CONTENTS

MY HOME – Energy management

Saving energy has never been this easy

MY HOME, the winning combination

Displaying information on energy consumption and managing and controlling energy loads; this is whAT THE NEw My Home solutions deliver to end users - making them very much more aware of their energy use, be it to meet their "green aspirations" or their desire to make financial savings.

Visibility drives savings

An aware user is one that saves with resulting benefits for the environment and in reduced costs. Studies have shown that displaying energy consumption results in users changing there (bad) routines or correcting faults which result in savings of 10 to 15%.

My Home enables you to:

- Create a living space with maximum comfort, using optimised levels of energy and heat.

Multimedia Touch Screen

Touch Screen

To ensure energy efficiency with MY HOME is easy

SCS-BUS

Zone temperature control

Heating only when and where needed.

Using this function, the user can decide the temperature of each individual room based on its use and the time of day. It is also possible to select the rooms that are not being used, and therefore don't need to be heated.
The activation of the system also takes into account the heat produced by the sun.

UP TO **30%** SAVINGS

Light automation management

Switch lights off, switch savings on.

Management of lighting depending on the presence of people and the level of natural light: this provides maximum visual comfort for the users and greatly contributing to energy savings. Depending on the space, savings of 55% to 75% are possible.

UP TO **75%** SAVINGS

SCS-BUS

Consumption display

A complete consumption and energy production check-up.

The user can display on the touch screen not only the consumptions inside their home (power, water and gas[1)]), but also the energy and hot water ouput obtained using photovoltaic or solar panels.

With a few simple steps, the user can select the type of consumption that needs to be checked, the type of display (instantaneous or graphs), and the period (day, month, year). Extremely useful information, for using one's own systems at their best, reducing waste and faults.

NOTE: [1)] subject to type of meters installed for gas and water.

Management of loads

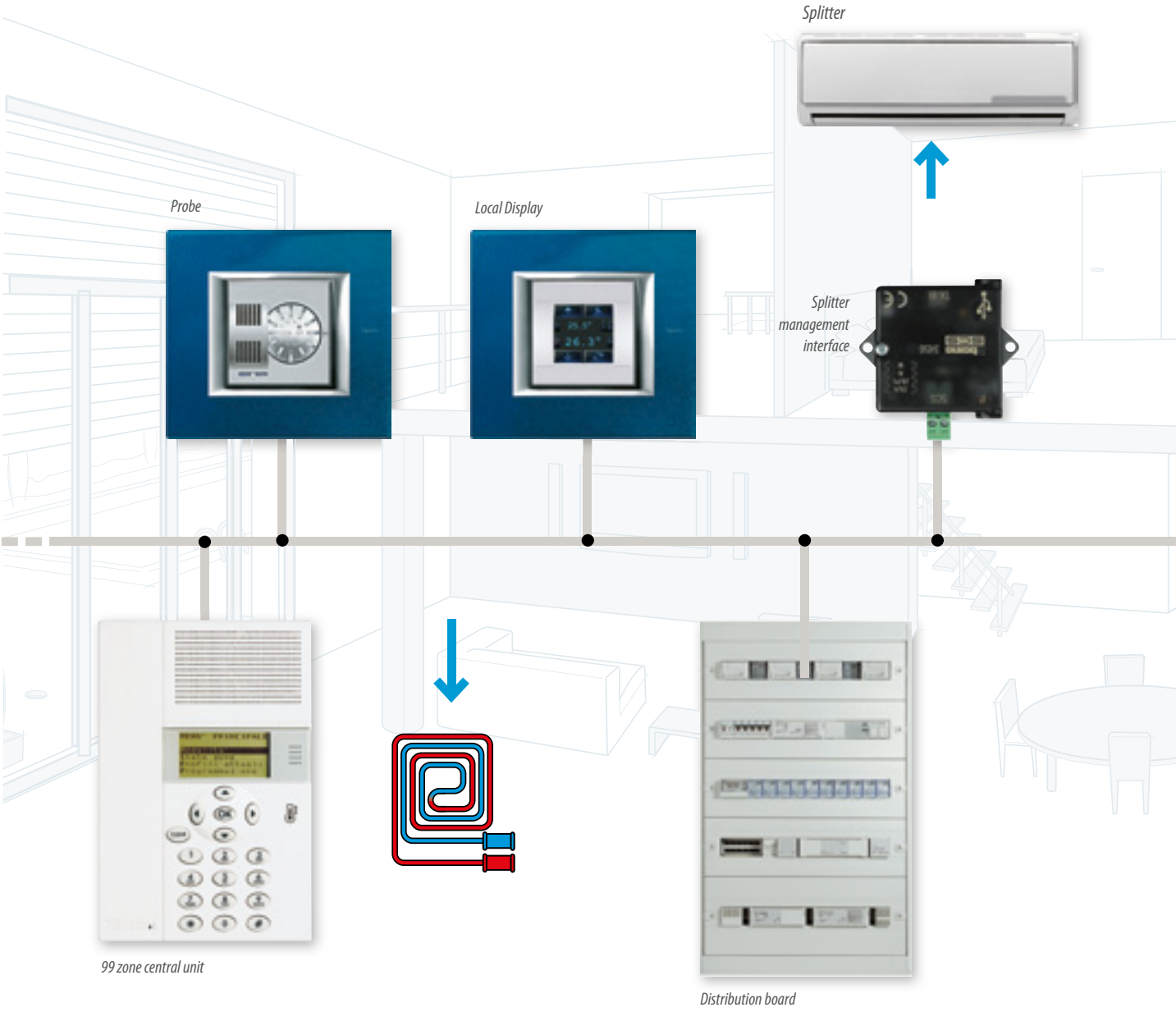
New heading required.

This function can be used to manage the maximum power to be used, and automatically disconnect the least important appliances in case of overload.

Using the Touch screens, the user can check the total consumption of the individual circuit, and decide if the priorities need changing.

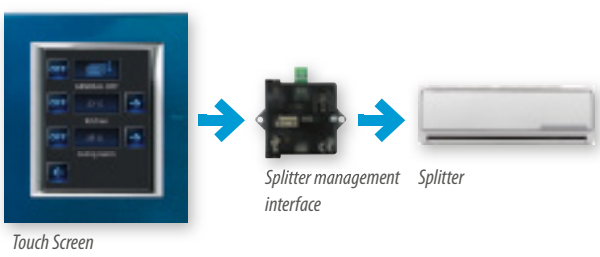
The user can also decide to delay the activation of a particular load.

Energy efficiency management devices overview



Zone temperature control

Air conditioning



Washing machine

Microwave

Photovoltaic panel

Thermal solar panels

Flush mounted 16A actuator

Bus meter with toroids

Pulse counter interface

Pulse counter interface

Pulse counter interface

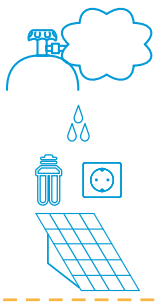
Touch Screen

Gas meter with pulse output

Water meter with pulse output

Consumption and production display

Touch Screen



Load control management

Central unit for load management

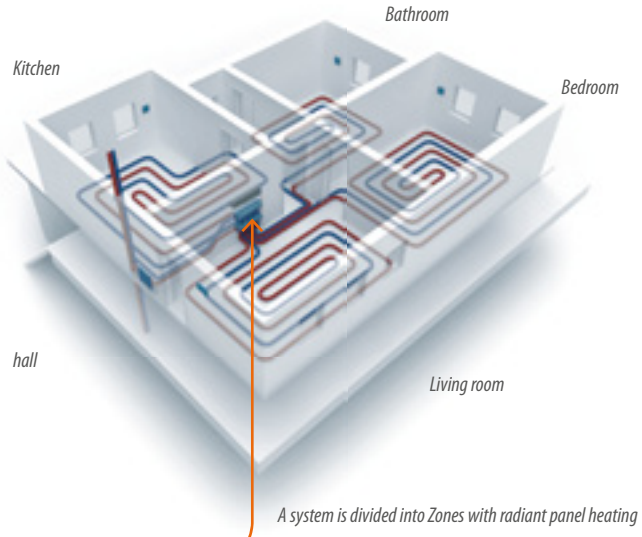
CONTENTS

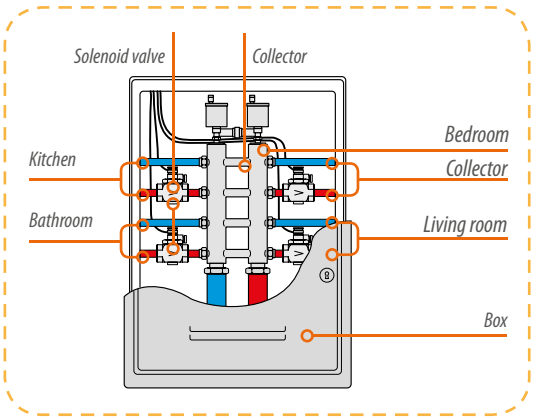
MY HOME – Temperature control

MY HOME temperature control can be used:

WHEN THE SYSTEM IS PRESET FOR ZONE MANAGEMENT

A system is preset for zone management when the solenoid valves for the management of each zone can be installed on the distribution collector.





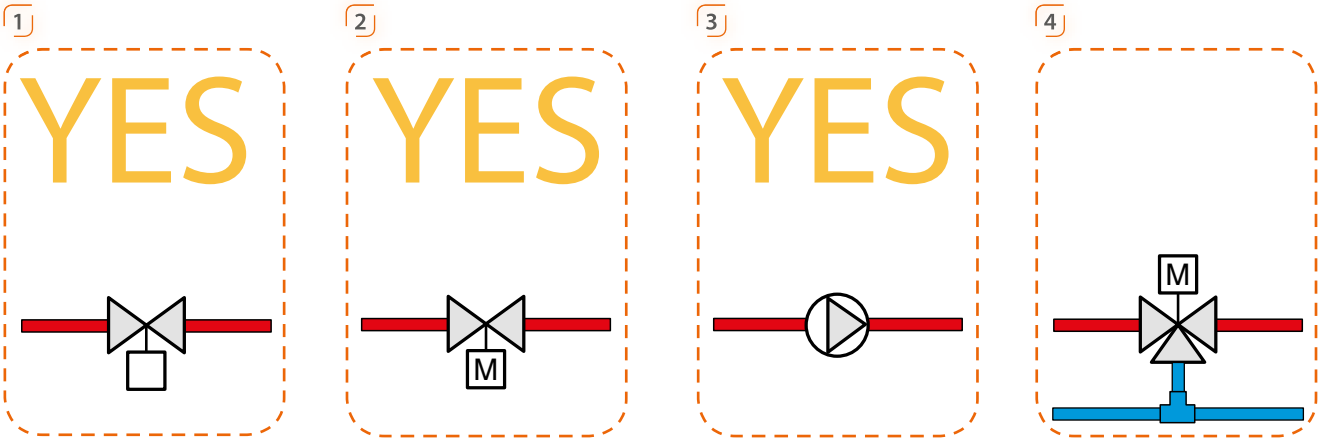
WHEN THE SOLENOID VALVES USED ARE:

The solenoid valves that manage the zones can be of two types:

1. with ON/OFF contacts

2. With open/close contacts

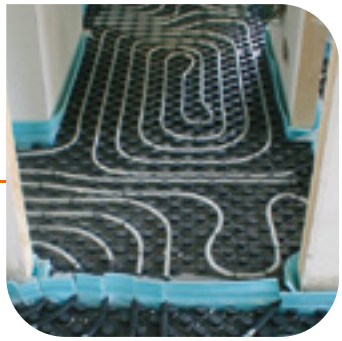
The MY HOME temperature control system can also manage the circulation pumps (see Fig. 3). WARNING: The proportional mixing valves cannot be managed directly from the MY HOME temperature control system; they need an external control unit, supplied by the manufacturer of radiant heating panel systems.



IN SYSTEMS WITH:

Radiators

Fan-coil



Radiant panels

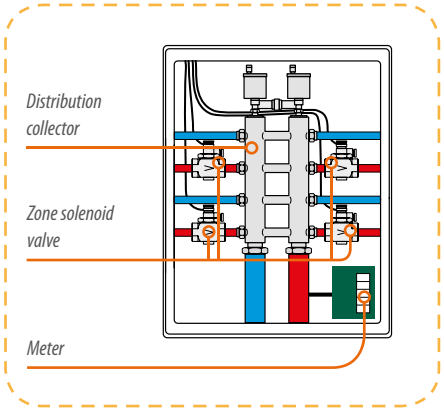
WITH SYSTEMS OF:

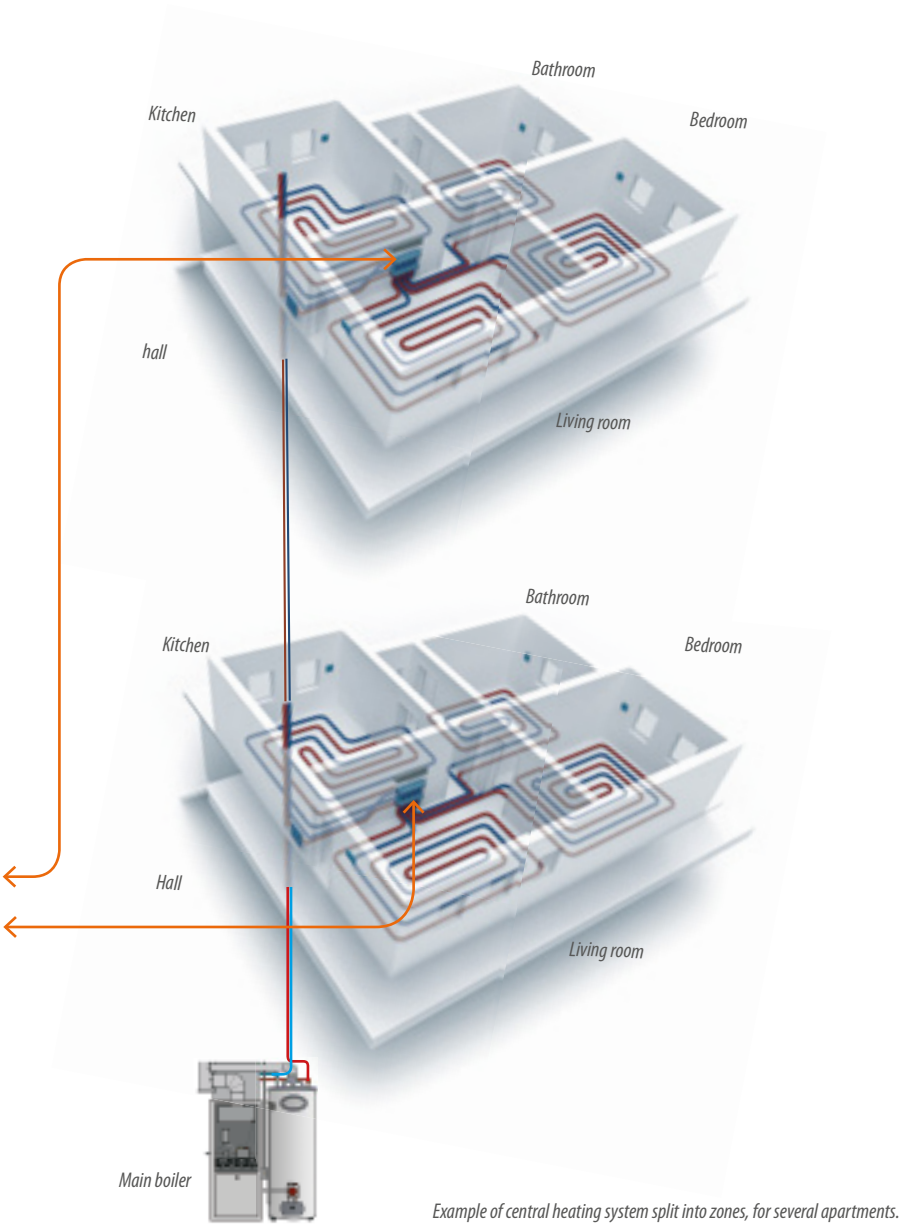
Heating *Cooling* *Both*

IN CENTRAL HEATING SYSTEMS WITH DISTRIBUTION COLLECTOR FOR EACH HOME

In central heating systems where each Home is fitted with its own distribution collector, it is possible to:

- by installing a meter on the collector input, measure the amount of heat used;
- by installing solenoid valves, to manage the different zones of the Home.





Example of central heating system split into zones, for several apartments.

Devices

The MY HOME temperature control system consists of the following devices:

- Power supply
- Temperature central unit
- Probes
- Actuators
- Contact interface (OPTIONAL)

Power supply

99 zone central unit

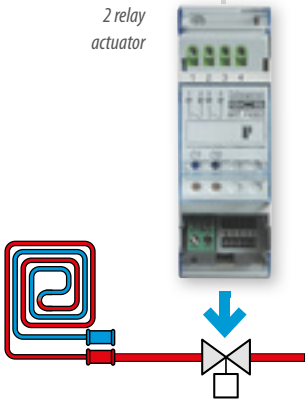
Probes:
they must be installed in each zone, so that the temperature of the rooms can be detected and if necessary locally changed, in relation to the temperature set on the control unit.

Zone 1 probe

Power supply:
for MY HOME systems.

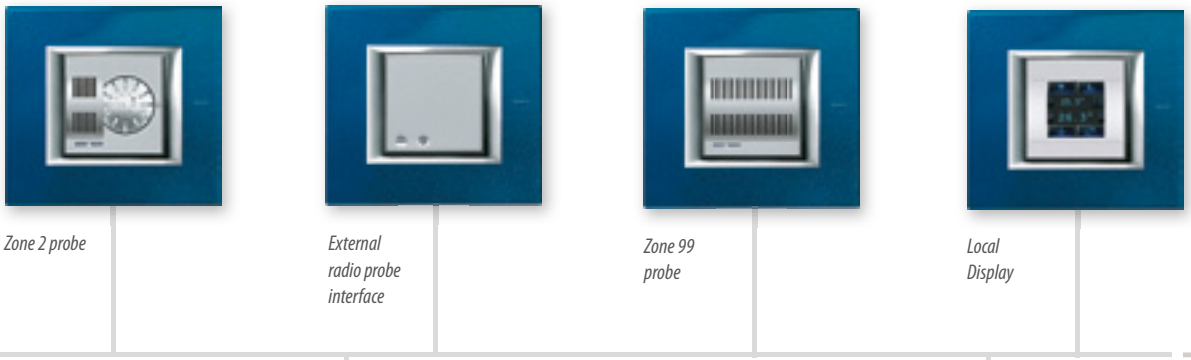
Temperature control unit:
this is the unit used for system configuration, program customisation, and the display of information. This is available in the catalogue in the 4 zone flush-mounting version or in the 99 zone wall-mounting version.

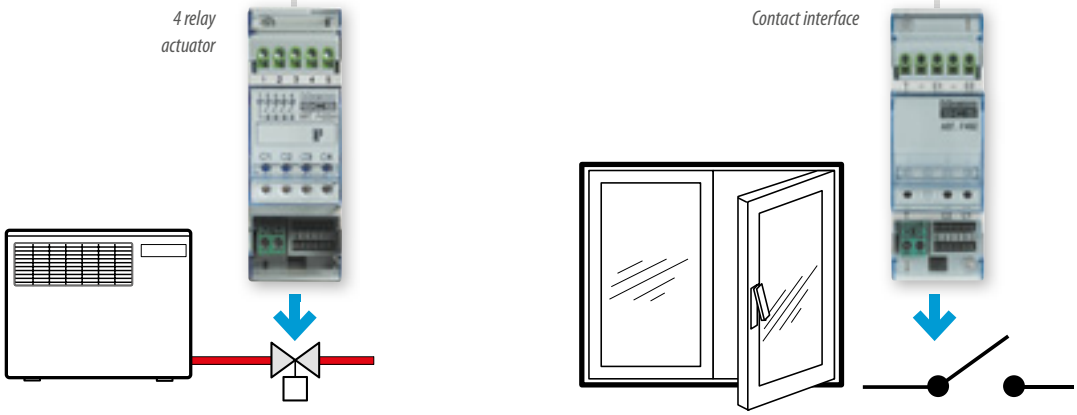
2 relay actuator



Actuators:
activate the solenoid valves and the circulation pumps.
The number and type of actuators depends on the type of solenoid valves installed, and their positioning within the system.

External temperature radio probe:
it measures the external temperature and sends the information, through radio waves, to the receiving interface, and therefore to the control unit.





Actuators:
For the ON/OFF control of the solenoid valves only one contact is used, while for open/close solenoid valves the interlocking of two relays is used. By using the 4 relay actuator, it is possible to control both the activation of the fan-coils and the automatic selection of the 3 speeds.

Contact interface:
this optional device detects the open or closed position of windows and doors by assessing the status of their magnetic contact. The information obtained is then used by the MY HOME temperature control system to switch off the zones corresponding to the rooms where windows and doors are open. With this function one can make the most of each energy saving opportunity, avoiding unwanted dispersion of heat to the outside, for example when the air inside the house is being changed.

Devices

TEMPERATURE CONTROL CENTRAL UNITS

The two temperature control units ensure simple management/programming of the whole system; in this way, thanks to a guided menu, it will be possible to select the operating mode, display the temperatures of the various zones, and change the daily and weekly programs. Inside the 4 zone control unit is a probe. This is a zone in itself, and it is therefore possible to connect three more probes, before the maximum number of probs that can be managed by the device is reached.

In addition to being able to manage temperature control systems, both in heating and cooling mode, the 99 zone control unit is also capable, thanks to the Scenarioso mode, of setting different temperatures in the different zones of the system, by means of a single control (e.g. maid Scenarioso). 16 Scenariosos for the winter and 16 Scenariosos for the summer can be set.

Adjustable probe

Local Display

LOCAL CONTROL

A probe is installed in each room, for the measurement of the temperature. Probe models fitted with a knob also provide easy system control:

- possibility of changing the temperature by ±3° C compared with the value set on the control unit
- possibility of managing the operating mode (OFF; antifreeze/thermal protection, and automatic)
- possibility of controlling the speed of the FAN-COILS

All these functions may also be performed using Local Display, a recently launched Oled Touch Screen technology control device, connected to a probe.

PC PROGRAMMING

TiThermo and TiThermo Basic are programs that enable the user to program and configure the control units, by setting and customising the parameters connected with the temperature control system. Thanks to a dedicated function, the software can also be used to update the firmware of the control unit.

4 zone central unit

99 zone central unit

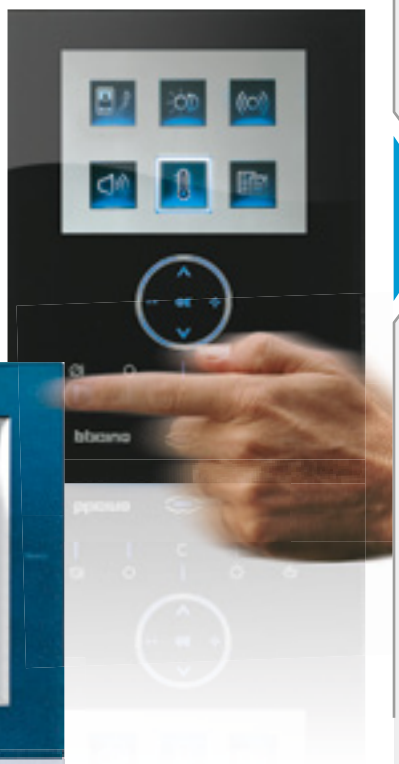
Bticino software

PERFECT INTEGRATION WITH THE MY HOME SYSTEM

Example of integration between Temperature Control and Automation

The temperature control system can be integrated with MY HOME Automation, for the management of the temperature in the different zones of the house, using Touch Screen, Videostation, and Video Display. In particular, using Touch Screen IP it is possible to manage not only the temperature in the different zones, but also those functions that up to now have always been managed by the control unit (e.g. weekly mode, external probe Scenarioso mode, etc.). For further information see the User Manual supplied as standard with Touch Screen IP.

Video Station



Touch Screen

Example of integration between Temperature Control and Automation

The integration between MY HOME Burglar-Alarm and Temperature Control systems allows the set-up of a particularly useful function in terms of energy saving, avoiding unwanted escape of energy to the outside, for example when the air inside the house is being changed. In practical terms, when doors or windows of a room are opened, the heating system of the temperature control zone corresponding to that room is automatically turned off.

The opening or closing of doors and windows is detected by the contact interface module of the Burglar-Alarm system, which reads the condition of the NC contact installed on the door or window, and transfers the information to the Temperature Control system for the appropriate actions.

Magnetic contact

Opening of window

Contact interface

Temperature control unit

Radiator off

Device selection criteria

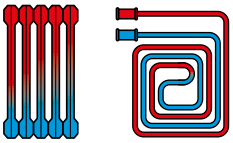
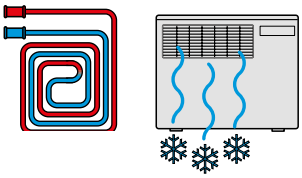
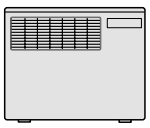
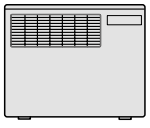
GUIDE TO THE SELECTION OF THE CONTROL UNIT

The following table shows the functions provided by the two control units. The selection must be based on the features of the system. It is fundamental that the selection of the control unit should be based on the number of zones of the hydraulic system. Other selection parameters may be the management of magnetic contacts, remote control, etc.

AVAILABLE FUNCTIONS	4 ZONE CENTRAL UNIT	99 ZONE CENTRAL UNIT
	 HC/HS/L/N/NT4695, AM5875	 3550
Maximum number of zones	4	99
Remote control	●	●
Local control (Touch Screen)	●	●
Programming with TiThermo Basic	●	
Programming with TiThermo		●
Magnetic contacts management		●
Scenarios	●	●
Climaveneta Chiller Management		●

GUIDE TO THE SELECTION OF THE DEVICES

The following table summarizes the various types of systems, and the devices needed for their management, based on their features.

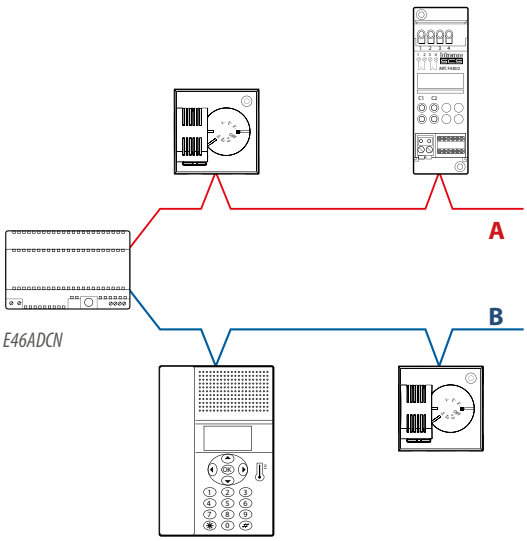
TYPE OF SYSTEM	ACTUATOR			PROBE		
	 F430/2	 F430/4	 Gateway	 HC/HS4692 L/N/NT4692  HC/HS4693 L/N/NT4693	 HC/HS4692FAN L/N/NT4692FAN	 HC/HS4685 L/N/NT4685 In conjunction with probe item HC/ HS4693, L/N/ NT4693, or with external probe item 3457
Radiators or Radiant panels 	●	●		●		●
Combined system with radiant panels and fan-coils 	●	●	●	●	●	●
Normal Fan-coil 		●		●	●	●
CLIMAVENETA Fan-coil 			●		●	●

Maximum number of devices, maximum distances and absorptions

A system can manage up to 99 zone addresses. Up to nine addresses dedicated to the actuators can be managed for each zone. The maximum number of devices which can be connected to the BUS also depends on their total absorption and the distance between the connection point and the power supply. The power supply can supply up to 1200 mA (E46ADCN) or 600 mA (E49) and the maximum number of devices which can be connected to the BUS is determined by summing the absorption of all the items and making sure that the total does not exceed the capacity of the power supply. For the calculations mentioned above, refer to the TECHNICAL DATA listed in the Technical sheets section of this guide. When calculating the absorptions the availability of current as a function of the length of the BUS cable must also be considered. During the sizing therefore respect the following rules:

- the connection between the power supply and the furthest device must not be more than 250 m long;
- the total length of the connections must not be more than 500m;
- for best division of the currents on the BUS line the power supply should be installed in the middle.

MAXIMUM DISTANCES OF THE BUS CABLE



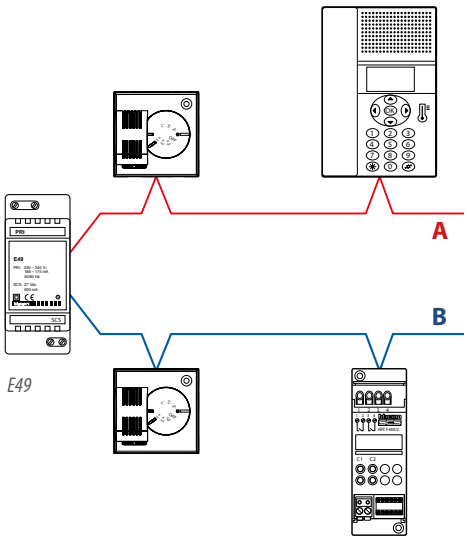
With power supply E46ADCN:

A =250 m max

B =250 m max

A + **B** =500 m

Maximum current supplied by the power supply: 1200 mA.



