4-zone central unit

HC4695 L4695 NT4695
HD4695 HS4695 N4695 AM5875

Description

This central unit can manage MY HOME temperature control systems with up to 4 zones, with a maximum of 9 circulation pumps. It can control heating or cooling systems and can set the system and modify the system operating mode.
The central unit is made up mechanically of two parts: a base to fasten on the supporting frame for wall mounted boxes to which the bus is connected and a removable front cover for easy programming with the settings required. The device communicates with and is supplied by the bus, while the two AA batteries supply power when the removable part is not inserted in the supporting frame. The central unit has a probe which already represents a system zone and the configuration sockets are in fact on the back part. Another three probes can be connected to reach the absolute number of zones which the system can manage in this case (a maximum of 4 zones in total). Coming with management software with guided menu shown on the display, it lets the user select the operating mode, display the temperatures of the various zones and display and modify the daily temperature profiles and the weekly programs; the maintenance menu, reserved to the installer and code protected, allows access to the system settings (zone configuration, system test, total reset, etc.).
The temperature central unit has a graphic display with blue back-lighting in the AXOLUTE series and green back-lighting in the LIVING, LIGHT, LIGHT TECH and Màtix series. By means of the six keys on the device front cover all the functions can be used interacting with the various menu items. The complete programming of the central unit by PC can be activated through the serial connector and the TiThermo BASIC software.

Legend

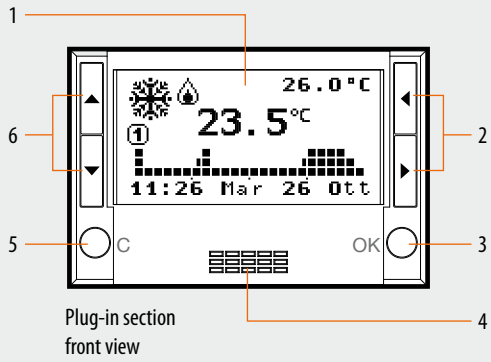
1. Graphic display: displays the system state and guides the programming operations.
2. Selection keys: can set the operating mode and select the functions.
3. OK key: to access the main menu or confirm the selection displayed.
4. Sensor: to measure the room temperature.
5. C key: to cancel the selection.
6. Scroll keys: to modify the temperature using the main screen; to scroll the menu items.
7. Connector: connection to the electronics in the back base.
8. Serial connector: for connection to the PC and use of TiThermo BASIC.
9. Battery compartment: socket for 2 AA 1.5V batteries.
10. Screw: to block central unit extraction.
11. Configurator socket: socket of the configurators for the combined probe.
12. BUS: connection for cable bus.

Technical data

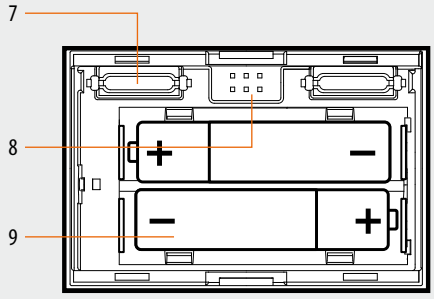
- Power supply from SCS BUS: 27 Vdc and 3 Vdc (2 AAA type, 1.5 V batteries)
- Operating power supply with SCS BUS: 18 – 27 Vdc
- Absorption: 30 mA with the light on
- Absorption: 8.5 mA with the light off
- Operating temperature: 0 – 35 °C
- Size: 2 modules
- Installation height: 1500 m from the floor

Graphic display

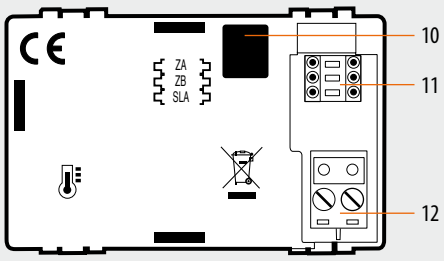
During normal operation the central unit graphic display shows the system basic information, while the screen light stays off. When a key is pressed, the display illuminates and the central unit is ready to implement any instructions entered by the user.



