

ZONING

ZITY Zoning System Installation and Service Manual



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ZONING

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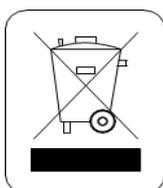
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ZITY Advanced Installation Manual

Connecting the system	4
Wiring diagrams	5
NTC probe functions	9
Control LEDs and output relays functions	10
System settings	11
Learning Mode.....	14
Most common errors	15
ZOE-RC Thermostat advanced settings	17
ZEUS-RC Thermostat advanced settings	18
ZEBRA Thermostat advanced settings	19
SW1 central ZITY Advanced settings:	21
Technical characteristics	22
Warranty terms	23



WEE (RAEE)

This product may not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. For more detailed information about recycling of this product, please contact your local city office or your household waste disposal service.

NOTES ON RADIO TRANSMISSION

The control unit should preferably be located in a high place and away from metal masses and conductive elements. The range between the thermostats and the control unit may be reduced if this is not the case. Radio transmission does not take place on an exclusive frequency, so the possibility of interference cannot be excluded. Frequency inhibitors and radio equipment operating in a permanent transmission mode in the same frequency band (433 MHz) may impair the normal operation of the ZONING. The system is designed to work on two different frequencies (433.92 and 434.33 MHz) to minimise this type of problem.



The installation should be carried out by authorised personnel only. Perform the entire installation without supply voltage. Protect the unit with the usual devices.

Installation Manual

1 Connecting the system

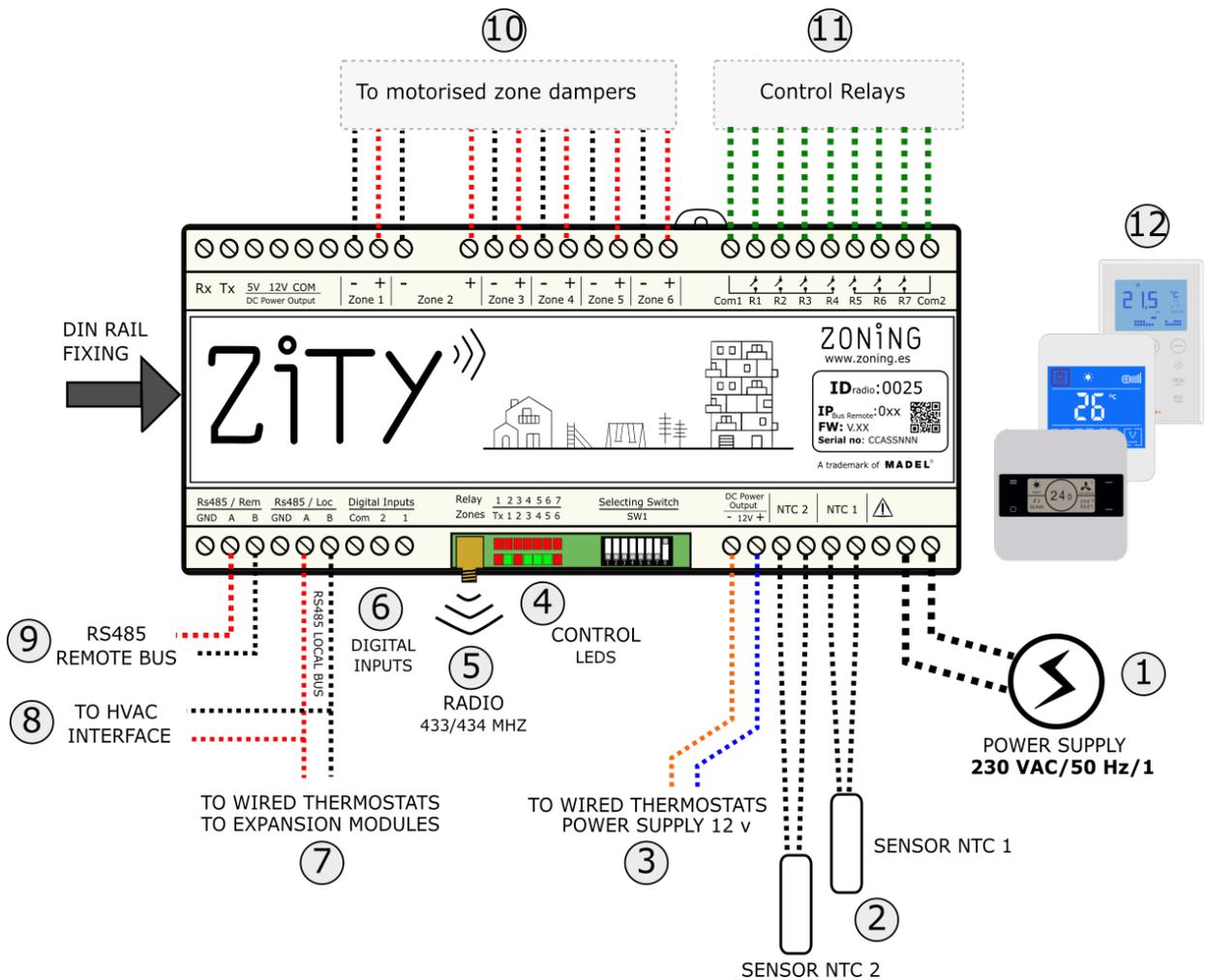
All system components are wired to the control unit or to its expansion modules.

It is advisable to locate the equipment preferably in a high place away from metal masses and conductive elements; place the control unit in a protected place that can only be accessed by authorized personnel and with appropriate

Tools for opening and subsequent handling of the equipment in question.

Place at a height of approximately 1.5 m, avoiding direct heat sources and unwanted air currents

Avoid to location the thermostats near metal masses and conductive elements.



- Supply voltage**, (230VAC/ 50 Hz/ 1)
- 10kOhm NTC temperature sensors** (see location according to type of machine)
- 12 VDC output voltage** for wired thermostats
- Control LEDs**, to monitor the status of the control unit
- 433/434 MHz Radio transmission antenna** (only in ZITY-RC control units)
- Digital inputs**, potential-free inputs
- RS485 local communication bus**. For wired thermostats and expansion modules.
- RS485 local communication bus**, for communication with equipment interfaces (connect in parallel with the previous bus)
- RS485 remote communication bus** for home automation communication/ BMS or NetBox (MODBUS RTU-SLAVE protocol)
- 24 VDC outputs** for control of motorised zone dampers (maximum 2 dampers per zone) (24Vdc -200 mA)
- Control relays** of the climate-control equipment (see connection depending on the type of equipment). Maximum current 6A
- Thermostats**: Wired or via radio

Fig.1 Connecting all ZONING SYSTEM components in the ZITY control unit.

1.1-B Direct expansion system with wired thermostats and NetBox gateway.