With power supply E49:

A =250 m max

B =250 m max

A + **B** =500 m

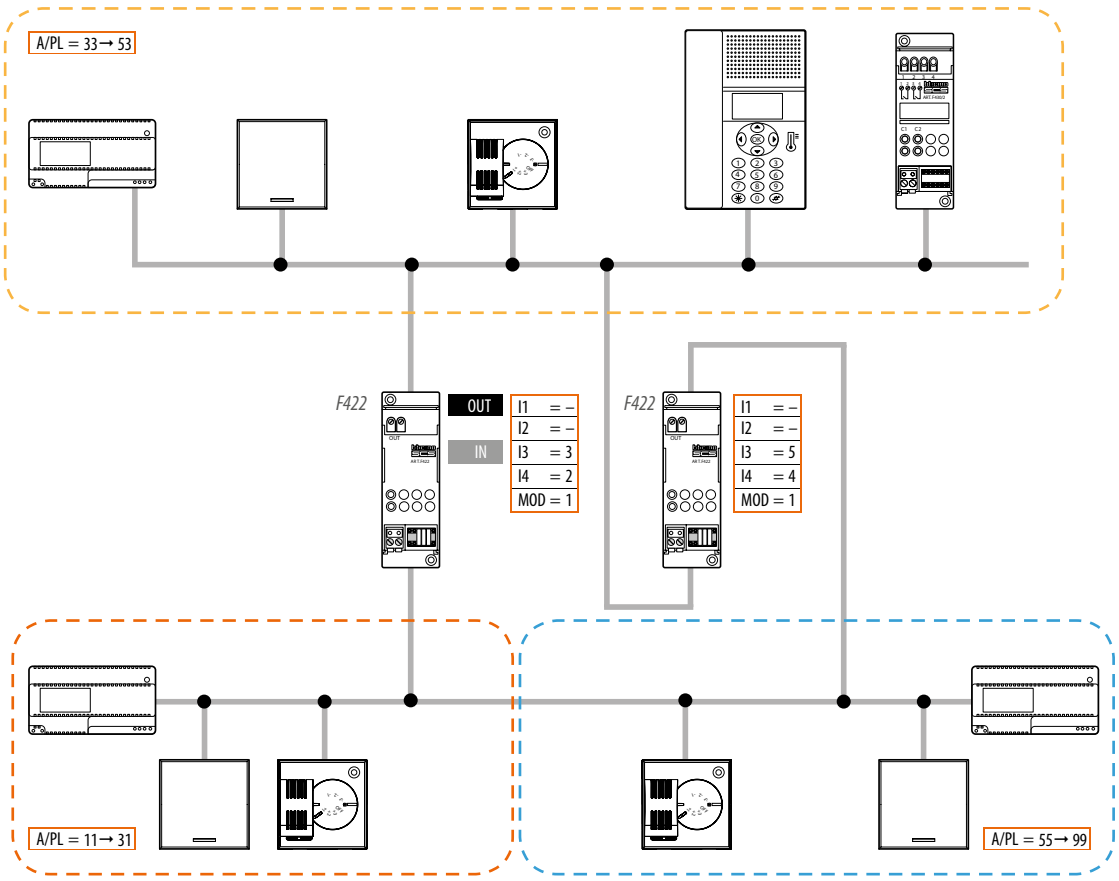
Maximum current supplied by the power supply: 600 mA.

NOTE: If a UTP5 cable is used instead of a BUS L4669 cable, distances must halved.

PHYSICAL EXPANSION MODE

In large systems or systems which have current absorption greater than the limit of 1200 mA supplied by the power supply E46ADCN or 600 mA supplied by the E49 compact power supply, split the system into several sections connected to each other using the F422 interface configured in “physical expansion” mode. It is important to remember that each line must be powered by its own power supply. To produce the “physical expansion” mode interface item F422 must be configured by inserting numeric configurator 1 in the MOD position. Positions I3 and I4 of the interface must be configured as a function of the two modes of use of the interface itself as indicated below:

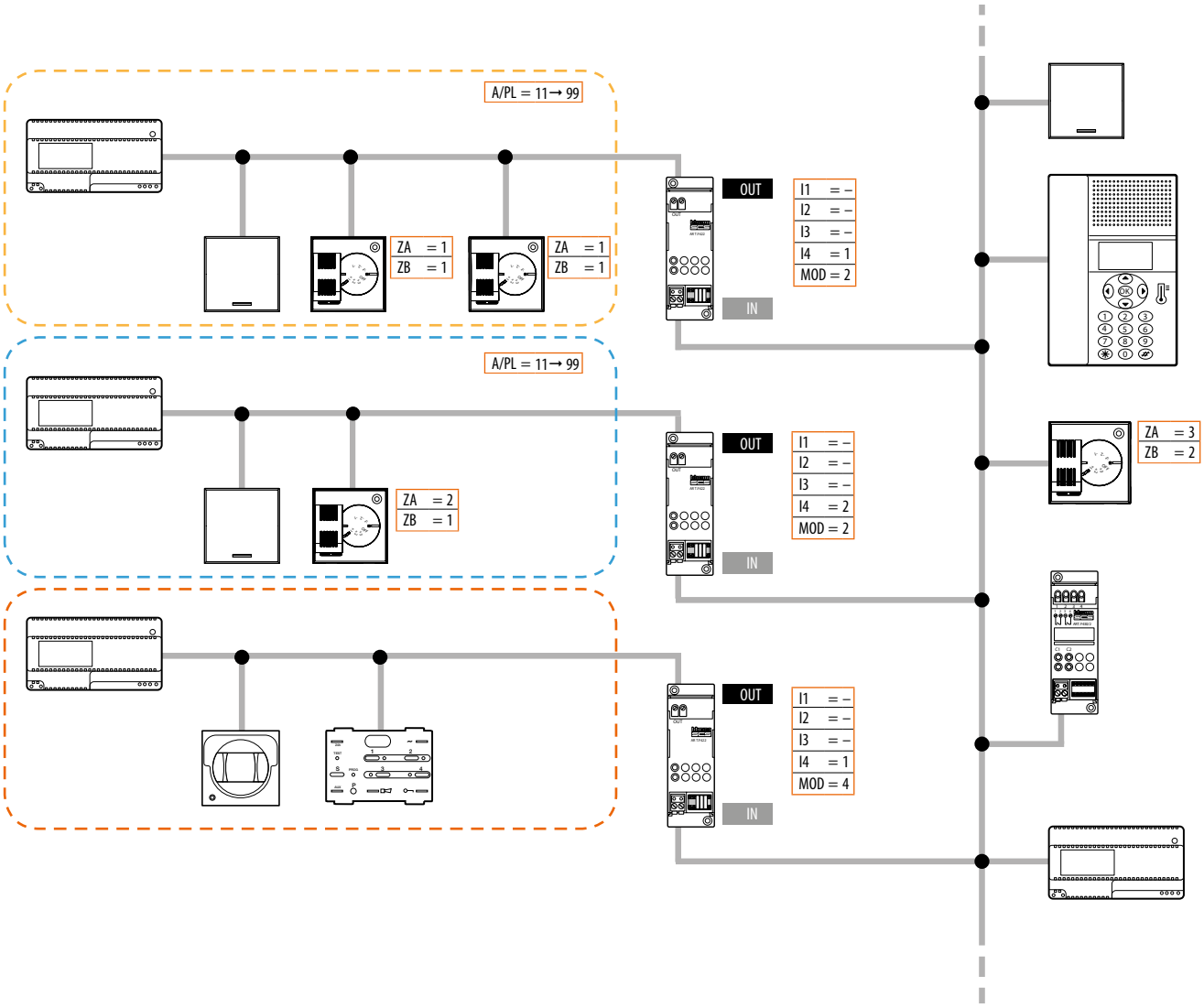
- If a bus system with only temperature control devices must be extended, positions I3 and I4 of the interface must be configured with addresses I3 = 1 – 9 and I4 = 1 – 9 completely independent from the Temperature control device addresses;
- If a bus system with Automation and temperature control devices must be extended, positions I3 and I4 must be configured as a function of the configuration of the Automation devices in the two connected systems. Referring to the illustration, let us suppose that I3 = 3, I4 = 2:
- on the input bus (IN) the Automation device addresses must be between A = 1 / PL = 1 and A = 3 / PL = 1;
- on the output bus (OUT) the addresses must be between A = 3 / PL = 3 and A = 9 / PL = 9 or the address of the next interface. It should be stressed that all the temperature control devices on the system section must be configured totally independently of the Automation device configuration. In any case no automation device must be configured with the same address (A, PL) as interface F422 (I3, I4).



Combining with other functions

The Temperature control function devices can share the same BUS cable as other MY HOME automation and emergency management applications (grey cable). If there is already a stable cable with the automation or power management BUS the Temperature control items can be added at any point in the system, after installing a box item 503E for the control units, one or more boxes positioned at a height of 1.5 m for each temperature probe and a unit with enough room for the DIN actuators.

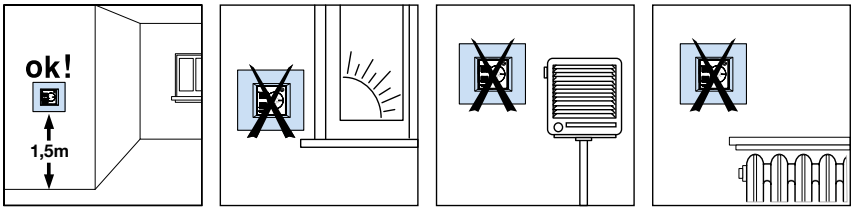
The above is also valid if the pre-existing MY HOME system has several Automation systems connected using interfaces item F422 configured in the "logical expansion" mode.
For systems with "logical expansion" there is no installation limitation for the Temperature control devices, which can be installed at any point in the system.Thus, for correct system sizing, one only need check the length of the connections made with the BUS cable and the total device absorptions as specified in this document. For systems which also have the burglar-alarm function, the Temperature control must not be installed on the same bus as the burglar-alarm, but there must be an F422 interface between the two buses.



Correct mode of installation for 4 zone control unit, probes and magnetic contacts

THE 4 ZONE CONTROL UNIT AND THE PROBES

must be installed at a height of approximately 1.5 m, away from areas that may affect the reading of the room temperature, such as nearby windows, fan-coils, or radiators. The probes may be installed both inside standard flush-mounting, or wall-mounting boxes (LIVING, LIGHT, LIGHT TECH only); Surface installation may be useful for resolving issues with pre-existing BUS systems that cannot be expanded.



CALIBRATION OF THE 4 ZONE CENTRAL UNIT AND THE PROBES

The probes and the 4 zone central unit do not normally need 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 probes connected and powered with the hydraulic system off for at least two hours. During this time, avoid any changes in the room temperature (e.g. by opening or closing windows, doors, etc.) and **avoid standing near them**;
- for the calibration use a **calibrated sample thermometer**, correctly placed inside the room.

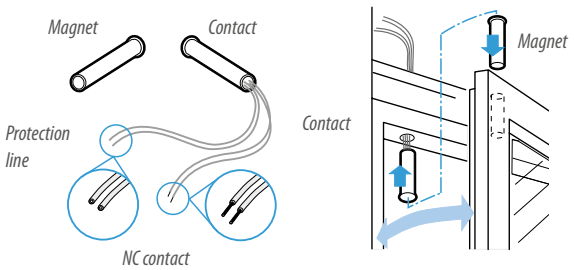
For more details on the calibration procedure, refer to the central unit installation manuals.

MAGNETIC CONTACTS

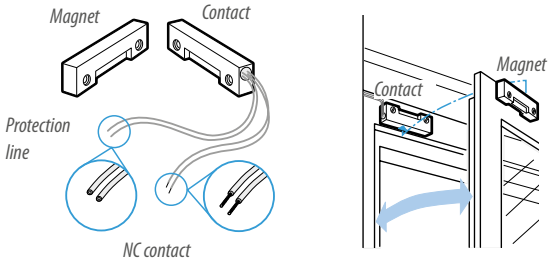
are generally installed in the upper part of the window frames and in the point furthest away from the hinges. In this way small openings cause the magnet to move away from the contact reed and the contact itself consequently opens. The models in the catalogue are of NC type and also have a protection line generally not used in temperature control. It is mainly useful for preventing tampering such as cutting the wires in burglar-alarm systems. If the same MY HOME system has temperature control and burglar-alarm applications the same magnetic contacts can be used for both functions at the same time.

If the contact interface is correctly configured it can support both applications. When the temperature control system is being installed the protection line should be installed and wired as well, so that the burglar-alarm can be installed as well.

FOR FLUSH-MOUNTING INSTALLATION 3510, 3510M, 3510PB

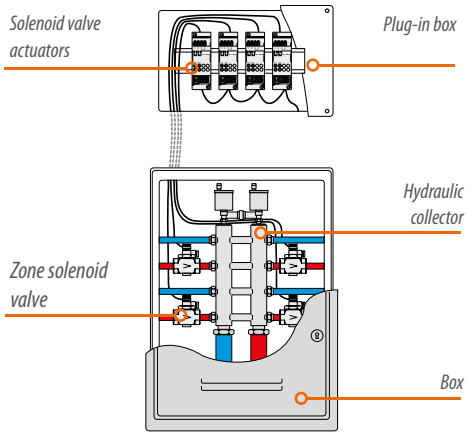


FOR VISIBLE INSTALLATION 3511



Disposition of solenoid valves and actuators

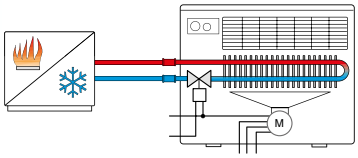
The typical installation requires the positioning of all solenoid valves on the collector, grouped inside a box in the boiler room. In this case it is recommended that also all actuators are grouped, inside a control unit, installed nearby the box itself. In multi-floor buildings, this solution may be repeated at every floor.



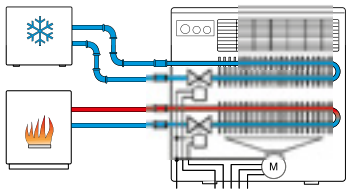
FAN-COIL SYSTEMS

In fan-coil systems, the solenoid valve may be installed inside the fan-coil itself. In 2 pipe systems, the same solenoid valve is used both for the heating and the cooling functions. In 4 pipe systems, 2 separate solenoid valves are used, one for the heating and the other for the cooling function.

Installation of the solenoid valve inside 2 pipe fan-coils

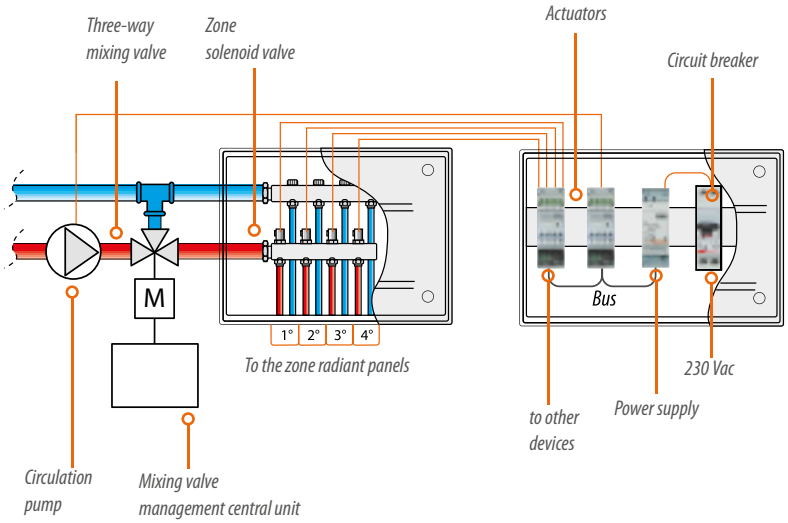


Installation of the solenoid valve inside 4 pipe fan-coils



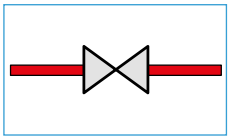
RADIANT PANEL SYSTEMS

In radiant panel systems it will be necessary to install, after the pump, a three-way mixing valve capable of mixing the water, so that the maximum temperature limit set is not exceeded. The mixing valve is managed by a central unit supplied by the manufacturer of the radiant panel system.

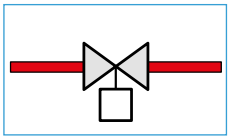


Legend of symbols

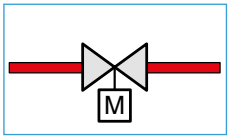
To make the reading of the diagrams shown in the following pages easier, the various symbols and their functions are summarised.



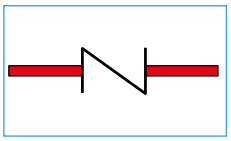
General valve symbol



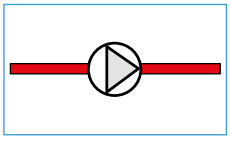
ON/OFF solenoid valve



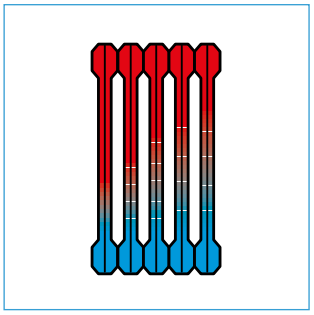
Open/close solenoid valve



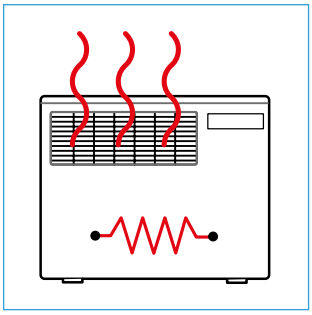
Non-return valve



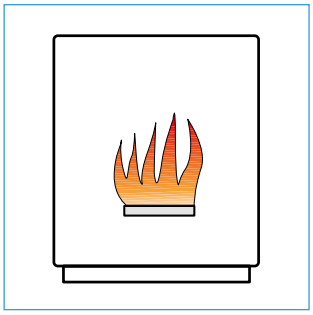
Pump



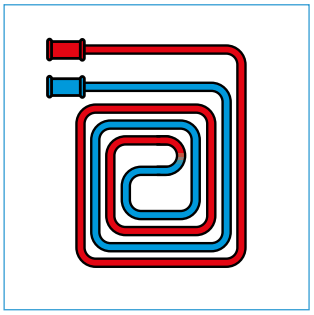
Radiators



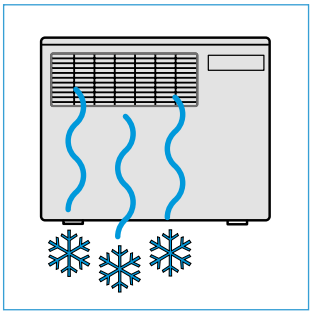
Electric radiator



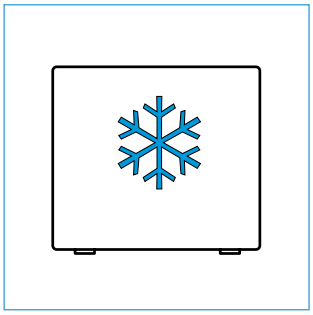
Boiler



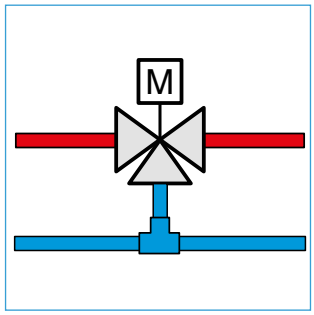
Radiant panels



Fan-coil



Chiller

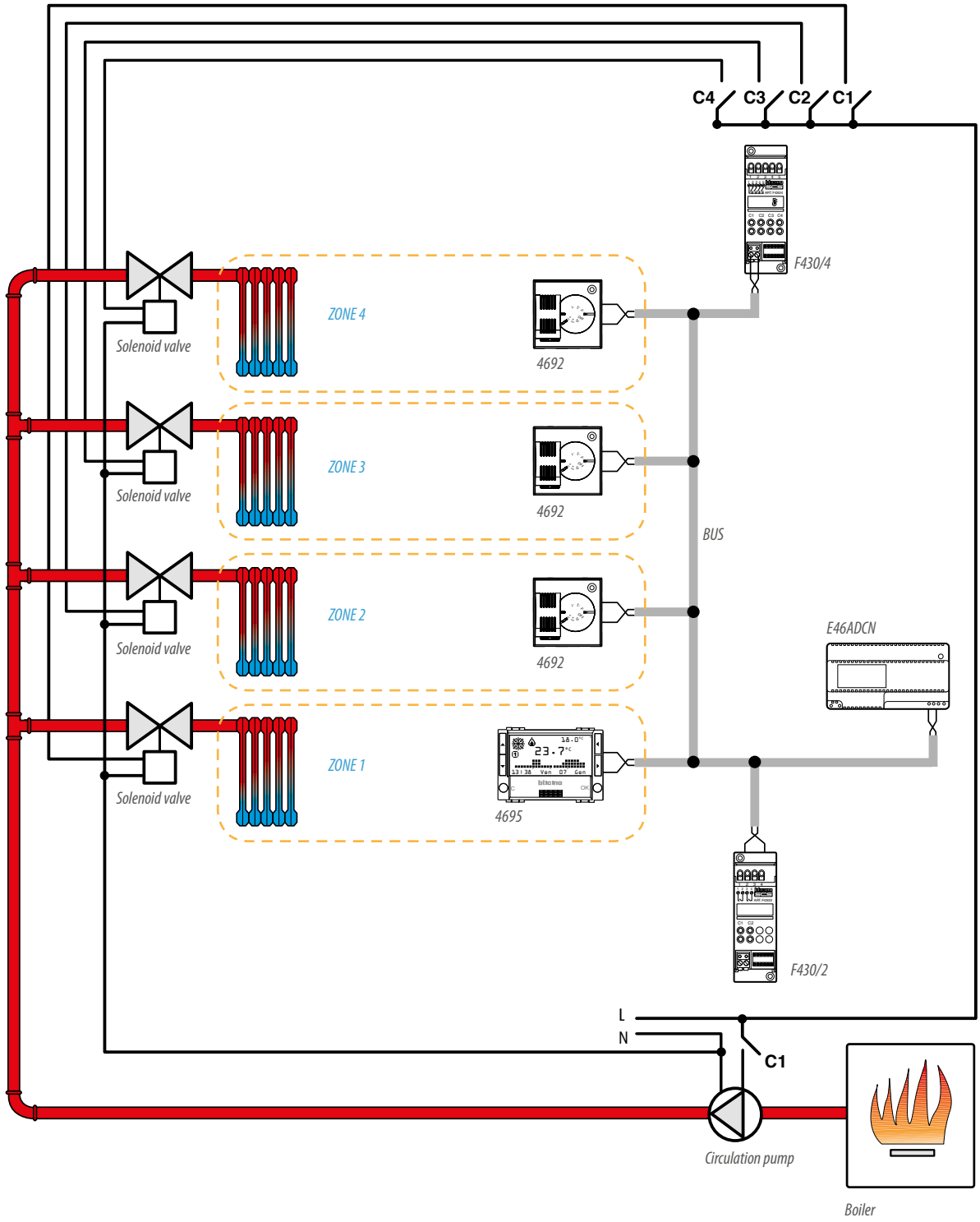


Three-way mixing valve (*)

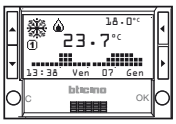
(*) NOTE: In radiant heating panel systems this valve has the function of mixing water, to ensure that the water itself, and therefore also the floor, remain below a certain temperature limit. For this reason, the mixing valve must be controlled by a control unit supplied by the radiant heating panel system supplier.

4 zone villa

DIAGRAM 1 HEATING WITH RADIATORS



CENTRAL UNIT/PROBE CONFIGURATION



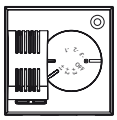
The 4 zone control unit item HD/HC/HS/L/N/NT4695 and item AM5875, as well as managing the whole of the temperature control system, contains a temperature probe which must be configured physically like the other system probes. Interact with the "Configure zones" menu to end the system configuration operations correctly.

As an alternative the TiThermo Basic application dedicated to this version of control unit can be used.

For these operations refer to the manual supplied with the products.

ZONE 1 CENTRAL UNIT/PROBE		
[ZA]	[ZB]	[SLA]
0	1	-

PROBES CONFIGURATION

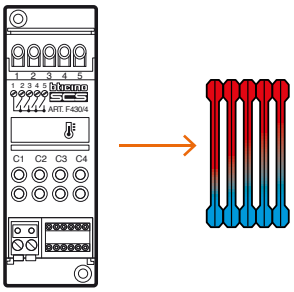


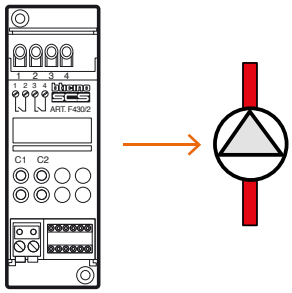
ZONE 2 PROBE		
[ZA]	[ZB]	[SLA]
0	2	-

ZONE 3 PROBE		
[ZA]	[ZB]	[SLA]
0	3	-

ZONE 4 PROBE		
[ZA]	[ZB]	[SLA]
0	4	-

ACTUATORS CONFIGURATION



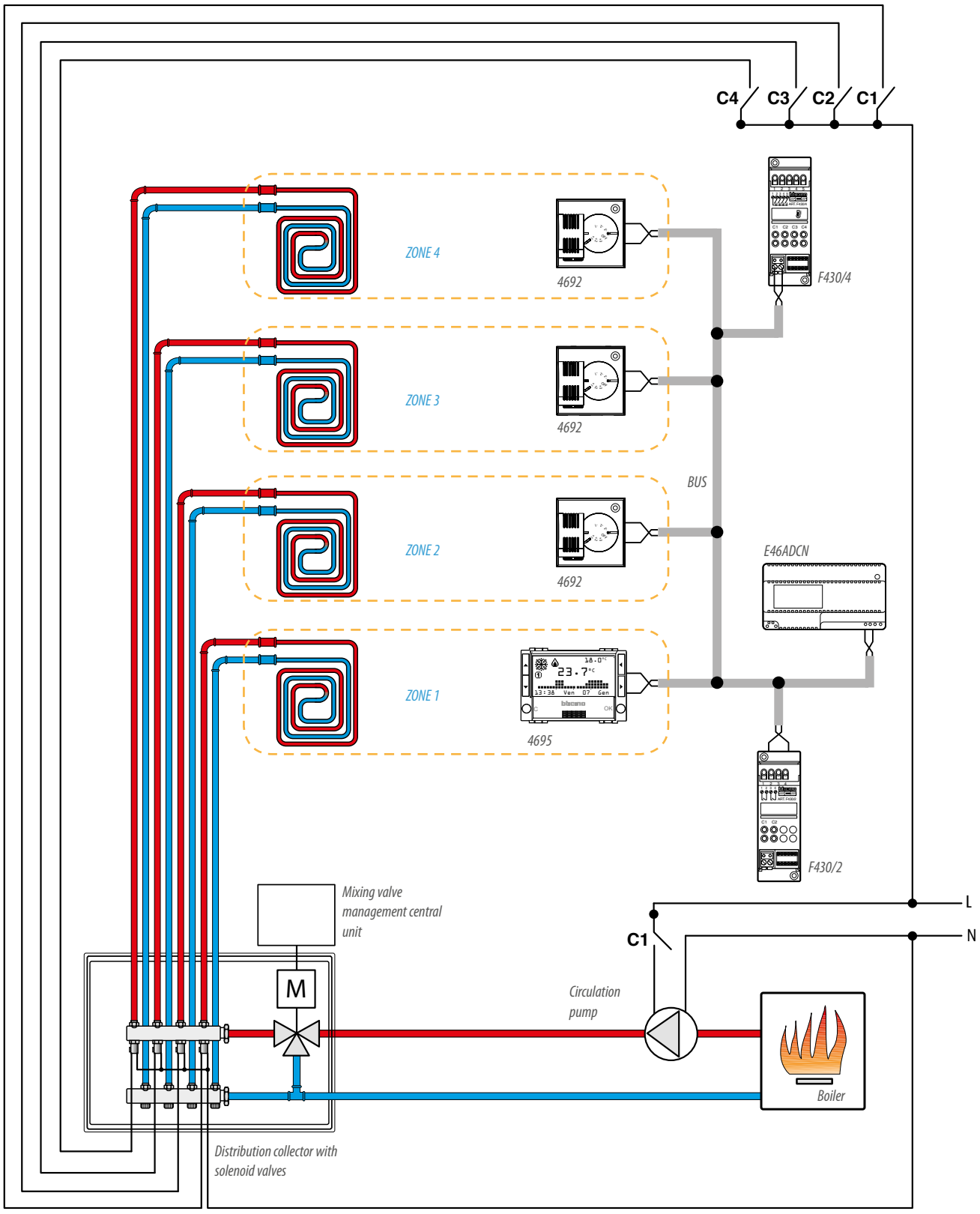


ZONE ACTUATOR					
[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	1	2	3	4	1

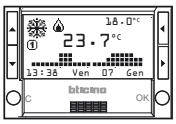
CIRCULATION PUMP ACTUATOR				
[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	0	1	OFF	-

4 zone villa

DIAGRAM 2 HEATING WITH RADIANT PANELS



CENTRAL UNIT/PROBE CONFIGURATION

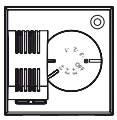


The 4 zone control unit item HD/HC/HS/L/N/NT4695 and item AM5875, as well as managing the whole of the temperature control system, contains a temperature probe which must be configured physically like the other system probes. Interact with the "Configure zones" menu to end the system configuration operations correctly. As an alternative the TiThermo Basic application dedicated to this version of control unit can be used. For these operations refer to the manual supplied with the products.

