode, see section 10.8, page 36

Standby mode, see section 10.9, page 36

Run mode, see section 10.4, page 34

11 Maintenance

The maintenance of the Uponor Control System Wired includes the following:

- Manual preventive maintenance
- Automatic preventive maintenance
- Corrective maintenance

11.1 Manual preventive maintenance

The Uponor Control System Wired requires no preventive maintenance except cleaning:

1. Use a dry soft cloth to clean the Control System and all its components.

Stop!
Do not use any detergents to clean the Uponor System components.

11.2 Automatic preventive maintenance

Uponor Control System Wired is fitted with an automatic exercise function. This function consists of a test run designed to prevent the pump and actuators from seizing up due to inactivity.

This exercise is run every 6 days ±24 hours at random:

- The pump exercise operates only if the pump has not been activated since the last exercise. The pump is activated 3 minutes during the exercise.
- The actuators exercise operates only if the actuators have not been activated since the last exercise. The exercise consists of opening and completely closing the actuators:
  - 5 minutes to open an actuator
  - 9 minutes to close an actuator

11.3 Corrective maintenance

11.3.1 Fallback mode

If a thermostat is short-circuited or not detected, the controller executes the fallback mode to maintain the temperature in the room (heating or cooling) until the problem is resolved.In fallback mode the actuators will be controlled as follows:

- 7 min open
- 14 min closed

If the wire is broken, the preceding thermostat in order control the actuators. If this is not possible, the fallback mode will be activated.

11.3.2 Resetting the controller

If the controller does not work as expected, for example due to a hang-up, it can be reset to solve the problem:

1. Disconnect and reconnect the controller to AC power.

11.4 Troubleshooting

The table below shows problems and alarms that can occur with the Uponor Control System and describes solutions.

Problem	Indication	Probable cause	Solution
Room too cold in heating mode **or** Room too warm in cooling mode	The thermostat does not switch on or off with heating or cooling demand	The thermostat is connected on a bad channel	1. Check Installation report. 2. Check the wiring.
	The indicator window on the actuator does not turn white	The actuator does not open	1. Replace the actuator. 2. Check that the controller output is +24 V DC during heating demand.
	Check the thermostat setpoint	Thermostat setting too low	1. Change temperature set point. 2. Use maximum and minimum settings to protect system from consequences of unreasonable temperature settings.
	Temperature displayed on thermostat drops after thermostat is moved	Thermostat may be infl uenced by external heat source	1. Change location of thermostat.
	Check thermostat wiring	Thermostats of individual rooms are incorrectly connected to the controller	1. Correct thermostat connections in the controller
	Check thermostat and actuator connections in the controller	Autolinking in controller is violated by incorrect thermostat and/or actuator wiring	1. Correct thermostat and actuator connections in the controller
		The thermostat is out of order	1. Replace the thermostat.
	ECO mode is displayed on thermostat	ECO mode	1. Change ECO profile or assign another profile to room 2. Cancel rest of ECO period by pressing a thermostat key
	Holiday mod is displayed on thermostat	Holiday mode	1. Cancel Holiday mode
Floor is cold	No heat demand from underfloor heating system Room temperature OK but fl oor is cold	Room is heated by another heat source	1. Change thermostat position
All rooms are cold in heating mode **or** All rooms are warm in cooling mode	Holiday mod is displayed on timer	Holiday mode	1. Cancel Holiday mode
	ECO mode is displayed on timer	ECO mode	1. Change ECO profile or assign another profile to room 2. Cancel rest of ECO period by pressing a thermostat key
Uneven heating in the house	The heat appears to shift from zone to zone in the house.	Zones assigned to loops, actuators and thermostats do not correspond.	1. Check that loops are assigned to correct zones. 2. Check that the actuators are connected to the same zone in the controller as on the manifold. 3. Check that thermostatsare connected to the correct zone in the controller.

