



**Description**

The KPM30 and KPM31 regulation unit derives from Giacomini's extensive experience in the field of thermoregulation of heating and cooling systems. The **KPM30 regulation unit** is a device designed to be used in Giacomini radiant heating and/or cooling systems in combination with bus thermoregulation components and other communicating devices with compatible protocols. The KPM30 module is equipped with a display and six multifunctional keys; this allows programming of the system parameters via a guided menu and the subsequent monitoring of the system by the user. The KPM30 module allows for quick connection to the ambient thermostats K492B, K495B and K495L and to the KPM35 expansion boards. In addition, the operation of the circulator and the activation of the mixing valve servo-control is managed automatically.

The **KPM31 version has the same characteristics as the KPM30 but without the display, therefore it must be installed in combination with the remote display KD201** (which is an optional accessory for the KPM30 model). Thanks to the plug-in terminals and the design compliant with the DIN standard, it can be installed in accessible electrical panels.

**Versions and product codes**

The KPM30/KPM31 series is available in different versions:

- KPM30Y001, KPM31Y001: stand alone for the control of one mixing valve
- KPM30Y002, KPM31Y002: stand alone for the control of two mixing valves
- KPM30Y003, KPM31Y003: for the management of one to three ambient thermostats and control of a mixing valve, a dehumidifier or a fan-coil
- KPM30Y004, KPM31Y004: for the management of one to sixteen thermostats and control of a mixing valve and seven air treatment machines (to be used in combination with the KPM35 expansion boards)
- KPM30Y005, KPM31Y005: for the management of one to sixteen thermostats and control of two mixing valves and seven air treatment machines (to be used in combination with the KPM35 expansion boards)

Product code	No. of mixing valves	No. of ambient thermostats	No. of air treatment machines
KPM30Y001 KPM31Y001	1	-	-
KPM30Y002 KPM31Y002	2	-	-
KPM30Y003 KPM31Y003	1	1÷3	1
KPM30Y004 KPM31Y004	1	1÷16 (with KPM35)	7 (with KPM35)
KPM30Y005 KPM31Y005	2	1÷16 (with KPM35)	7 (with KPM35)

**Main features**

**Mechanical characteristics**

Dimensions: all versions are available on DIN rail mounting 6 modules of 105x115x60 mm

**Plastic housing**

- DIN rail mounting in accordance with DIN 43880 and CEI EN 50022
- Material: technopolymer
- Self-extinguishing: V2 (according to UL94) and 960 °C (according to IEC 695)
- Ball pressure test 125 °C
- Resistance to creeping current  $\geq 250$  V
- Grey RAL7035

**Electrical characteristics**

- Insulated power supply:
  - DC power supply: 48 Vdc (36 Vmin...72 Vmax)
  - AC power supply: 24 Vac +10/-15 %, 50/60 Hz
  - Maximum absorption: P=11W, P=14VA, Imax=700 mA
- CPU: H8SX/1651 32-bit, 50 MHz
- FLASH program memory: 2+2 MByte
- SRAM data memory: 512 Kbytes organized in 16-bit
- EEPROM parameter data memory: 13 kByte + 32 kB
- NAND FLASH memory: 32 MByte
- Working cycle duration: 0,2 s typically (applications of average complexity)
- Clock: available as standard and integrated on the base

**Battery characteristics**

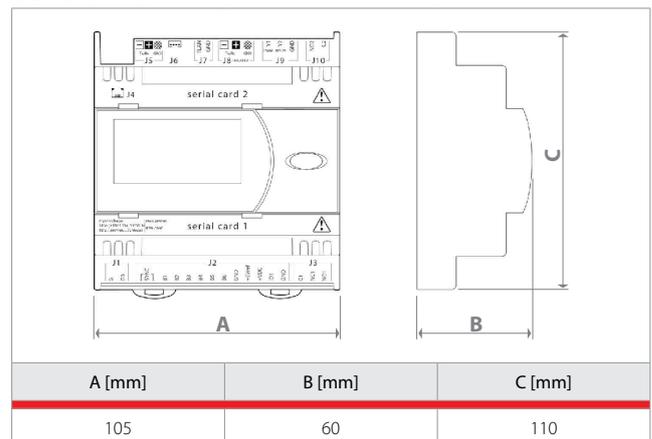
The battery used in the KPM30/KPM31 is "button" type lithium, code CR2430, voltage 3Vdc and dimensions 24x3 mm.

**Technical data**

- Operating conditions: -10÷60 °C, 90 % R.H. non-condensing
- Storage and transportation conditions: -20÷70 °C, 90 % R.H. non-condensing
- Protection degree: IP40 front panel only
- Environmental pollution: 2
- Class according to the protection against electric shock: to be integrated on Class I and/or II equipment
- Period of electrical stresses of the insulating parts: long
- Type of action: 1 C
- Type of disconnection or microinterruption: microinterruption
- Heat and fire resistance class: Class D (UL94-V0)
- Immunity against voltage surges: Class II
- Ageing characteristics (hours of operation): 80.000
- No. of automatic operating cycles: 100.000 (EN 60730-1); 30.000 (UL 873)
- Software class and structure: Class A
- Surge immunity class: Class III (CEI EN 61000-4-5)

The device is not intended to be hand-held.