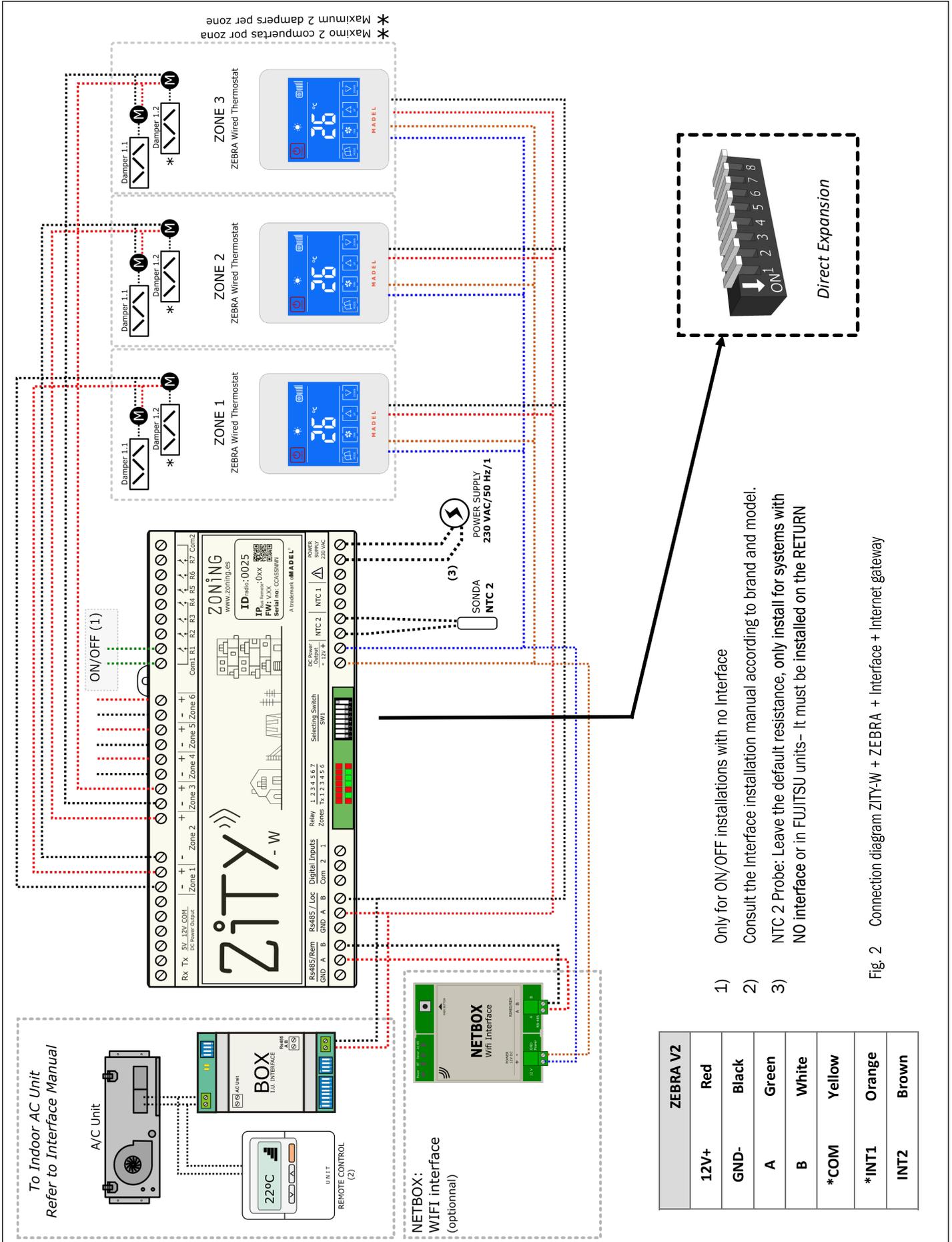
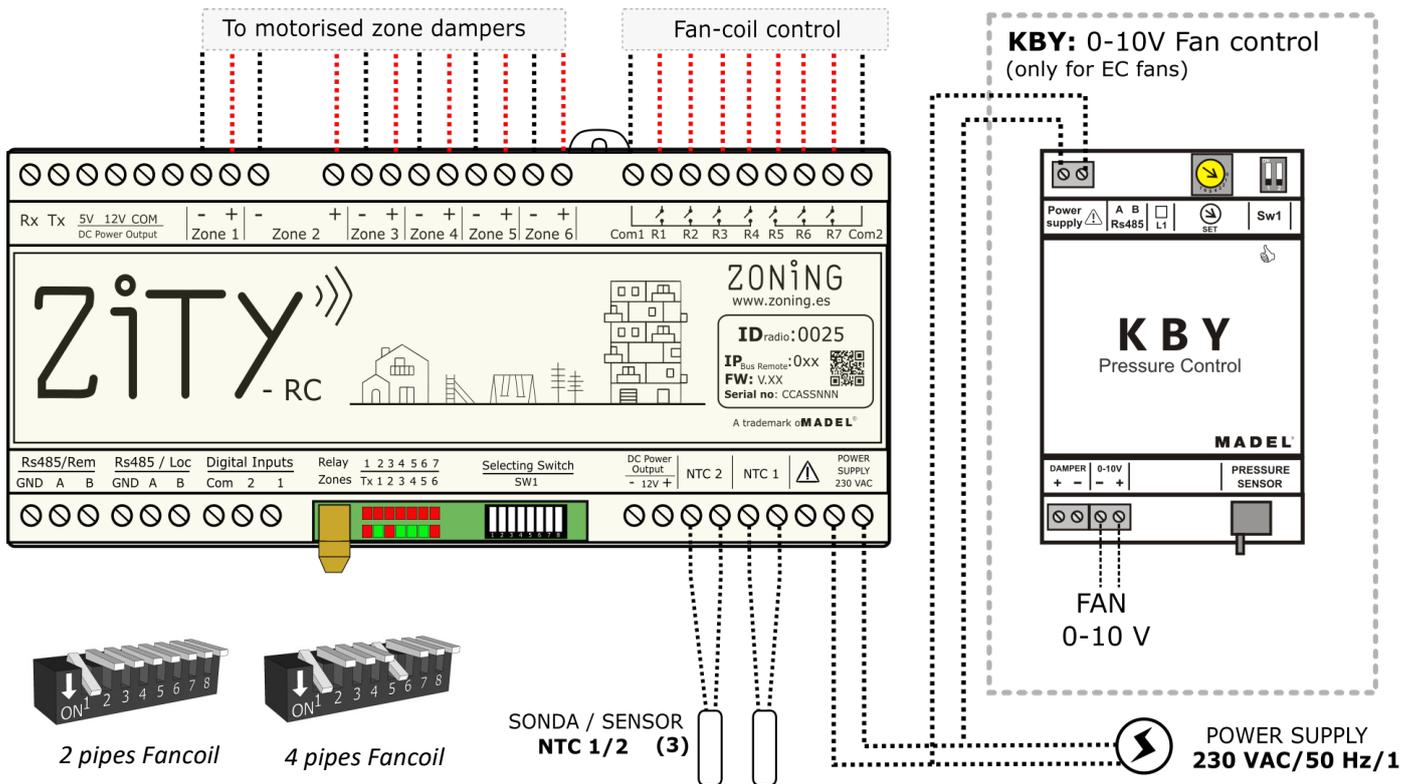


Fig. 2 Connection diagram ZITTY-W + ZEBRA + Interface + Internet gateway

ZiTY Control Unit

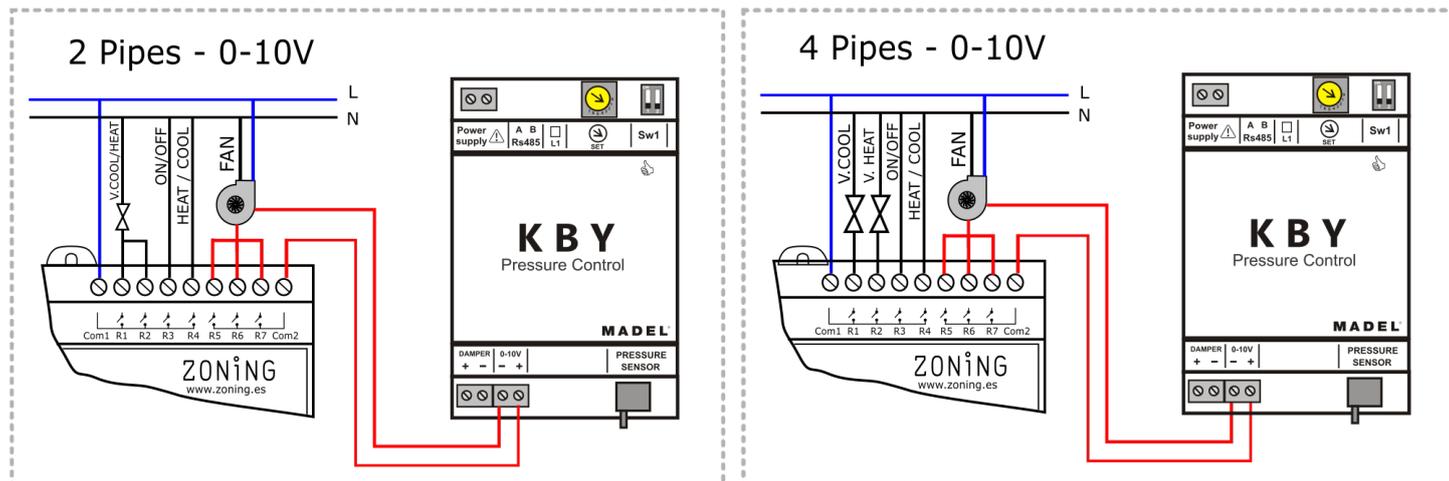
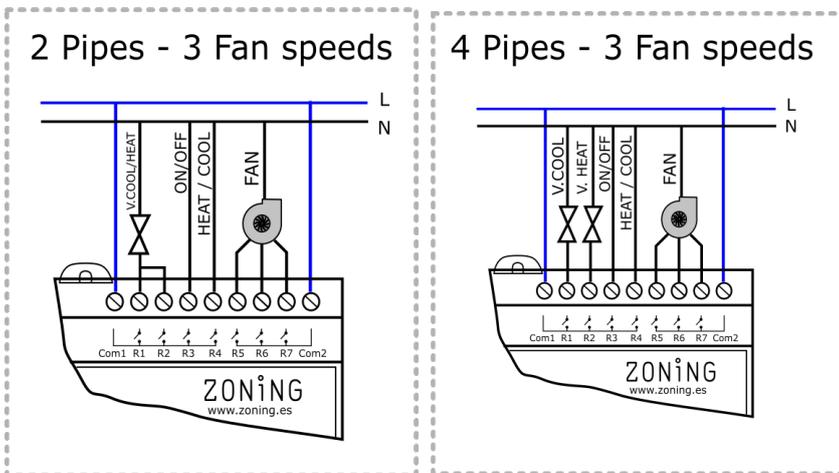
1.1-C Hydronic systems. Fancoil

For the connection of thermostats, motorized dampers and NetBox, Refer to diagrams above.



2- Pipe FANCOIL			
Installation Type	Individual	Collective	Location
NTC 1	Optional*3	Optional*3	Battery inlet pipe
NTC2	Remove resistor	Optional*3	Battery inlet pipe

4- Pipe FANCOIL			
Installation Type	Individual	Collective	Location
NTC 1	Optional*3	Optional*3	Heat battery inlet pipe
NTC2	Optional*3	Optional*3	Cold battery inlet pipe



Installation Manual

1.1-D Radiant system

For the connection of thermostats, motorized dampers and NetBox, Refer to diagrams above.

A Radiant heating installation (radiators or radiant/ cooling floor) can be zoned.

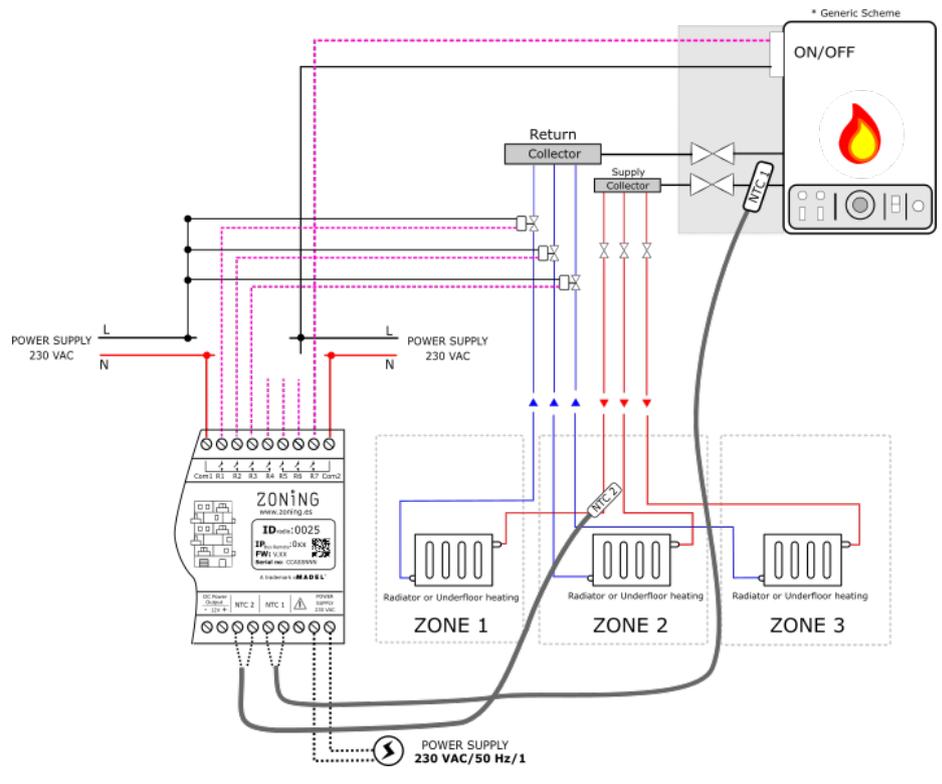
The system manages the zone thermostatic valves (ON/OFF) and the switching (ON/OFF) of the production equipment.