ZONE 1 CENTRAL UNIT/PROBE

[ZA]	[ZB]	[SLA]
0	1	-

PROBES CONFIGURATION



ZONE 2 PROBE

[ZA]	[ZB]	[SLA]
0	2	-

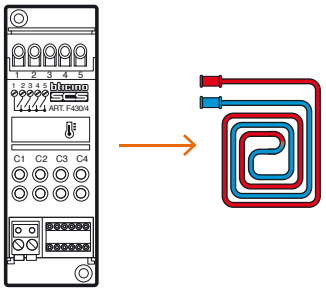
ZONE 3 PROBE

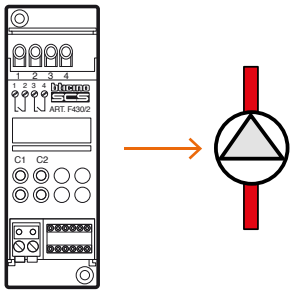
[ZA]	[ZB]	[SLA]
0	3	-

ZONE 4 PROBE

[ZA]	[ZB]	[SLA]
0	4	-

ACTUATORS CONFIGURATION





ZONE ACTUATOR

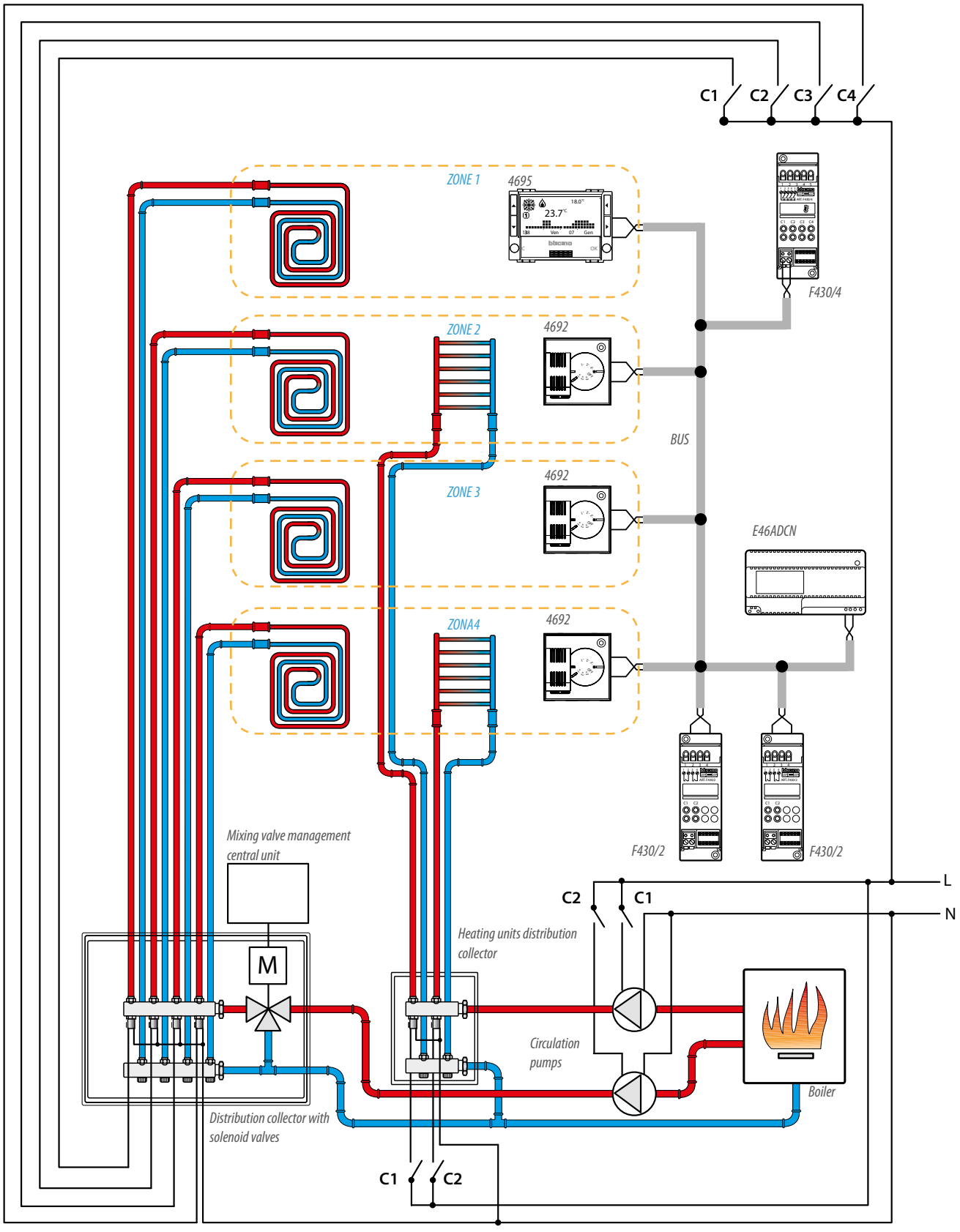
[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	1	2	3	4	1

CIRCULATION PUMP ACTUATOR

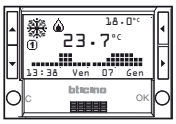
[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	0	1	OFF	-

4 zone villa

DIAGRAM 3 HEATING WITH RADIANT PANELS AND HEATING UNITS



CENTRAL UNIT/PROBE CONFIGURATION

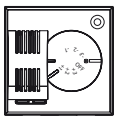


The 4 zone control unit item HD/HC/HS/L/N/NT4695 and item AM5875, as well as managing the whole of the temperature control system, contains a temperature probe which must be configured physically like the other system probes. Interact with the "Configure zones" menu to end the system configuration operations correctly. As an alternative the TiThermo Basic application dedicated to this version of control unit can be used. For these operations refer to the manual supplied with the products.

ZONE 1 CENTRAL UNIT/PROBE

[ZA]	[ZB]	[SLA]
0	1	-

PROBES CONFIGURATION



ZONE 2 PROBE

[ZA]	[ZB]	[SLA]
0	2	-

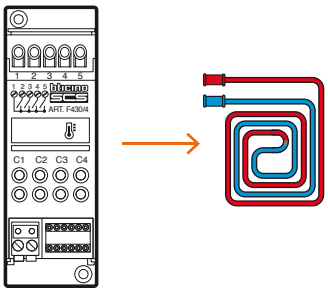
ZONE 3 PROBE

[ZA]	[ZB]	[SLA]
0	3	-

ZONE 4 PROBE

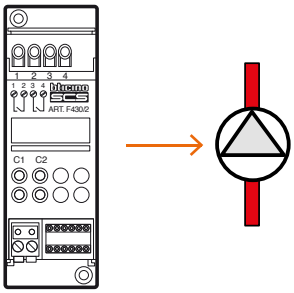
[ZA]	[ZB]	[SLA]
0	4	-

ACTUATORS CONFIGURATION



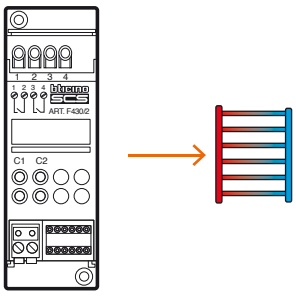
ZONE ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	1	2	3	4	1



CIRCULATION PUMP ACTUATOR

[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	0	1	0	2

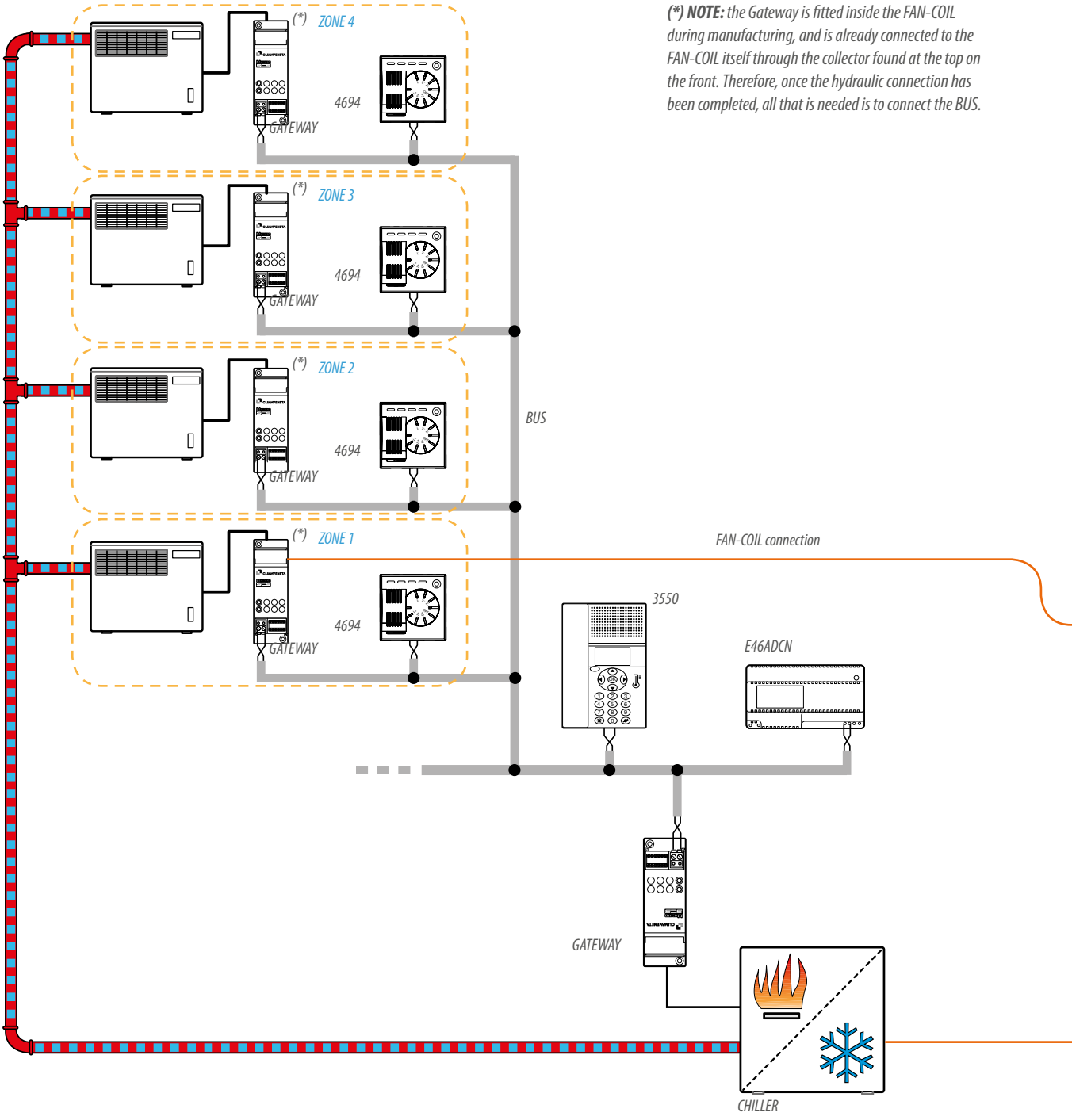


HEATING UNITS ACTUATOR

[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	2	1	4	1

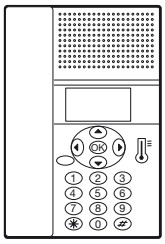
4 zone villa - Climaveneta fan-coil

DIAGRAM 4 HEATING AND COOLING WITH CLIMAVENETA FAN-COIL



***(*) NOTE:** the Gateway is fitted inside the FAN-COIL during manufacturing, and is already connected to the FAN-COIL itself through the collector found at the top on the front. Therefore, once the hydraulic connection has been completed, all that is needed is to connect the BUS.*

99 ZONE CENTRAL UNIT CONFIGURATION



The 99 zone control unit item 3550 does not need physical configurators but, to end the system configuration operations, interact with the "Configure zones" menu.

As an alternative the TiThermo application can be used. For these operations refer to the manual supplied with the products.

CONFIGURATION OF PROBES FOR FAN-COIL

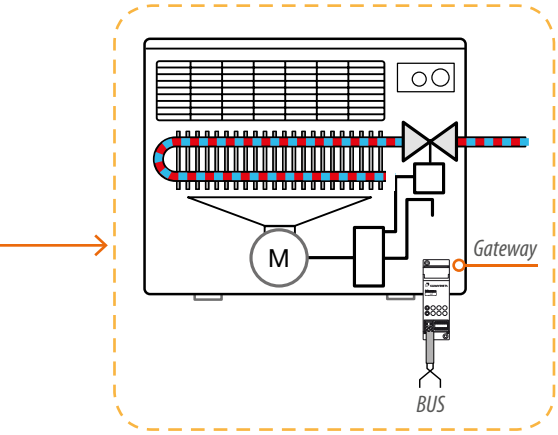
ZONE 1 PROBE		
[ZA]	[ZB]	[SLA]
0	1	-

ZONE 2 PROBE		
[ZA]	[ZB]	[SLA]
0	2	-

ZONE 3 PROBE		
[ZA]	[ZB]	[SLA]
0	3	-

ZONE 4 PROBE		
[ZA]	[ZB]	[SLA]
0	4	-

HEATING AND COOLING WITH CLIMAVENETA FAN-COIL



Electric diagram and configuration of the GATEWAY installed inside the Climaveneta fan-coil for the heating-cooling of zone 2.
In order to control the fan-coils of all other zones, perform the same type of connection, ensuring correct configuration of the actuator for the specific zone, as shown in the configuration tables.

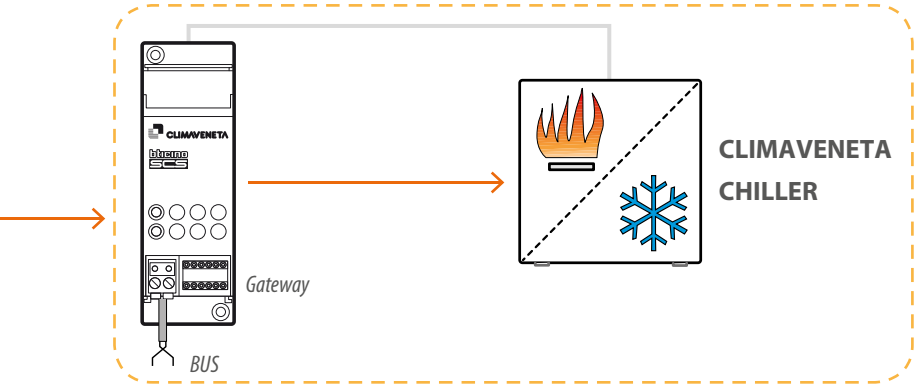
ZONE 1 GATEWAY			
[ZA]	[ZB]	[N]	[TYPE]
0	1	1	0

ZONE 2 GATEWAY			
[ZA]	[ZB]	[N]	[TYPE]
0	2	1	0

ZONE 3 GATEWAY			
[ZA]	[ZB]	[N]	[TYPE]
0	3	1	0

ZONE 2 GATEWAY			
[ZA]	[ZB]	[N]	[TYPE]
0	4	1	0

CLIMAVENETA CHILLER

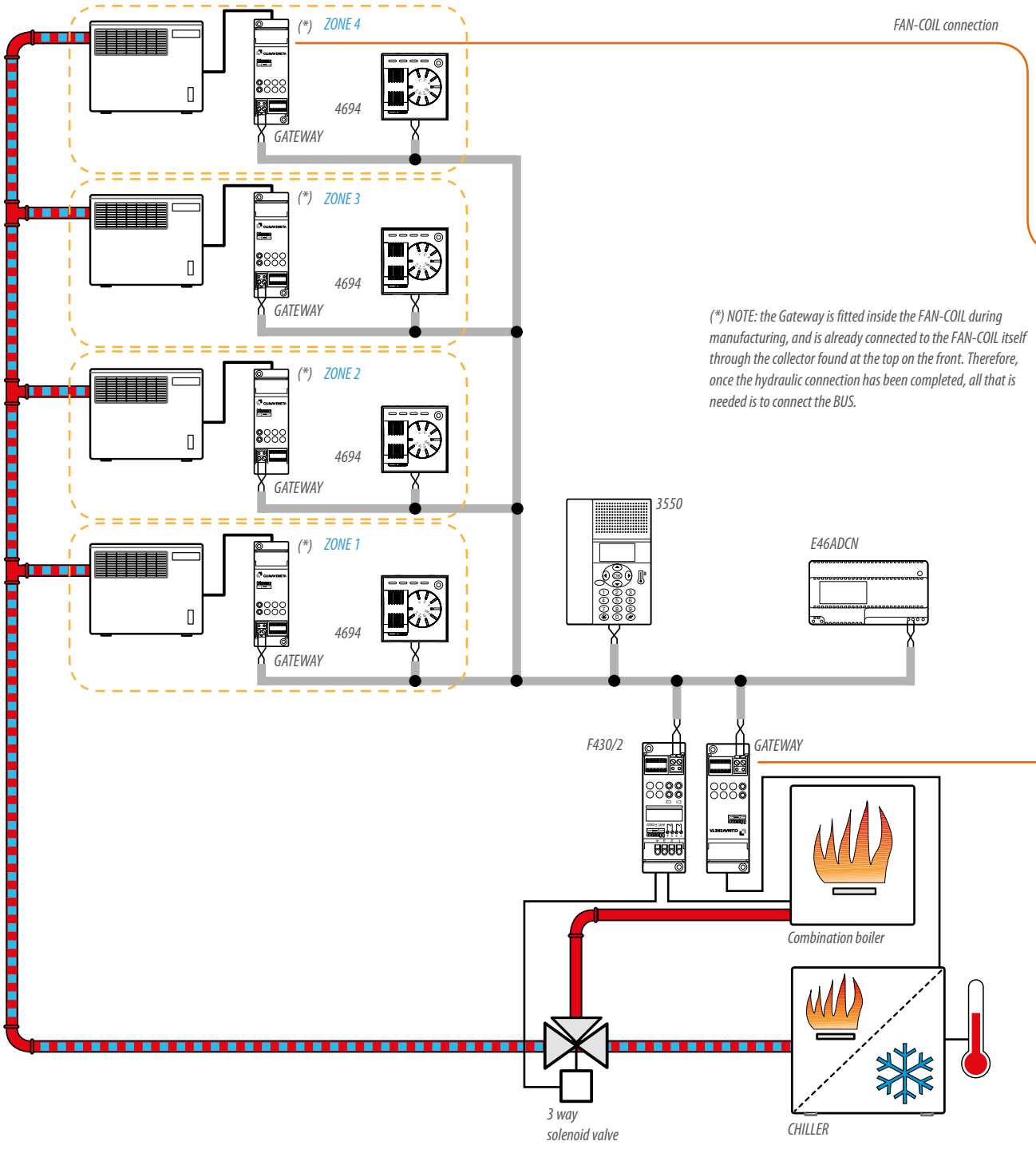


Wiring diagram and configuration of the gateway which controls the chiller. With one chiller, a system can be slaved and operate both as a heating system and as a cooling system. The Gateway is connected to the CLIMAVENETA chiller through the collector found at the top on the front, and to the BUS through the draw-out connection terminal.

GATEWAY CHILLER			
[ZA]	[ZB]	[N]	[TYPE]
0	0	1	1

4 zone villa

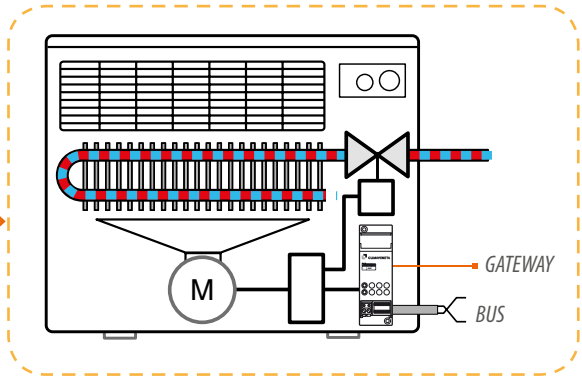
DIAGRAM 5 HEATING AND COOLING WITH CLIMAVENETA AIR CONDITIONING AND COMBINATION BOILER



HEATING AND COOLING WITH CLIMAVENETA FAN-COIL

Electric diagram and configuration of the GATEWAY installed inside the heating/cooling Climaveneta fan-coil.

Correctly configures the gateway corresponding to the zone as indicated in the configuration tables of the following pages.

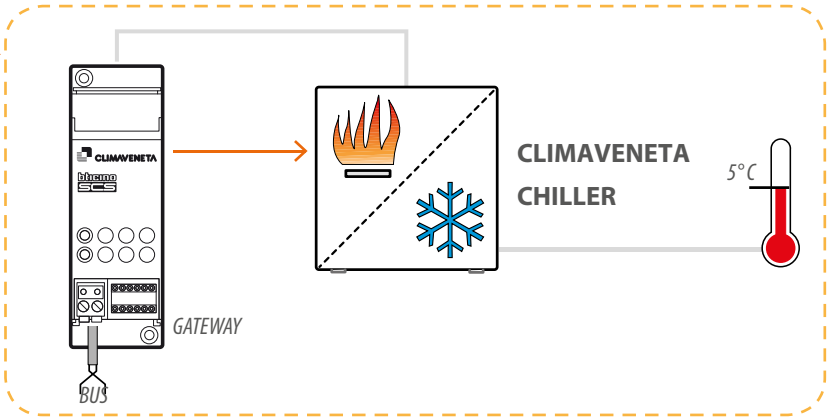


CLIMAVENETA CHILLER

Wiring diagram of the gateway which controls the chiller. A single chiller serves a system which can work both as heating and as cooling. The attached outside temperature probe is a device normally present in a Climaveneta system of this type.

There is thus no need to install radio probe item 3455 with its interface. The temperature datum is made available to the MY HOME temperature control system by means of the gateway.

The Gateway is connected to the CLIMAVENETA chiller through the collector found at the top on the front, and to the BUS through the draw-out connection terminal.



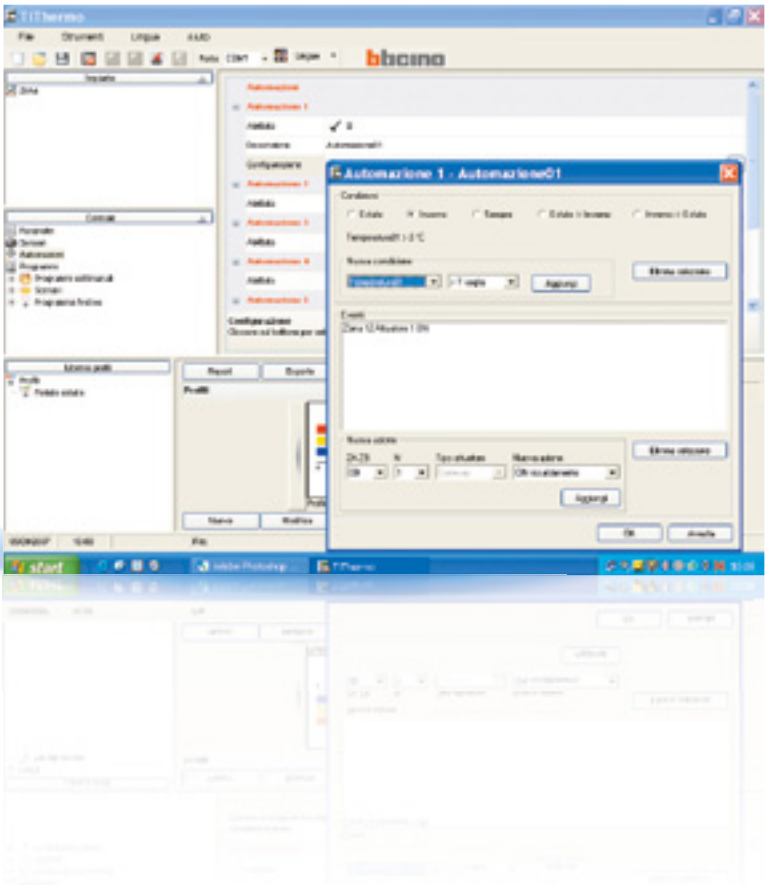
4 zone villa

< previous

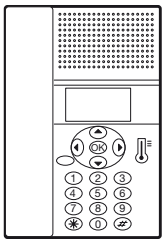
This diagram represents an example of a heating and cooling system made with Climaveneta unit and Combination boiler.
By means of the TiThermo software the 99 zone control unit item 3550 can be programmed to use the reading of the outside temperature from the Climaveneta system to manage systems with combination boilers.
Depending on the outside temperature the control unit activates the most suitable and convenient heating system depending on the heat yield.
During the spring and autumn rooms can be heated using the heat generated by the Chiller. This heat is however not suffi cient in the winter when a Combination boiler, generally supplied by gas, must be used.
The MY HOME temperature control system switches between the two sources of heat, using the outside temperature as parameter to discriminate between spring and autumn and winter.Actuator F430/2 manages the switching ON or OFF of the Boiler and changes the valve state, while the Gateway manages the Climaveneta Chiller.In the example given here the Chiller continues to work as long as the outside temperature (measured by the Climaveneta outside probe) remains higher than a set threshold value; below this value the Combination boiler starts to work.
Using TiThermo set the Outside Temperature (OT) value below which the Boiler starts to work: for example set 5°C.
When OT is higher than 5°C the Chiller manages the system.When OT is lower than 5°C the following actions take place: Chiller OFF, Boiler ON and valve open towards the Boiler.
The Boiler continues to work until OT rises above a value higher than 5°C. This selection is made to avoid device state oscillation phenomena.
If for example 7°C is set as threshold value, when OT is higher than 7°C the following actions take place: Chiller ON, Boiler OFF, valve open towards the Chiller.To sum up, the Chiller continues to work until the OT drops below 5°C; at this point the Boiler starts to work.
It will stay on until the OT rises above 7°C, when the Chiller switches on again.

NOTE: for the TiThermo software setting details consult the documentation supplied with the product itself.

TiThermo: example of an application window, indispensable for programming and setting the temperature thresholds and the automations.



99 ZONE CENTRAL UNIT CONFIGURATION



The 99 zone control unit item 3350 must be used to manage systems with combination boiler. The function is not in fact available on the 4 zone control unit item HC/HS/L/N/NT4695 and item AM5875.

This device does not need physical configurators but, to end the system configuration operations, interact with the "Configure zones" menu and with TiThermo applications. For these operations refer to the manual supplied with the products.

PROBES CONFIGURATION

ZONE 1 PROBE

[ZA]	[ZB]	[SLA]
0	1	-

ZONE 2 PROBE

[ZA]	[ZB]	[SLA]
0	2	-

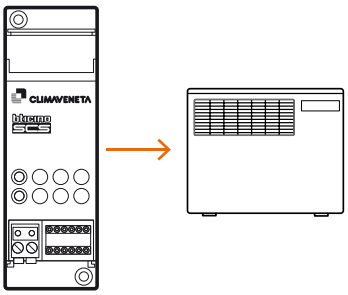
ZONE 3 PROBE

[ZA]	[ZB]	[SLA]
0	3	-

ZONE 4 PROBE

[ZA]	[ZB]	[SLA]
0	4	-

GATEWAY FAN-COIL CONFIGURATION



ZONEF1 GATEWAY

[ZA]	[ZB]	[N]	[TYPE]
0	1	1	0

ZONE 2 GATEWAY

[ZA]	[ZB]	[N]	[TYPE]
0	2	1	0

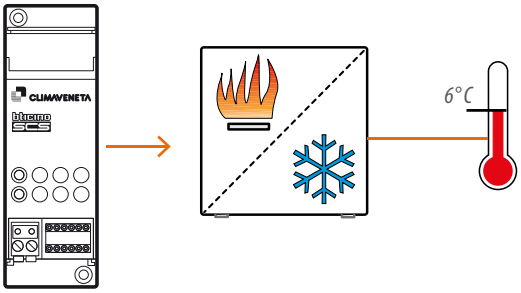
ZONE 3 GATEWAY

[ZA]	[ZB]	[N]	[TYPE]
0	3	1	0

ZONE 2 GATEWAY

[ZA]	[ZB]	[N]	[TYPE]
0	4	1	0

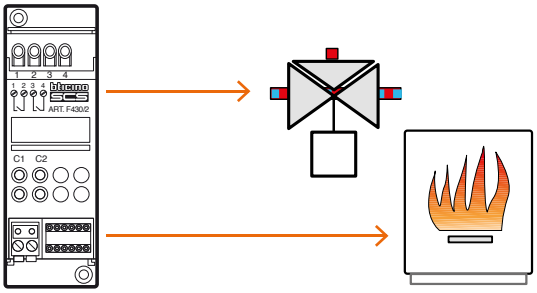
GATEWAY CHILLER CONFIGURATION



GATEWAY CHILLER

[ZA]	[ZB]	[N]	[TYPE]
0	0	1	1

BOILER AND SOLENOID VALVE ACTUATOR CONFIGURATION

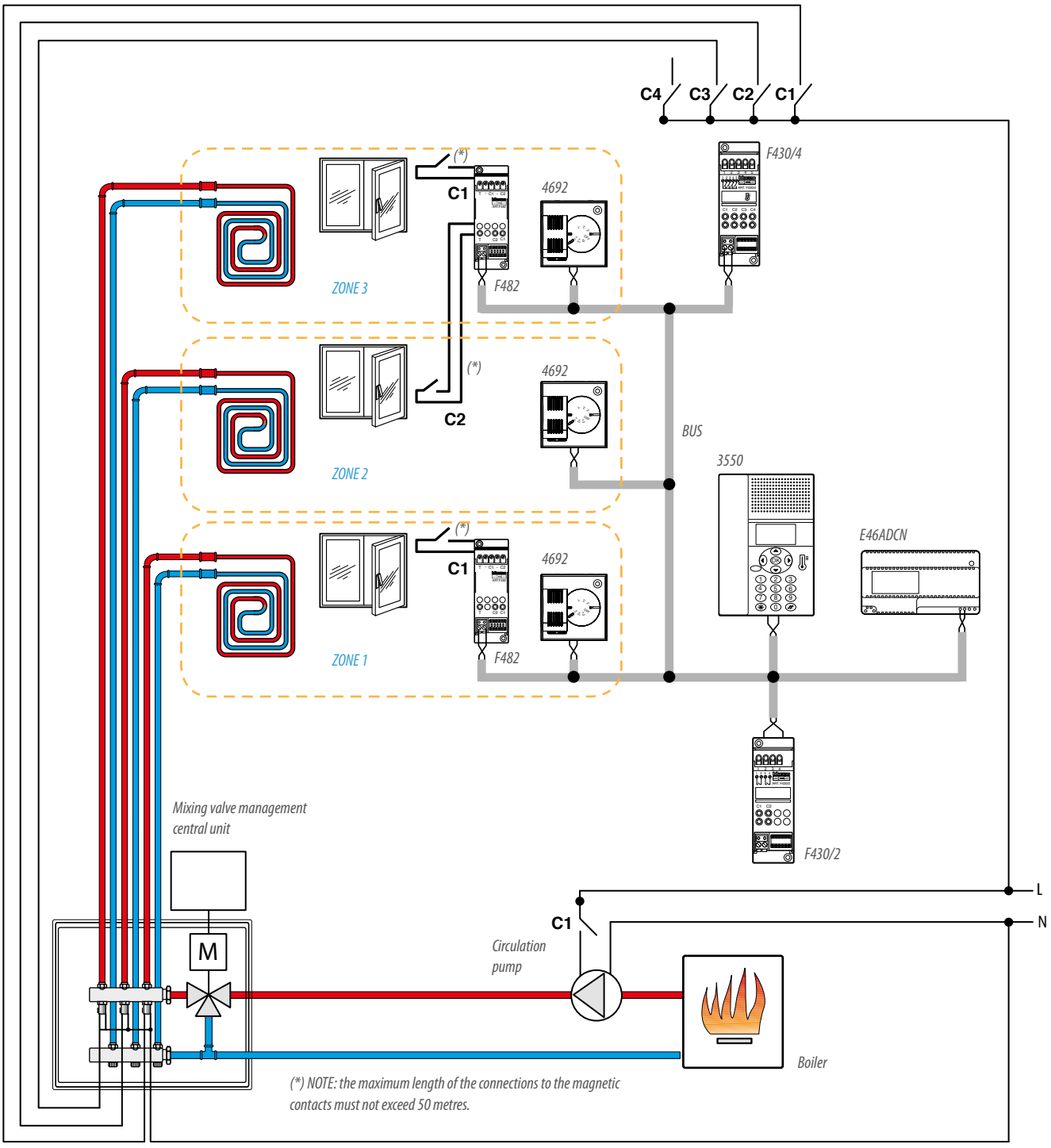


BOILER/SOLENOID VALVE ACTUATOR

[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	5	1	6	1

3 zone villa

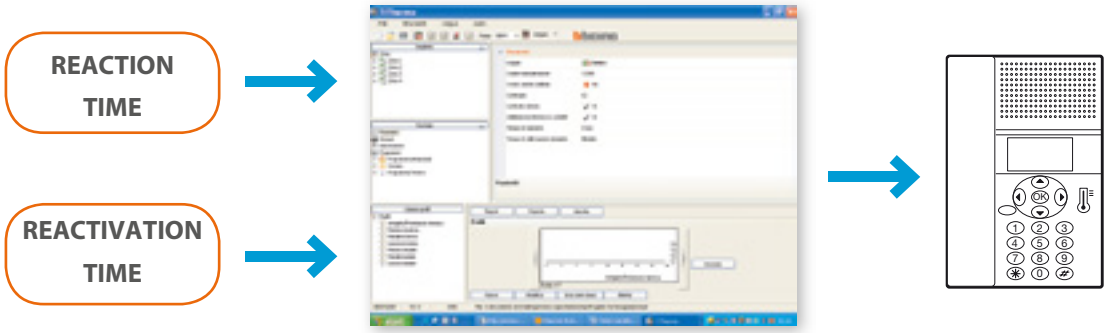
DIAGRAM 6 HEATING WITH RADIANT PANELS WITH WINDOW CONTACT MANAGEMENT



99 ZONE CENTRAL UNIT CONFIGURATION

The 99 zone control unit item 3350 must be used to use the magnetic contact management function. The function is not in fact available on the 4 zone control unit item HC/HS/L/N/NT4695 and item AM5875. This device does not need physical configurators but, to end the system configuration operations, interact with the "Configure zones" menu. As an alternative the TiThermo application can be used. For these operations refer to the manual supplied with the products.