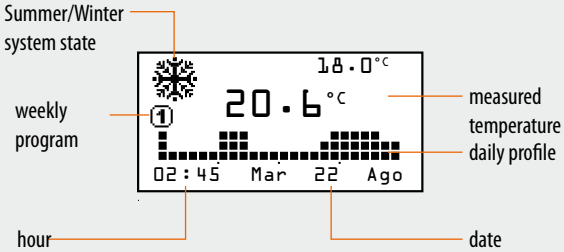
Plug-in section
front view



Plug-in section
back view



Fixed section
back view

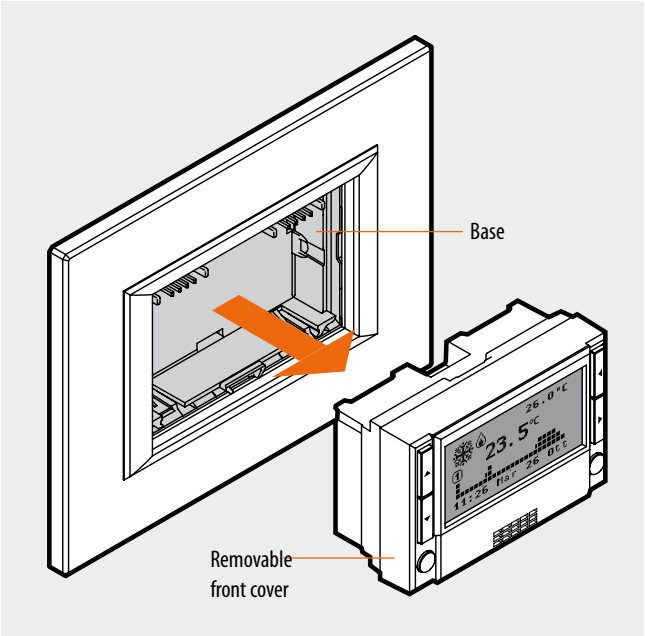


4-zone central unit

HC4695 L4695 NT4695
HD4695 HS4695 N4695 AM5875

Removable system

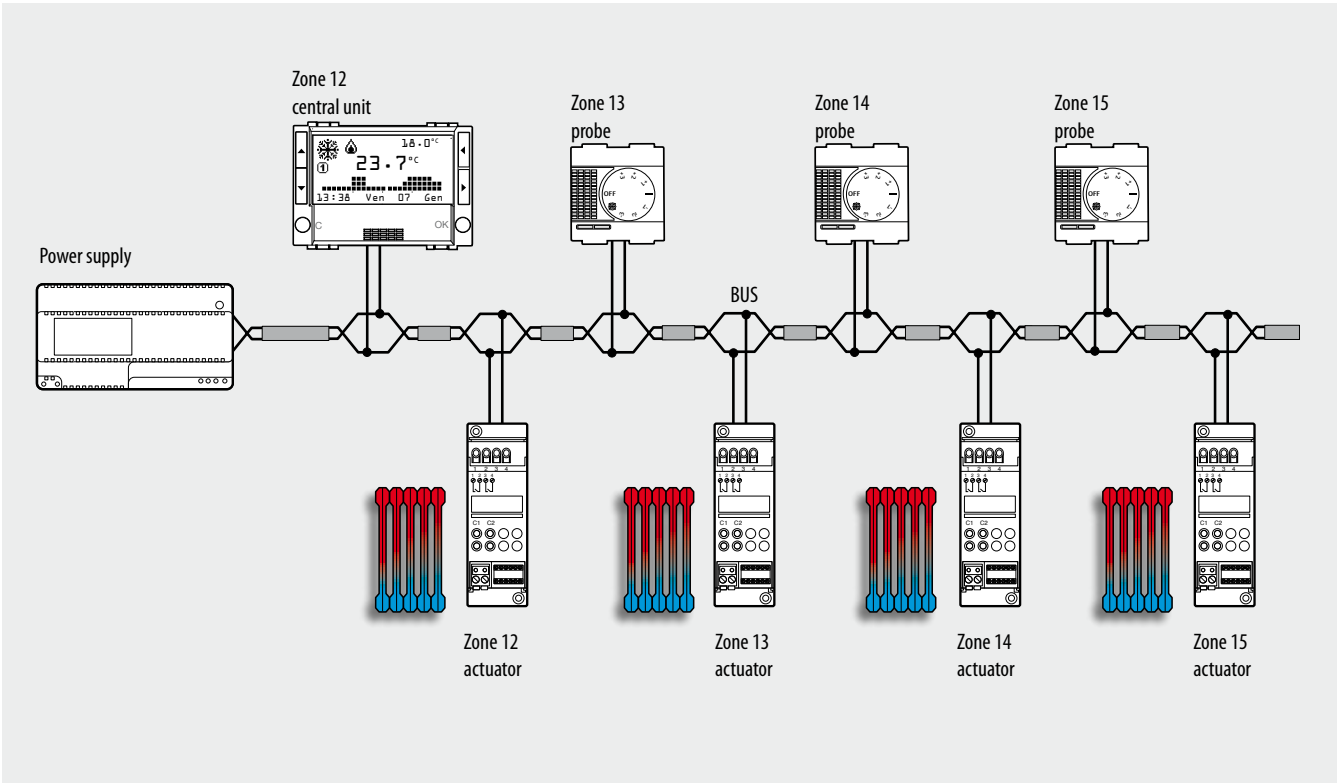
The central unit is made up of a base for the connection to the system bus cable and a removable front cover with batteries. The system so formed lets the user perform the programming operations and replace the batteries easily.