The NTC probes (optional) are used as supply temperatures protection. NTC1 for the production equipment output and NTC2 for the inlet temperatures to the radiant floor.

To activate in the ZITY the radiant protocol, the switches must be positioned as follows:

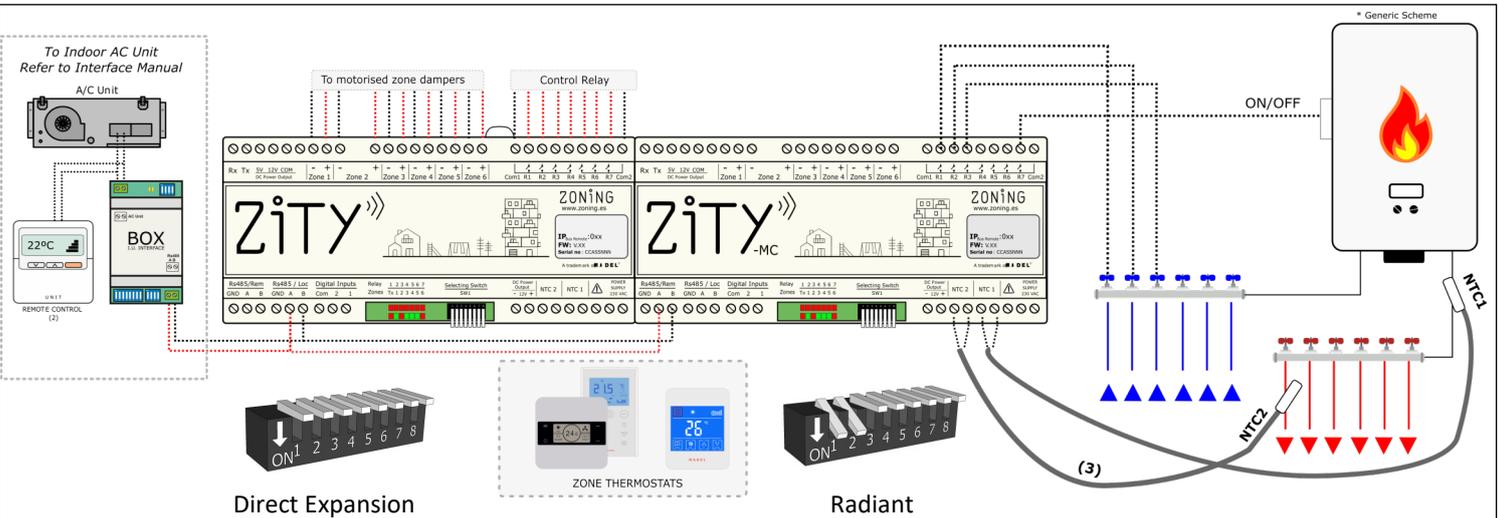


Radiant



1.1-E Direct Expansion/ Radiant combined hybrid systems

For the connection of thermostats, motorized dampers and NetBox, Refer to diagrams above.



Direct Expansion

Radiant

This application allows to control a combined air (Direct Expansion or Fancoil) / water (radiators or radiant floor) installation. Integrating in each zone thermostat the functionalities of both systems.

To do this, 2 ZITY central modules must be installed, the first controls the air installation with motorized dampers and the other ZITY will control the radiant system through thermostatic valves.

Both control units are linked by a communication BUS that manages one control unit or the other depending on the working mode selected in the Master thermostat (cooling/ heating air, cooling/radiant heat).

The NTC probes will be connected to each of the production equipment, according to the required functionality.

ZITY Control Unit

1.2 Power supply

Supplies the control unit at 230 VAC through the "Power Supply (1)" terminals, using wires with a section of between 1.0 mm² and 1.5 mm².

Each module must be powered separately if different zone expansion modules are installed.

1.3 NTC Probes

The ZITY control unit has 2 inputs (NTC 1, 2) for NTC 10K type sensor (R25=10K, 3% B25/85=3977 K, 0.75%), whose function depends on the production equipment installed. By default only a 10 Kohm resistor is connected in NTC2 terminals, output NTC1 remains free.

DIRECT EXPANSION 1x1 and VRF

Installation type	With gateway	No gateway	Location
NTC 1	Do not connect	Do not connect	-
NTC2	Leave resistor (1)	Advisable or leave resistor	Air return

*1: Only install in FUJITSU- GENERAL machines with gateway. The other brands do not require a sensor.

FANCOIL 2 PIPES

Installation type	Individual	Collective	Location
NTC 1	Optional (3)	Optional (3)	Battery inlet pipe
NTC2	Remove resistor (4)	Optional (3)	Battery inlet pipe

FANCOIL 4 PIPES

Installation type	Individual	Collective	Location
NTC 1	Optional (3)	Optional (3)	Heat battery inlet pipe
NTC2	Optional (3)	Optional (3)	Cold battery inlet pipe

*3: For fancoil water input temperature protection.

*4: Remove the resistor if a Master thermostat is installed. When using auto-mode detection (no Master), remove the resistor and install the NTC2 sensor in the water delivery pipe.

RADIANT SYSTEM

Installation type	Heating, radiant or cooling floor	Location
NTC 1	Optional (5)	Boiler output pipe
NTC2	Optional (6)	Superficie radiante

*5: For boiler delivery temperature protection.

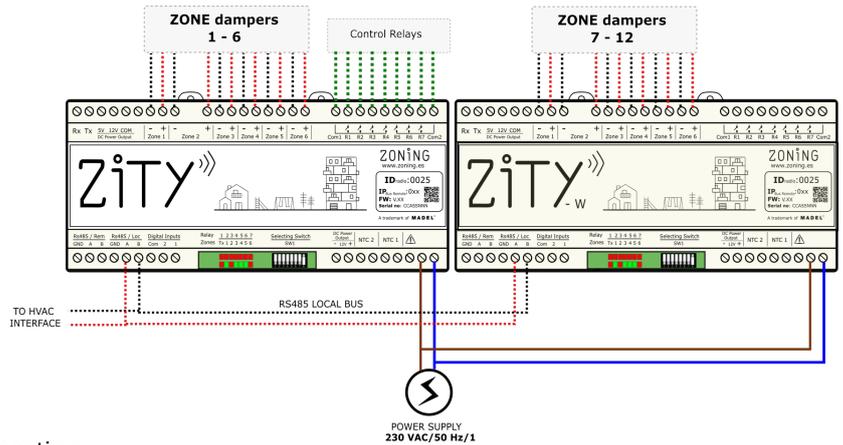
*6: For input temperature protection in radiant/cooling floor

In COMBINED systems (control of air and water production units in the same installation), each ZITY control unit will connect the sensors according to the unit they control. For example, in a combined fancoil and radiant floor installation, the ZITY- RC (W) control unit that manages the fancoil must have sensors according to the type of control required, and the ZITY-RC (W)/MC control unit that controls the radiant system must have its associated sensors.

Installation Manual

1.4 Installations with more than 6 zones

In installations with more than 6 zones, 1 or 2 zone expansion modules will be connected. The first expansion module controls zones 7 to 12. A third module can be added, which will control from zone 13 to zone 18. These modules will be connected via the unit's local bus.

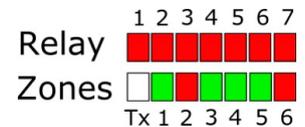


1.5 Connecting the motorized dampers. Parallel connection.

Connect the motors of each regulator to wire clamps 1 to 6 on the board (10). Use a red (+) / black (-) wire with a section of between 0.75 mm² and 1.0 mm². If there are two regulators per zone (maximum recommended), connect them in parallel

1.6 Control LEDs

The control unit has 2 rows of LEDs (red/green) that are used to monitor its status.



LEDs	Colour	Description
R1 to R7	Static red Flashing red	Static red: The associated relay is active (see paragraph 2.11 relays) Flashing red: Error or learning mode (see error list)
Z1 to Z6	Static red Static green Flashing red	Static red: Damper closed Static green: Damper open Flashing red: Zone communication error
Tx	Random flashing red	Flashes every time radio communication arrives

1.7 Control relays

The control unit has 7 control relays. The function of each relay depends on the protocol chosen in Sw1.