When setting the parameters for the management of the magnetic contacts, the TiThermo application must be used. Two parameters may be set: the reaction time, and the reactivation time.

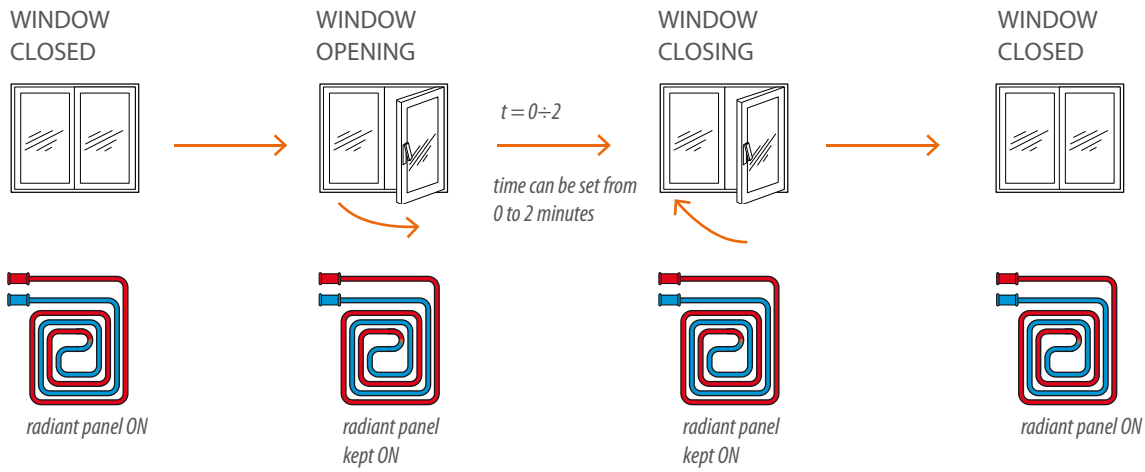


TiThermo screen

Temperature central unit item 3550

REACTION TIME

The reaction time can be set from 0 to 2 minutes and is a sort of delay to the deactivation of the temperature control zone. During this time the system completely ignores the opening of the window frame avoiding switching the corresponding temperature control zone OFF. Setting 0 minutes deactivation is practically instant. This function is suitable for short openings of windows or doors not needed for the changes of air, for example opening a window to close or open the shutters, or opening the entrance door to welcome a person.



3 zone villa

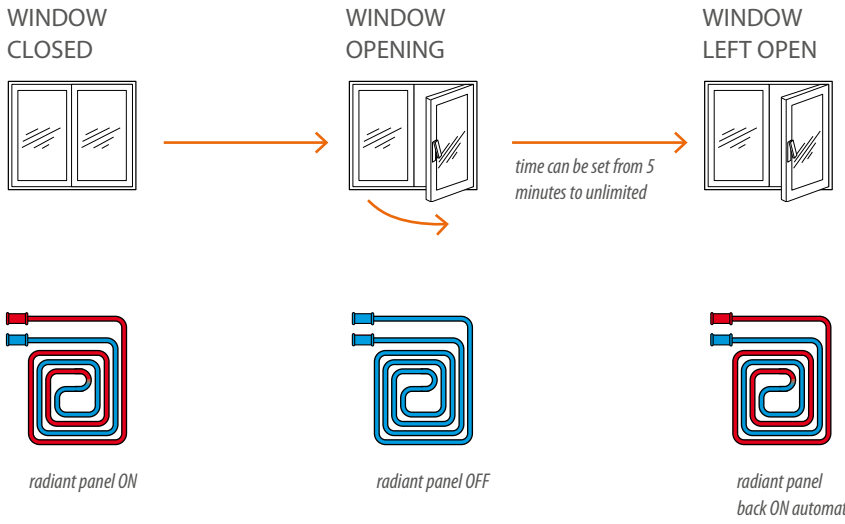
< previous

REACTIVATION TIME

The reactivation time can be set from 5 to 55 minutes, or on unlimited. When the time set has elapsed the system reactivates the temperature control zone even if windows or doors are still open.

Even if it goes against the concept of energy saving this function is useful when the windows have been left open and the temperature set in the room must be kept the same.

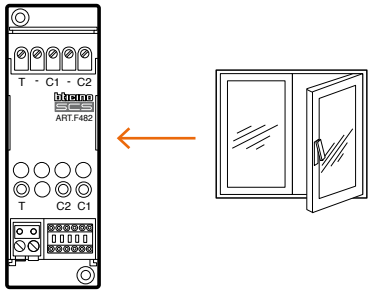
When the reactivation time is set on unlimited the function is not active.



CONTACT INTERFACE CONFIGURATION

The contact interface is directly connected to the temperature control bus. It autonomously and independently manages the two C1 and C2 lines. It is necessary to configure only the line used, and not both of them.

Follow by connecting the AUX configurator to the MOD1 and/or MOD2 housings, for the activation of the operating mode with temperature control system only. Then configure the Z1/2 and N1/2 housings, in order to assign the address 1 to 99 of the device, within the system. The coupling between the interface contact line and the temperature control zone must be performed using the TiThermo application.



CONTACT INTERFACE OF ZONE 1 WINDOWS

[Z1]	[N1]	[MOD1]	[Z2]	[N2]	[MOD2]
0	1	AUX	-	-	-

CONTACT INTERFACE OF ZONE 2 AND 3 WINDOWS

[Z1]	[N1]	[MOD1]	[Z2]	[N2]	[MOD2]
0	2	AUX	0	3	AUX

PROBES CONFIGURATION

ZONE 1 PROBE

[ZA]	[ZB]	[SLA]
0	1	-

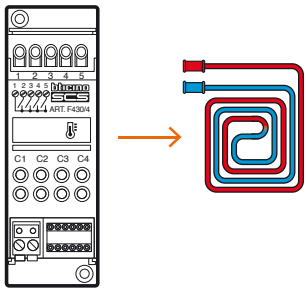
ZONE 2 PROBE

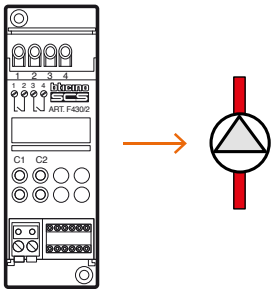
[ZA]	[ZB]	[SLA]
0	2	-

ZONE 3 PROBE

[ZA]	[ZB]	[SLA]
0	3	-

ACTUATORS CONFIGURATION





ZONE ACTUATOR

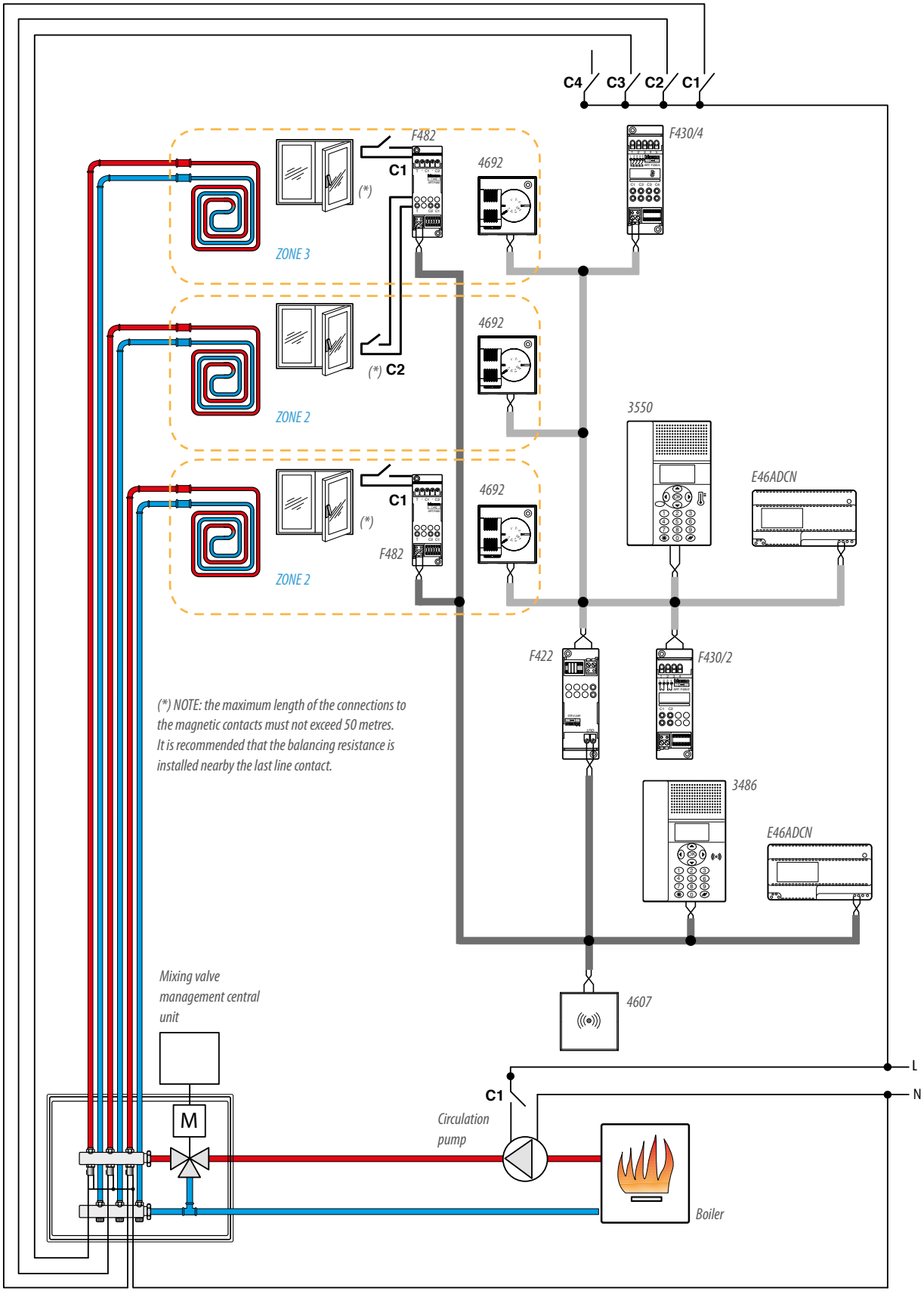
[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	1	2	3	OFF	1

CIRCULATION PUMP ACTUATOR

[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	0	1	OFF	-

3 zone villa

DIAGRAM 7 HEATING WITH RADIANT PANELS WITH WINDOW CONTACT MANAGEMENT FROM THE BURGLAR-ALARM SYSTEM



99 ZONE CENTRAL UNIT CONFIGURATION

In this case the contact interface is connected to the burglar-alarm bus only and communicates with the temperature control bus by means of interface F422. The door or window opening or closing signal is sent both to the burglar-alarm system and to the temperature control system, and is used both for safety and energy saving purposes.

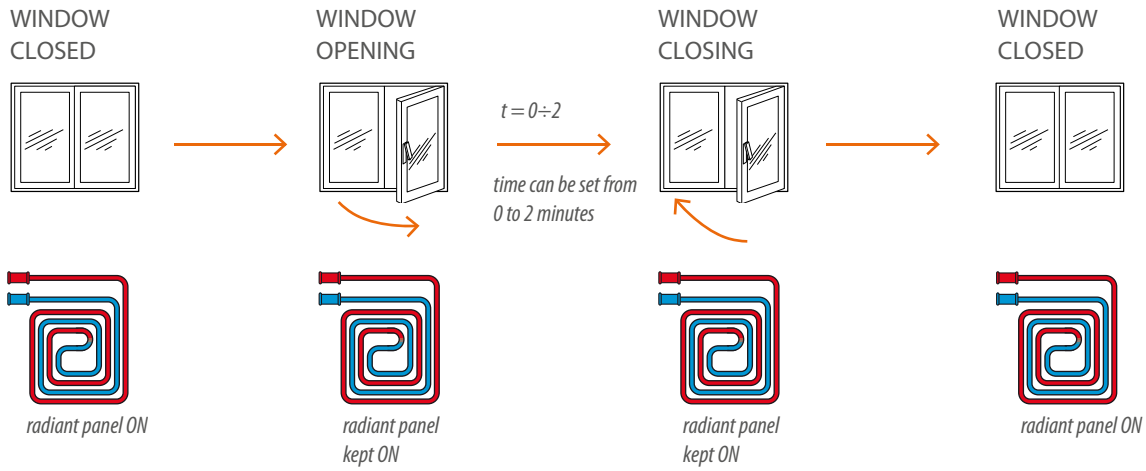
In order to use the function for the management of the magnetic contacts installed in the Burglar-Alarm system, item 3550 must be used in the 99 zone control unit temperature control system. This device does not require physical configurators. Configuration operations must be performed using the "Configuration" menu or the TiThermo application. When setting the parameters for the management of the magnetic contacts, the TiThermo application must be used. Two parameters may be set: the reaction time and the reactivation time.

TiThermo screen

Temperature central unit item 3550

REACTION TIME

The reaction time can be set from 0 to 2 minutes and is a sort of delay to the deactivation of the temperature control zone. During this time the system completely ignores the opening of the window frame avoiding switching the corresponding temperature control zone OFF. Setting 0 minutes deactivation is practically instant. This function is suitable for short openings of windows or doors not needed for the changes of air, for example opening a window to close or open the shutters, or opening the entrance door to welcome a person.



3 zone villa

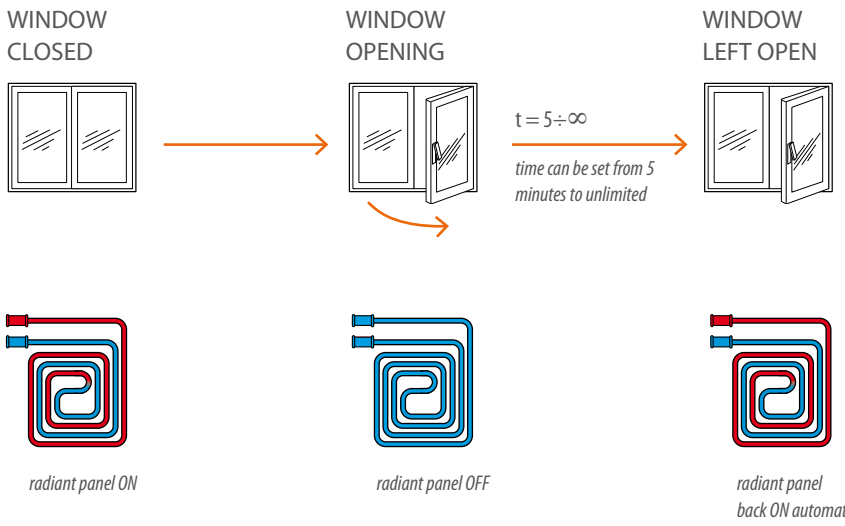
< previous

REACTIVATION TIME

The reactivation time can be set from 5 to 55 minutes, or on unlimited. When the time set has elapsed the system reactivates the temperature control zone even if windows or doors are still open.

Even if it goes against the concept of energy saving this function is useful when the windows have been left open and the temperature set in the room must be kept the same.

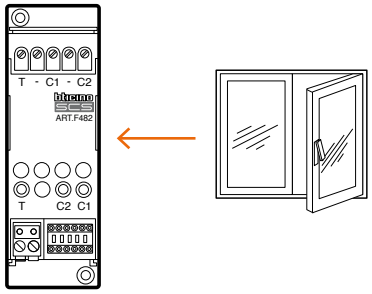
When the reactivation time is set on unlimited the function is not active.



CONTACT INTERFACE CONFIGURATION

Then configure housings Z1/2 and N1/2 depending on the requirements and features of the burglar-alarm system (see the burglar-alarm technical guide).

The coupling between the interface contact line and the temperature control zone must be performed using the TiThermo application.



CONTACT INTERFACE OF ZONE 1 WINDOWS

[Z1]	[N1]	[MOD1]	[Z2]	[N2]	[MOD2]
(*)	(*)	4	(*)	(*)	(*)

CONTACT INTERFACE OF ZONE 2 AND 3 WINDOWS

[Z1]	[N1]	[MOD1]	[Z2]	[N2]	[MOD2]
(*)	(*)	4	(*)	(*)	(*)

(*) NOTE: The involved contacts are C1 and C2. Only the housings of the lines used must be configured; configure housings MOD1 and/or MOD2 based on the type of contact an the operating mode to be used. See table.

MOD1/MOD2	TYPE OF CONTACT AND MODE
4	NC
5	Balanced
6	NC - delayed
7	NC - Balanced - delayed

PROBES CONFIGURATION

ZONE 1 PROBE

[ZA]	[ZB]	[SLA]
0	1	-

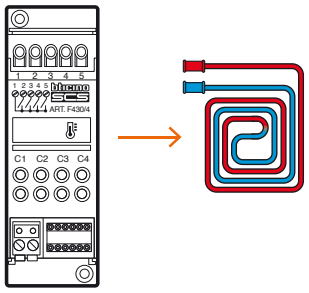
ZONE 2 PROBE

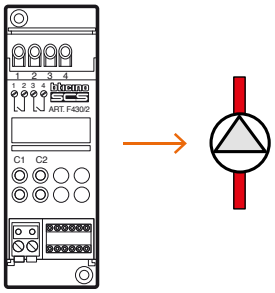
[ZA]	[ZB]	[SLA]
0	2	-

ZONE 3 PROBE

[ZA]	[ZB]	[SLA]
0	3	-

ACTUATORS CONFIGURATION





ZONE ACTUATOR

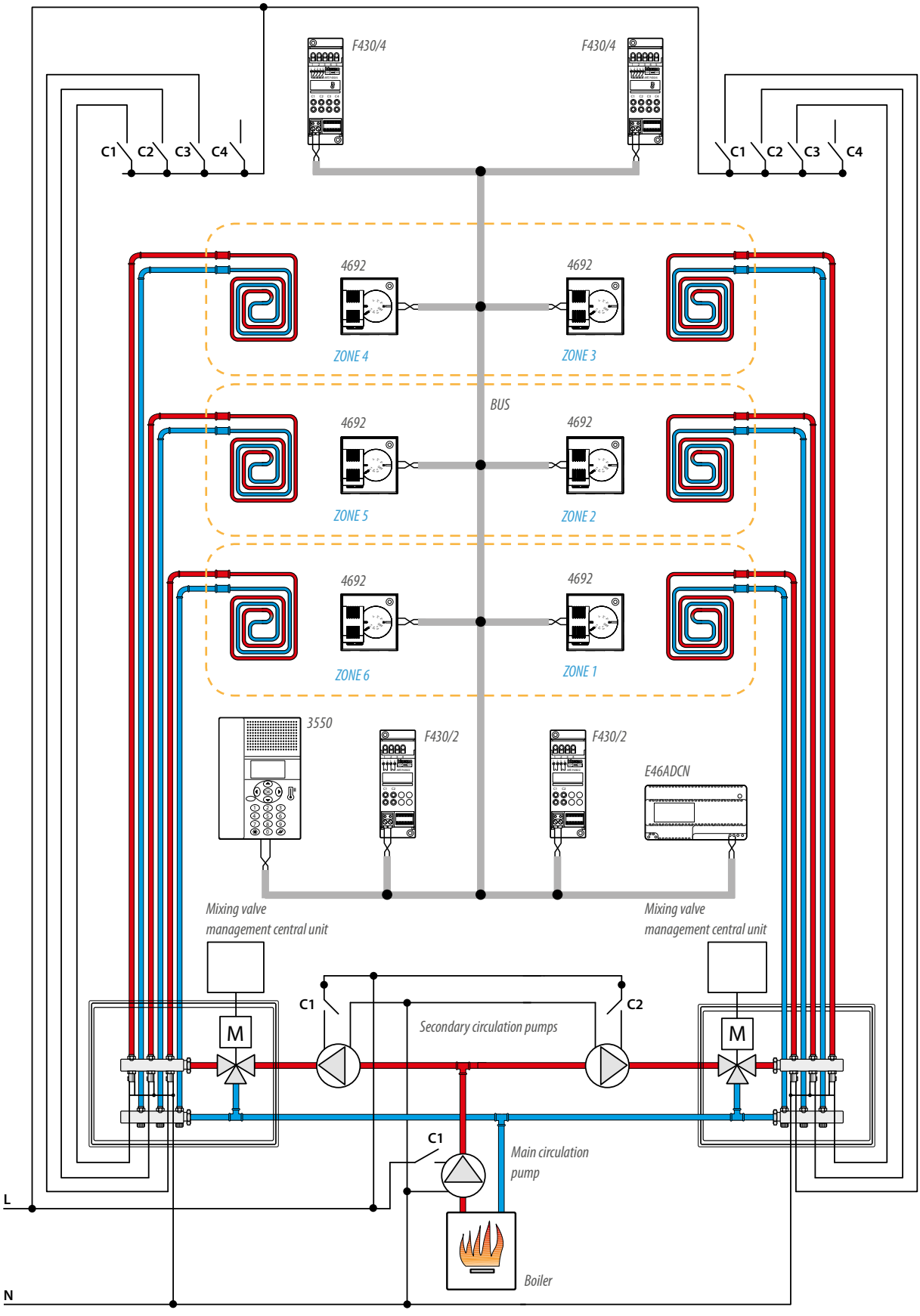
[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	1	2	3	OFF	1

CIRCULATION PUMP ACTUATOR

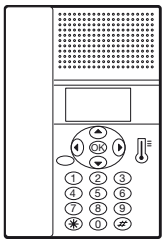
[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	0	1	OFF	-

6 zone villa

DIAGRAM 8 HEATING WITH RADIANT PANELS



99 ZONE CENTRAL UNIT CONFIGURATION



The 99 zone control unit item 3550 does not need physical configurators but, to end the system configuration operations, interact with the "Configure zones" menu.

As an alternative the TiThermo application can be used. For these operations refer to the manual supplied with the products.

PROBES CONFIGURATION

ZONE 1 PROBE

[ZA]	[ZB]	[SLA]
0	1	-

ZONE 2 PROBE

[ZA]	[ZB]	[SLA]
0	2	-

ZONE 3 PROBE

[ZA]	[ZB]	[SLA]
0	3	-

ZONE 4 PROBE

[ZA]	[ZB]	[SLA]
0	4	-

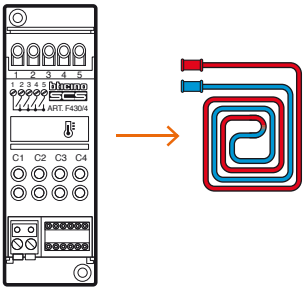
ZONE 5 PROBE

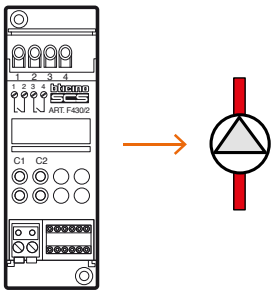
[ZA]	[ZB]	[SLA]
0	5	-

ZONE 6 PROBE

[ZA]	[ZB]	[SLA]
0	6	-

ACTUATORS CONFIGURATION





ZONE ACTUATOR 1, 2, 3

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	1	2	3	OFF	1

ZONE ACTUATOR 4, 5, 6

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	4	5	6	OFF	1

MAIN CIRCULATION PUMP ACTUATOR

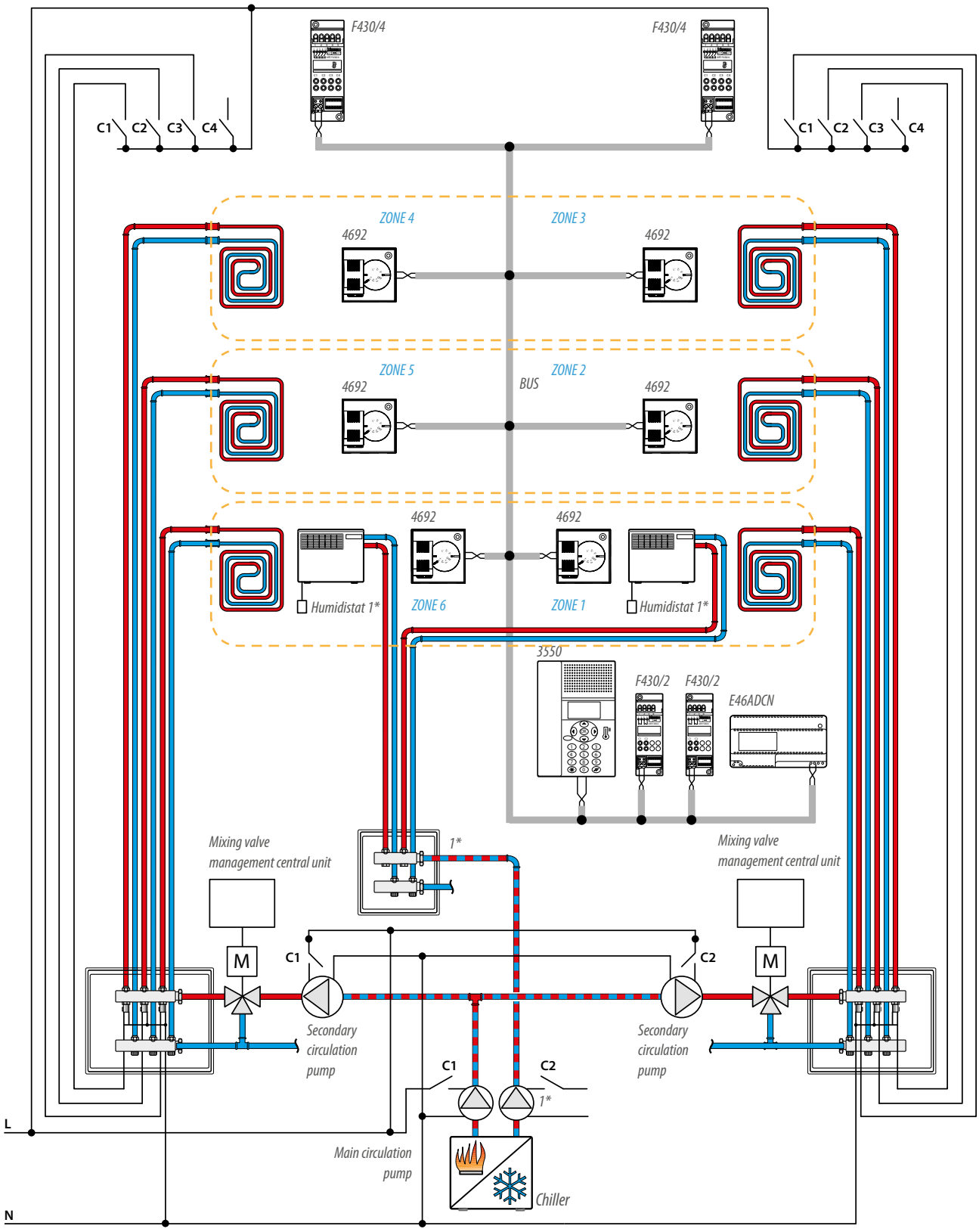
[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	0	1	OFF	-

SECONDARY CIRCULATION PUMPS ACTUATOR

[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	2	1	3	1

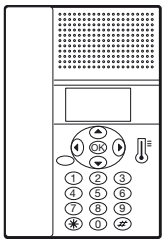
6 zone villa

DIAGRAM 9 RADIANT PANELS HEATING AND COOLING AND DEHUMIDIFIER FAN-COIL



NOTE: 1 the dehumidifier system is not managed through the MY HOME system.*

99 ZONE CENTRAL UNIT CONFIGURATION



The 99 zone control unit item 3550 does not need physical configurators but, to end the system configuration operations, interact with the "Configure zones" menu.

As an alternative the TiThermo application can be used. For these operations refer to the manual supplied with the products.