**Dimensions**



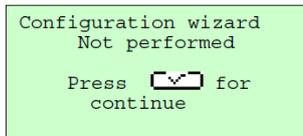
Commands

Legend	
1	Alarm button, allows to analyse the type of alarm and disable it after having fixed the problem
2	PRG button, allows to access the menus
3	ESC button, return to the previous menu
4	DOWN button, allows to navigate the menus
5	UP button, allows to navigate the menus
6	ENTER button, allows to select and confirm

First start-up

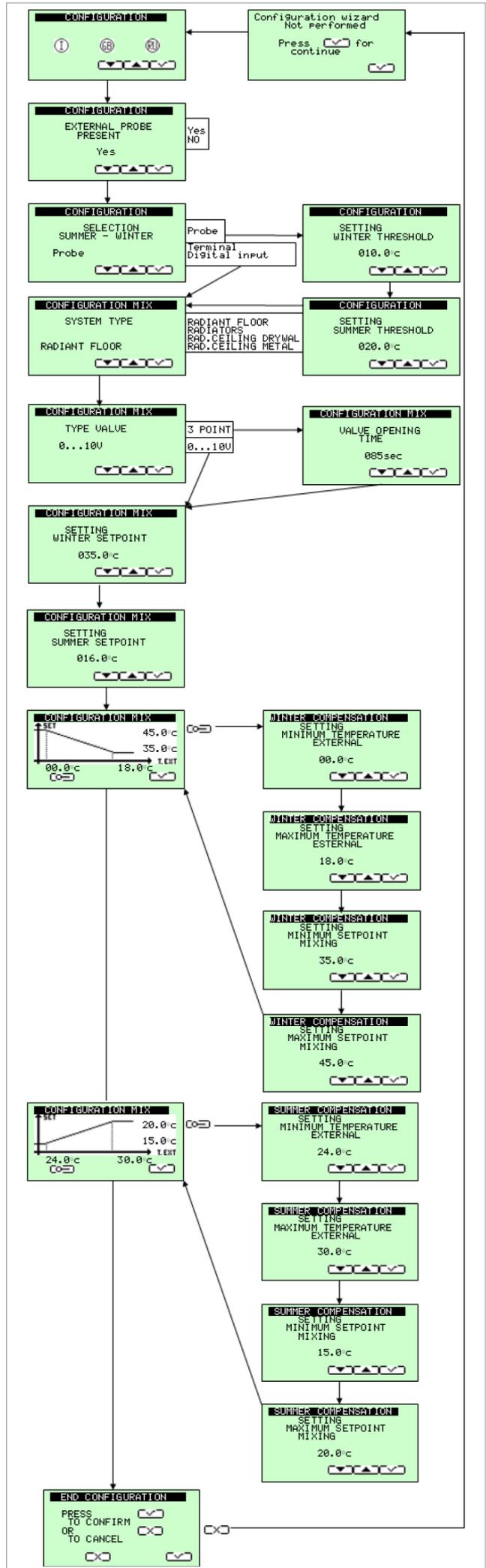
**Warning.**  
The installation and initial start-up of the system must only be carried out by qualified personnel, in strict accordance with the regulations in force.

The control unit is not configured at the first start-up, warned by the first screen that appears on the display.

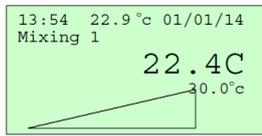


This screen allows to set the system installed in the control unit by following the wizard.

1. **language:** select the desired language with the arrows and confirm with enter.
2. **external probe:** indicate if the external probe is connected.
3. **summer/winter selection:** probe=from external probe, digital input=from external contact, terminal=from display.
4. **system type:** indicate the type of system if floor, ceiling or radiators.
5. **mixing valve type:** 0..10V or 3-point floating (K281=85sec, K274=145sec, K274J=160sec).
6. **winter set point**
7. **summer set point**
8. **winter climatic curve**
9. **summer climatic curve**
10. **confirm configuration**



## Main screen



The main screen allows a quick check of the system's main water mixing functions.

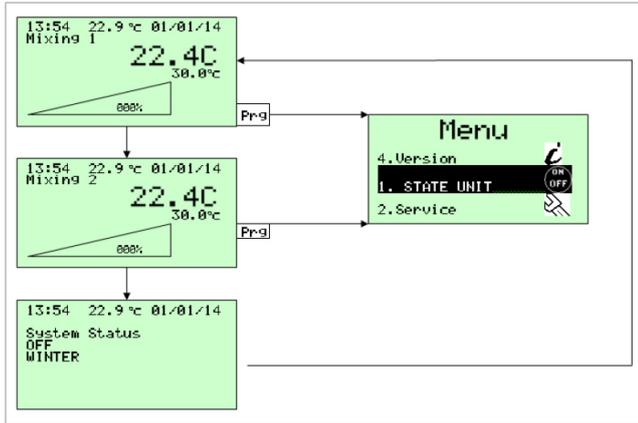
Displays time, outside temperature if configured, date, the mixing valve displayed, the water temperature, the set water temperature must reach and the mixing valve position as a percentage.

Visible symbols:



SCREED SET-UP screed set-up operation

## Main navigation



It is possible to navigate using the up and down arrow keys. To enter the main menu, press the PRG key.