Problem	Indication	Probable cause	Solution
The system does not start	The power indicator in the controller is off	There is no AC power in the controller	1. Check that the controller is connected to AC power. 2. Check the wiring in the 230 V compartment. 3. Check that there is 230 V AC power in the wall socket.
	There is 230 V AC power in the wall socket but not in 230 V compartment	Faulty power cable	1. Replace power cable and plug.
Uneven fl oor temperature	Floor temperature is changing abnormally between hot and cold in heating mode	Supply water temperature too high	1. Check boiler or shunt
The thermostat is not supplied with +6–12 V DC	The thermostat does not switch on or off with heating or cooling demand	There is a problem with a terminal block	1. Check the terminal block.
	The thermostat does not switch on or off with heating or cooling demand	The thermostat cable is faulty	1. Replace the thermostat cable.
		The thermostat is out of order	1. Replace the thermostat.
Thermostat T-36 or T-38 is set in RFT for using a floor sensor or RS mode for using a remote sensor, but the sensor is not sensed	An asterisk ✳ is blinking on the screen	There is a short circuit in the sensor connection or the sensor is missing	1. Replace the thermostat cable.
		The sensor is missing	1. Reconnect the sensor or connect a missing sensor.
The Uponor Digital thermostat or Timer is blank after installation and powering up of the Uponor Controller C-33/ C-35	Nothing displayed on Uponor Digital thermostat or Uponor Timer screen	The Uponor Digital Thermostat back plate has been deformed or bent during installation. No power reaching the thermostat.	1. Loosen the screws on the wallplate so that thermostat's back part is not deformed. 2. Reinstall front part and confirm power-up after a few seconds.
Uponor thermostat T-38 will not follow the Z1 or Z2 timing schedule defined on Uponor Timer I-36	Uponor thermostat T-38 will not follow the Z1 or Z2 timing schedule	The Uponor thermostat T-38 is following the local time schedule as specified.	1. For the Uponor Thermostat T-38 to follow the Timer I-36 time schedule, the programming must be turned OFF as described in section 9.7, page 28.
The Uponor Timer I-36 will not follow the specified time scheduling	Flashing house and hand symbol	Uponor Timer I-36 has been forced into econony mode by a remote system	1. To return to nomal scheduling mode the dry contact input must be opened again by the remote system.

12 Technical data

Controller

- CE marking:
  - Low voltage tests: EN 60730-1* and EN 60730-2-1**
  - Electromagnetic compatibility (EMC) tests: EN 60730-1 and EN 301-489-3
- Power supply: 230 V AC +10/-15 %, 50 Hz
- Isolation: IP20
- Storage temperature: -20 °C to +70 °C
- Operating temperature: 0 °C to +55 °C
- Ambient relative humidity (RH): < 95 % at 20 °C
- Power consumption:
  - < 90 W in full charge
  - < 2 W without any charge
- Pump and boiler relay outputs:
  - 230 V AC +10 %/-15 %
  - < 250 VA
  - Only dry contact
- Heating–cooling and dew-point inputs: Only dry contact
- Actuator outputs:
  - 24 V DC ±5 %, 218 mA maximum per output 3 to 12
  - 24 V DC ±5 %, 436 mA maximum per output 1 and 2
- Dew-point sensor module output:
  - 24 V DC ±5 %, 40 mA maximum
- Supply connection: wires 1.5 mm² maximum
- Pump and boiler connection: wires 1.5 mm² maximum

**) 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*

Thermostats and Timer

- CE marking:
  - Low voltage tests: EN 60730-1* and EN 60730-2-9***
  - EMC tests: EN 60730-1 and EN 301-489-3
- Power supply: +6 to +12 V DC through wires from controller
- Isolation:
  - T-33, T-35, T-37: IP20
  - T-34, T-36, T-38, I-36: IP31
- Operating temperature:
  - T-33, T-35, T-37: 0 °C to 50 °C
  - T-34, T-36, T-38, I-36: 0 °C to 40 °C
- Storage temperature:
  - T-33, T-35, T-37: -20 °C to +70 °C
  - T-34, T-36, T-38, I-36: -10 °C to +60 °C
- Ambient relative humidity (RH):
  - T-33, T-35, T-37: < 95 % at 20 °C
  - T-34, T-36, T-38, I-36: < 85 %
- Consumption: < 5 mA
  - All thermostats: < 5 mA
  - Timer I-36: < 15 mA
- Backup time, T-38 and I-36 only: 2 h
- Wire thermostat to controller: 2×0.5 mm^2, < 50 m
- Wire thermostat to floor sensor: < 4 m

Usable in all Europe CE 0682

Declaration of conformity:

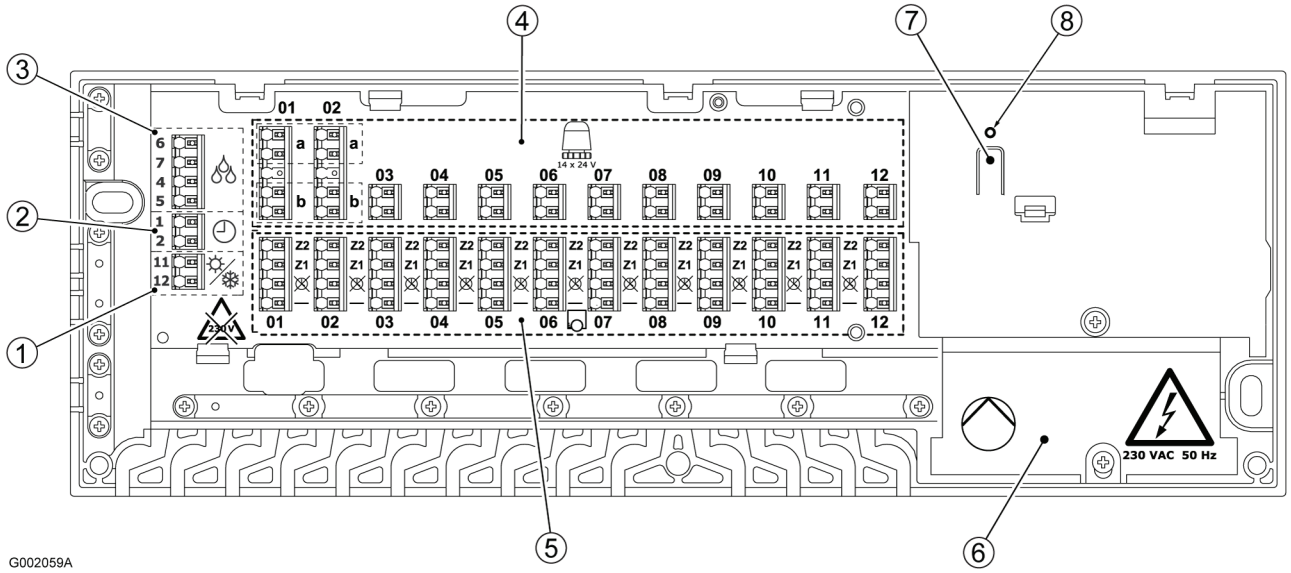
We hereby declare under our own responsibility that products dealt with by these instructions satisfy all essential demands linked to the R&TTE 1999/5/CE Directive dated March 1999.

Cables

The following table specifies cables to be used guaranteed without EMC problems:

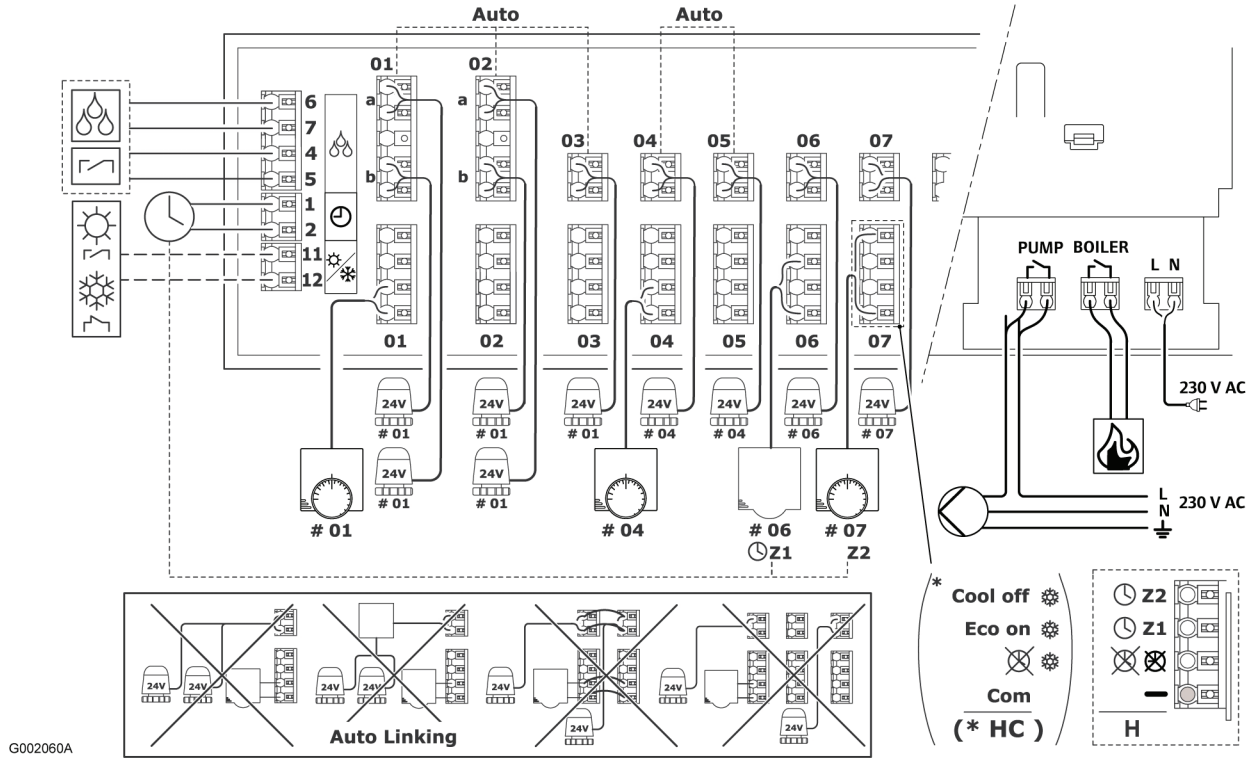
Cable	Standard cable length	Maximum cable length	Wire gauge
C-33/C-35 to actuator	0.75 m	2 m	0.2 – 1.5 mm^2
C-33/C-35 to thermostat	—	50 m	2×0.5 mm^2
Thermostat to external sensor	5 m	5 m	0.6 mm^2
Thermostat to floor sensor	4 m	4 m	0.75 mm^2
C-33/C-35 to heating/cooling relay	—	20 m	0.2 – 1.5 mm^2
C-33/C-35 to timer	—	5 m	0.2 – 1.5 mm^2
C-33/C-35 to dew-point sensor module	—	20 m	0.2 – 1.5 mm^2