PROBES CONFIGURATION

ZONE 1 PROBE

[ZA]	[ZB]	[SLA]
0	1	-

ZONE 2 PROBE

[ZA]	[ZB]	[SLA]
0	2	-

ZONE 3 PROBE

[ZA]	[ZB]	[SLA]
0	3	-

ZONE 4 PROBE

[ZA]	[ZB]	[SLA]
0	4	-

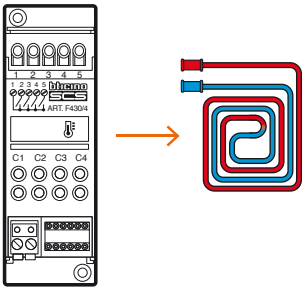
ZONE 5 PROBE

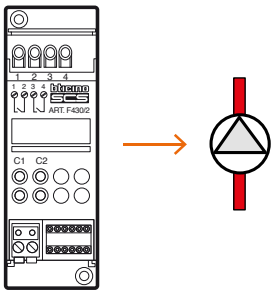
[ZA]	[ZB]	[SLA]
0	5	-

ZONE 6 PROBE

[ZA]	[ZB]	[SLA]
0	6	-

ACTUATORS CONFIGURATION





ZONE ACTUATOR 1, 2, 3

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	1	2	3	OFF	1

ZONE ACTUATOR 4, 5, 6

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	4	5	6	OFF	1

MAIN CIRCULATION PUMP ACTUATOR

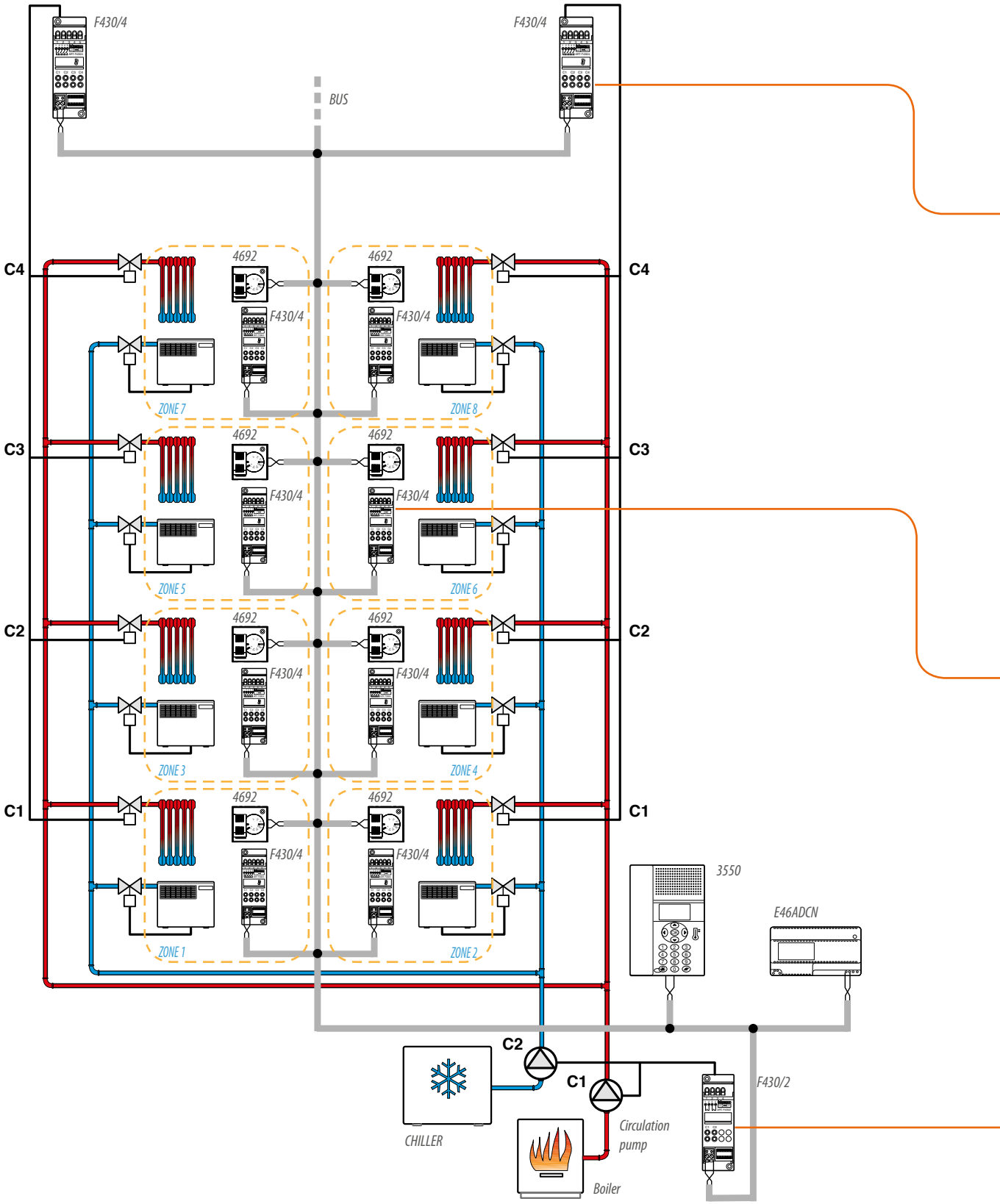
[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	0	1	OFF	-

SECONDARY CIRCULATION PUMPS ACTUATOR

[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	0	2	0	3

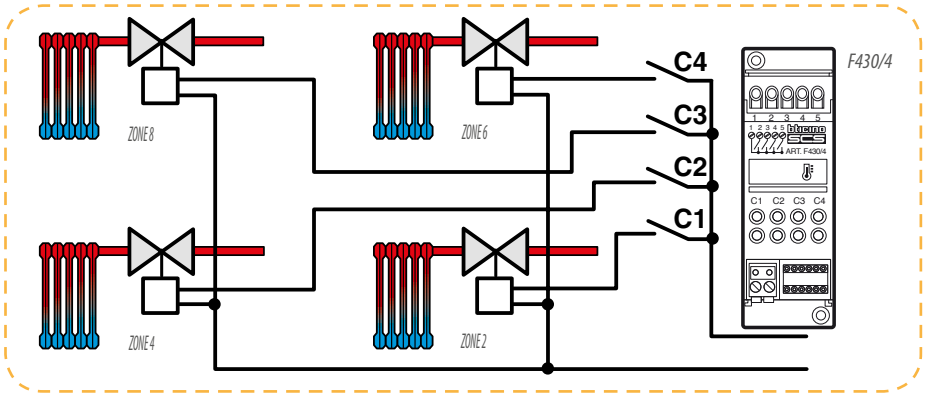
8 zone villa

DIAGRAM 10 HEATING WITH RADIATORS AND FAN-COIL COOLING



HEATING

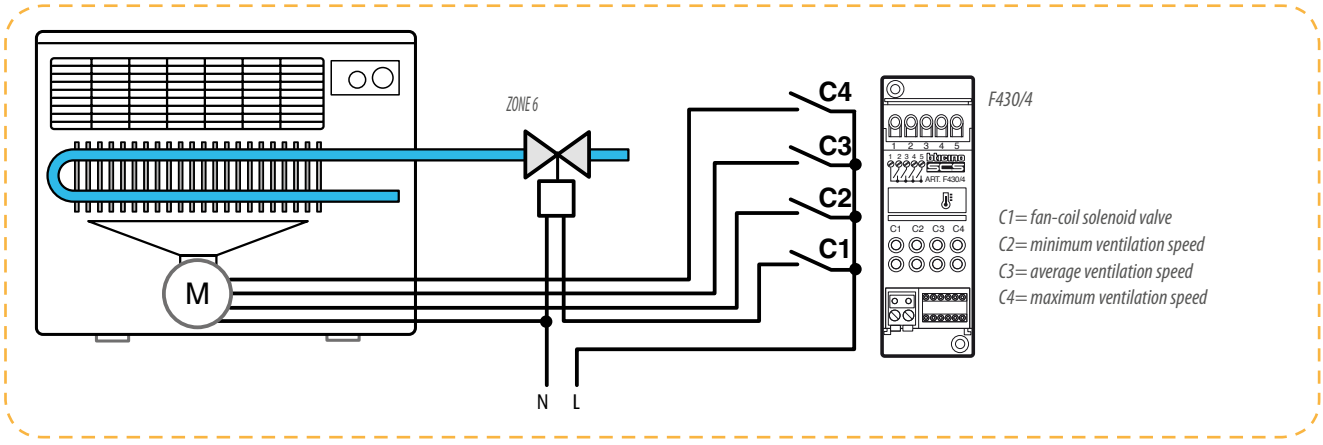
Wiring diagram for connecting the solenoid valves of zones 2, 4, 6 and 8 to the heating actuator. To control zones 1, 3, 5 and 7 replicate the same connection between the solenoid valves and the corresponding actuator. The configuration must be made correctly, maintaining the correlation between the actuator contact and the address of the zone to be controlled. In the example given here, zone 2 is controlled by contact C1 configured with [ZA] = 0 and [ZB] = 2.



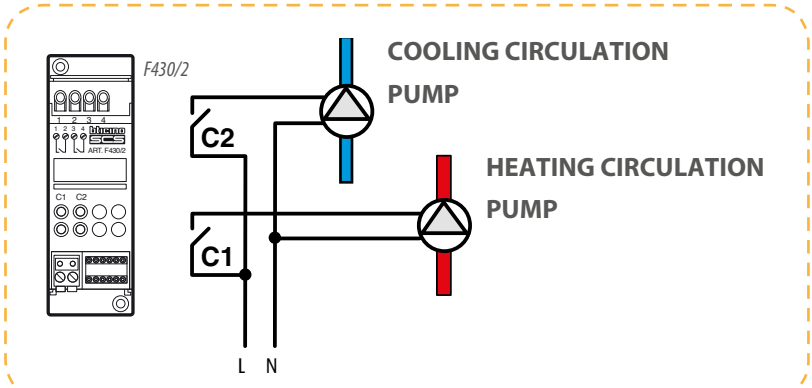
COOLING

Wiring diagram for connecting the fan-coil to the actuator for zone 6 cooling.

To control the fan-coils belonging to zones 1, 2, 3, 4, 5, 7 and 8 replicate the same connection, correctly configuring the actuator corresponding to the zone as indicated in the configuration tables.



CIRCULATION PUMP

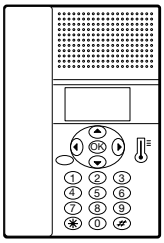


Wiring diagram for connecting the circulation pumps to the corresponding actuator.
The pumps of the two systems, heating and cooling, are controlled by a single actuator.

8 zone villa

< previous

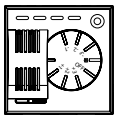
99 ZONE CENTRAL UNIT CONFIGURATION



The 99 zone control unit item 3550 does not need physical configurators but, to end the system configuration operations, interact with the "Configure zones" menu.

As an alternative the TiThermo application can be used.
For these operations refer to the manual supplied with the products.

PROBES CONFIGURATION



ZONE 1 PROBE

[ZA]	[ZB]	[SLA]
0	1	-

ZONE 2 PROBE

[ZA]	[ZB]	[SLA]
0	2	-

ZONE 3 PROBE

[ZA]	[ZB]	[SLA]
0	3	-

ZONE 4 PROBE

[ZA]	[ZB]	[SLA]
0	4	-

ZONE 5 PROBE

[ZA]	[ZB]	[SLA]
0	5	-

ZONE 6 PROBE

[ZA]	[ZB]	[SLA]
0	6	-

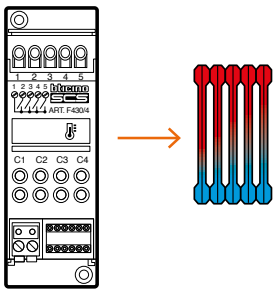
ZONE 7 PROBE

[ZA]	[ZB]	[SLA]
0	7	-

ZONE 8 PROBE

[ZA]	[ZB]	[SLA]
0	8	-

HEATING SYSTEM ACTUATOR CONFIGURATION



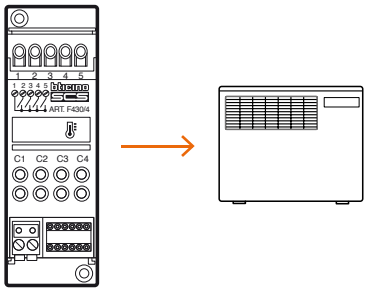
ZONE 1, 3, 5 AND 7 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	1	3	5	7	1

ZONE 2, 4, 6 AND 8 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	2	4	6	8	1

COOLING SYSTEM ACTUATOR CONFIGURATION



ZONE 1 COOLING ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	1	1	1	1	2

ZONE 2 COOLING ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	2	2	2	2	2

ZONE 3 COOLING ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	3	3	3	3	2

ZONE 4 COOLING ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	4	4	4	4	2

ZONE 5 COOLING ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	5	5	5	5	2

ZONE 6 COOLING ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	6	6	6	6	2

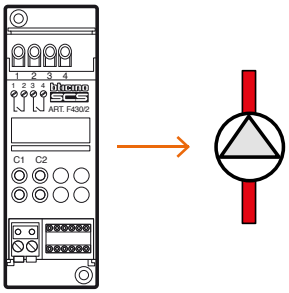
ZONE 7 COOLING ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	7	7	7	7	2

ZONE 8 COOLING ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	8	8	8	8	2

CIRCULATION PUMP ACTUATOR CONFIGURATION

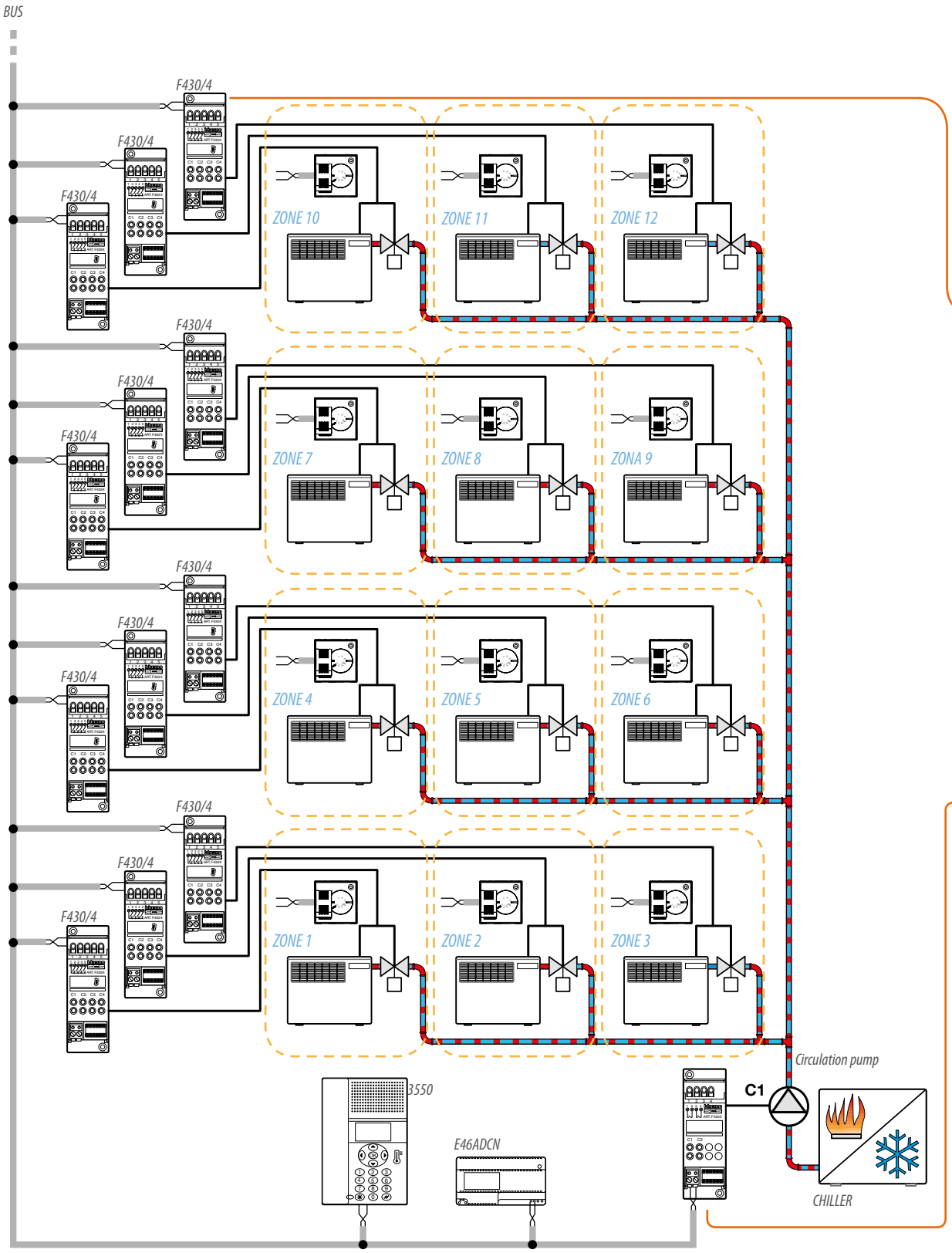


CIRCULATION PUMP ACTUATOR

[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	0	1	0	2

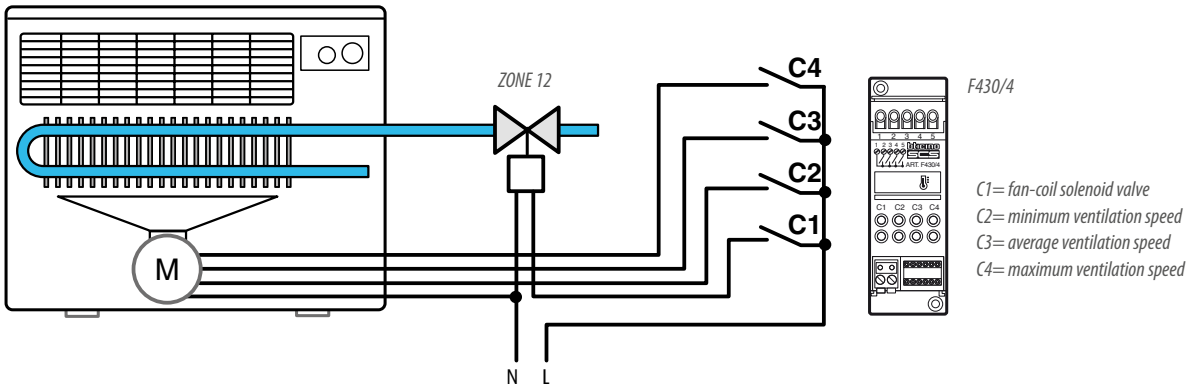
Service sector, 12 zones

DIAGRAM 11 2 PIPE, 3 SPEED FAN-COIL, SINGLE HEATING AND COOLING SYSTEM



HEATING AND COOLING

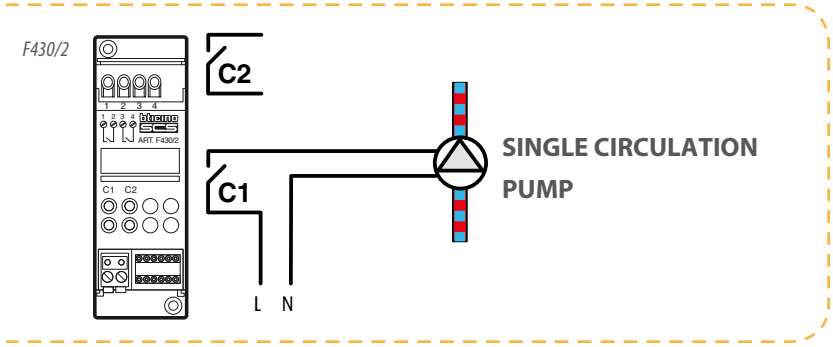
Wiring diagram for connecting the fan-coil to the actuator for zone 12 heating/cooling. To control the fan-coils belonging to all the other zones replicate the same connection, correctly configuring the actuator corresponding to the zone as indicated in the configuration tables.



CIRCULATION PUMP

Wiring diagram for connecting the circulation pumps to the corresponding actuator.

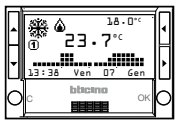
A system which can provide both heating and cooling is controlled by a single pump.



Service sector, 12 zones

< previous

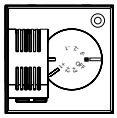
CENTRAL UNIT/PROBE CONFIGURATION



The 99 zone control unit item 3550 does not need physical configurators but, to end the system configuration operations, interact with the "Configure zones" menu.

As an alternative the TiThermo application can be used. For these operations refer to the manual supplied with the products.

PROBES CONFIGURATION



ZONE 1 PROBE

[ZA]	[ZB]	[SLA]
0	1	-

ZONE 2 PROBE

[ZA]	[ZB]	[SLA]
0	2	-

ZONE 3 PROBE

[ZA]	[ZB]	[SLA]
0	3	-

ZONE 4 PROBE

[ZA]	[ZB]	[SLA]
0	4	-

ZONE 5 PROBE

[ZA]	[ZB]	[SLA]
0	5	-

ZONE 6 PROBE

[ZA]	[ZB]	[SLA]
0	6	-

ZONE 7 PROBE

[ZA]	[ZB]	[SLA]
0	7	-

ZONE 8 PROBE

[ZA]	[ZB]	[SLA]
0	8	-

ZONE 9 PROBE

[ZA]	[ZB]	[SLA]
0	9	-

ZONE 10 PROBE

[ZA]	[ZB]	[SLA]
1	0	-

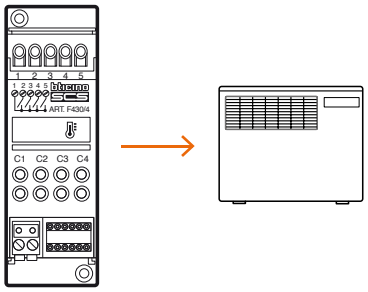
ZONE 11 PROBE

[ZA]	[ZB]	[SLA]
1	1	-

ZONE 12 PROBE

[ZA]	[ZB]	[SLA]
1	2	-

HEATING/COOLING FAN-COIL ACTUATOR CONFIGURATION



ZONE 1 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	1	1	1	1	1

ZONE 2 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	2	2	2	2	1

ZONE 3 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	3	3	3	3	1

ZONE 4 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	4	4	4	4	1

ZONE 5 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	5	5	5	5	1

ZONE 6 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	6	6	6	6	1

ZONE 7 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	7	7	7	7	1

ZONE 8 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	8	8	8	8	1

ZONE 9 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	9	9	9	9	1

ZONE 10 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
1	0	0	0	0	1

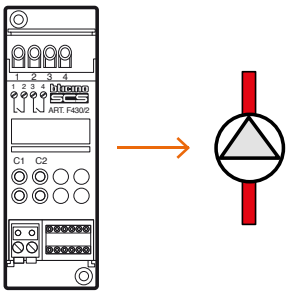
ZONE 11 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
1	1	1	1	1	1

ZONE 12 ACTUATOR

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
1	2	2	2	2	1

CIRCULATION PUMP ACTUATOR CONFIGURATION

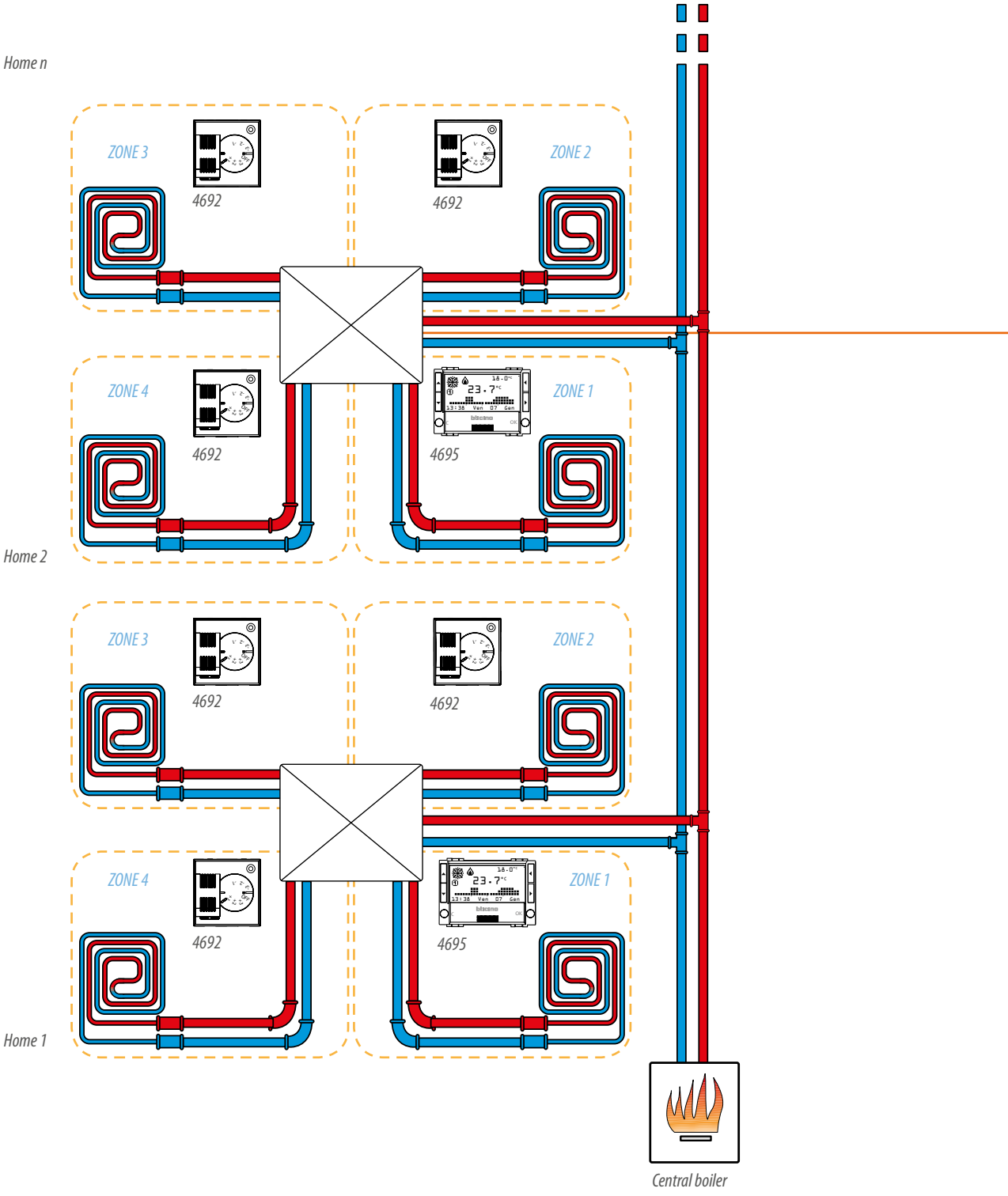


CIRCULATION PUMP ACTUATOR

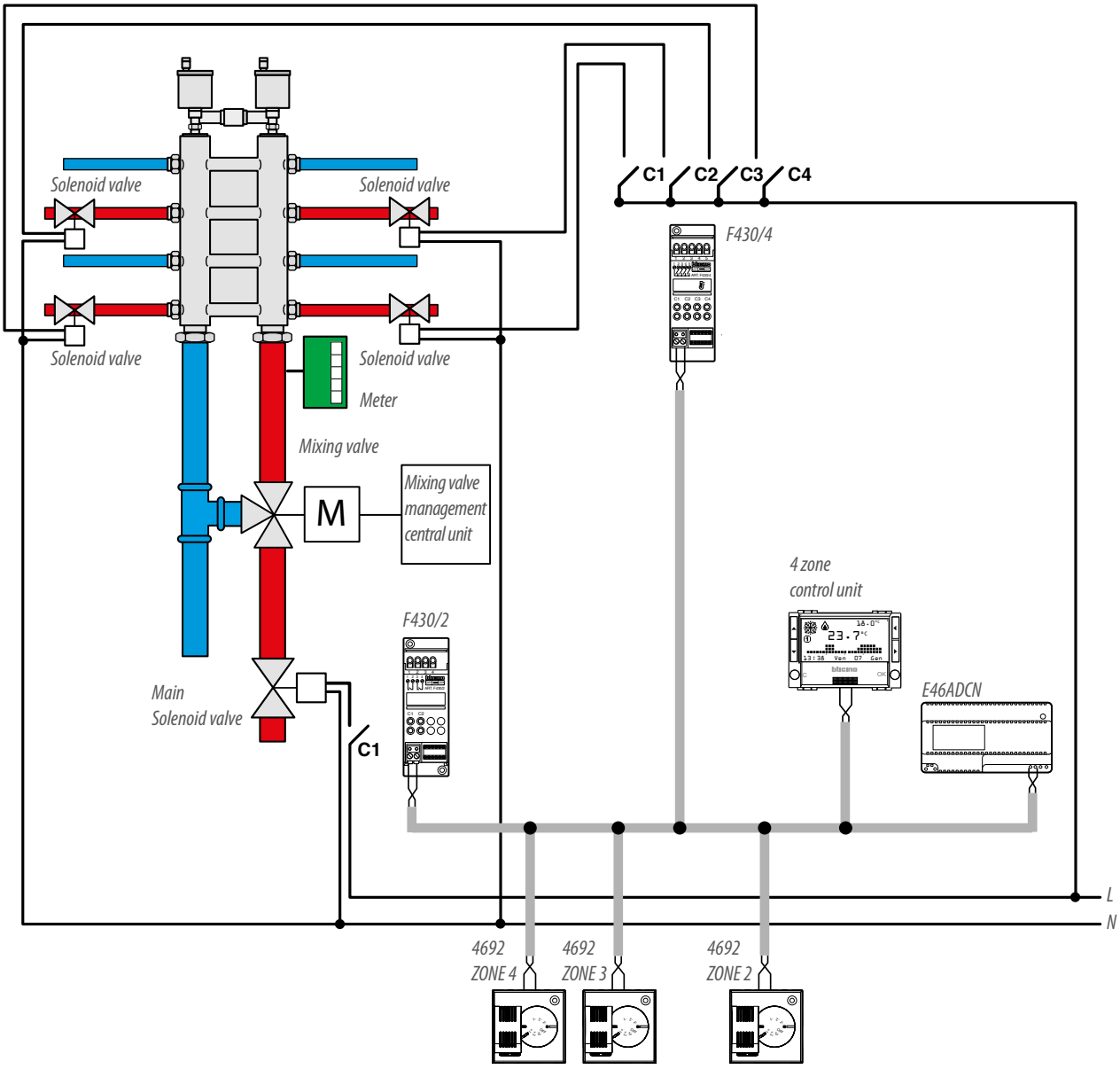
[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	0	1	OFF	-

Several homes, 4 zones

DIAGRAM 12 RADIATOR CENTRAL HEATING SYSTEM WITH RADIANT PANELS OF SEVERAL HOMES, 4 ZONES



CONNECTION OF THE DISTRIBUTION COLLECTOR AND TEMPERATURE CONTROL BUS SYSTEM OF HOME 2



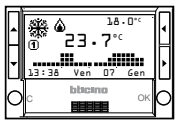
The meter is used to measure the amount of heat consumed by each home.

NOTE: The temperature control BUS system, the connection of the solenoid valve, and the meter, are the same for all homes.

Several homes, 4 zones

< previous

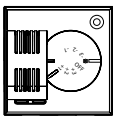
CENTRAL UNIT/PROBE CONFIGURATION



The 4 zone control unit item HD/HC/HS/L/N/NT4695 and item AM5875, as well as managing the whole of the temperature control system, contains a temperature probe which must be configured physically like the other system probes. Interact with the “Configure zones” menu to end the system configuration operations correctly. As an alternative the TiThermo Basic application dedicated to this version of control unit can be used. For these operations refer to the manual supplied with the products.

ZONE 1 CENTRAL UNIT/PROBE		
[ZA]	[ZB]	[SLA]
0	1	-

PROBES CONFIGURATION

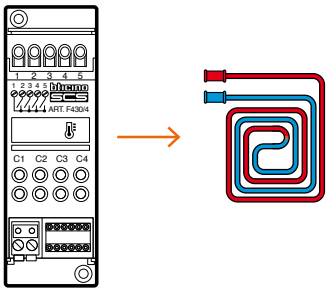


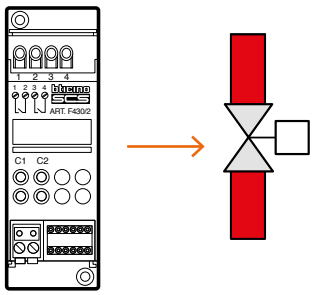
ZONE 2 PROBE		
[ZA]	[ZB]	[SLA]
0	2	-

ZONE 3 PROBE		
[ZA]	[ZB]	[SLA]
0	3	-

ZONE 4 PROBE		
[ZA]	[ZB]	[SLA]
0	4	-

ACTUATORS CONFIGURATION





ZONE ACTUATOR 1, 2, 3 AND 4					
[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	1	2	3	4	1

MAIN SOLENOID VALVE ACTUATOR				
[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	0	1	OFF	-

General concepts

The Temperature control system must be appropriately configured so that it can work properly and so that each item can perform the required function.
Configuring basically means interacting with the unit and actuator probes, thus defining:

- *For the probes and the 4 zone control unit:*
  a) the zone of belonging
  b) any slave probes managed
- *For the probes:*
  a) "Master" or "Slave" mode (if necessary)
- *For the actuators:*
  a) the zone of belonging
  b) the type of load to manage
  c) the number of actuators belonging to the same zone
- *For the central units:*
  a) the zones of the system and their name
  b) the functioning mode of the actuators (heating, cooling, ecc.)
  c) the type of load to be controlled (solenoid valves, fan-coil, etc.)
  d) the pumps in the system
  e) the control mode of the pumps (heating, cooling, etc.)
  f) the startup delay of the pumps (if necessary)

ZONE ZA AND ZB
Address of the devices belonging to a logical zone; as an example in a dwelling one can talk about night area, day area and cellar.