## Main menu

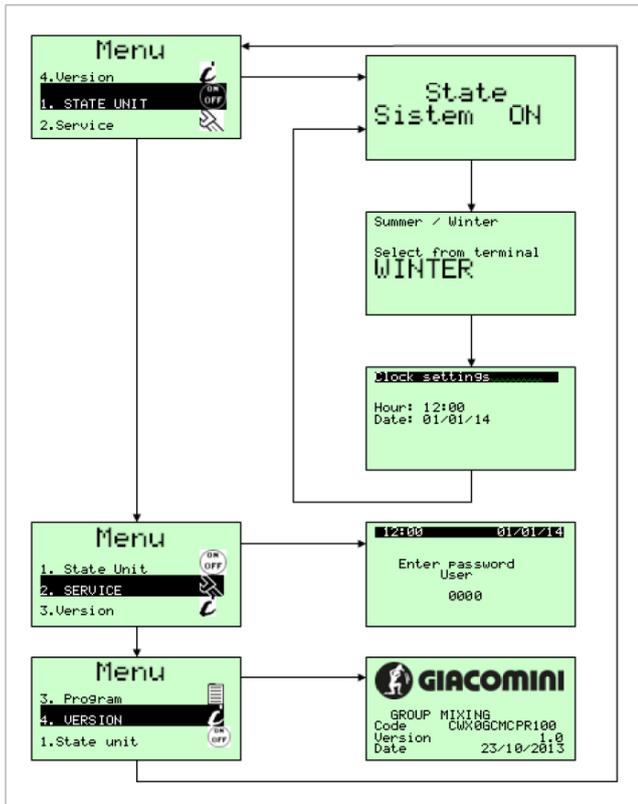
The sub-menu can be entered via the main menu for the detailed control of the system.

1. **STATE UNIT:** Allows to enable and disable the entire system. If it is set by the configuration, it allows the summer/winter change from the terminal and change the date and time.

2. **SERVICE:** allows to enter the technical parameters menu with password.

3. **VERSION:** allows to analyse the version of the installed program.

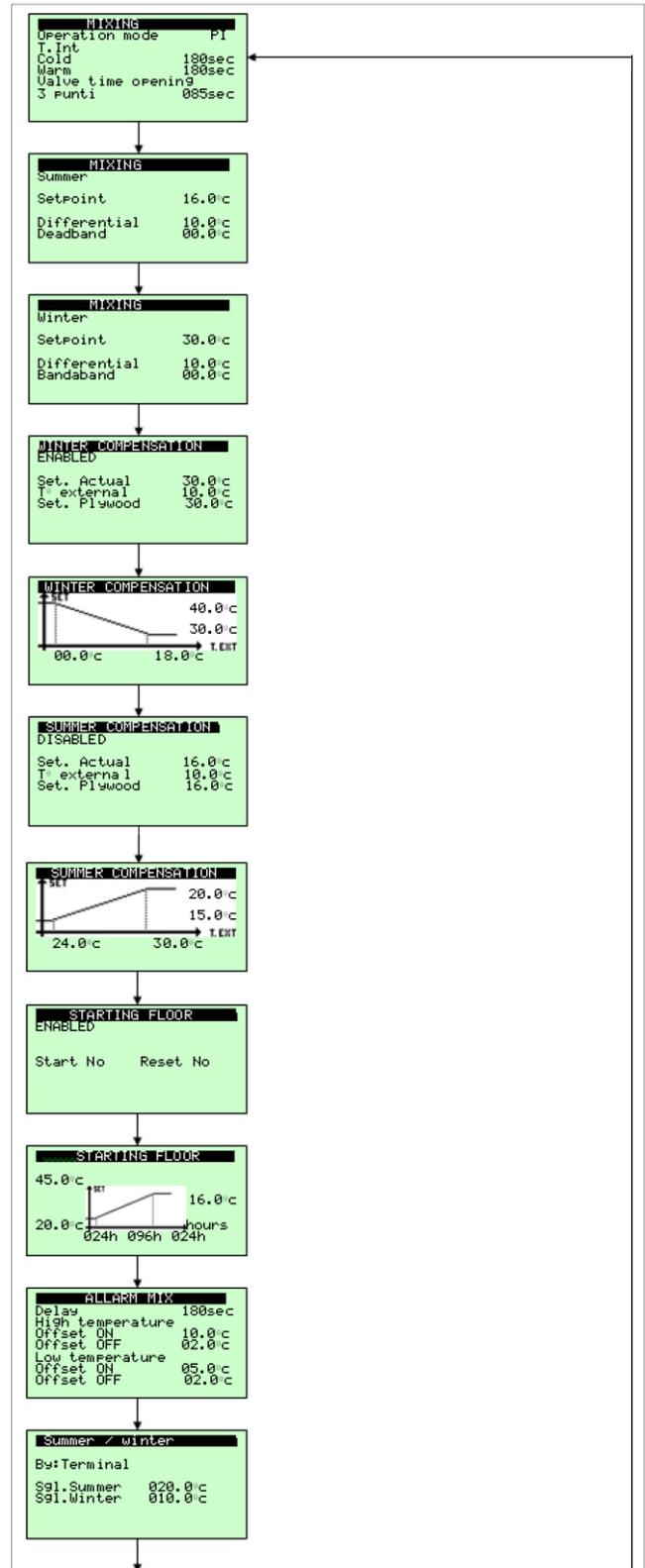
To navigate, use the Up Arrow and Down Arrow selecting with ENTER. ESC to exit.