Uponor Controller C-35 layout

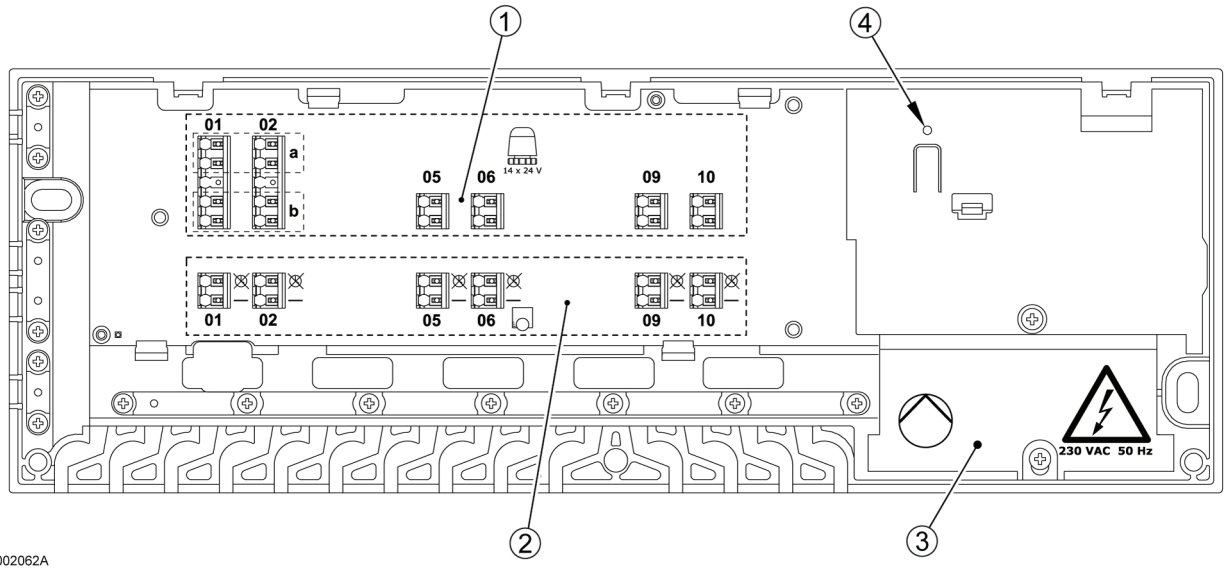


Pos.	Description	Pos.	Description
1	Connectors for heating–cooling relay	7	Push-button for Heating or Heating / Cooling mode
2	Connectors for timer	8	Bicoloured power indicator • Red = Heating mode • Green = Heating–cooling mode • Off = Power off
3	Connectors for dew-point sensor unit		
4	Connectors for 1–14 actuators		
5	Connectors for 1–12 thermostats		
6	230 V AC compartment		