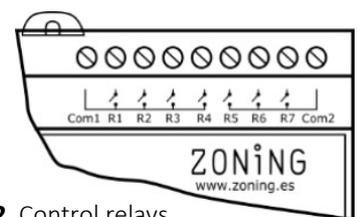


Fig. 2 Control relays

Protocol	R1	R2	R3	R4	R5	R6	R7
Direct expansion	On/OFF	-	-	-	-	-	-
2 Pipe Fancoil	Valve	Valve (1)	ON / OFF	OFF=Heat ON= Cool	Speed 1	Speed 2	Speed 3
4 Pipe Fancoil	Cold valve	Heat valve	ON / OFF	OFF=Heat ON= Cool	Speed 1	Speed 2	Speed 3
Radiant	Zona 1 valve	Zona 2 valve	Zona 3 valve	Zona 4 valve	Zona 5 valve	Zona 6 valve	Boiler ON/OFF

*1: Relay 1 output must be jumpered

ZITY Control Unit

2 System settings

Configuring the system is a two-step process:

- 1 Configure the switches of the ZITY control unit: Select switch SW1 according to the type of machine and position the DIP8 in learning mode.
- 2 Link and configure the thermostats with the control unit

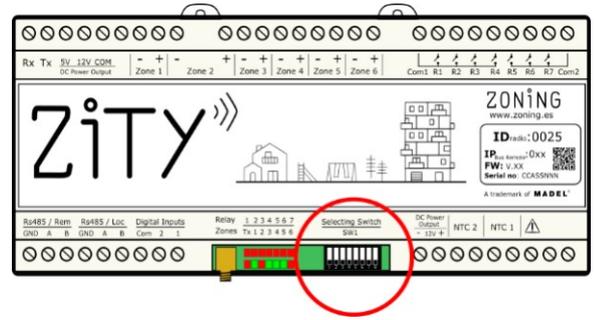
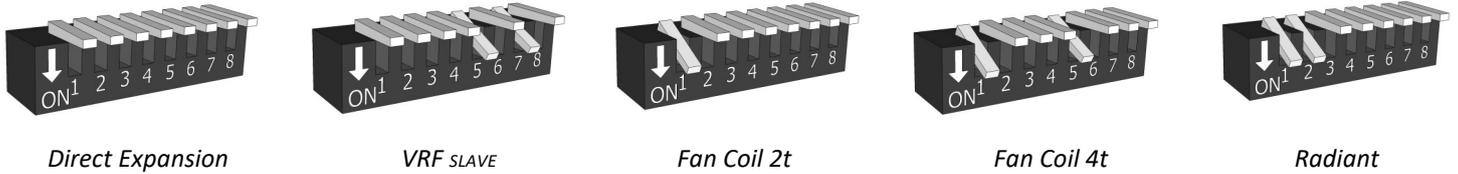


Fig. 23 SW1 to configure ZITY

2.1 Configure the control unit switches: Consult for other applications.

The SW1 switch is used to configure the ZITY control unit according to the type of installation.

Dip 8 from SW1 8 is used to place the unit in learning mode during start-up (see the corresponding section).

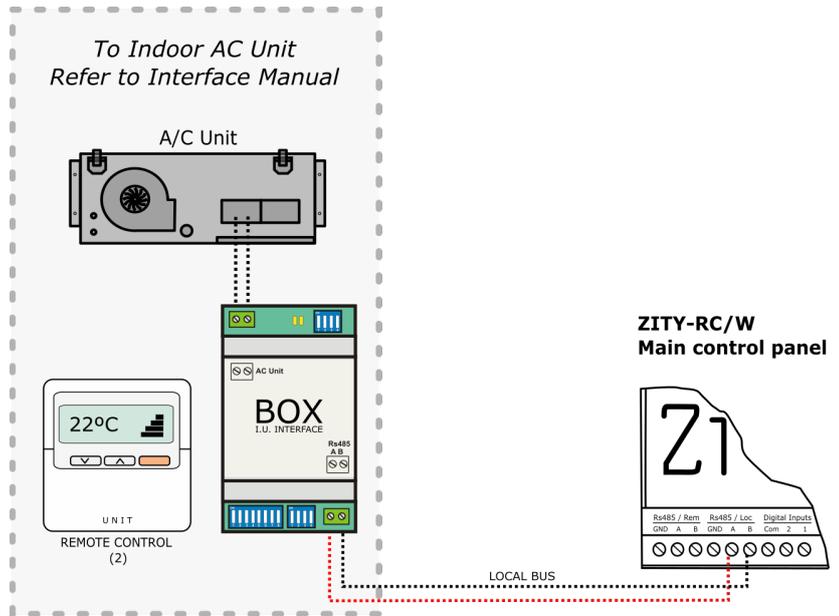


2.2 Configuration and connection of control interfaces (only for Direct Expansion installations/VRF)

By default, the communication interfaces between the ZONING System and the Direct expansion climate-control units are factory-set. Only check the switches to adjust the unit fan speeds and/ or in the case of removing the unit remote control. See the all switches configuration of the corresponding interface manual.

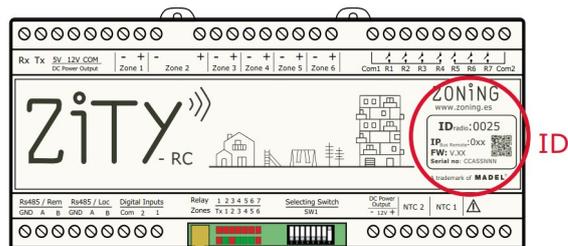
The interface is connected to Rs485/LOC Bus, following the indicated polarity.

For the connection between interfaces and the different units, see the corresponding manual for each brand.



2.3 Link and configure the thermostats

2.3.A RC radio thermostat with ZITY-RC: Link the thermostats and the control unit via the following steps:

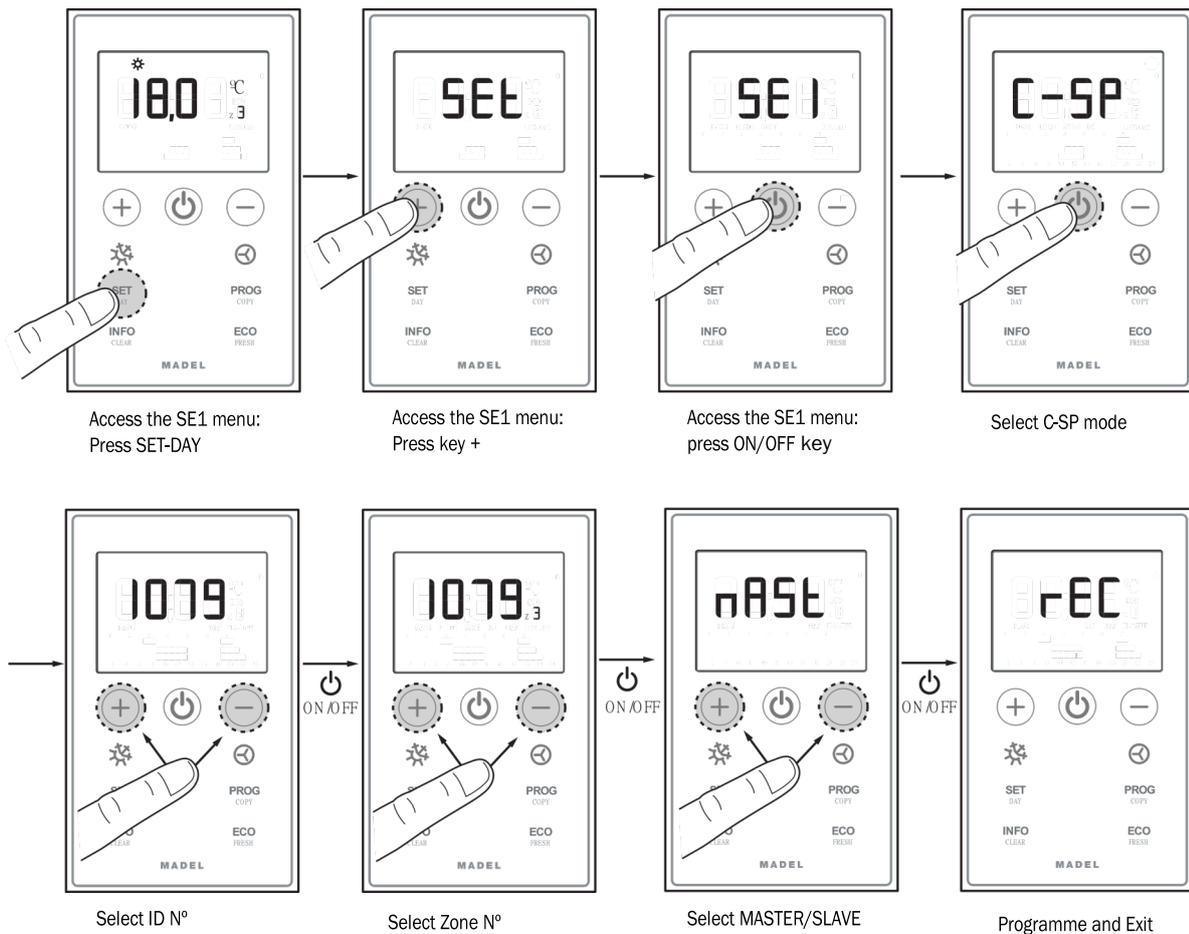


- On the front label, locate the ID number (radio ID) of the ZITY control unit and associate this number to each of the thermostats.
- Assign a zone number to each thermostat (corresponding to the motorized control that has been connected to outputs 1 to 6 of the ZITY control unit.
- Select whether the thermostats is Master or Slave. A single thermostat must be declared as a Master. If there is no Master or more than one, the ZITY control unit will be in error.