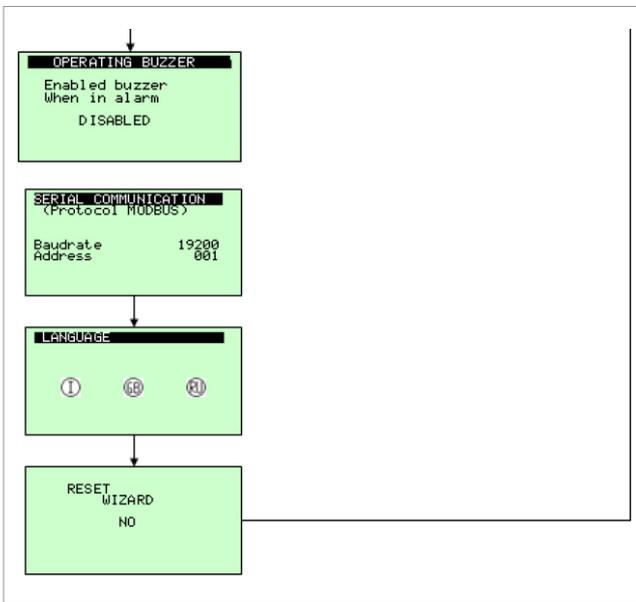


## Service menu

The service menu is accessible to the installer only. It allows to modify additional parameters and reset the guided configuration.

1. Mixer parameters PI.
2. Summer mixer parameters.
3. Winter mixer parameters.
4. Displaying of winter compensation.
5. Winter compensation parameters.
6. Displaying of summer compensation.
7. Summer compensation parameters.
8. Enabling set up of screed.
9. Set-up parameters.
10. Alarms parameters.
11. Season change parameters from external probe.
12. Buzzer management.
13. Serial bus communication.
14. Language.
15. Guided configuration reset.





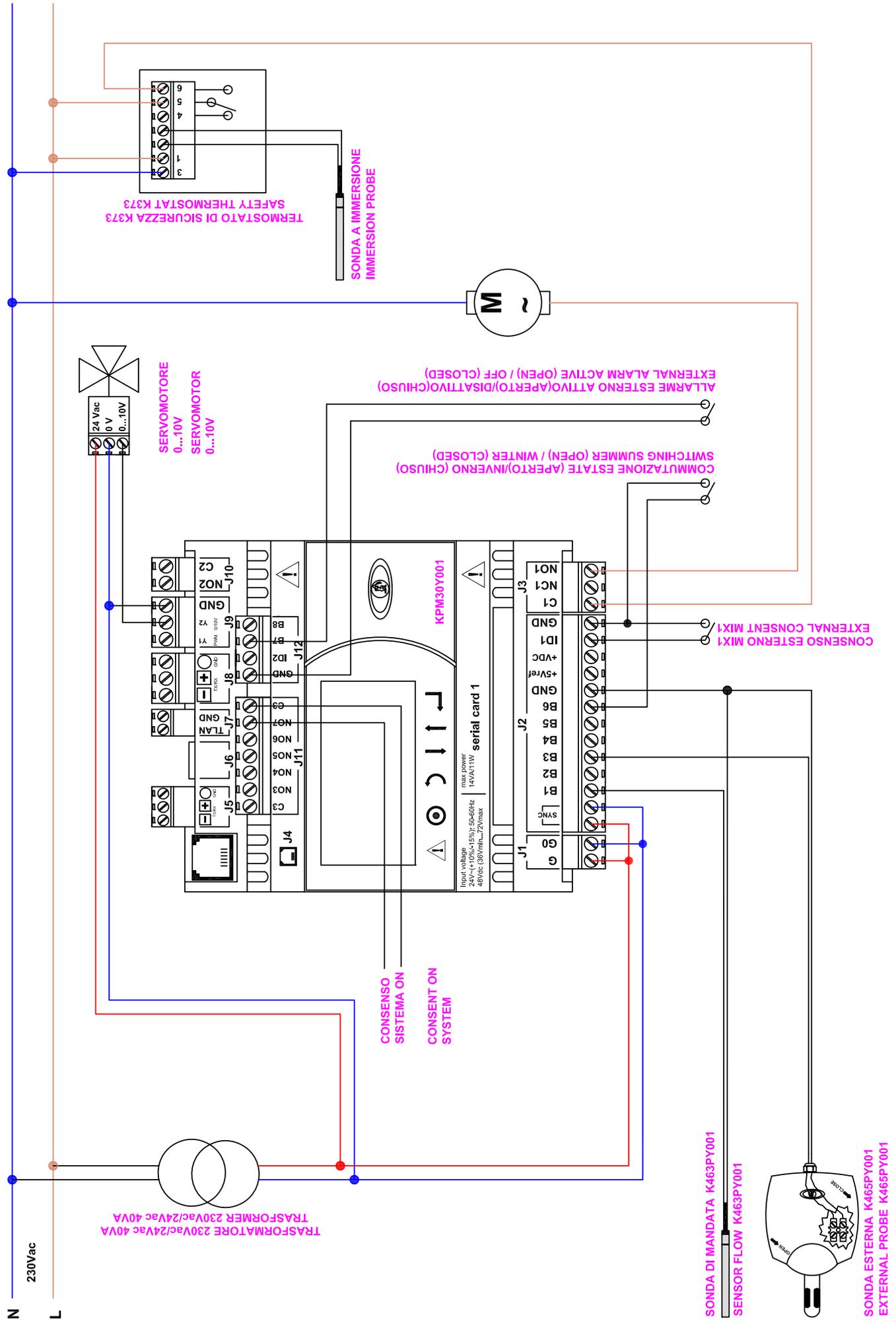
Version KPM30Y002 allows the reset of 2 mixing valves.  
 Use the Up Arrow and Down Arrow selecting with ENTER to navigate the various parameters in the window until the cursor is in the upper left to move to the next window.  
 Press ESC repeatedly to exit and return to the main screen.