C-35 wiring diagram



Uponor Controller C-33 layout



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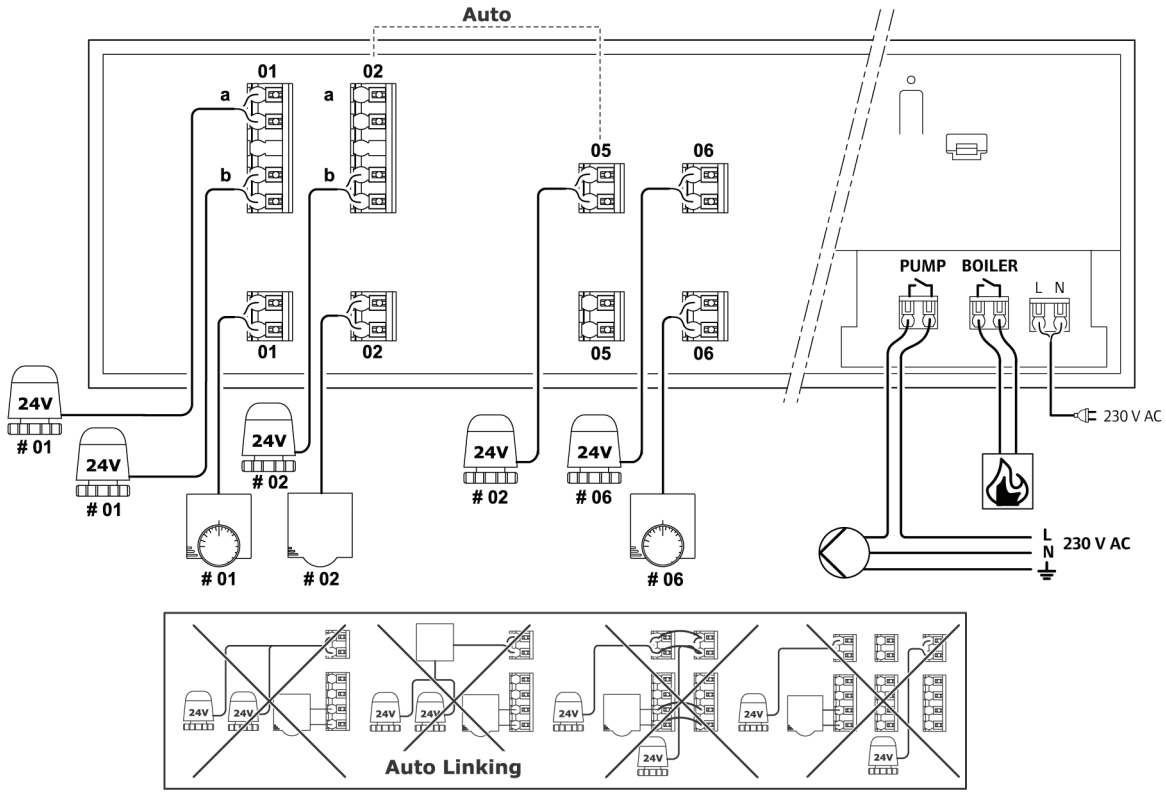
Pos.	Description	Pos.	Description
1	Connectors for 1–8 actuators	4	Power indicator • Red = Power on (heating mode) • Off = Power off
2	Connectors for 1–6 thermostats		
3	230 V AC compartment		

C-33 wiring diagram



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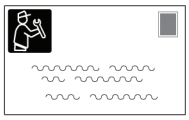
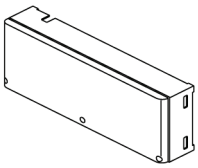
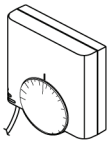
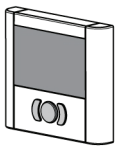
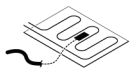
Installation report

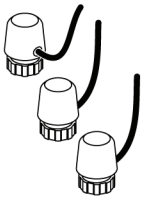


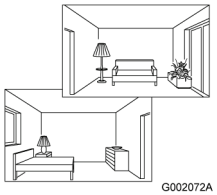












Controller No.	**Channels**				**Rooms**
#1					
Floor sensor					
Relay	Yes ☐	+24 V DC ☐			
	No ☐	230 V AC ☐			
Pump	Yes ☐				
	No ☐				
Timer	Yes ☐				
	No ☐				

Uponor Housing Solutions Ltd.

Snapethorpe House Rugby Road,
Lutterworth Leicestershire LE17 4HN

Tel. +44 1455 550 355
Fax +44 1455 550 366
www.uponorhousingsolutions.co.uk