Configuration

Differently from the 99 zone version, the 4 zone flush mounted central unit must be configured. This central unit is fitted with an integrated temperature probe, and therefore it must be configured. The configuration sockets on the back of the central unit are in fact intended and reserved for the integrated probe. They are: ZA, ZB and SLA. The ZA and ZB sockets must always be used for the configuration operations, connecting two configurators that identify the address, and the number of the zone controlled by the probe itself. It is not necessary to start with zone 01, although it is fundamental that the values of the subsequent zones are immediately after those of the central unit itself. The configuration procedure requires the completing of the operations using the "Configuration" menu of the central unit, and the activation of the "Learning" function. In fact, the search within the system is performed on 3 zone addresses that follow the one assigned to the central unit itself. The actuators controlled by the probes must be configured with the same zone address.

Socket	Function	Configurators
ZA	zone address	0 – 9
ZB	zone address	0 – 9
SLA	Master mode	0 – 8



Programming

The central unit must be used to set the operating mode of the integrated probe fitted inside. Using the "Configuration" item of the "Maintenance" menu, define if the zone should manage a heating system, a cooling system, or a combined one.
Using the same menu item, also select the type of load to control, choosing between: ON/OFF, OPEN/CLOSE, 3SP FAN-COIL and GATEWAY. When performing programming operations from the central unit, refer to the installation manual supplied with the central unit itself.

Master and Slave probe

A probe can operate in conjunction with other probes so that an average temperature calculation can be performed, based on measurements taken from several points within the same zone. This function is useful for the management of very large areas, throughout which the temperature may change consistently
To activate this function, one probe must be configured as "Master", and one or more probes must be configured as "Slave" (max 8). The Master probe calculates the average between its own temperature, and the temperatures measured by the Slave probes, and then performs the appropriate operations. The integrated probe fitted inside the central unit can only operate as Master. Therefore, for the slave function, only probe item 4693 may be used. In addition to the zone address, in order to configure the integrated probe as Master it will be sufficient to connect a numeric configurator to the SLA socket, which should indicate the number of Slave probes within the zone, up to 8 maximum.