## Terminals

J1 - G - G0	24Vac +10/-15% 50/60Hz from safety transformer Class II
J2 - SYNC	24Vac +10/-15% 50/60Hz from safety transformer Class II
J2 - B1	Delivery probe radiant1
J2 - B2	Delivery probe radiant2
J2 - B3	External probe
J2 - B4	Not used
J2 - B5	Not used
J2 - B6	Summer open/winter closed
J2 - GND	Common J2
J2 - +5Vref	Not used
J2 - +VDC	Not used
J2 - ID1	Consensus activation radiant 1
J2 - GND	Common J2
J3 - C1 - NC1 - NO1	Circulator command radiant 1
J4	Connection RJ12 for KD201
J5 - Rx/Tx - GND	Primary Bus
J6	Not used
J7 - TLAN - GND	Not used
J8 - Rx/Tx - GND	Not used
J9 - Y1 PWM	PWM output for K489M mixer radiant 2
J9 - Y2 0...10V	0..10V output for mixer radiant 1
J9 - GND	Common for Y1 – Y2
J10 - NO2 - C2	Circulator command radiant 2
J11 - C3	Common J11
J11 - NO3	Mixer radiant 1 Down
J11 - NO4	Mixer radiant 1 UP
J11 - NO5	Mixer radiant 2 Down
J11 - NO6	Mixer radiant 2 UP
J11 - C3	Common J11
J12 - GND	Common J12
J12 - ID2	Consensus activation radiant 2
J12 - B7	External alarm radiant 1
J12 - B8	External alarm radiant 2

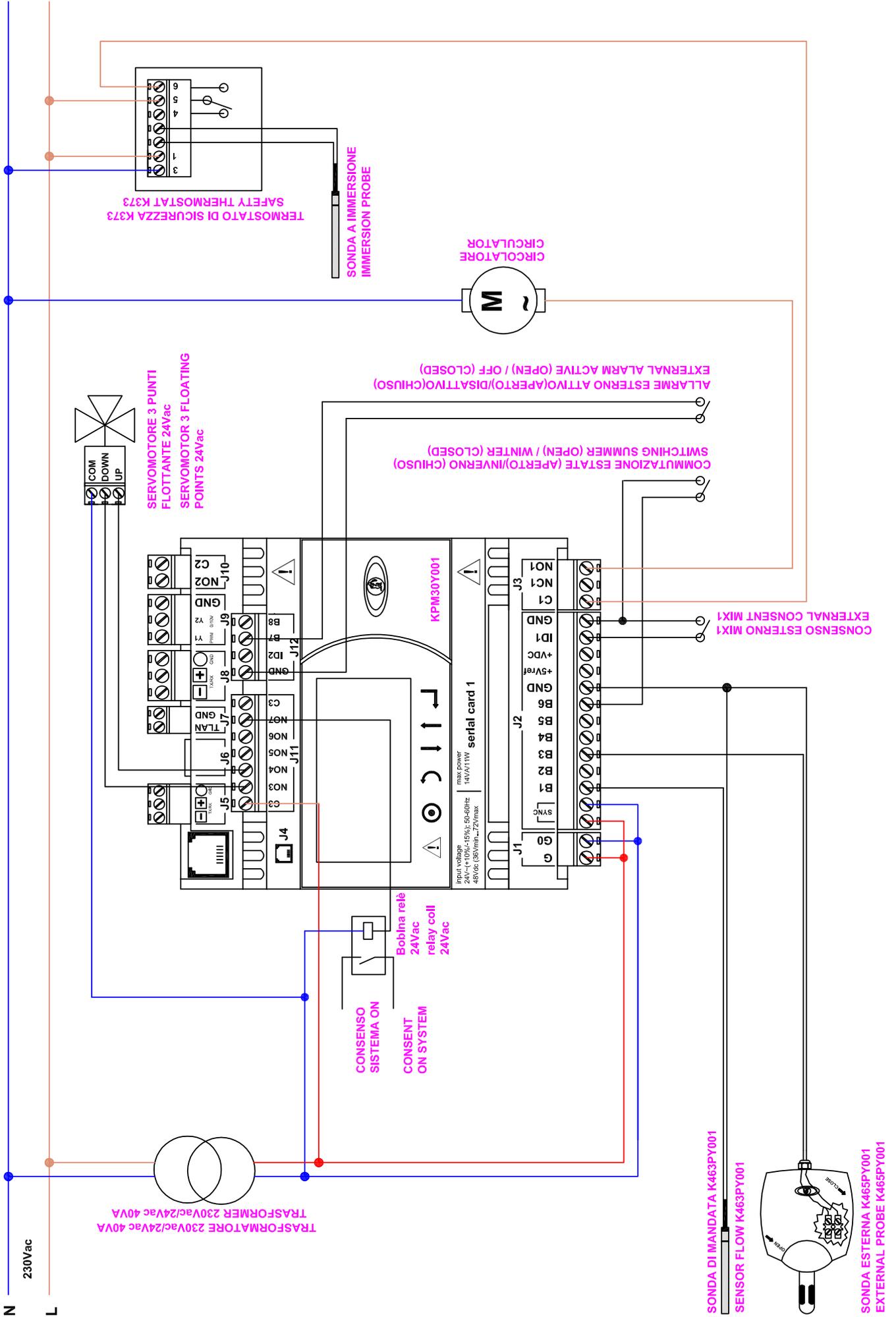
# Electric connections KPM30Y001 / KPM31Y001