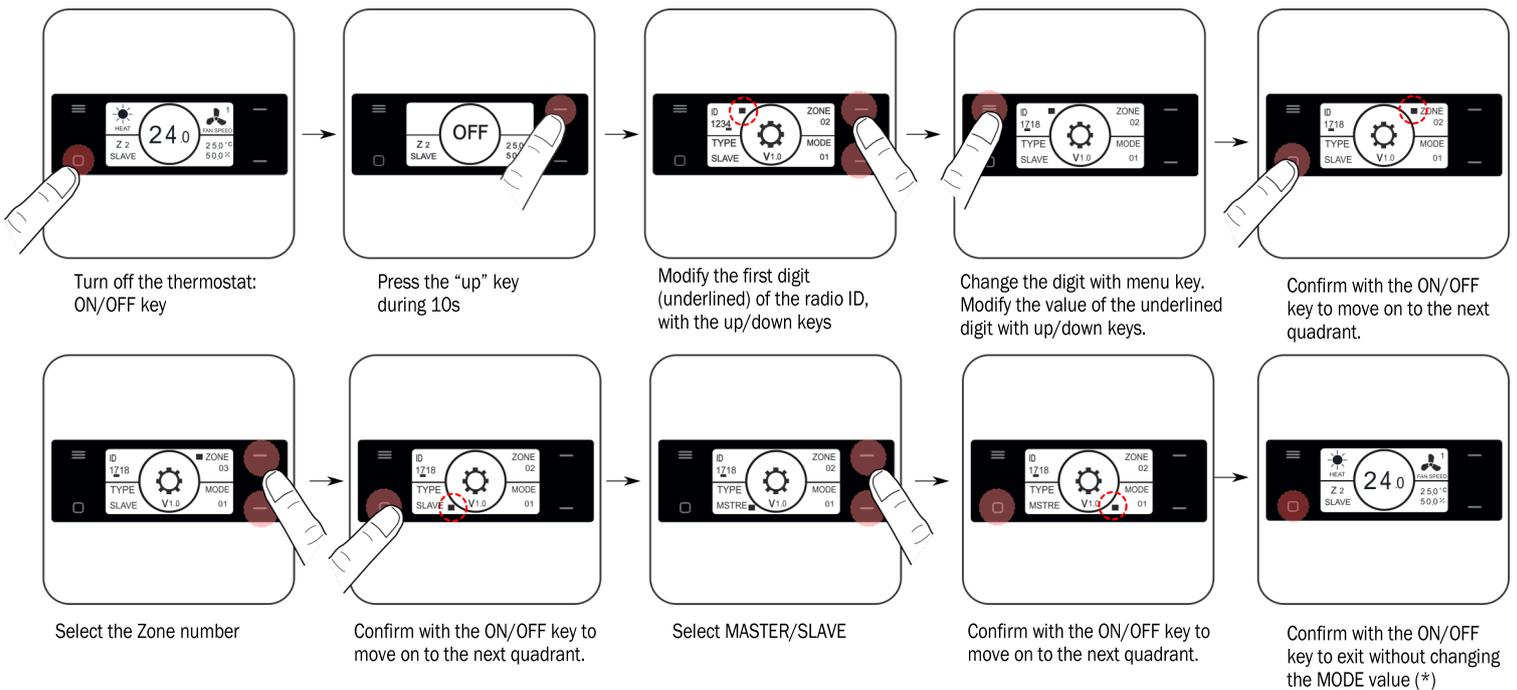
Access the ZEUS/ ZOE-RC thermostats configuration menus to carry out the steps described. See the following diagrams:

Installation Manual

2.3.A ZOE-RC thermostats with ZITY-RC: After locating the corresponding radio ID of the ZITY-RC unit, assign a zone number to each thermostat and select which thermostat will be MASTER or Slave.



2.3.B ZEUS-RC thermostats with ZITY-RC: Assign ID number / Zone / Master- Slave.



Learning and start-up: See section 3 to carry out this process.

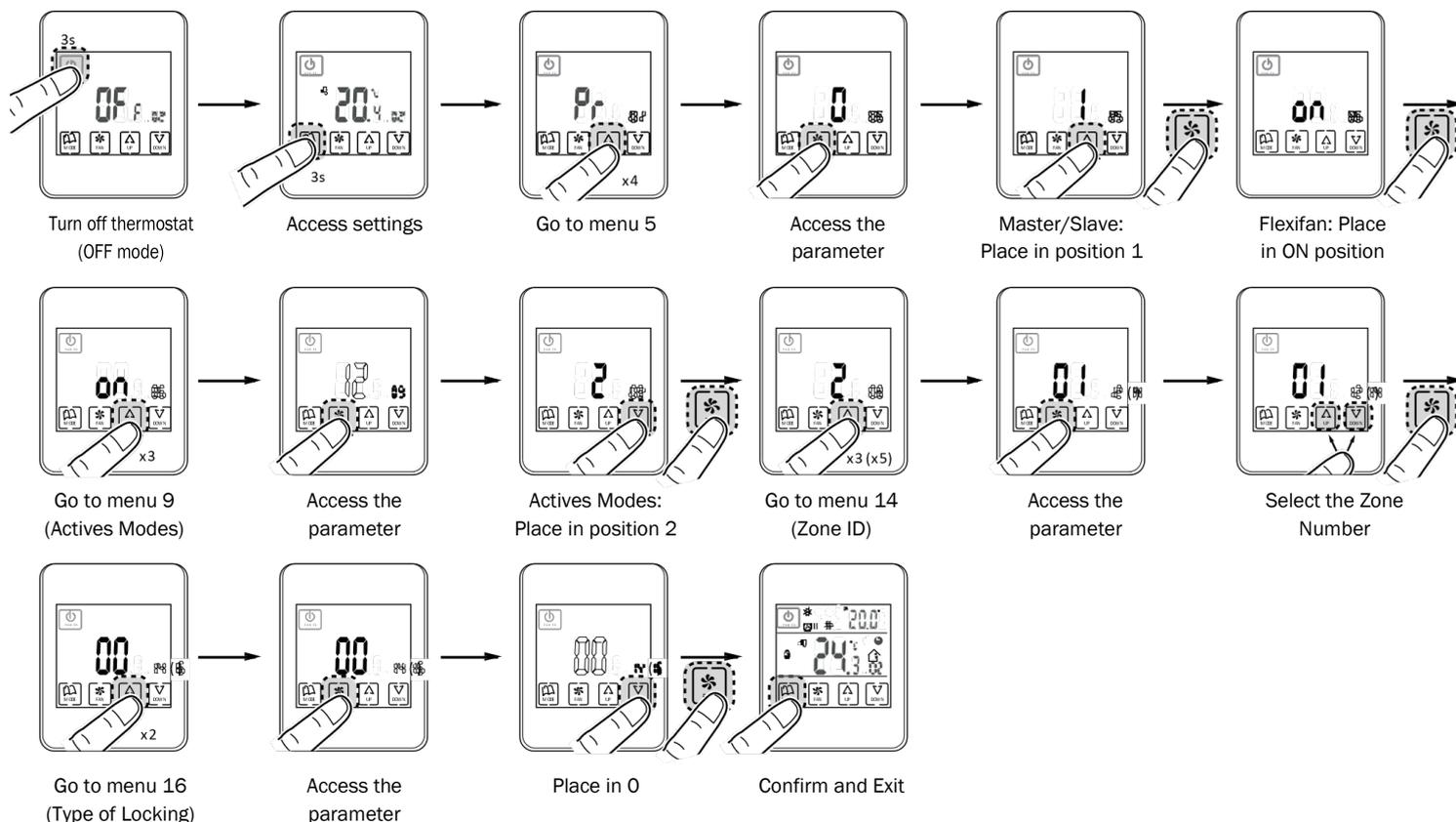
(*) See advanced functionality to modify the MODE parameter

2.3.B ZEBRA thermostats with ZITY-W (by wire)

1 Connect the thermostats and the control unit via the following steps:

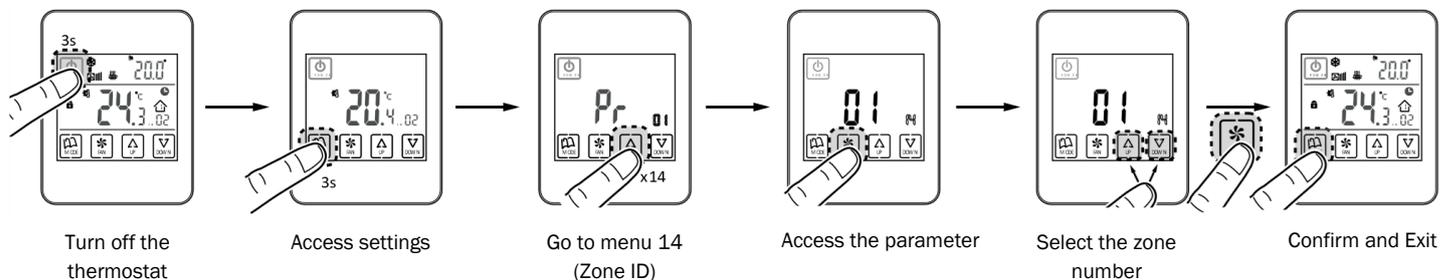
- **For the Master thermostat: define a single Master per installation.**

Configure menus 5 (Master/ Slave), 6 (Flexifan), 9 (Actives Modes), 14 (Zone Number) and 16 (Keypad Lock):



* Valid values for the ZEBRA V2 (7 wires) in the case of having a ZEBRA V1 (4 wires) see the advanced setting. For more information on other menus, see the advanced settings.

For the Slave thermostat: Only configure menus n°5 (Slave) and n°14 (Zone number):



* Valid values for the ZEBRA V2 (7 wires) in the case of having a ZEBRA V1 (4 wires) see the advanced setting. For more information on other menus, see the advanced settings.

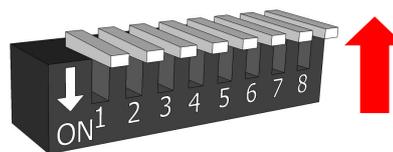
Installation Manual

3 Learning and start-up

In the first place, it is necessary to carry out the appraisal process in order to detect all the system's elements and start-up can be carried out later (once recognised).

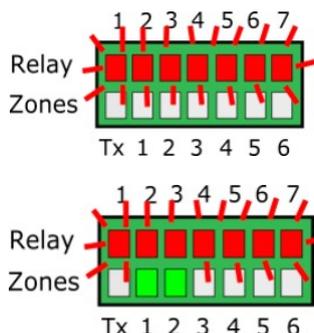
Place the switches according to the type of the system (Direct expansion, Fancoil, Boiler...). See page 11

Make sure that DIP 8 is OFF (up).

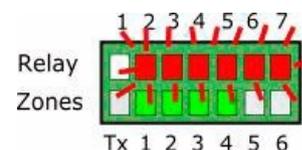


3.1 Recognising components

1. Connect the 230VAC power supply of the ZITY control unit.
2. The control unit is positioned in learning mode and the 7 LEDs corresponding to the relays begin to flash.
3. Every time the thermostat of one of the zones is recognized by the control unit, the LED for the zone lights up in green.



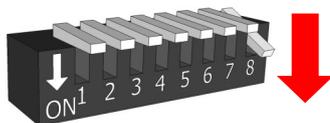
The upper row of LEDs corresponds to peripheral detection. Each time one of them is detected, the associated LED goes out.