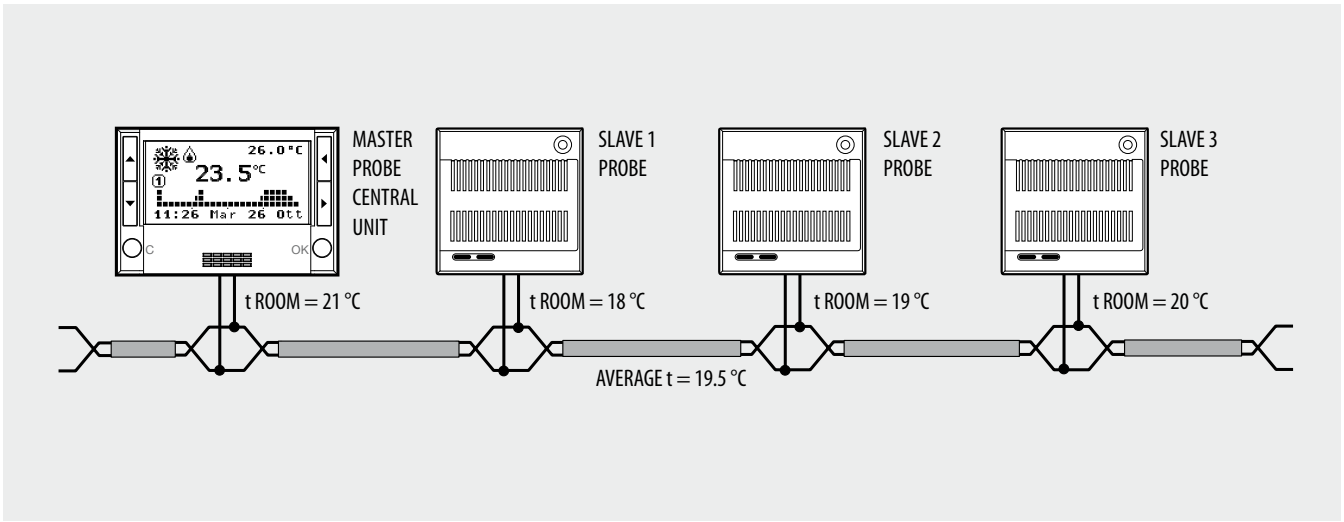
To configure a Slave probe, connect the configurator marked as SLA to the MOD socket. Use the SLA socket to progressively assign a number to all Slave probes of the zone. During this numbering procedure, it is essential to start from no. 1, and that the sequence is respected, without missing any numbers.

4 zone central unit calibration

The 4 zone central unit does not normally require calibration: however, in particular installation situations (perimeter walls, north or south facing walls, when close to heat sources, etc.), the temperature value measured may be corrected using the appropriate calibration function, which can be found in the central unit menu.
Before performing the calibration operation, ensure the following:

- leave the 4 zone central unit connected and powered with the hydraulic system off for at least 2 hours. During this time, avoid any changes in the room temperature (e.g. by opening or closing windows, doors, etc.), and avoid standing near it;
- for the calibration use a calibrated sample thermometer, correctly positioned inside the room.

Note: For more details on the calibration procedure and the programming operations using the central unit, refer to the installation manual of the central unit.



Central unit/Master Probe (HC/HS/L/N/NT4695, AM5875)		Slave 1 probe (HC/HS/L/N/NT4693)		Slave 2 probe (HC/HS/L/N/NT4693)		Slave 3 probe (HC/HS/L/N/NT4693)	
Socket	Configurators	Socket	Configurators	Socket	Configurators	Socket	Configurators
ZA	4	**ZA**	4	**ZA**	4	**ZA**	4
ZB	7	**ZB**	7	**ZB**	7	**ZB**	7
SLA	3	**MOD**	SLA	**MOD**	SLA	**MOD**	SLA
		SLA	1	**SLA**	2	**SLA**	3

Circulation pump

In addition to controlling the zone valves, for some types of systems it will also be necessary to control one or more water circulation pumps. When programming the operating mode of the circulation pumps is not necessary to connect any special configurators: it will be sufficient to use the central unit through the "Pump" item; inside the "Maintenance" menu, select the zones that must be served by a circulation pump. Using the programming procedure, set a logic link between the zones, and the pump that hydraulically supplies them. To complete the programming procedure, the pump management mode must also be selected, thus defining if the pump supplies a heating, a cooling, or a combined system. Depending on the needs of the hydraulic system, one "circulation pump" or "several circulation pumps" may be installed, to supply one or more zone groups. If necessary, it is also possible to set a "pump switch-on delay", in relation to the opening of the zone valves. In the following cases, pump control is not necessary, or needed:

- in systems where the pump is always in operation (thanks to water recirculation hydraulic systems, or the presence of three-way valves);
- in systems where the pump is managed automatically (it comes on by itself when water is required, and turns off again when all valves are closed);
- in systems where the pump has simply not been installed (for example for air conditioning units or electric heating control).