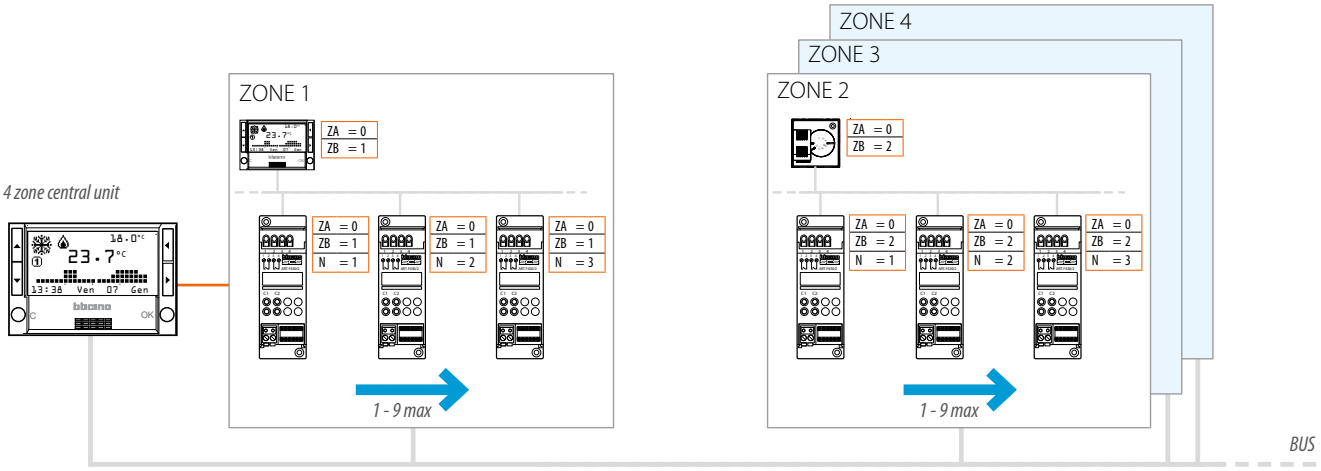
PROGRESSIVE ZONE NUMBER N
Numeric identification of the single actuator inside the same zone.

ACTUATOR ADDRESS
The address of each actuator is uniquely defined by inserting the numeric configurators from 0 to 9 in positions ZA and ZB. For each zone a maximum of 9 addresses can be defined by inserting the numeric configurators from 1 to 9 in position N; a maximum of 4 or 99 zones can be defined in a system, according to the control unit used.
Up to 99 zones can be managed in a system; 2 configurators will thus be needed to define the zone number.

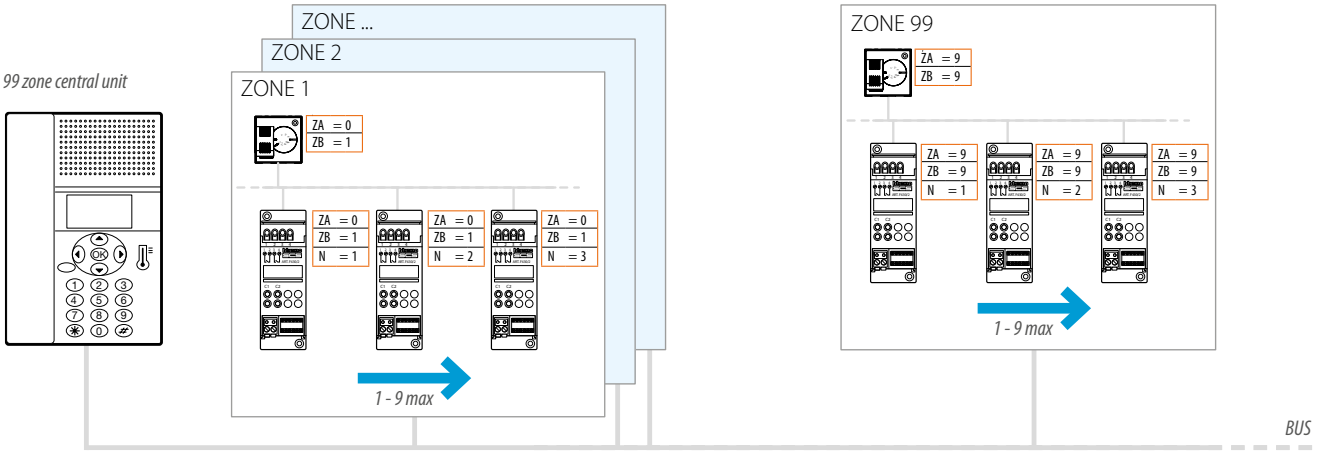
PROBES ADDRESS
The probes also have positions ZA and ZB to define the address of the devices which will receive the control (actuators). These positions have numeric configurators which enable the device to send the control.

General concepts

The probe which controls zone 1 is combined in the 4 zone control unit.



The temperature control function can manage up to 99 zone addresses. For each zone up to 9 addresses dedicated to the actuators can be managed.

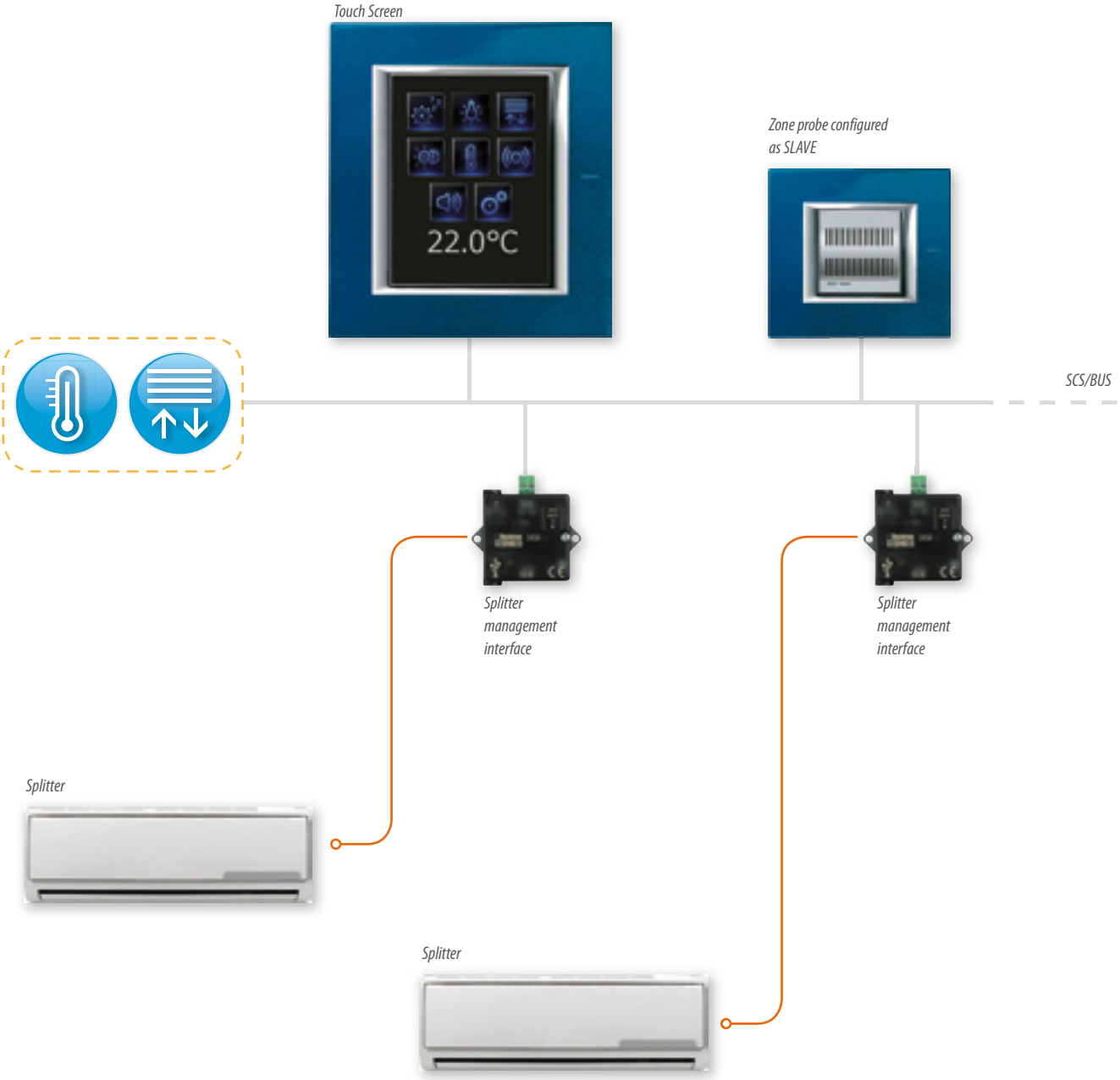


CONTENTS

Air Conditioning

Integrating the MY HOME system with the management of the splitter air conditioning system is now possible using the splitter management interface, item 3456. The interface transfers all the splitter functions, which up to now were performed using the remote control supplied with the device, to the Touch Screen or the Multimedia Touch Screen of the MY HOME system.

If a probe configured as SLAVE of the Temperature control system is installed in a room, it will be possible to read the room temperature and set the splitter operation.



MY HOME integration devices

SPLITTER MANAGEMENT INTERFACE, ITEM 3456

The splitter control interface is a device capable of controlling the air conditioning system splitters by sending infrared commands, replacing the remote control of the splitter itself.

The association between the device and the splitter remote control, must be performed by connecting the interface to the programming software PC.

The device may be installed inside flush mounted boxes, behind traditional devices, in distribution boards, without using a DIN rail space inside the splitter.

It is fitted with an IR transmitter with a two metre wire, for connection to the splitter receiver.

TOUCH SCREEN H4684 L4684 AM5864 AND MULTIMEDIA TOUCH SCREEN HD/HC/HS4690

Using the Touch Screens, it is possible to send the following commands based on the interface configuration mode:

Base Mode

- Recall up to 20 favourite controls, previously set during the association between the interface and the splitter. In this mode, the controls can be recalled, as if they were a scenario (without the need for being associated to the scenario module), also by other devices, such as Local Display or Scenario control. This mode can be used with splitters of any brands.

Advanced mode

- Adjust the temperature (SETPOINT);
- Adjust the oscillation and/or the position of the ventilation fins (SWING)
- Set the splitter speed (VEL);
- Select the operating MODE (OFF, winter, summer, fan, dehumidifier, etc.).

All these controls may be included in an automation scenario saved on the scenario module of the system (e.g. Exit for when one goes out: switching of all the lights and splitters of the home).

The advanced mode may also be used for the splitters included in the software database list.

CONTENTS

MY HOME – Energy consumption display

Instantaneous power, water and gas consumption data

The energy data collection devices enable not only electricity consumption to be displayed on the touch screen but also water and gas consumption as well as data for the central heating system1).

It is also possible to display the energy produced on site from solar thermal and photovoltaic systems.
The consumption can be displayed on the touch screen as instantaneous or cumulative data in graphical or table format to make interpretation easy.
By setting tariff values it is pOssible to display the data in the form of costs.

NOTE:
1)subject to type of meters iNstalled for gas and water.

Energy selection screen

Power consumption screen (instantaneous / cumulative)

Monthly power consumption graph

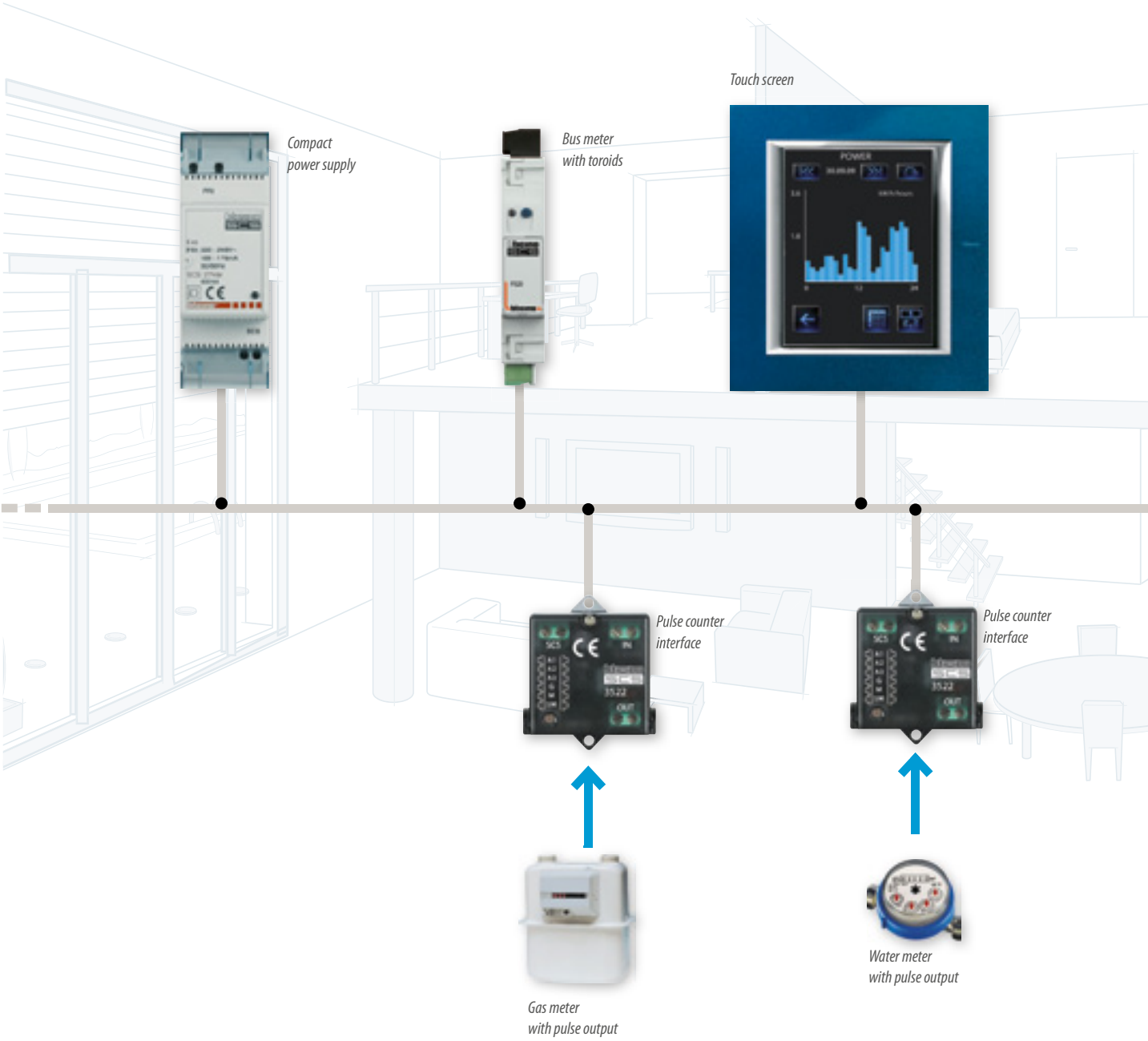
Daily power consumption graph

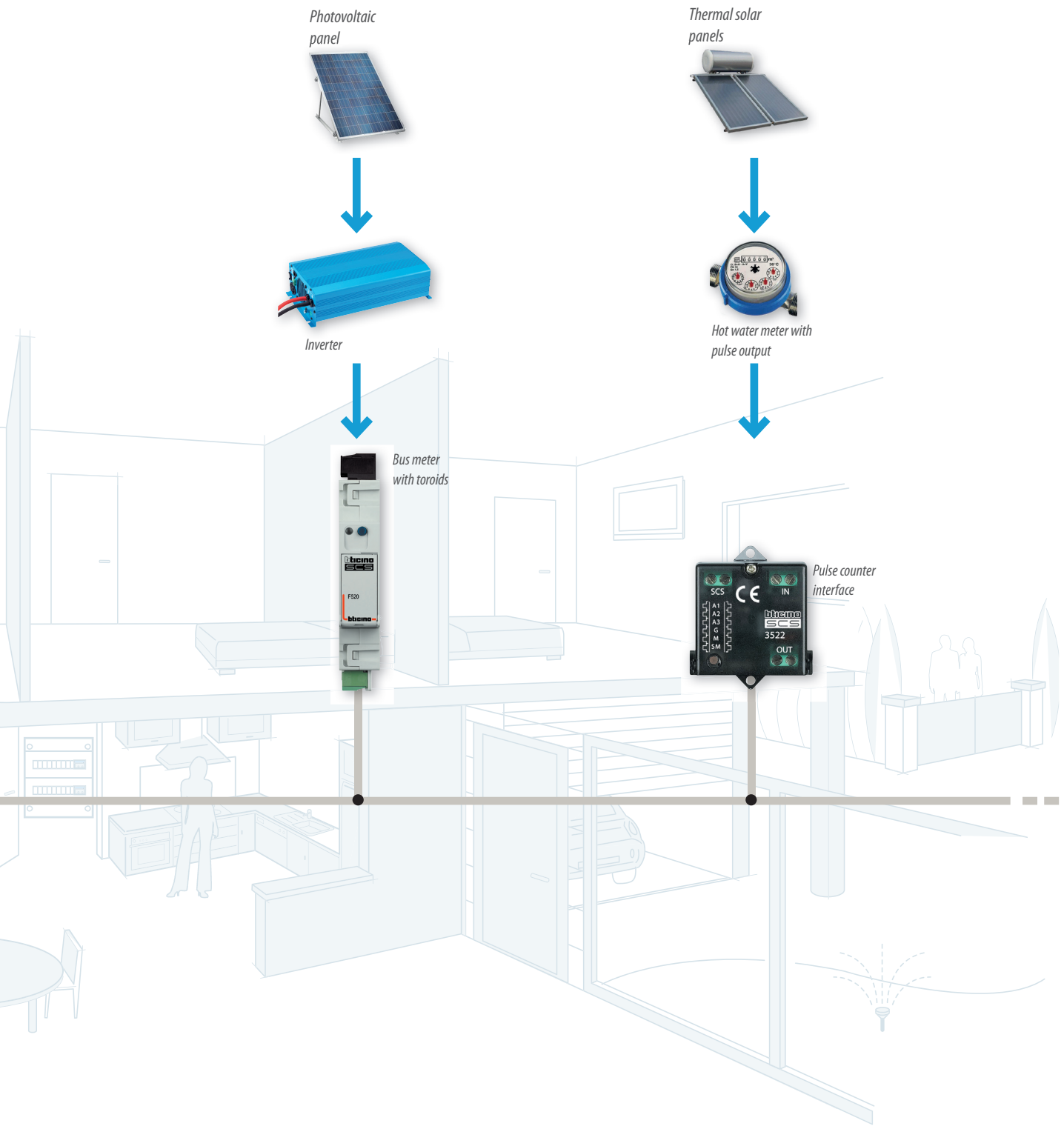
Displaying consumptions and the production data

The energy data collection devices can be integrated directly on to bus of the Automation/Temperature control system, or be part of a dedicated system, as shown on the diagram below. In this case a power supply will be necessary to power the BUS, as and Touch Screen to display consumption levels.

The use of pulse counter interfaces and toroid power meters, linked to the My Home consumption display system anables display on the Touch screen the consumptions of power, gas, and water, as well as heating data.

Using the power meters and the pulse counter interfaces, it is possible, when a photovoltaic or a thermal solar system is installed, to monitor how much power is being generated and how much water is being heated.




Photovoltaic panel
Thermal solar panels
Inverter
Hot water meter with pulse output
Bus meter with toroids
Pulse counter interface
SCS
IN
OUT
3522

Measurement and display devices

PULSE COUNTER INTERFACE ITEM 3522

The device detects, counts, and processes the information (water, gas, etc.) received from meters with pulse outputs; the data is then made available to the SCS bus, and displayed on the Touch Screens. The processing and accounting functions are:

- instantaneous consumption (calculated as the average of 2 pulses received during the time unit);
- hourly, daily, and monthly consumption (one year memory).

The device may be installed in flush mounted boxes, behind traditional type devices, or also inside distribution boards, but without taking up any DIN rail space.

BUS METER WITH 3 INPUTS FOR TOROIDS - ITEM F520

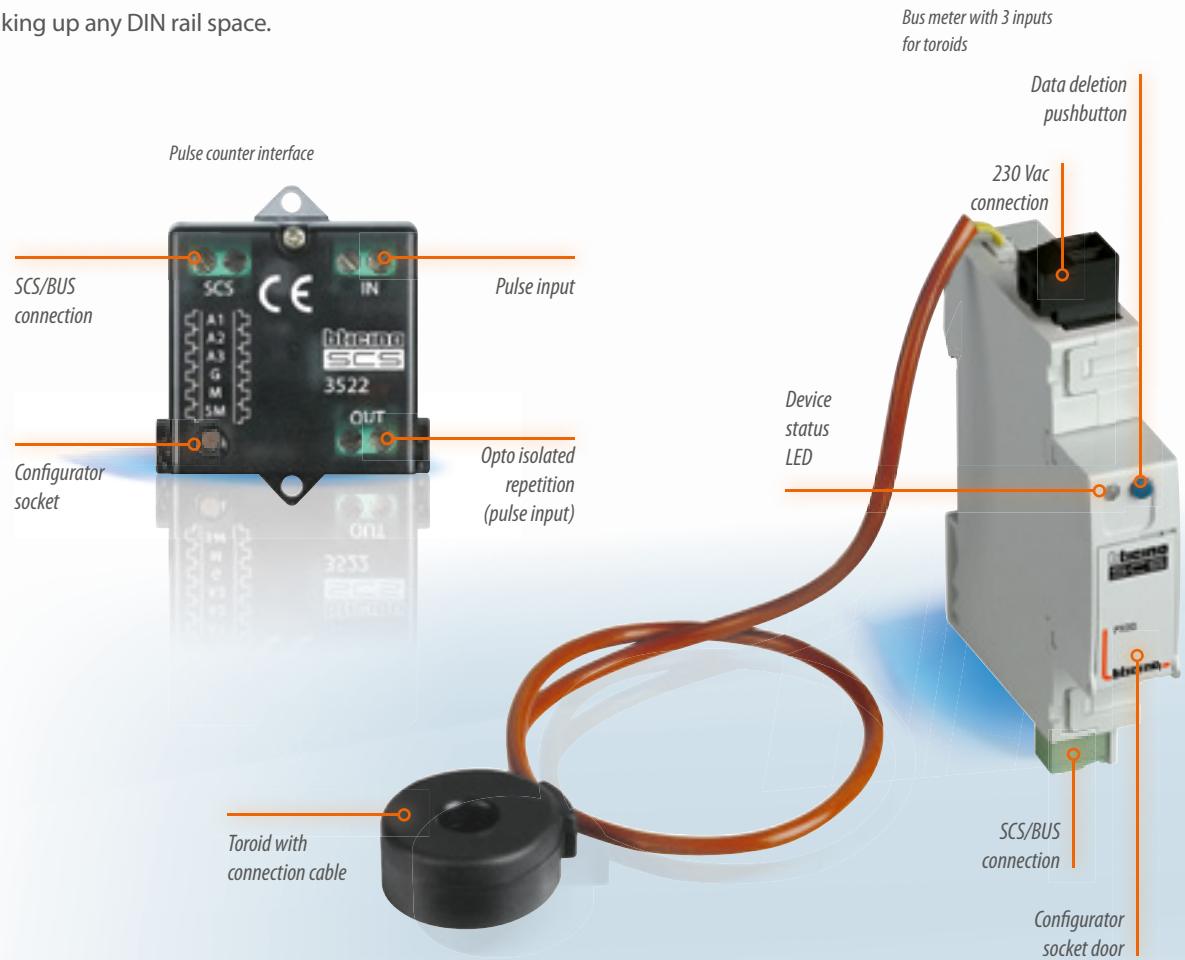
The device measures up to three separate circuits, by connecting up to three toroids to the appropriate inputs.

The data is displayed on the Touch Screens through the SCS Bus. The processing and accounting functions are:

- instantaneous consumption of 3 lines maximum;
- cumulative hourly consumptions for the last 12 months, daily consumptions for the last 2 years, monthly consumptions for the last 12 years.

The above described functions are also valid to save the data coming from solar thermal and photovoltaic systems.

The device is supplied with 1 toroid and corresponding connection cable (item 3523); it is suitable for installation inside distribution boards and switchboards and requires the space of 1 DIN module.



TOUCH SCREEN

MULTIMEDIA TOUCH SCREEN

On the Touch Screen it is possible to display:

- the instantaneous consumption;
- the daily consumption;
- the monthly consumption;
- the average daily consumption for each month;
- the total consumption of the last 12 months;
- the daily, monthly and last 12 months consumption graphs;
- the consumption in several units of measure (m^3, l, kWh, etc.) and the corresponding currency value (Euro, $, £, etc.);
- the consumption resulting from heating accounting systems;
- the power generated;[1)]
- the production of hot water.[1)]

Note: [1)] the modes of display are also available for the production.

CONTENTS

MY HOME – Load control management

The end of the black-out

The My Home load control management system manages the maximum power used, by automatically disconnecting appliances in a prioritised order when a predetermined electrical consumption level is reached.
The system:

- Manages up to 63 loads.
- Displays on the touch screens the instantaneous and cumulative hourly, daily, monthly consumptions of the controlled phase. In addition, the actuator with probe, enables measurement of the actual consumption of the controlled load.
- Appliances or circuits can be disabled or re-enabled through the touch screen along with setting appliance priorities.
- The touch screen enables users to check that the electricity loads are operating correctly through measurement of any earth leakage.
- The actuation and control devices occupy only one DIN module each therefore optimising space on the distribution board.
- By configuring the actuators of the load control system in automation mode, it is possible to use the touch screens to set the time delays for the activation of the loads at set times.

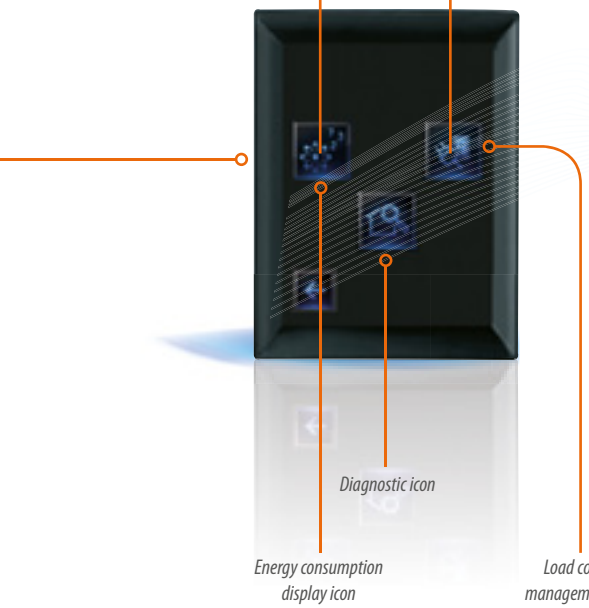
Dedicated icon on the screen of the touch screen

Power consumption screen (instantaneous / cumulative)

Monthly power consumption graph

Controlled loads screen

Controlled load consumption display screen (with item F522)



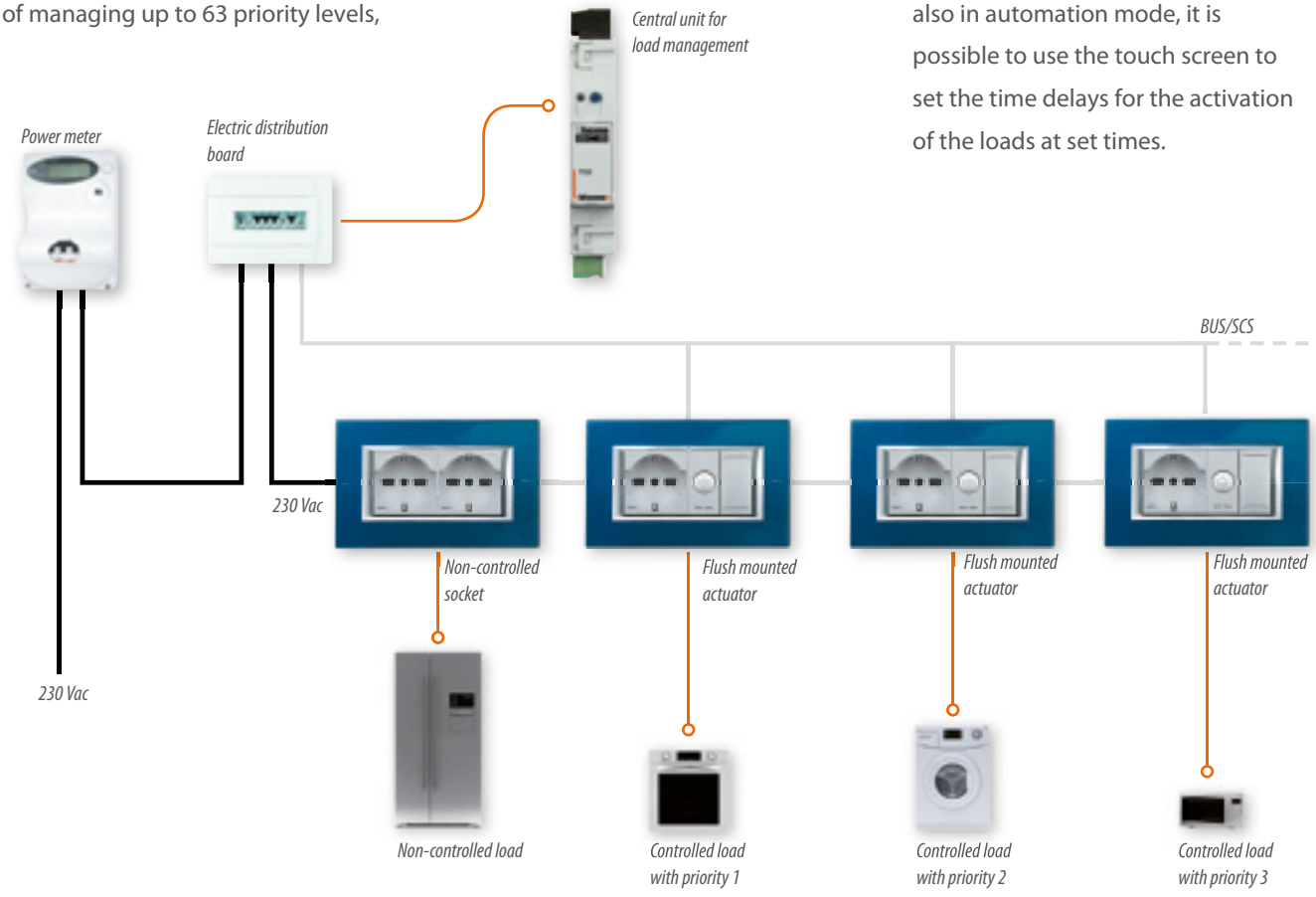
Diagnostic icon

Energy consumption display icon

Load control management icon

Operation

Using the external toroid, the central unit measures the power used by the loads connected and compares it with the value preselected during the installation (using the configurators it is possible to select powers between 1.5 and 18 kW, with tolerances up to +/- 20%). An actuator is associated to each appliance being controlled.
The actuator receives the information from the central unit and disconnects the load from the network in case of overload.
The disconnection sequence of the actuators is defined during the installation using a simple configuration operation to be carried out on the devices themselves.
The central unit gives the possibility of managing up to 63 priority levels, and a number of devices depending on the available supply current.
In the example shown, the oven, the microwave oven, and the washing machine represent the loads controlled using actuators, while the refrigerator, which operation is imperative that is not interrupted, is connected to his socket without actuator.
In case of overload, the first device that disconnects is the one considered the least important by the user, in the example the oven, which actuator has configurator no. 1. The microwave is on the other hand the most important device, and the corresponding actuator has configurator no. 3. This load therefore only disconnects after the oven and the washing machine.
The user can reactivate the disconnected device at any time using the actuator pushbutton or the touch screen. In this case, if the overload condition still exists, the central unit will enable the operation of the selected load, but will disconnect the subsequent loads starting from the least important, until the overload situation is resolved.
The operating status of the loads is notified both by the actuators and the touch screens.
By configuring the actuators of the load control management system also in automation mode, it is possible to use the touch screen to set the time delays for the activation of the loads at set times.