With one mixer 0...10 V at 24 Vac



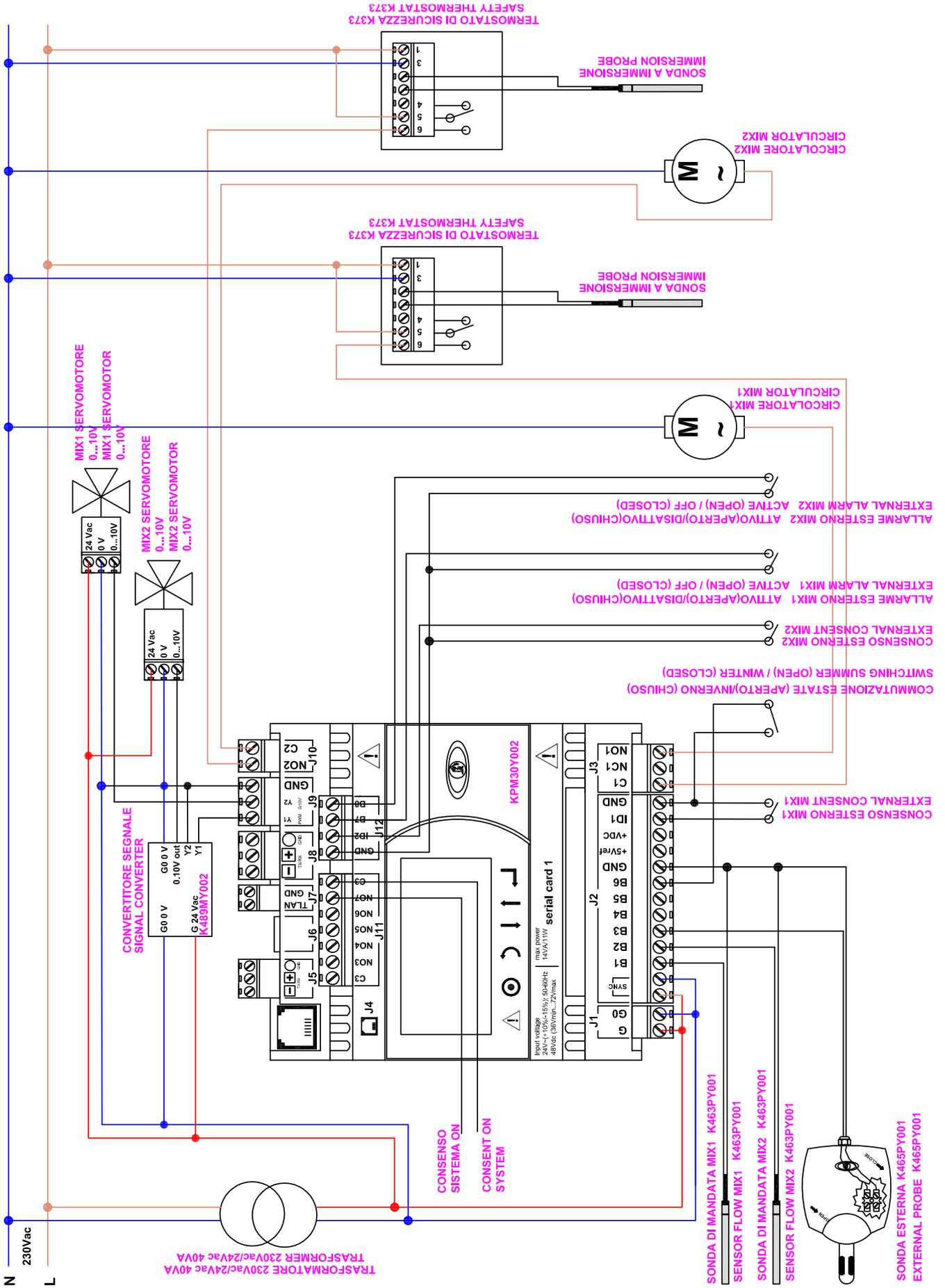
# Electric connections KPM30Y001 / KPM31Y001