System with a circulation pump

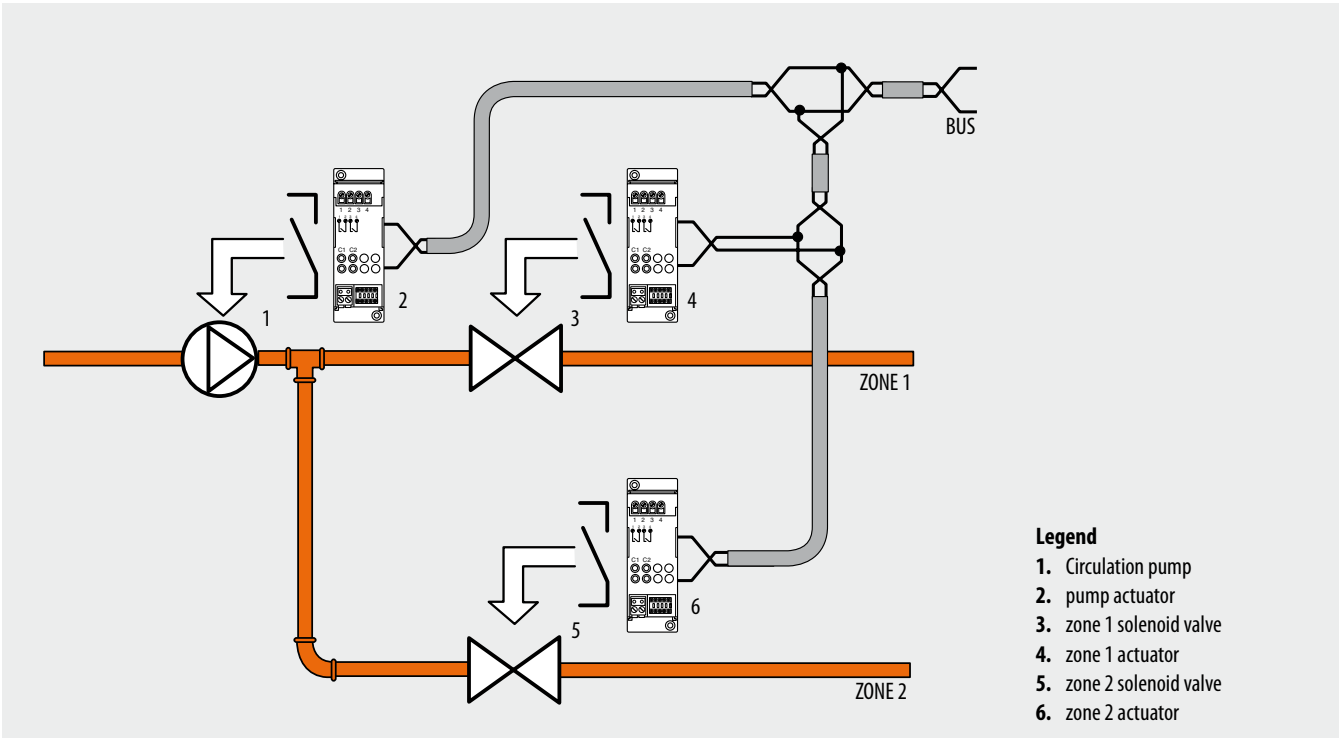
The system shown only has one circulation pump, that only supplies two zones, controlled by two solenoid valves. The pump is managed by a dedicated actuator configured in zone 00. In the same way as the pump, also the two valves are controlled by two different actuators. The circulation pump will remain active until at least one of the two valves remains open and will stop when both valves are closed.