- LED R1: Pasarela de comunicación máquina.
- LED R2: Modulo de expansión 7-12 zonas
- LED R3: Modulo de expansión 7-12 zonas
- LED R4: Central combinada W-MC
- LED R5: Central Slave 1
- LED R6: Central Slave 2
- LED R7: Central Slave 3

3.2 Exiting learning mode Salir del modo aprendizaje

- 1 Wait for 30 seconds after the last component has been detected.
- 2 Pull down the DIP8 (ON).
- 3 Disconnect the voltage to the ZITY control unit.



3.3 Start-up in normal operating mode

- 1 Connect the ZITY control unit again.
- 2 When power is supplied to the control unit, it will begin to operate normally according to the settings specified in the SW1.

3.4 Learning and start-up for systems with zone expansion modules (...-ME)

The learning process should be carried out at the same time in all the control units, main board (ZITY-RC or ZITY- W) and expansion modules (ZITY-W/ME).

The SW1 DIP 8 should therefore be placed in learning mode for all units (central and modules).

The LEDs for the associated zones will be enabled in each control unit. The main board will detect, apart from the zones, the expansion modules (LED R2 or LED R2/R3, OFF).

* For RC systems, enter the ID for the main board in all thermostats.

3.5 Learning and start-up for systems with combined modules (...-MC). The learning process must be carried out on both boards (the main one and the combined one), with the following particularities;

3.5.1 ZITY-RC/MC Combined modules: First, check that both the base board (ZITY-RC) and the combination module (ZITY-RC/MC) share the same ID.

The thermostats will be detected by both boards, the gateway (...Box) will only be detected by the base board, and the ZITY-RC/MC combined module will not be detected in the relay LEDs although it will operate normally.

The learning process for the 2 control units can be carried out at the same time or separately.

If the air and water climate control zones do not coincide, consult the technical department.

3.5.2 ZITY-W/MC Combined modules:

Carry out the learning process simultaneously in both control units, base board (ZITY-W) and the combined module (ZITY-W/ MC). The base board will detect the thermostats, the gateway (...Box) if fitted, and the combined module (LED R4, OFF). The combined module **will not detect any component during this process.**

When starting for the first time in normal mode after learning, the combined board WILL NOT turn on any LEDs until 3 min have passed, and will then show the zone LEDs and the relays that are active.

ZITY Control Unit

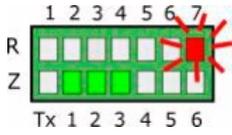
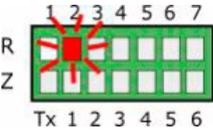
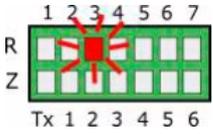
4 Most common errors

4.1 For all installations:

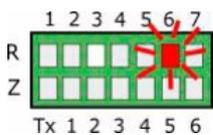
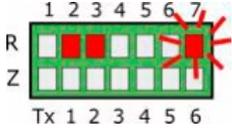
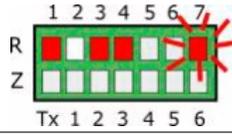
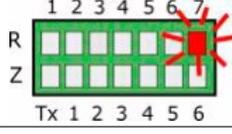
ERROR	INDICATOR	CAUSE	SOLUTION
1 On supplying 230Vac to the control unit, no LED lights up on the control unit		No voltage or no learning	<ul style="list-style-type: none"> Check that voltage is reaching the ZITY control unit (230VAC ±10%). Ensure the learning process has been carried out.
2 5 minutes after switching on the control unit, all zone LEDs start to flash and <u>all grilles are closed</u>		Incorrect settings	<ul style="list-style-type: none"> Check the settings of the thermostats. Make sure that they are connected to the control unit . Repeat the learning process. In Radio systems, check whether it works at a shorter distance and relocate the antenna. In Radio systems, check the operating frequency between thermostats and central are the same.
3 Some of the zone LEDs do not light up and the rest do		Learning error	<ul style="list-style-type: none"> The thermostat corresponding to the LED switched off has not been recognised in the learning process . Reprogram the thermostat and repeat the learning process, making sure that all LEDs light up during the process, waiting for 30s before finishing.
4 Some of the zone LEDs are flashing and the dampers of these zones close		Poor communication	<ul style="list-style-type: none"> The control settings have been changed since the learning process. Configure it again. Check that the thermostat is in the installation. Check the location and the batteries in the thermostats via Radio. Checking the wiring in the wired thermostats
5 The R7 LED in the relay row flashes and the zone LEDs light up in red		More than one Master	<ul style="list-style-type: none"> There are two thermostats declared as Master in the installation. Re-configure the thermostats in conflict and leave only one Master.
6 The control unit does not show any error but the unit does not start up		Time programming	<ul style="list-style-type: none"> Check that the thermostat PROG function is not enabled and whether it corresponds to a switch-off time or is not set correctly.
7 The grille closes when it has to open (and vice versa)		Motors incorrectly connected	<ul style="list-style-type: none"> Check motor connection. Polarity (black -, red +). Check that it is tested in the correct operating mode (Cool/ Heat).
8 One of the grilles is not working		Zone regulator connection	<ul style="list-style-type: none"> Check motor connection. Polarity (black -, red +). Check that the regulator is not obstructed.
9 All grilles are operating correctly, but the climate-control unit does not work		Climate-control unit incorrectly connected	<ul style="list-style-type: none"> Check the control unit settings according to the type of the equipment. Check the connection of the equipment with the board.

Installation Manual

4.2 For direct expansion installations:

ERROR	INDICATOR	CAUSE	SOLUTION
1 The R7 LED in the relay row flashes and the zone LEDs light up in green		Interface communication error	<ul style="list-style-type: none"> Check the connection and settings of the Interface (see manual for each brand and model).
2 The R2 LED in the relay row is flashing. The system does not start up		DX mode error	<ul style="list-style-type: none"> The work mode is not sent. Impose a thermostat as MASTER and place the control unit in Local Mode. In the case of remote systems, check that the mode is sent by channel Rs485/Rem . Check the position of switch 7 of the ZITY or the active modes of the thermostat, to avoid not working in radiant modes.
3 The R3 LED in the relay row is flashing. The system is blocked		Sensor error	<ul style="list-style-type: none"> In installations with NO INTERFACE, the resistor (by default) or the NTC sensor are not connected. Or the measured temperature is out of range.

4.3 For fancoil installations:

ERROR	INDICATOR	CAUSE	SOLUTION
1 The R6 LED in the relay row is flashing		Fancoil mode error	<ul style="list-style-type: none"> The work mode is not sent. Impose a Master thermostat and place the control unit in Local Mode. In the case of sub-zone, ensure that the NTC2 sensor is in the delivery.
2 The R7 LED in the relay row flashes and the R2 and R3 LEDs remain lit		Water temperature error in Heat mode	<ul style="list-style-type: none"> Battery temperature in heat battery out of range. Check NTC1 connection.
3 The R7 LED in the relay row flashes and the R1, R3 and R4 LEDs remain lit		Water temperature error in Cool Mode	<ul style="list-style-type: none"> Battery temperature in heat battery out of range. Check connection of NTC1 or NTC2 for 2T and 4T installations respectively.
4 The R7 LED in the relay row is flashing		Combined mode error	<ul style="list-style-type: none"> Check the position of Switch 7 of the ZITY or Active Modes of the ZEBRA thermostat. The control unit is attempting to work in Cool or Radiant Heat Mode.

ZITY Control Unit

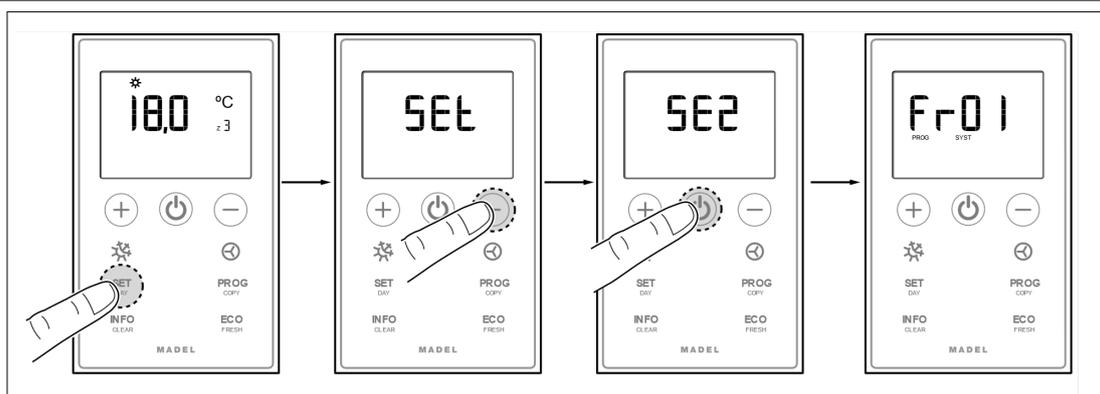
5 ZOE-RC Thermostat advanced settings: ZOE-RC timer-thermostats have an expert menu (Se2) for setting various system parameters. The parameters that can be configured are shown in the following table:

Parameter	Description	Values
Fr	Radio frequency	Fr00 = 433 Mhz; Fr01 = 434 Mhz (*)
Tc	Setpoint/ ambient temperature	Tc00 = Setpoint temp. (*); Tc01= Ambient +
Hc	Active modes (1)	Hc00 = Cool/ heat air + DRY+FAN (*) Hc01 = Cool/ heat air + FAN Hc02 = Radiant heat / radiant cool Hc03 = Cool/ heat air + FAN + radiant cool/ heat Hc04 = Cool/ heat air + DRY + FAN + radiant cool/ heat
Pr	Weekly programming	Pr00 = No weekly programming Pr01 = Weekly programming active (*)
Bl	Lock modes (1)	Bl00 = No lock (*) Bl01 = Total lock except +/-/ON-OFF Bl02 = Mode key lock Bl03 = Mode key lock + Master OFF
Fn	Fan	Fn00 = Fan inactive (automatic operation)
Min heat temp.	Min heat setpoint temperature	Selectable from 15 to 21°C
Max heat temp.	Max heat setpoint temperature	Selectable from 21 to 30°C
Min cool temp.	Min cool setpoint temperature	Selectable from 17 to 25°C
Max cool temp.	Max cool setpoint temperature	Selectable from 25 to 30°C
Hi	Hysteresis (1)	Hi02 = Hysteresis 0.2°C (Eu.bac operation) Hi03 = Hysteresis 0.3°C Hi04 = Hysteresis 0.4°C Hi05 = Hysteresis 0.5°C (*) C-Sp = Hysteresis 0.5°C and KSP temperature standard
Slv	Master/ Slave hybrid mode	Slv1 = Mode button active in Slave for temperature limits Slv0 = Mode button inactive in Slave(*)

(*) Default values

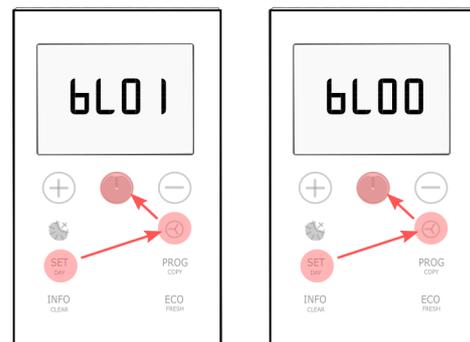
(1) Setting in V04. In previous versions, check active parameters

Carry out the following sequence to enter the Se2 advanced settings menu: **SET, -, ON/OFF**



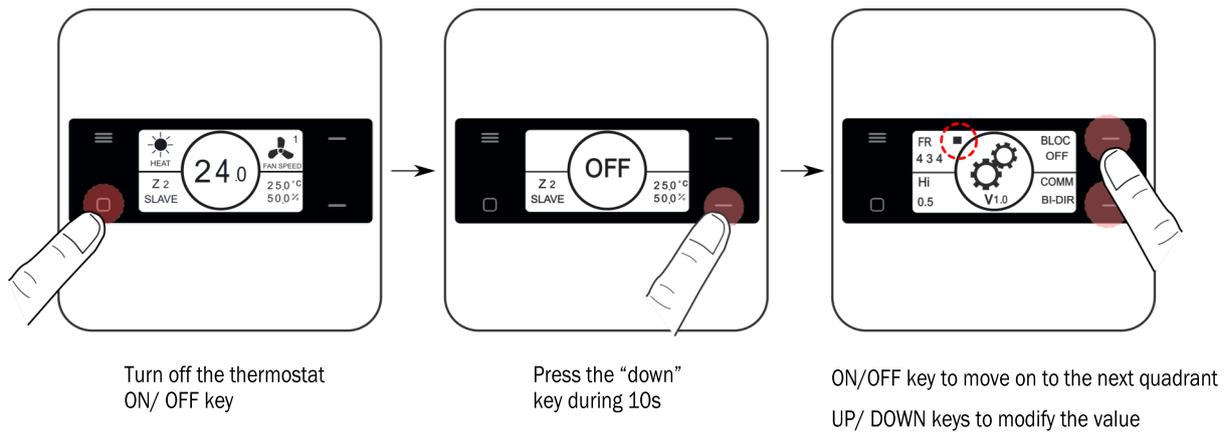
Quick locking keys for ZOE-RC: Use the following key combinations to lock/unlock the keyboard quickly:

- Bl00 = Unlocking (*)
- Bl01 = All lock except +/-/ON-OFF



Installation Manual

6 ZEUS-RC advanced settings: ZEUS-RC thermostat have an expert menu for setting various system parameters. To access the expert menu, follow this procedure:



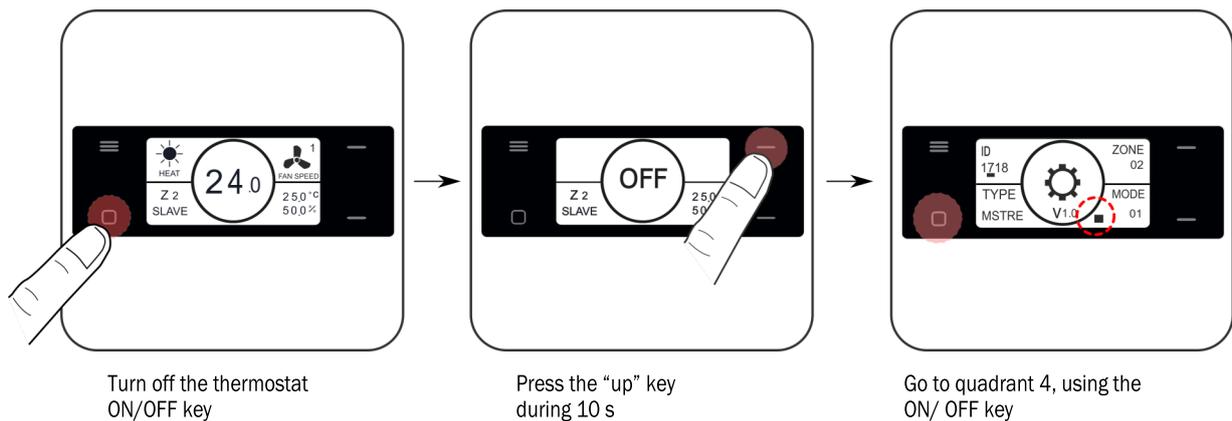
Parameter	Description	Values
Fr	Radio frequency	Fr = 434 Mhz (*) Fr = 433 Mhz;
Bl	Lock modes (1)	OFF = No lock (*) ON = Menu key lock
Hi	Hysteresis (1)	Hi02 = Hysteresis 0.2°C (Eu.bac operation) Hi05 = Hysteresis 0.5°C (*)
COMM	Communication type	BI-DIR = Bidirectional communication(*).(1) UNI-DIR = Unidirectional communication .(2)

(*) Default values

(1) The bidirectional mode entails a high battery consumption (service life about 1 year)

(2) The unidirectional mode consumes less batteries than bidirectional mode and is indicated when it is not connected with external devices (Netbox) or for older control units

To configure the **active modes**, we access the configuration menu 1 (see page 11), and modify the value of the fourth quadrant. When a thermostat receives an operating mode in which it is not active, it will turn off and will not be operational in that mode. For this functionality to be operational, the thermostat must be in bidirectional mode.



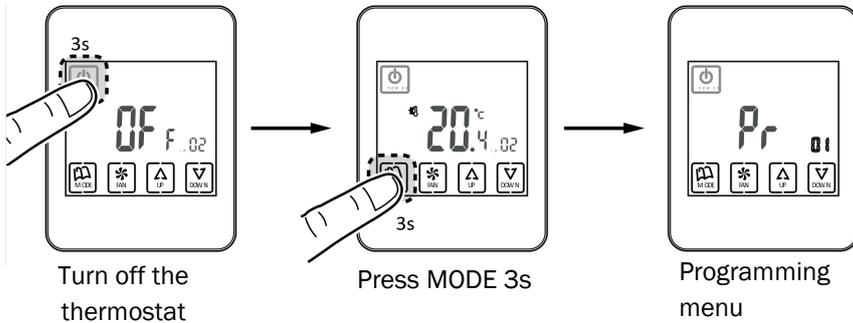
Parameter	Description	Values
MODE	Active modes	01 = Cool/ heat air + DRY+FAN (*) 02 = Cool/ heat air + FAN 03 = Cool 04 = Radiant heat 05= Radiant heat/ radiant cool 06 = Cool/ heat air + FAN + radiant heat 07 = Cool/ heat air + DRY + FAN + radiant heat 08 = Cool/ heat air + DRY + FAN + radiant heat/ radiant cool

Installation Manual

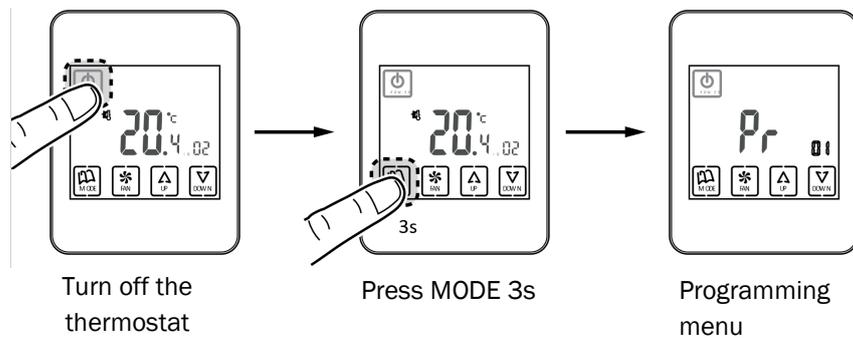
7 ZEBRA Thermostat advanced settings: The ZEBRA timer-thermostats have a menu for setting various system parameters. The parameters that can be configured are shown in the following table :

To access the menu, follow the next steps:

- **Master thermostat** (Place Master in OFF and MODE button 3s):



- **Slave thermostat** (Turn off thermostat and MODE button 3s):



Note that the menus are different in ZEBRA V1 and ZEBRA V2 (ZEBRA V2 default values are indicated in parentheses).