NOTE: inside the electric distribution board it is installed the central unit for load management

DISPLAY FUNCTION

The central unit for load management is capable of measuring the consumption of the controlled line using the toroid supplied. The information is displayed on the touch screens through the SCS BUS.

The processing and accounting functions are:

- instantaneous consumption of the controlled line;
- hourly, daily, monthly and last 12 months cumulative consumptions.

DIAGNOSTIC FUNCTION

Thanks to the actuator with probe (Item F522), it is possible to display, in addition to consumptions, also the diagnostic, using the additional toroid (item 3523) of the controlled load.

Controlled loads diagnostic display screen

Load OK

Load near the earth leakage disconnection limit

Load problems (e.g. device earth connection problems)

Diagnostic icon

Device selection criteria

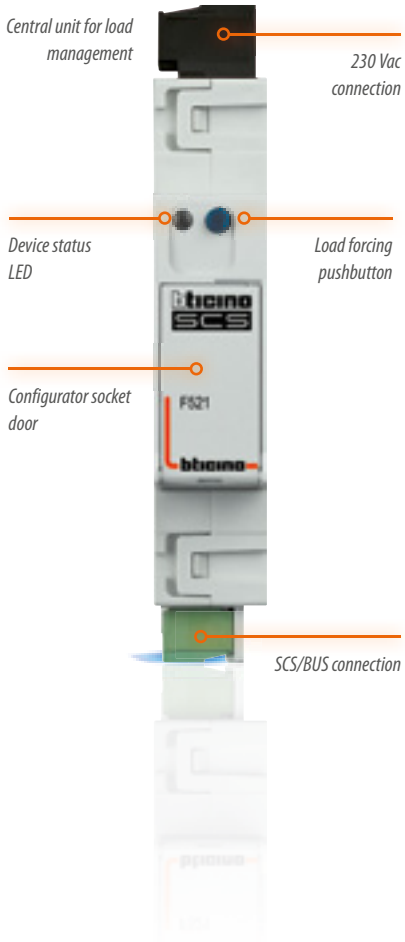
CENTRAL UNIT FOR LOAD MANAGEMENT F521

The device is capable of measuring the input power from the electric system and to control the status of the actuators of the load management system, to prevent the risk of tripping of the power meter.
The central unit manages up to 63 appliances or electric loads per each phase, measures currents and voltages, and processes these data to provide energy and power information.

The processing and accounting functions are:

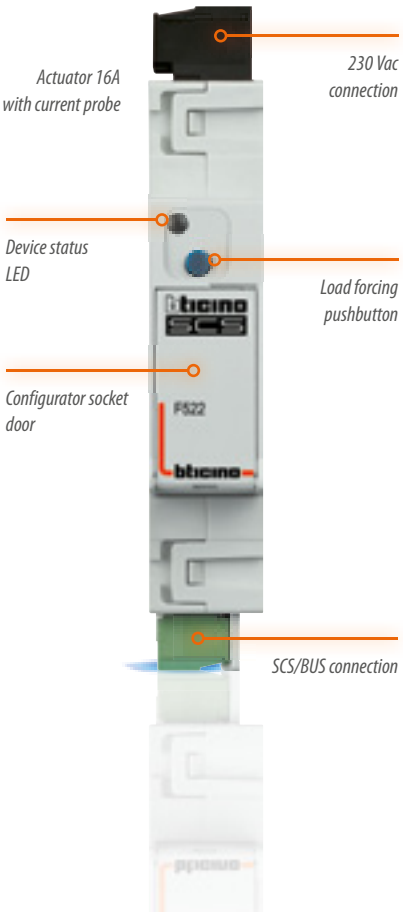
- instantaneous consumption of the controlled line;
- cumulative hourly consumptions for the last 12 months, daily consumptions for the last 2 years, monthly consumptions for the last 12 years.

The central unit is suitable for installation inside distribution boards and switchboards and requires the space of 1 DIN module.



ACTUATOR 16 A WITH CURRENT PROBE - ITEM F522

The device is an actuator with an integrated current probe for the measurement of controlled load consumptions (instantaneous consumption and 2 independently resettable energy totalizers), and is capable of performing both ENERGY MANAGEMENT and automation functions.
When configured in ENERGY MANAGEMENT mode, it gives the possibility of measuring the load input power, the power and the earth leakage current (through the connection of an external toroid, item 3523).
The actuator is suitable for installation inside distribution boards and switchboards and requires the space of 1 DIN module.



ACTUATOR 16A F523

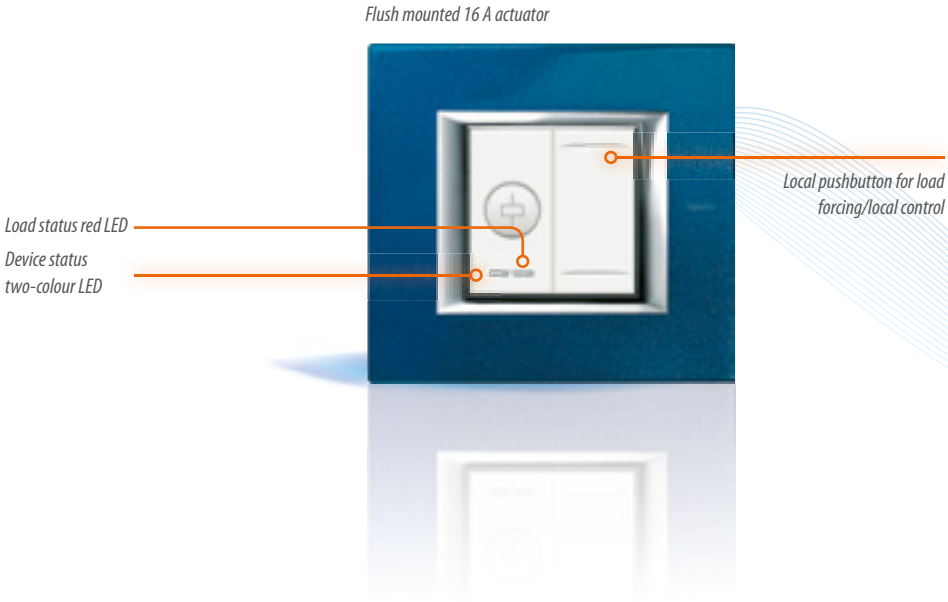
The device is an actuator capable of performing both energy management and automation functions. The actuator is suitable for installation inside distribution boards and switchboards and requires the space of 1 DIN module.

FLUSH MOUNTED ACTUATOR 16 A ITEMHC/HS/HD/L/N/NT4672N

Actuator conceived for installation in Living, Light, Light Tech and Axolute flush mounted supports, intended for the automation and/or ENERGY MANAGEMENT functions.

The device has:

- a local load forcing pushbutton;
- a red/green two-colour LED for the notification of the status of the actuator;
- central unit for load management red disabling signalling LED.



Load control management and consumption display

BUILDING LAYOUT

The BUS system layout for the installation of Load Control Management System and the Display of Consumptions System offers the following advantages:

- Both for new systems, and installation in existing electric systems, the BUS line can use the same conduits of the energy system used for the wiring of power sockets. However, this is only possible when using the BUS cable, Item L4669, with insulation voltage 300/500 Vdc.
- Depending on the needs of the user and the type of building, the load control actuators may be installed:

1. in DIN distribution board, if it is not required to display and reactivate the load directly in the room where the load is located;
2. near each current socket for the load to be controlled, to ensure the possibility of controlling the status and/or forcing the load.

PHYSICAL LIMIT

The maximum number of devices that can be connected to the BUS (central unit for load management, actuator, power meter, and pulse counter interface) depends on the total absorption of the same, and on the distance between the connection point and the power supply.

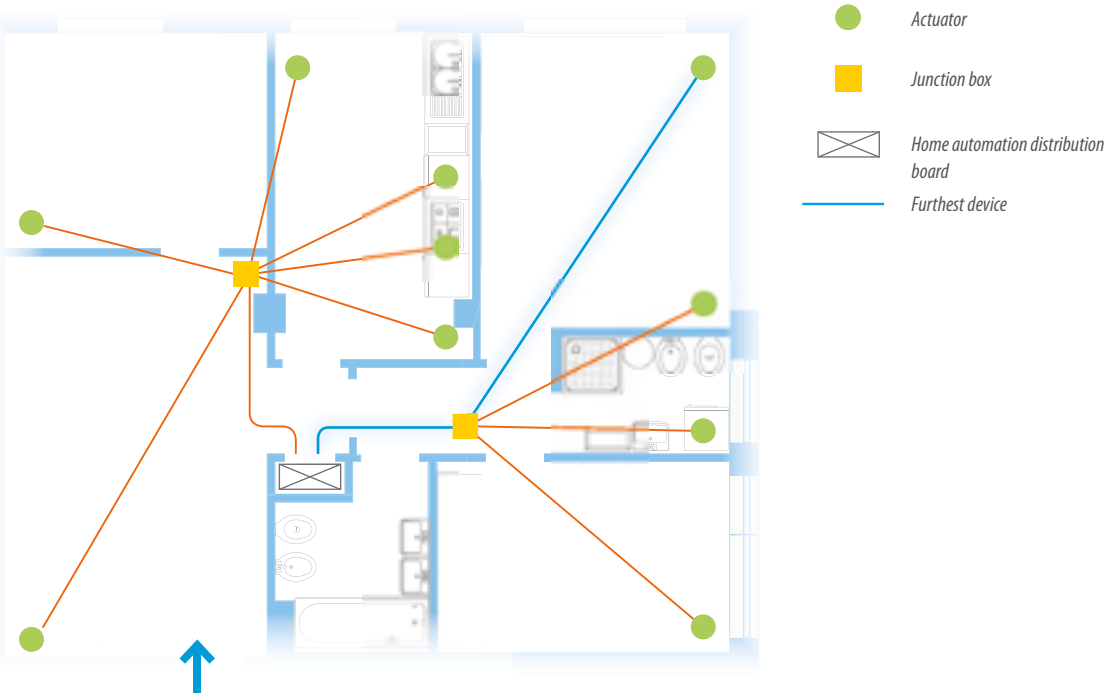
If the system uses the same cable as the Automation/temperature control system, the calculation of the maximum number of devices must be performed taking into account the general absorption of the same.
For the purpose of the above calculations, the table shows the current absorbed by each device.

MAXIMUM NUMBER OF ACTUATORS

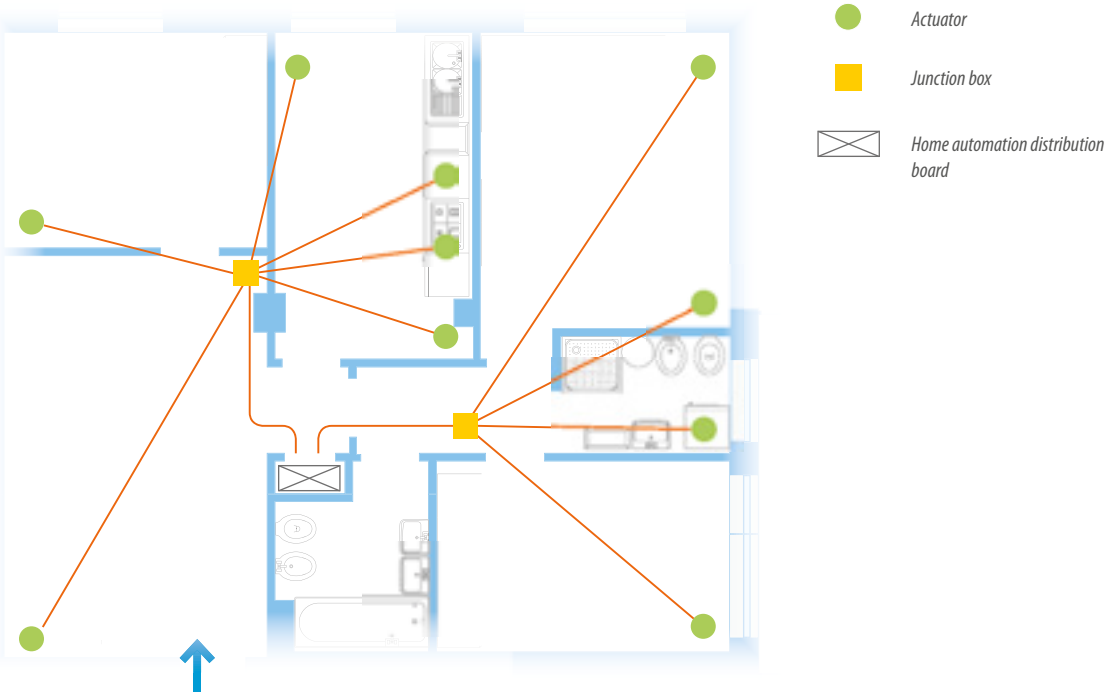
The Central Unit for Load Management can control up to 63 actuators (appliances or electric loads).
If the system is solely dedicated to Load Management, or if it shares the same BUS line of the Automation/ Temperature control system, the number of actuators shall depend on the limit of the available current.

ITEM	DEVICE	ABSORPTION FROM BUS
F521	Central unit for load management	28 mA
F522	Actuator with probe	30 mA
F523	Basic actuator	10 mA
HD/HC/HS/L/N/NT4672N	Flush mounted actuator	10 mA
H4684 - L4684 - AM5864	Touch screen 3.5"	80 mA
HD/HC/HS4690	Multimedia Touch screen 10"	50 mA
F520	Bus meter with toroids	35 mA
3522	Pulse counter interface	7.5 mA

1. The length of the connection between the power supply and the furthest device cannot exceed 250 m.

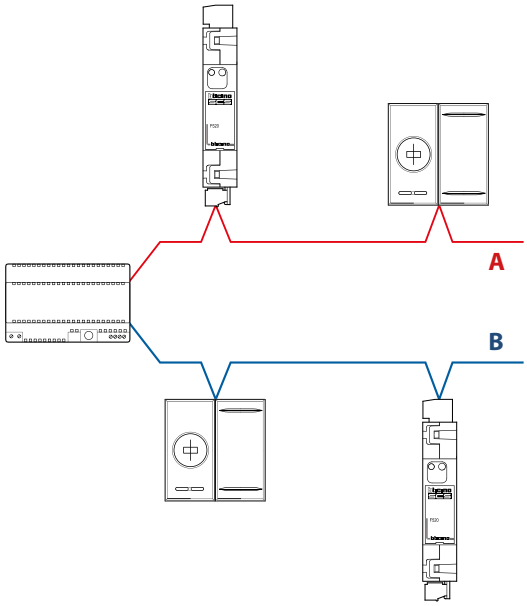


2. The total length of the connections must not exceed 500 m (extended cable).



Load control management and consumption display

In order to ensure optimum distribution of the currents on the BUS line, it is recommended to position the power supply in an intermediate position.



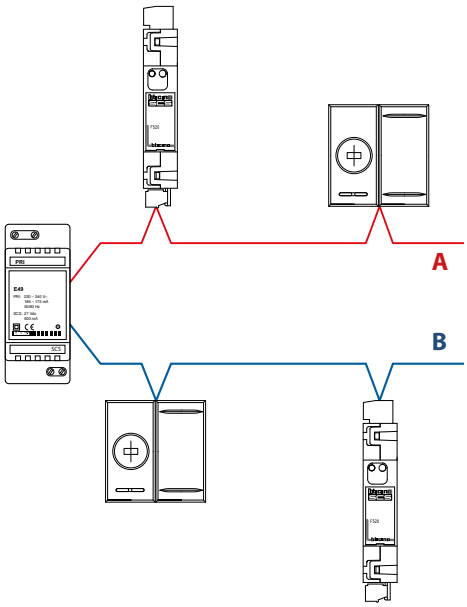
With E46ADCN power supply:

A =250 m max

B =250 m max

A + **B** =500 m

The maximum current supplied by the power supply is: 1200 mA.



With E49 power supply:

A =250 m max

B =250 m max

A + **B** =500 m

The maximum current supplied by the power supply is: 600 mA.

NOTE: If a UTP5 cable is used instead of a BUS L4669 cable, distances must halved.

Load control management and consumption display

The load management control and consumption display systems must be correctly configured to ensure that they can operate correctly, and that each item can perform the desired function. The mode of configuration must be the physical one. The physical configuration entails interaction with the devices - pulse counter interface (Item 3522), bus meter with 3 inputs for toroids (Item F520), central unit for load management (Item F521), load control actuators (Item F522, F523, L/N/NT/HC/HS/ HD4672N) – and consists in physically connecting the connection components, called configurators to the appropriate housings of the devices.
The configurators have different numbers, letters, colours, or graphics.

The products may be split in two classes:

1. Pulse counter interface (item 3522), Bus meter with 3 inputs for toroids (item F520), Central unit for load management (item F521). All these devices have an address from 1 to 255.

2. Load control actuators:

CONFIGURATOR SOCKET	CONFIGURATORS USED
A1 is the configurator indicating the hundreds	0, 1, 2
A2 is the configurator indicating the tens	From 0 to 9
A3 is the configurator indicating the units	From 1 to 9
A3-Ta	From 1 to 9 (a configurator must be in this housing)
A3-Tb	From 1 to 9
A3-Tc	From 1 to 9

WARNING: The 0 configurator in A3-Tb, A3-Tc indicates that the toroid input is not being used. A3 or A3Ta cannot be equal to 0. In the case of the bus meter with 3 inputs for toroids, item F520, if only one toroid is used, this must be connected to A3-Ta.

Configuration examples:
For bus meter with three inputs for toroids, item F520, and pulse counter interface, item 3522:

	VALUE OF CONFIGURATORS		ADDRESSES
Bus meter with toroids	A1 A2 A3-Ta A3-Tb A3-Tc	0 0 1 2 3	Toroid connected to Ta with address 001 Toroid connected to Tb with address 002 Toroid connected to Tc with address 003
	A1 A2 A3-Ta A3-Tb A3-Tc	2 5 3 4 0	Toroid connected to Ta with address 253 Toroid connected to Tb with address 254 No toroid connected to Tc
Pulse counter interface	A1 A2 A3 G M SM	0 0 4	Pulse counter interface address 004

WARNING: The devices in this class must be a different address from each other: for example, there cannot be a pulse counter interface and a bus meter with three inputs for toroids with the same address. Also two toroids cannot have the same address.

In case two consumption/load control devices are installed on an automation or temperature control bus, the configured addresses are not in conflict with the other devices on the system: a temperature control probe configured with address 11 is not in conflict with a bus meter with 3 inputs for toroids with address 11.

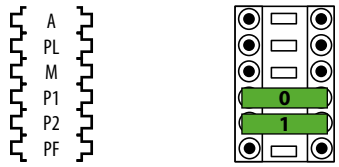
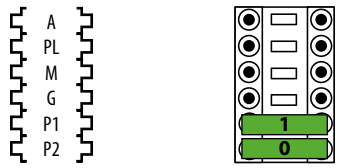
Load control management and consumption display

the actuators may be used both as automation actuators and ENERGY MANAGEMENT actuators. The configuration in automation mode follows the same rules outlined in the automation guide (see the device TECHNICAL SHEETS); the configuration in Energy Management mode requires a progressive address from 1 to 63.

These addresses are used in the appropriate configuration software programs in the touch screens, and define the disconnection priorities for the controlled load.

CONFIGURATOR SOCKET	CONFIGURATORS USED
P1 is the configurator indicating the tens	From 0 to 6
P2 is the configurator indicating the units	From 0 to 9

Configuration examples:
For actuator 16 A with probe Item F522 and actuator 16 A Item F523:

	VALUE OF CONFIGURATORS	ADDRESSES
Actuator 16 A with probe		Address priority 01
Actuator 16A		Address priority 10

WARNING: In the case of consumption display/ load control actuators installed on an automation or temperature control bus, and configured also in automation mode (A, PL...), the load control actuator must not have the same address as another actuator on the automation bus. Example: if actuator F411/1N A = 1 PL = 1, then actuator F522 cannot be configured with PL=1.

CONSUMPTION DISPLAY CONFIGURATION

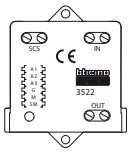
After installing the devices (Pulse counter interface, item 3522, bus meter with 3 inputs for toroids, Item F520, central unit for load management, Item F521), an address must be assigned using physical configurators (A1, A2, A3). This address will then be used in the software for the configuration of the user interfaces. (e.g. software for the configuration of the 3.5" touch screen).
For more information see the relevant product technical sheet.

LOAD CONTROL SYSTEM CONFIGURATION

After installing the devices and configuring the actuators, it is necessary that the central unit for load management acquires the actuators on the bus, and the corresponding priorities configured. For more information see the technical sheet of the central unit for load management, item F521, and the TECHNICAL SHEET for the actuators.

SYSTEM EXPANSIONS

The "energy management" system is a very flexible system, for the installation of the devices on the automation/ temperature control bus, or for creating a system solely dedicated to energy management, with dedicated power supply. in general, all energy management devices may be installed on each bus
branch and on each expansion, provided this is allowed by the absorption calculations. The only exceptions are the actuators, which, when configured in automation mode, during system expansions follow the same rules of the automation bus (automation technical guide).

AVAILABLE FUNCTIONS	DEVICES					
	Power bus meter with 3 inputs for toroids	Central unit for load management	Actuator 16 A with current probe	Actuator 16A	Flush mounted Actuator 16 A	Pulse counter interface
						
Visualisation	●	●	●			●
Load control		●	●	●	●	
Diagnostic [1)]			●			

NOTE [1)]: in combination with additional toroid, item 3523

Display of electricity, water and gas consumptions

ITEM	DESCRIPTION
RCCD	General switch
MCB1	4 A MCB switch
E49	Compact power supply
F520	Bus meter with three inputs for toroids
3523	Toroid
Touch Screen	Touch Screen 3.5"/ Multimedia Touch Screen 10"
3522	Pulse counter interface

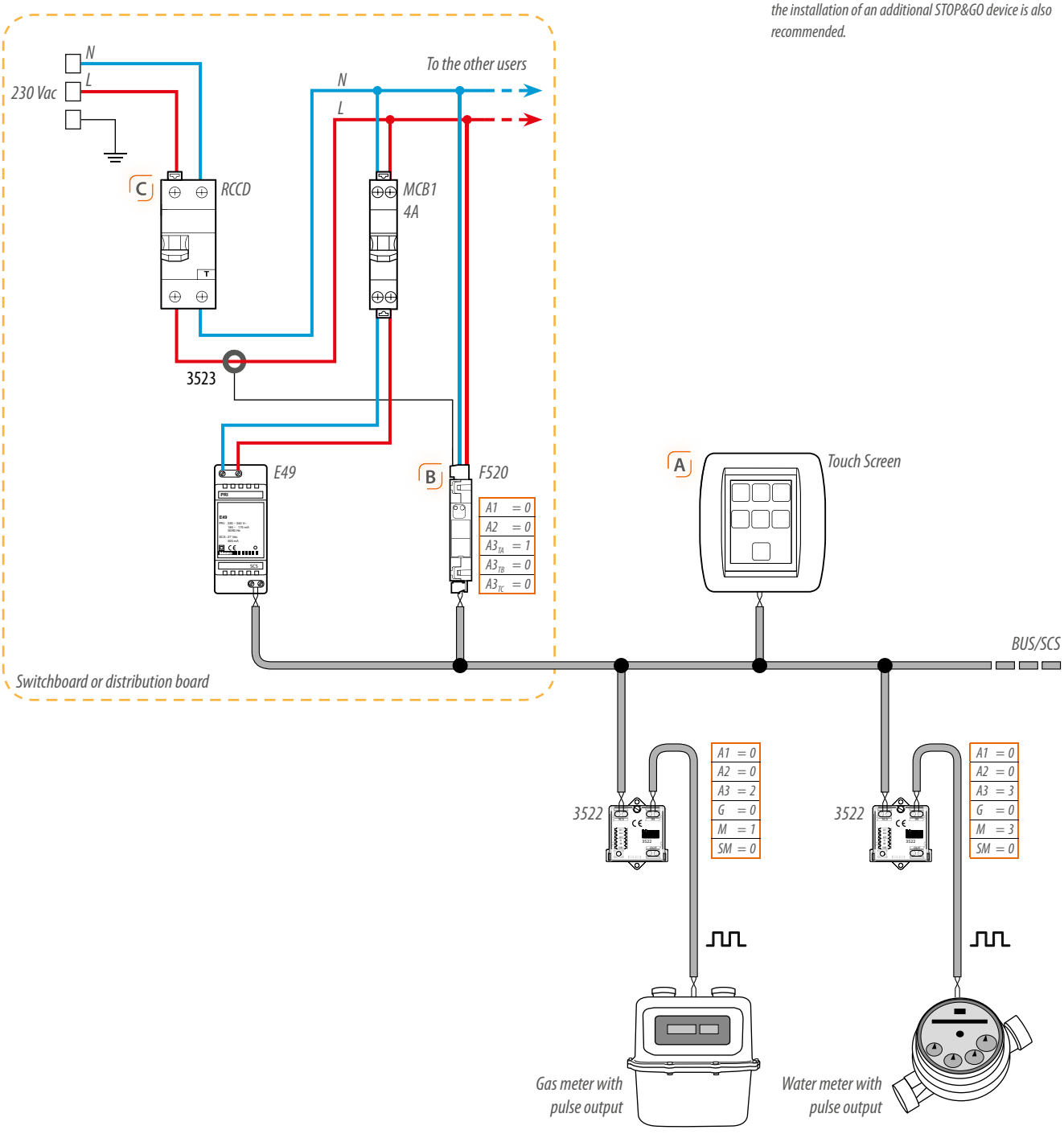
WARNING

A *The following Touch Screens may be installed:*

- *H4684 AXOLUTE*
- *L4684 LIVING / LIGHT / LIGHT TECH*
- *AM5864 MATIX*
- *Multimedia Touch Screen HD/HC/HS4690*

B *Each F520 is supplied as standard with one toroid, item 3523*

C *The general switch RCCD must be selected depending on general absorption. For better safety and comfort, the installation of an additional STOP&GO device is also recommended.*



Display of electric consumptions on several lines

ITEM	DESCRIPTION
E49	Compact power supply
F520	Bus meter with three inputs for toroids
3523	Toroid
Touch Screen	Touch Screen 3.5"/ Multimedia Touch Screen 10"
RCCD	General switch
MCB1-5	Linear protection switch
MCB6	4 A MCB switch

WARNING

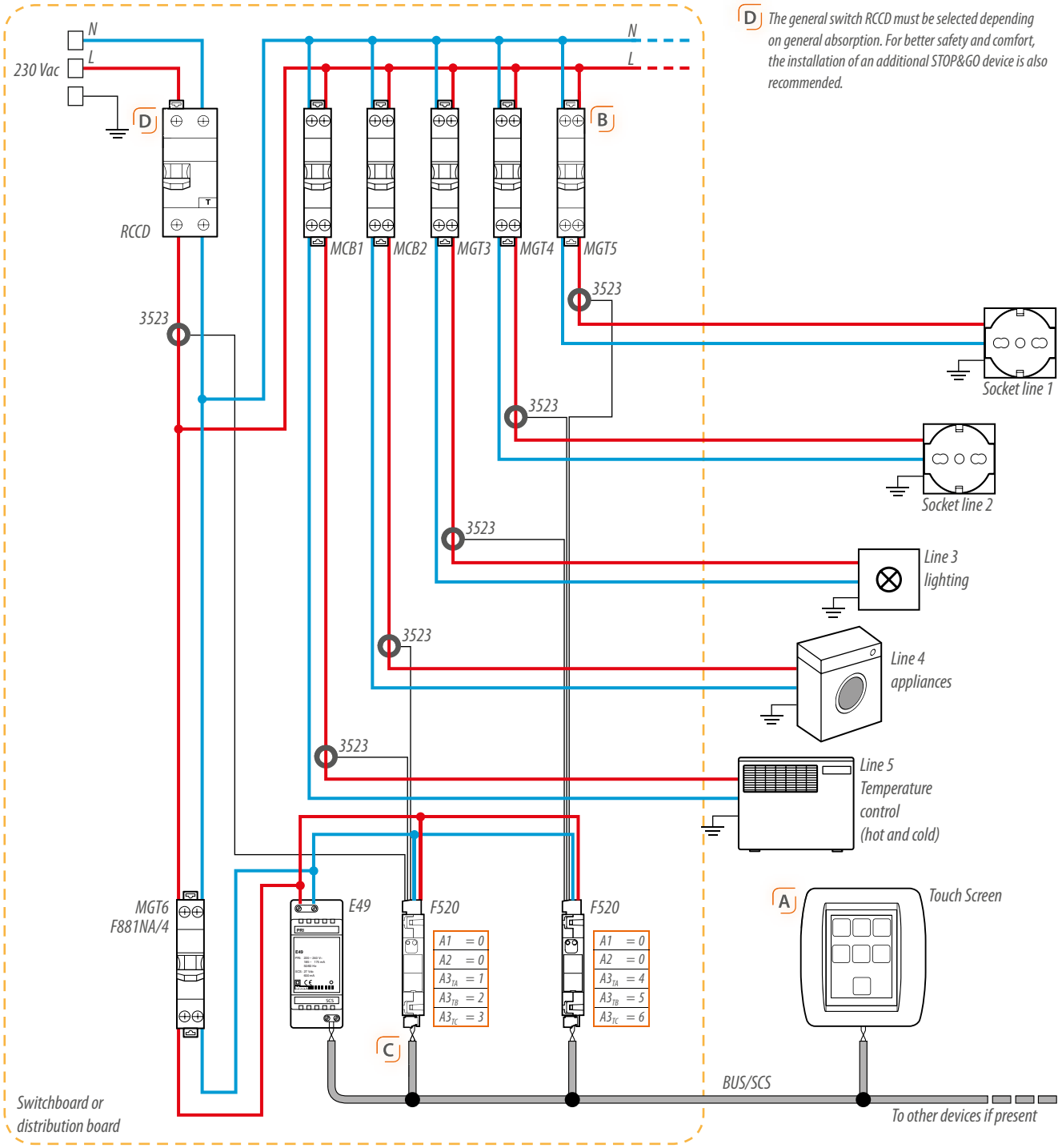
A *The following Touch Screens may be installed:*

- *H4684 AXOLUTE*
- *L4684 LIVING / LIGHT / LIGHT TECH*
- *AM5864 MÀTIX*
- *Multimedia Touch Screen HD/HC/HS4690*

B *General MCB switches must be selected depending on load absorption*

C *Each F520 is supplied as standard with one toroid, item 3523*

D *The general switch RCCD must be selected depending on general absorption. For better safety and comfort, the installation of an additional STOP&GO device is also recommended.*



Display of produced and consumed energy

ITEM	DESCRIPTION
E49	Compact power supply
F520	Bus meter with three inputs for toroids
3523	Toroid
3522	Pulse counter interface
Touch Screen	Touch Screen 3.5" / Multimedia Touch Screen 10"
RCCD	General switch
MCB1-2	MCB protection switch

If a photovoltaic system and a thermal solar system for the production of energy and hot water are installed, by using energy measurement devices and the pulse counter interface the user can display the energy produced, or the amount of heated water on the touch screen.