4 zone central unit calibration

The 4 zone central unit does not normally require calibration: however, in particular installation situations (perimeter walls, north or south facing walls, when close to heat sources, etc.), the temperature value measured may be corrected using the appropriate calibration function, which can be found in the central unit menu.
Before performing the calibration operation, ensure the following:

- leave the 4 zone central unit connected and powered with the hydraulic system off for at least 2 hours. During this time, avoid any changes in the room temperature (e.g. by opening or closing windows, doors, etc.), and avoid standing near it;
- for the calibration use a calibrated sample thermometer, correctly positioned inside the room.

Note: For more details on the calibration procedure and the programming operations using the central unit, refer to the installation manual of the central unit.



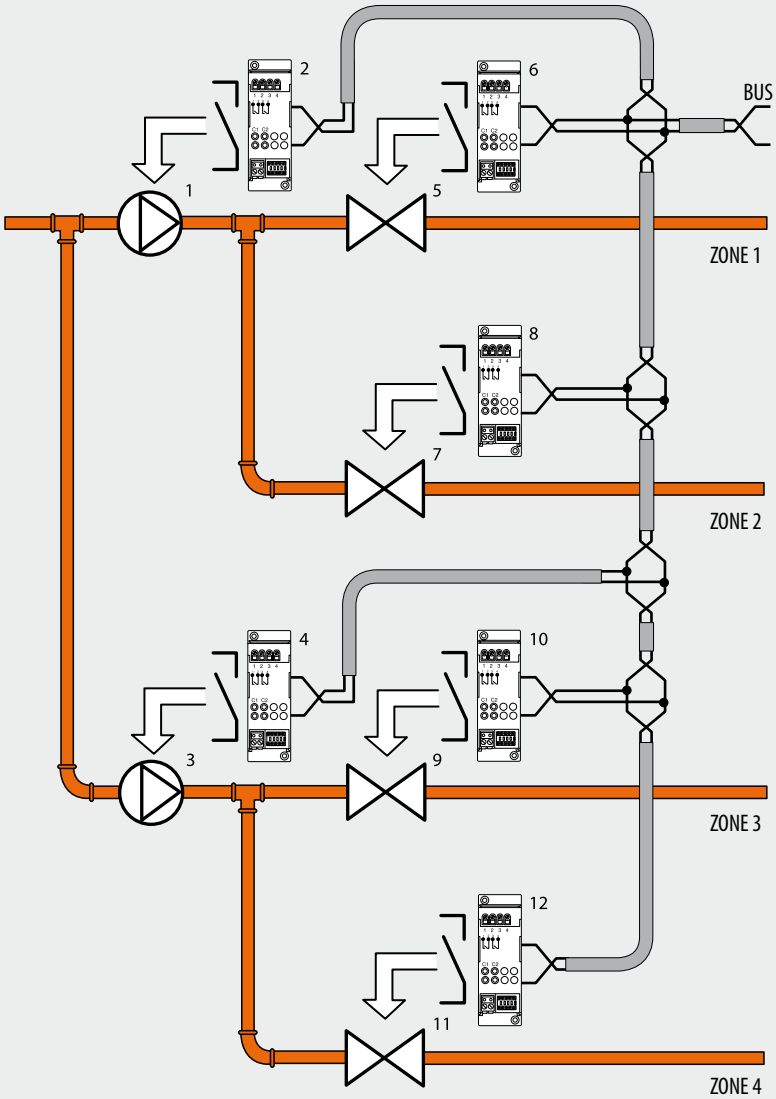
Legend

1. Circulation pump
2. pump actuator
3. zone 1 solenoid valve
4. zone 1 actuator
5. zone 2 solenoid valve
6. zone 2 actuator

System with two circulation pumps

The system shown requires two circulation pumps that serve two different zone groups controlled by their own solenoid valves. The first group pump is managed by a dedicated actuator configured in zone 00 with progressive number equal to 1 (N=1). Also the two valves that control ZONE1 and ZONE2 are managed by their own actuators. The circulation pump will remain active until at least one of the two valves remains open and will stop when both valves are closed.