Parameter ZEBRA V1	Parameter ZEBRA V2	Description	Values
01	01	Weekly programming	See user manual
02	02	Time setting	See user manual
03	03	Temperature compensation	-8°C a +8°C (Default=0°C)
04	04	Backlight	On= Backlight always active(*); OFF=Backlight turns off in 15s
05	05	Master - Slave	0=Slave (*); 1=Master
06	06	Fan-control (in Master only)	On=Active; OFF=Disabled (*)
07	07	Factory Reset	On= Reset to default values; OFF= Inactive (*)
08	08	°C/°F	°C=Celsius (*); °F= Fahrenheit

(Continued on next page)



ZITY Control Unit

Parameters ZEBRA V1	Parameters ZEBRA V2	Description	Values
09	09	Active modes	0= Cool air + Fan; 1= Heat air + fan; 2= Cool/ heat air + fan (*); 3= Radiant heat; 4= Radiant cool; 5= Frío + Calor radiante; 6= Air heat + Radiant heat + FAN; 7= Radiant cool + cool air + FAN; 8= Cool/heat air + Cool/heat radiant + FAN; 9= Cool air + FAN + DRY; 10= Cool/ heat air + FAN + DRY; 11= Cool air + cool radiant + FAN + DRY; 12= Cool/ heat air + cool/heat radiant + FAN + DRY
10	10	Max Cooling setpoint temp.	10 to 30 °C (default 30°C)
11	11	Min Cooling setpoint temp.	10 to 30 °C (default 10°C)
-	12	Max Heating setpoint temp.	10 to 30 °C (default 30°C)
-	13	Min Heating setpoint temp.	10 to 30 °C (default 10°C)
12	14	ID (Zone)	Zone identifier (1 to 18) (default 01)
13	15	Weekly programming template	07= Programming every day of the week (*); 06= Programming from Monday to Saturday; 05= Programming from Monday to Friday
14	16	Lock options	0= Unlocked; 1= All locked; 2= Lock keys UP - DOWN; 3= Lock MODE key; 4= Lock FAN key; 5= Lock MODO+FAN keys (*); 6= Lock FAN + UP/DOWN keys; 7= Lock FAN + UP/DOWN + MODE keys; 8= Lock UP/DOWN + MODE keys;
15	17	Re-start	0= Re-start disabled; 1=Enabled (starts up in same mode as before the loos of current) (*)
16	18	Period programming	2/4/6 periods. (Default 4)
-	19	Weekly programming	Enabling or disabling weekly programming; 0= Not active; 1= Active
-	20	Digital input 1	0= Not active;1= Window contact; 2= Presence contact; 3= Condensation sensor
-	21	Digital input 2	0= Not active;1= Window contact; 2= Presence contact; 3= Condensation sensor
-	22	Digital input 1 settings	0= Normally closed; 1= Normally open
-	23	Digital input 2 settings	0= Normally closed; 1= Normally open
-	24	ECO Mode	0= Not active; 1= Active

(*) Default values;

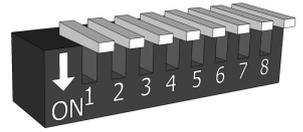
ZEBRA V1 = 4-wire thermostat;

ZEBRA V2 = 7-wire thermostat

Installation Manual

8 SW1 central ZITY advanced settings: The SW1 switch is used to configure the ZITY control unit according to the type of installation and operating frequency.

DIP 8 is used to place the unit in learning mode during start-up (see the corresponding section).

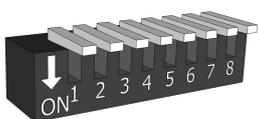


Selecting Switch
SW1

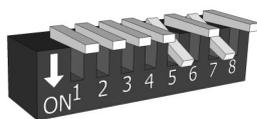
Switch SW1		Description
DIP1	ON	The production equipment is water-operated.
	OFF	The production equipment is Direct Expansion (DX) (default option).
DIP2	ON	The production equipment is Boiler.
	OFF	DX indoor unit (Split or VRV) or Fancoil (by default).
DIP3	ON	Centralized system. The equipment only obeys the commands that reach it from the RS485/ Rem bus.
	OFF	Distributed system. The equipment obeys the last order that arrives, whether from the RS485/ Rem bus or from the thermostats. No priority (default option).
DIP4	ON	Radio transmission frequency 433 MHz. Corresponds to Fr00 of the ZOE-RC thermostats
	OFF	Radio transmission frequency 434 MHz. Corresponds to Fr00 of the ZOE-RC thermostats (default option)
DIP5	ON	Slave VRV for Direct expansion installations (requires DIP 7 ON) / Water type 4T installations .
	OFF	Master VRV for Direct expansion installations / Water 2 T installations (by default).
DIP6	ON	Settings for Eu.Bac operation (should also be enabled in the thermostats).
	OFF	Settings for standard operation (by default)
DIP7	ON	Not combined. There is a single production unit: air or water. For SLAVE VRV installations (DIP 5 ON also required).
	OFF	Combined. Air and water production units are combined (by default).
DIP8	ON	Unit in work mode.
	OFF	Unit in learning mode. To start up the installation.

Check the diagrams for each type of installation to see the combination of the different DIPs.

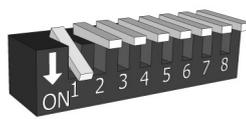
For remote connections with BMS, combined installations between Master/ Slave boards, ask the technical department.
www.zoning.es



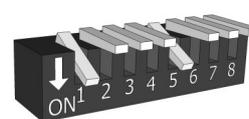
Direct Expansion



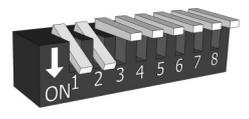
VRF SLAVE



Fan Coil 2t



Fan Coil 4t



Radiant

Technical characteristics

MADEL ATD hereby declares that ZEUS/ ZOE / ZEBRA / ZITY equipment complies with the essential requirements and any other applicable or enforceable provisions of Directives 2014/35/UE LVD, 2014/30/UE EMC and 2014/53/UE RED, 2011/65/UE.

Central de control ZITY (receptor)

- Power 230 VAC/ 50-60 Hz
- Consumption: 4 VA
- 7 relay outputs (maximum load: 6A, $\cos \phi = 1$)
- Mean range Radio: 50 m in open field, 20 m in habitat.
- Orientable external antenna.
- Frequency (ISM band, Standard I-ETS 300- 220): 434,33 MHz (Optional: 433,92 MHz). Work cycle < 10%
- For installation up to 2000m above sea level
- Receiver, Category II
- Protection grade: IP 20
- Electrical insulation protection, Class II
- Category II
- Controller type: Programmable.
- For zones of continuous or intermittent occupancy.
- Operating temperature: 0 °C a 45°C
- Storage temperature: -10 °C a 60 °C
- Dimensions (mm): 160 x 90 x 65

ZEBRA wired thermostat

- Power supply: 12 VDC
- Consumption: < 0,3 VA
- Control output: Modbus RTU Rs485
- Wire: S < 1,5 mm²
- Operating temperature: 0°C a 50°C
- Storage temperature: -20 °C a 60 °C
- Humidity range: 10-90% (no condensation)
- Wall mount with bolts (supplied)
- Protection grade: IP 20
- Temperature probe NTC10K. Precision 0,1°C
- Regulation precision CA according to standard EN15500. CA=0.xx (Test report CLMSxxx)
- ECO Economy mode (variation of the setpoint temperature in $\pm 3^{\circ}\text{C}$)
- Frost protection for: $T < 7^{\circ}\text{C} + / - 3^{\circ}\text{C}$
- Dimensions (LxHxZ): 85x108x13 mm
- Weight 0,11 kg

ZEUS-RC radio thermostat

- Power 2 1.5 V LR06 AA batteries (alkaline)
- Average battery life 1 year (or longer). The batteries are supplied with the unit.
- Battery life indicator.
- Carrier frequency (ISM band, Standard I-ETS 300-220): 434,33 MHz (Optional: 433,92 MHz).
- Bidirectional radio communication (Average response time 120s)
- Mean range: 50 m in open field, 20 m in habitat
- Operating temperature: 0°C to 55°C
- Storage temperature: -10°C to 60°C
- Humidity Range: 10-90% (no condensation)
- Wall mount with bolts (supplied)
- Protection grade: IP 20
- NTC10K Temperature sensor. Accuracy 0,1°C
- Control hysteresis $\pm 0,5^{\circ}\text{C}$
- Economy ECO mode ($\pm 3^{\circ}\text{C}$ setpoint temperature variation)
- Dimensions (LxHxZ): 90x90x18 mm
- Weight 0,13 kg (with batteries)

ZOE-RC radio thermostat

- Power 2 1.5 V LR06 AA batteries (alkaline)
- Average battery life 1 year (or longer). The batteries are supplied with the unit.
- Battery life indicator.
- Carrier frequency (ISM band, Standard I-ETS 300-220): 434,33 MHz (Optional: 433,92 MHz).
- Mean range: 50 m in open field, 20 m in habitat
- Operating temperature: 0°C to 55°C
- Storage temperature: -10°C to 60°C
- Humidity Range: 10-90% (no condensation)
- Wall mount with bolts (supplied)
- Protection grade: IP 20
- NTC10K Temperature sensor. Accuracy 0.1°C
- Configurable control hysteresis $\pm 0.5^{\circ}\text{C}$
- CA control accuracy according to Standard EN15500. CA= 0.3 (Test report CLMS17-741. CSTB)
- Economy ECO mode ($\pm 3^{\circ}\text{C}$ setpoint temperature variation)
- Frost protection for: $T < 7^{\circ}\text{C} + / - 3^{\circ}\text{C}$
- Dimensions (LxHxZ): 70 x 110 x 19 mm
- Weight 0,13 kg (with batteries)

Installation Manual

WARRANTY

MADEL ATD guarantees all its products against production defects for a period of two (2) years. This period will start from the date of delivery of the goods to the DISTRIBUTOR. The warranty will only cover replacement of defective products, not including labour, travel, replacement of other damaged products, etc., or any other disbursement, expenses or consequential damages. The warranty will not cover the damage incurred in the products due to incorrect installation, handling or storage in poor conditions.

The procedure to follow in the case of return of the Madel ZONING system under warranty is as follows: If there is any problem, you should contact MADEL technical support service (902.550.290) who will try to solve any problems and answer any questions about the installation. It is important to call from the place where the equipment is installed in order to carry out the necessary tests to diagnose the equipment. If any anomaly is detected, returning the equipment for factory inspection will be authorised. Our technical support will provide a written authorisation for the return of the equipment under warranty. This authorisation can only be completed by Madel technical staff and should be affixed to the equipment. It will also serve for monitoring its return, which should be made through your usual distributor.

All returned equipment must be in perfect conditions of use and must have all the initial additional components, such as sensors, antenna, etc.

ZONING

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