WARNING

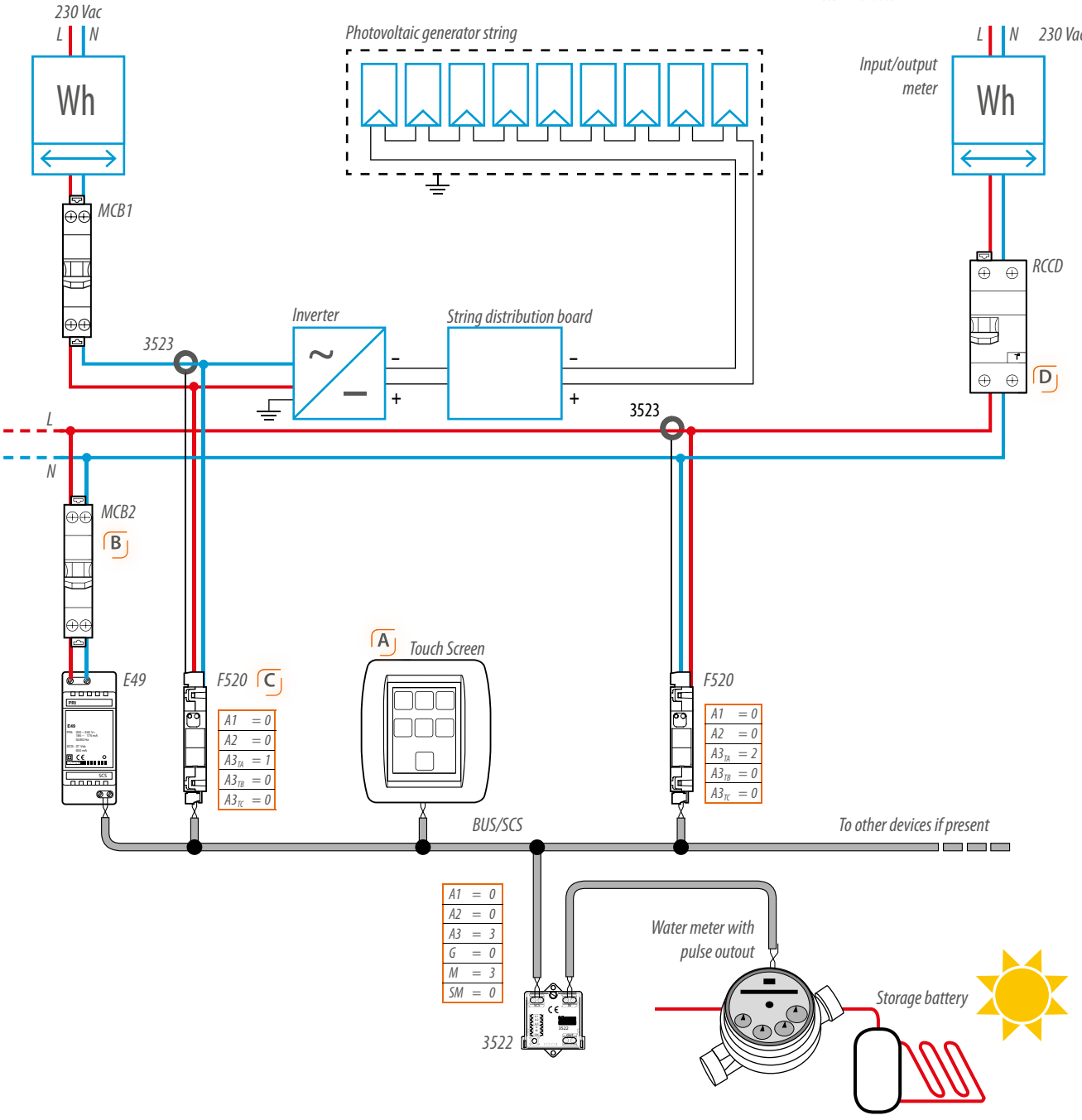
A *The following Touch Screens may be installed:*

- *H4684 AXOLUTE*
- *L4684 LIVING / LIGHT / LIGHT TECH*
- *AM5864 MÀTIX*
- *Multimedia Touch Screen HD/HC/HS4690*

B *General MCB switches must be selected depending on load absorption*

C *Each F520 is supplied as standard with one toroid, item 3523, for current reading*

D *The general switch RCCD must be selected depending on general absorption. For better safety and comfort, the installation of an additional STOP&GO device is also recommended.*



Display of produced and consumed energy in exchange mode on location

ITEM	DESCRIPTION
E49	Compact power supply
F520	Bus meter with three inputs for toroids
3523	Toroid
Touch Screen	Touch Screen 3.5"/ Multimedia Touch Screen 10"
RCCD	General switch
MCB1-3	MCB protection switch

In the presence of a photovoltaic panels system configured for a delivery of energy in "local exchange" mode, the bus meter with 3 inputs for toroids can be installed as shown in the figure: one toroid measures the current produced by the photovoltaic panels, the other the home consumption.
WARNING: avoid fitting the measuring toroid directly on the main bidirectional meter.

WARNING

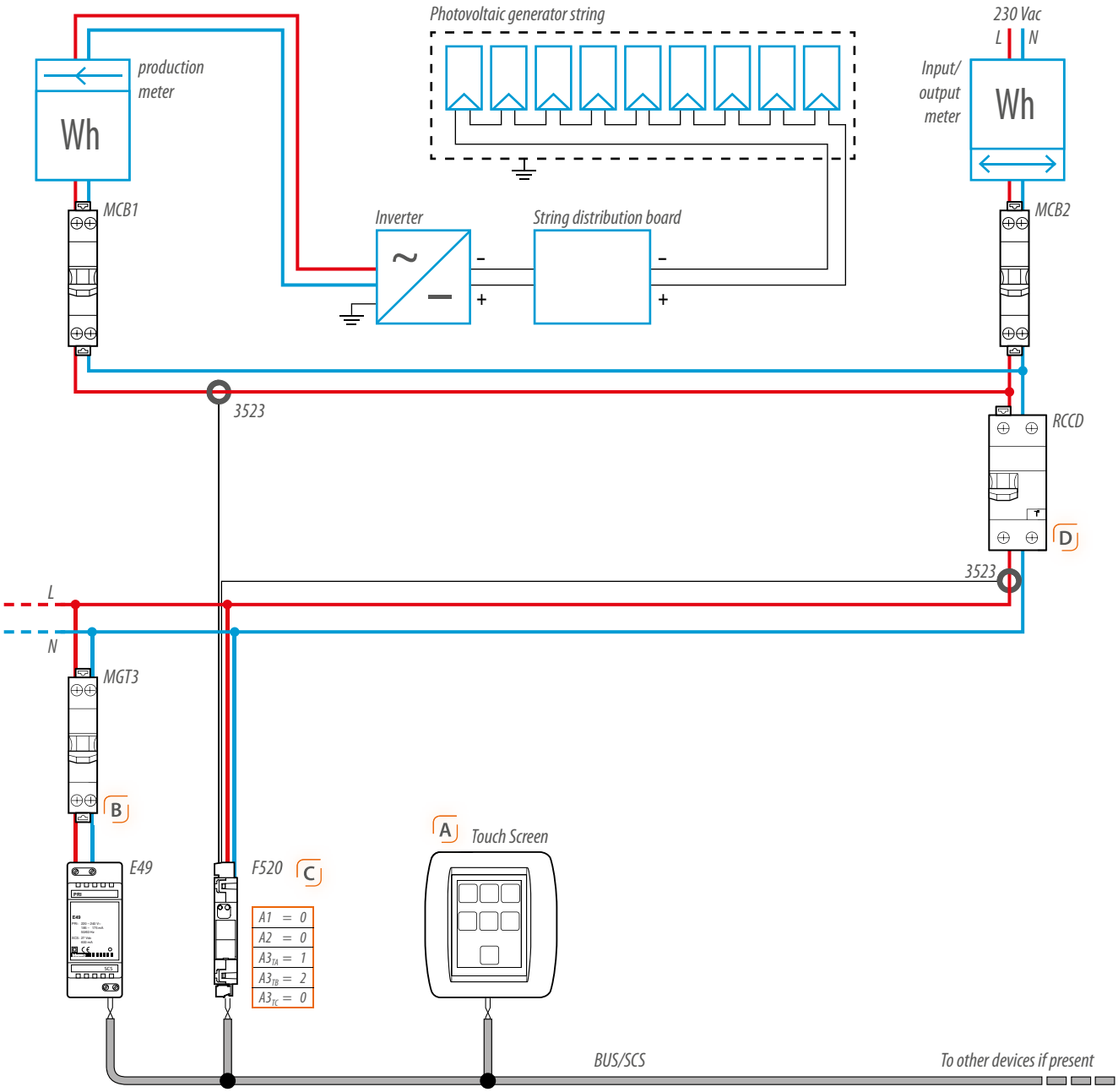
A *The following Touch Screens may be installed:*

- *H4684 AXOLUTE*
- *L4684 LIVING / LIGHT / LIGHT TECH*
- *AM5864 MÀTIX*
- *Multimedia Touch Screen HD/HC/HS4690*

B *General MCB switches must be selected depending on load absorption*

C *Each F520 is supplied as standard with one toroid, item 3523, for current reading*

D *The general switch RCCD must be selected depending on general absorption. For better safety and comfort, the installation of an additional STOP&GO device is also recommended*



Display of the consumption of thermal power / hot water by individual home

ITEM	DESCRIPTION
E46ADCN	Power supply
...4695	4 zone central units
...4692	probe with adjustment knob
F430/2	2 relay DIN actuator
F430/4	4 relay DIN actuator
3522	Pulse counter interface
Touch Screen	Touch Screen 3.5" / Multimedia Touch Screen 10"

In an establishment with central heating, by connecting a Pulse counter interface to the pulse output of the meter of a My Home system, it is possible to display on the touch screen the data made available by the meter (water consumption of the individual home, thermal power). The meter must be have pulse outputs, and must be installed at the input of the distribution manifold.

WARNING

A *The following Touch Screens may be installed:*

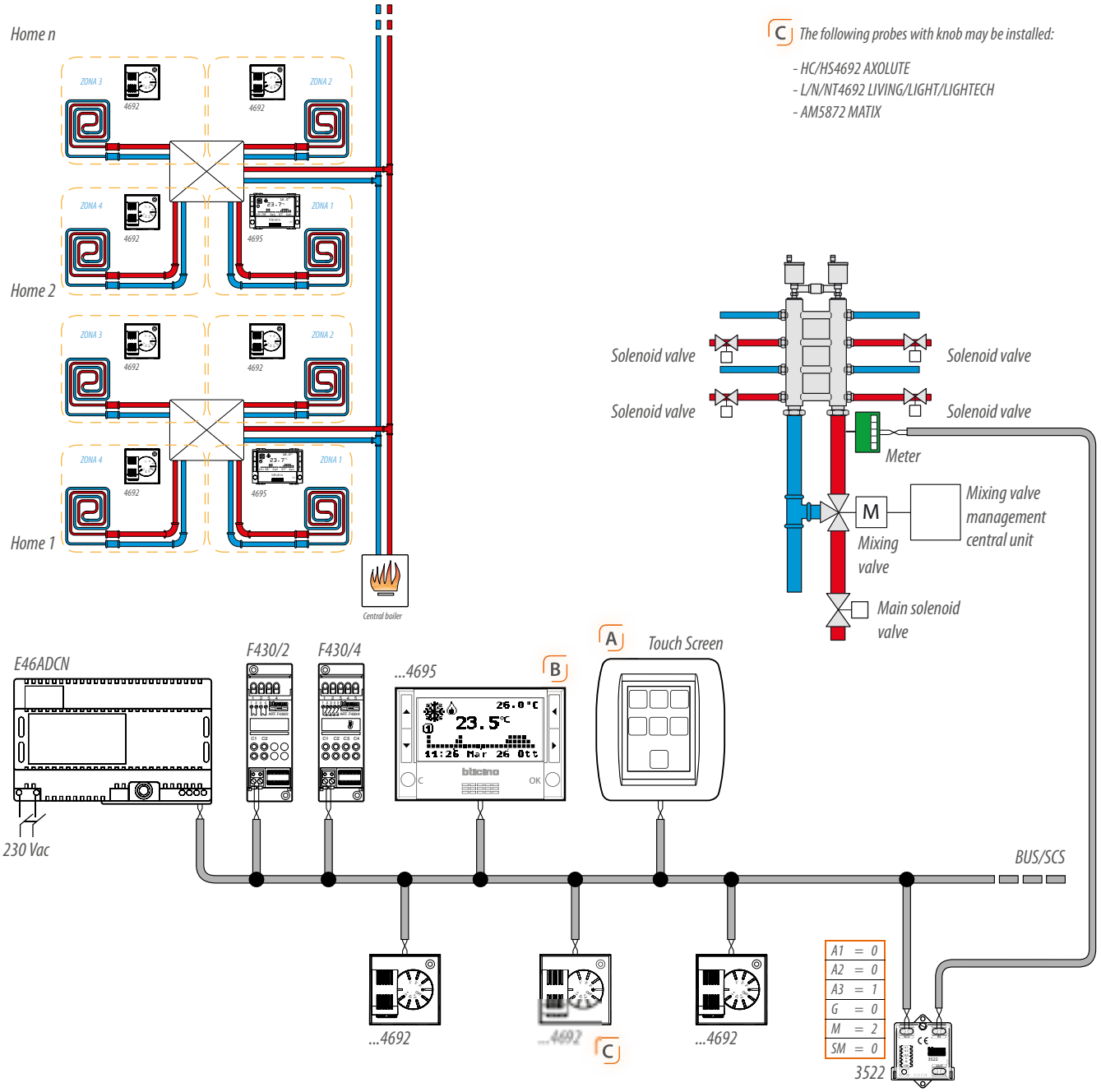
- *H4684 AXOLUTE*
- *L4684 LIVING / LIGHT / LIGHT TECH*
- *AM5864 MÀTIX*
- *Multimedia Touch Screen HD/HC/HS4690*

B *The following 4 zone central units may be installed:*

- *HC/HS4695 AXOLUTE*
- *L/N/NT4695 LIVING/LIGHT/LIGHTECH*
- *AM5875 MATIX*

C *The following probes with knob may be installed:*

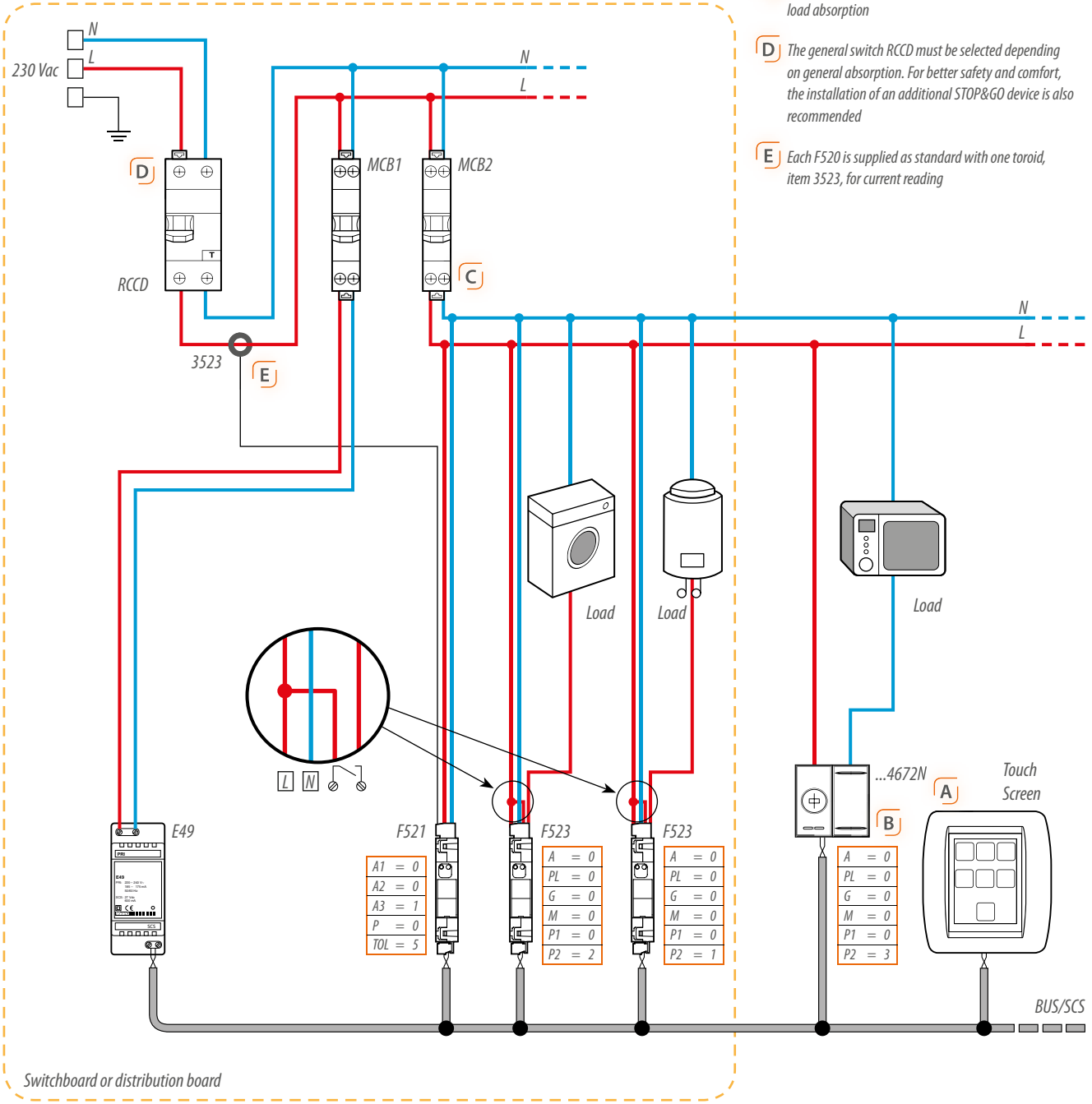
- *HC/HS4692 AXOLUTE*
- *L/N/NT4692 LIVING/LIGHT/LIGHTECH*
- *AM5872 MATIX*



NOTE: the pulse counter interface is recommended (M=2) to detect the thermal power

Load control management with total consumption display

ITEM	DESCRIPTION
E49	Compact power supply
F521	Central unit for load management
F523	16 A 1 M DIN basic actuator
3523	Toroid
Touch Screen	Touch Screen 3.5" / Multimedia Touch 10"
RCCD	General switch
MCB1	4 A MCB switch
...4672N	Flush mounted actuator



WARNING

A *The following Touch Screens may be installed:*

- *H4684 AXOLUTE*
- *L4684 LIVING / LIGHT / LIGHT TECH*
- *AM5864 MÀTIX*
- *Multimedia Touch Screen HD/HC/HS4690*

B *The following 2 module flush mounted 16 A actuators may be installed*
- *HC/HS/HD4672N AXOLUTE*
- *L/N/NT4672N LIVING/LIGHT/LIGHTECH*

C *General MCB switches must be selected depending on load absorption*

D *The general switch RCCD must be selected depending on general absorption. For better safety and comfort, the installation of an additional STOP&GO device is also recommended*

E *Each F520 is supplied as standard with one toroid, item 3523, for current reading*

Load control management with total display, of loads and diagnostics

ITEM	DESCRIPTION
E49	Compact power supply
F521	Central unit for load management
F523	16 A 1 M DIN basic actuator
F522	Actuator 16 A with probe
3523	Toroid
Touch Screen	Touch Screen 3.5" / Multimedia Touch Screen 10"
RCCD	General switch
MCB1	4 A MCB switch

WARNING

A *The following Touch Screens may be installed:*

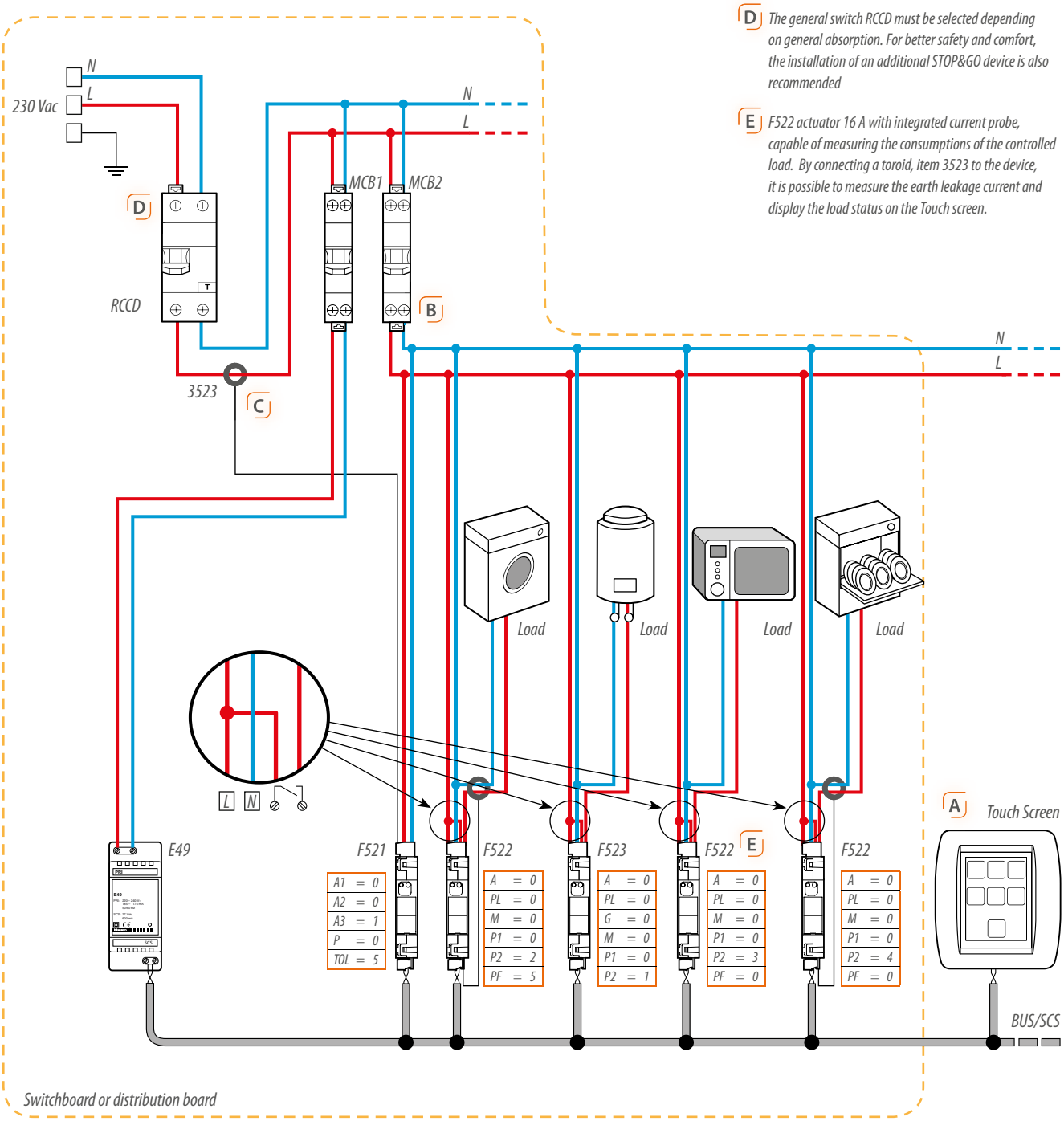
- *H4684 AXOLUTE*
- *L4684 LIVING / LIGHT / LIGHT TECH*
- *AM5864 MÀTIX*
- *Multimedia Touch Screen HD/HC/HS4690*

B *General MCB switches must be selected depending on load absorption*

C *Each F520 is supplied as standard with one toroid, item 3523, for current reading*

D *The general switch RCCD must be selected depending on general absorption. For better safety and comfort, the installation of an additional STOP&GO device is also recommended*

E *F522 actuator 16 A with integrated current probe, capable of measuring the consumptions of the controlled load. By connecting a toroid, item 3523 to the device, it is possible to measure the earth leakage current and display the load status on the Touch screen.*



Three-phase and one-phase load control management

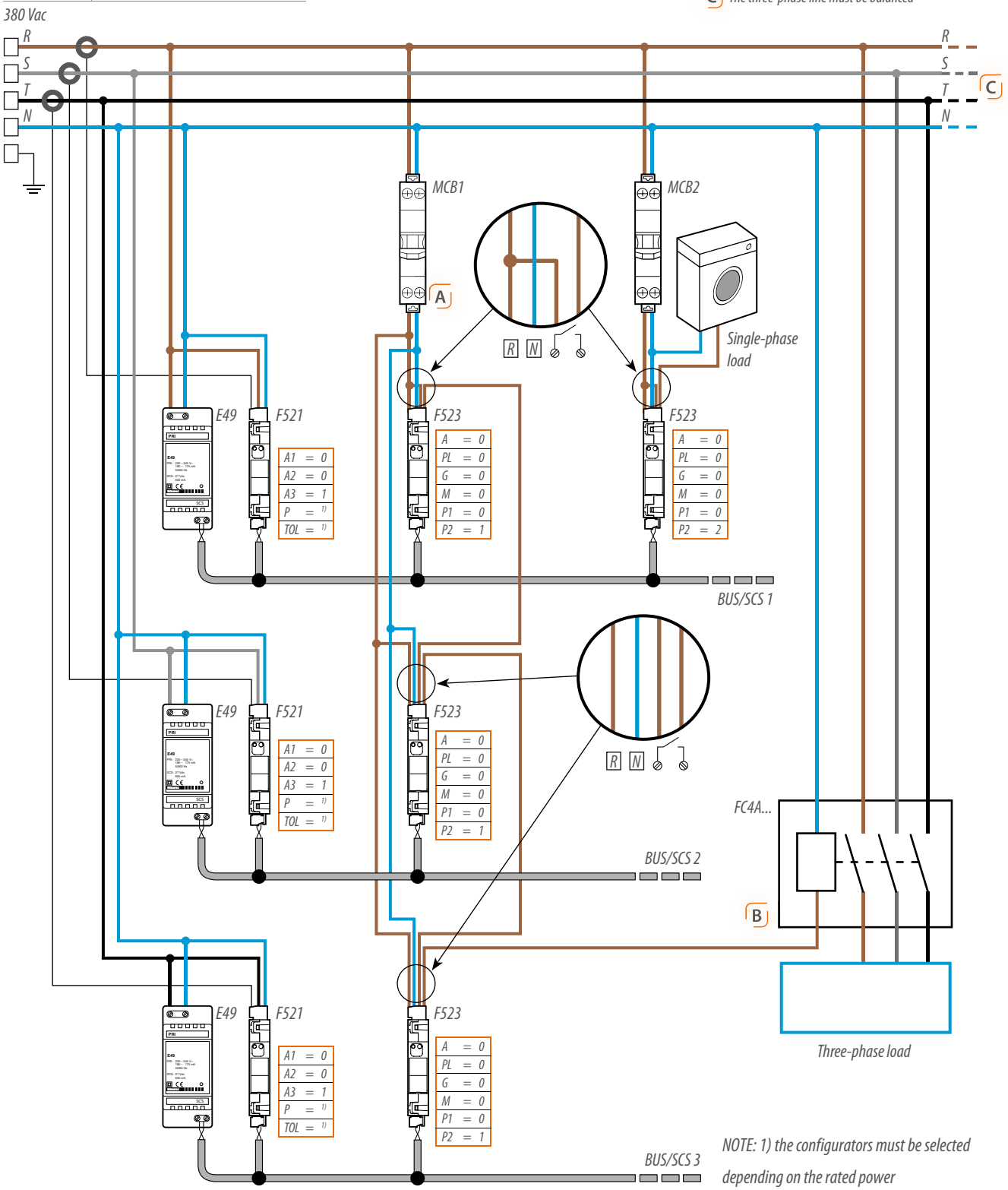
ITEM	DESCRIPTION
E49	Compact power supply
F521	Central unit for load management
F523	16 A 1 M DIN basic actuator
3523	Toroid
MCB	MCB switch
FC4A...	AC contactor

WARNING

A *General MCB switches must be selected depending on load absorption*

B *The contactor must be selected depending on the absorption of the load*

C *The three-phase line must be balanced*



NOTE: 1) the configurators must be selected depending on the rated power