The second group is similar to the first one, but the actuator controlling the pump of zones 3 and 4 is configured in zone 00 with progressive number equal to 2 (N=2). Although belonging to the same system, the two pump/solenoid valve groups are totally independent from each other (see also actuator configuration).



Legend

1. zone 1 and 2 circulation pump
2. pump actuator
3. zone 3 and 4 circulation pump
4. pump actuator
5. zone 1 solenoid valve
6. zone 1 actuator
7. zone 2 solenoid valve
8. zone 2 actuator
9. zone 3 solenoid valve
10. actuator zone 3
11. zone 4 solenoid valve
12. actuator zone 4

TiThermo Basic software

TiThermo Basic is the tool used for creating or changing, through a simple and logic graphic interface, the configuration to be sent to the temperature control system central unit, defining and customising the parameters of the temperature control system and the profiles of the various operating programs.

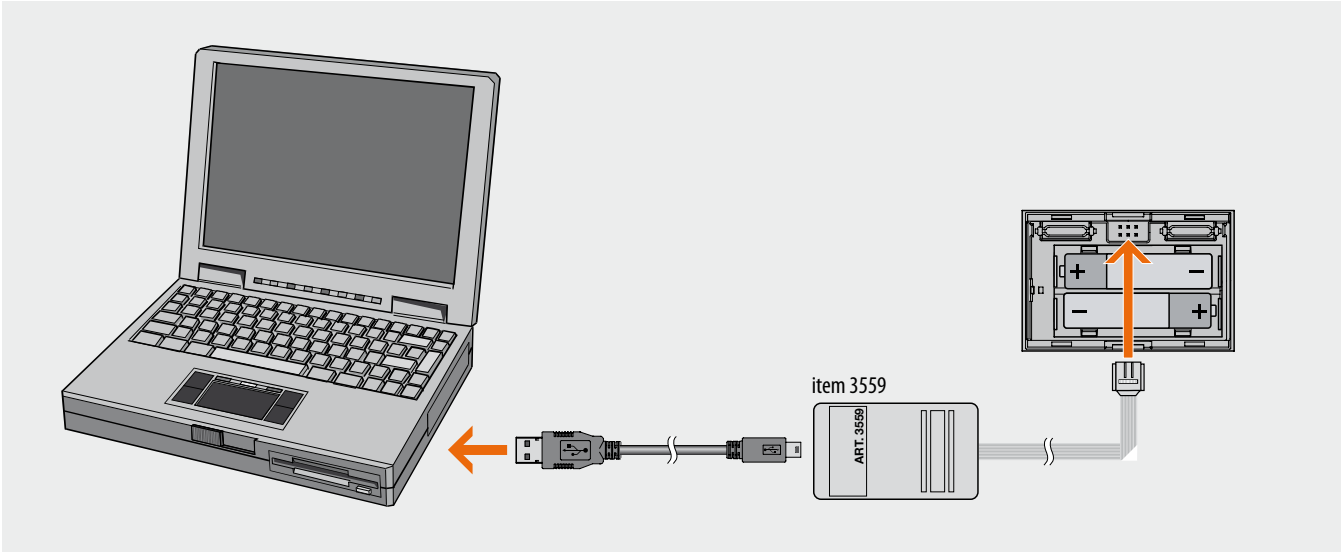
Thanks to a dedicated function, the software may also be used to update the central unit firmware.

The software can be used to:

- customize the zones
- manage the actuators, selecting the type of function to be assigned (heating, cooling, heating+cooling, no function) and the type of load for the selected function (ON/OFF, Open/ Close, Fan-Coil, Gateway)
- manage the circulation pumps, selecting the type of function to be assigned (heating, cooling, heating+cooling, no function) and the tripping delays
- customise the configuration parameters and the operating programs of the central unit (e.g. weekly programs, holiday programs)
- export and/or import profiles and collections (as XML files).

NOTE: for more information on the operation of the application see the manual supplied with the products.

The central unit is connected to the PC using cable item 335919 or with item 3559 (see figure). This accessory is not included with the central unit, and must therefore be purchased separately.



TiThermo Basic screenshots