With one mixer 3-point floating at 24 Vac



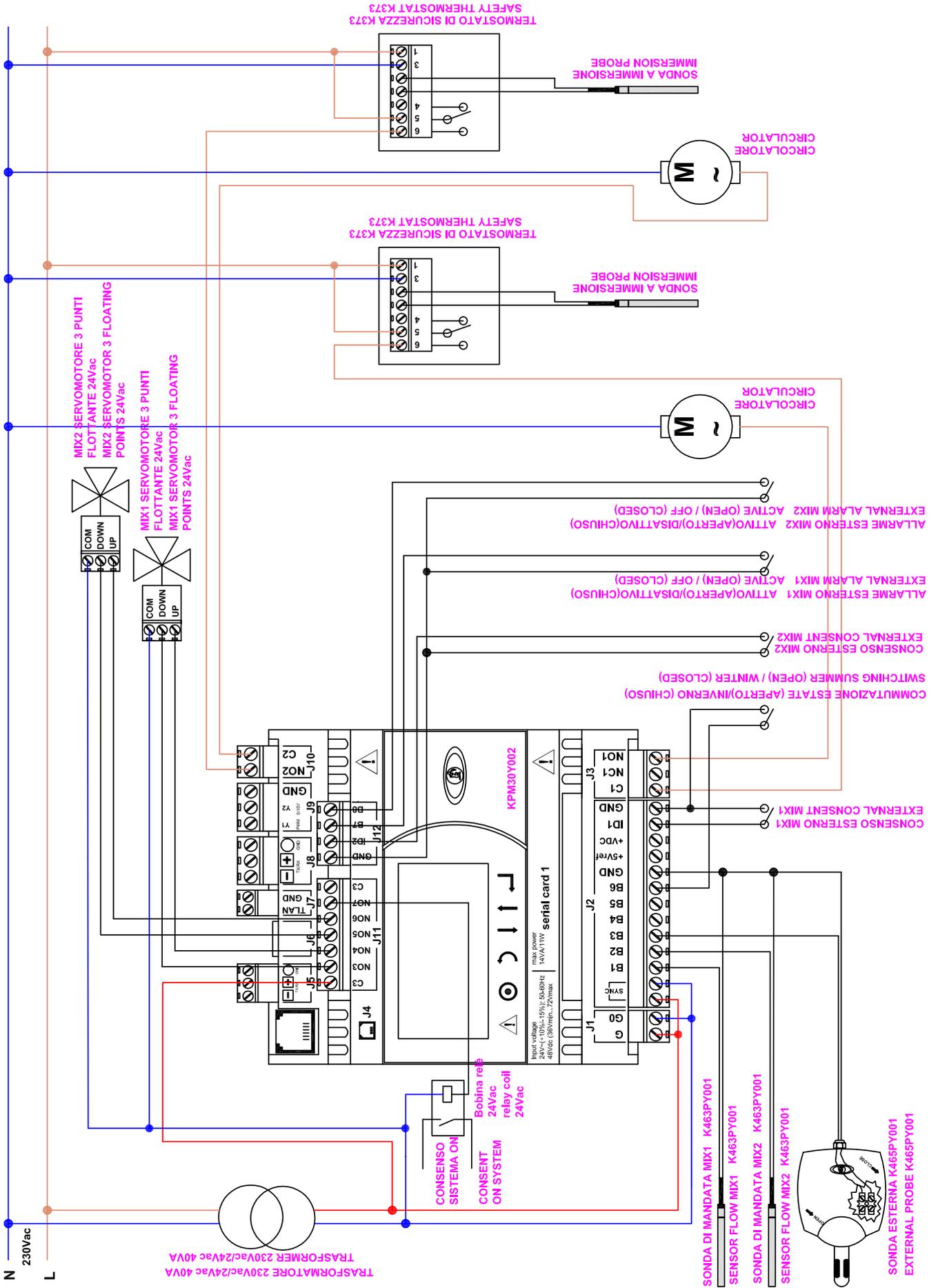
# Electric connections KPM30Y002 / KPM31Y002

With two mixers 0...10V at 24 Vac



# Electric connections KPM30Y002 / KPM31Y002

With two mixers 3-point floating at 24 Vac



Commands

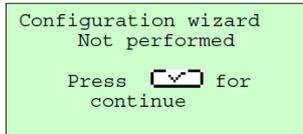
Legend	
1	Alarm button, allows to analyse the type of alarm and disable it after having fixed the problem
2	PRG button, allows to access the menus
3	ESC button, return to the previous menu
4	DOWN button, allows to navigate the menus
5	UP button, allows to navigate the menus
6	ENTER button, allows to select and confirm

First start-up



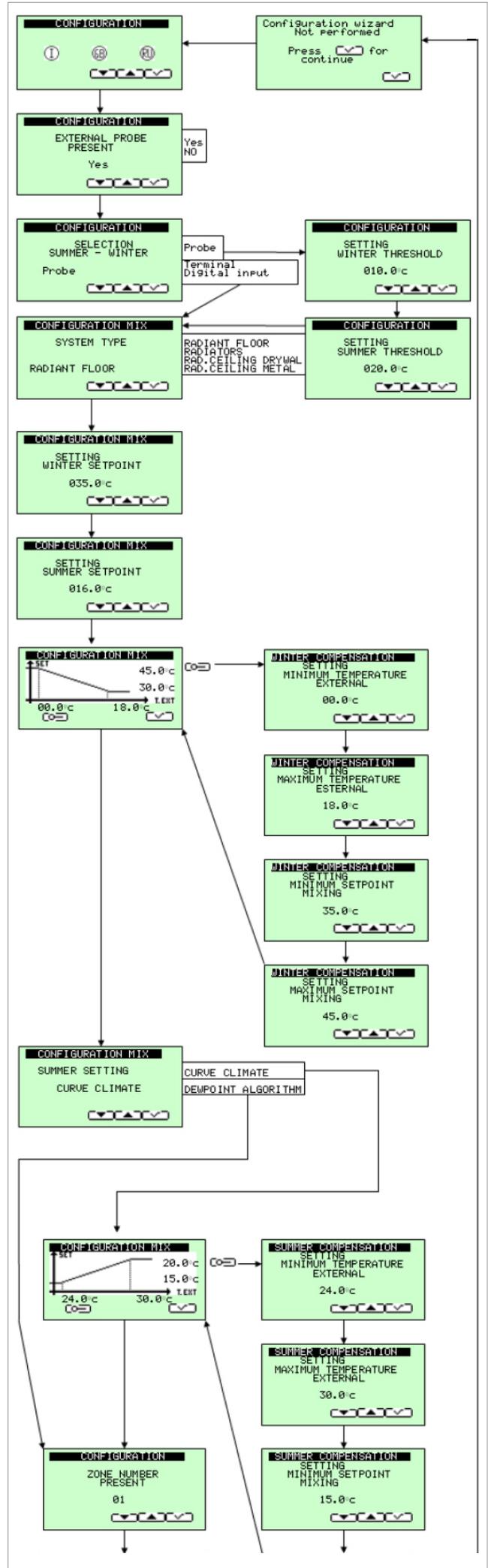
**Warning.**  
The installation and initial start-up of the system must only be carried out by qualified personnel, in strict accordance with the regulations in force.

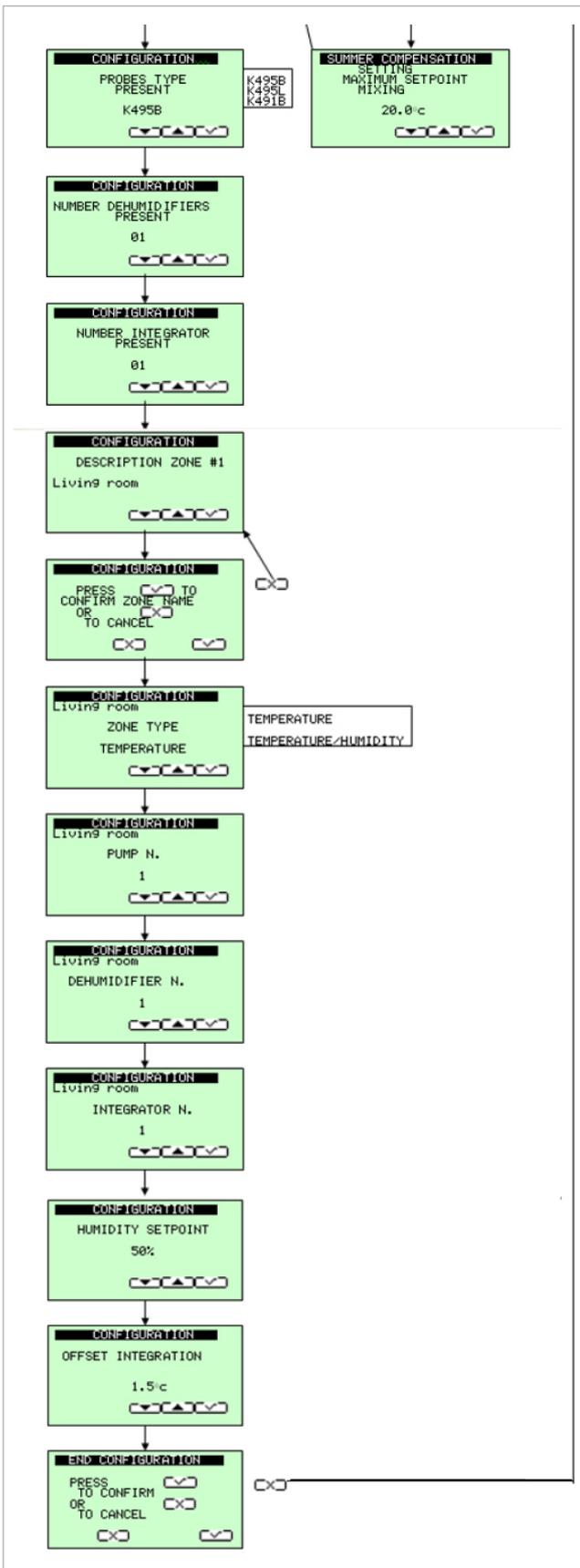
The control unit is not configured at the first start-up, warned by the first screen that appears on the display.



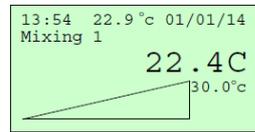
This screen allows to set the system installed in the control unit by following the wizard.

1. **language:** select the desired language with the arrows and confirm with enter.
2. **external probe:** indicate if the external probe is connected.
3. **summer/winter selection:** probe=from external probe, digital input=from external contact, terminal=from display.
4. **system type:** indicate the type of system if floor, ceiling or radiators.
5. winter set point
6. summer set point
7. winter climatic curve
8. **summer regulation:** indicate whether from climatic curve, external probe or internal dew point
9. summer climatic curve
10. number of zones present: indicate the number of thermostats connected
11. type of probes/thermostats: indicate the code of the Giacomini thermostat connected
12. number of dehumidifiers
13. number of integrators
14. humidity set
15. integration offset
16. confirm configuration





### Main screen



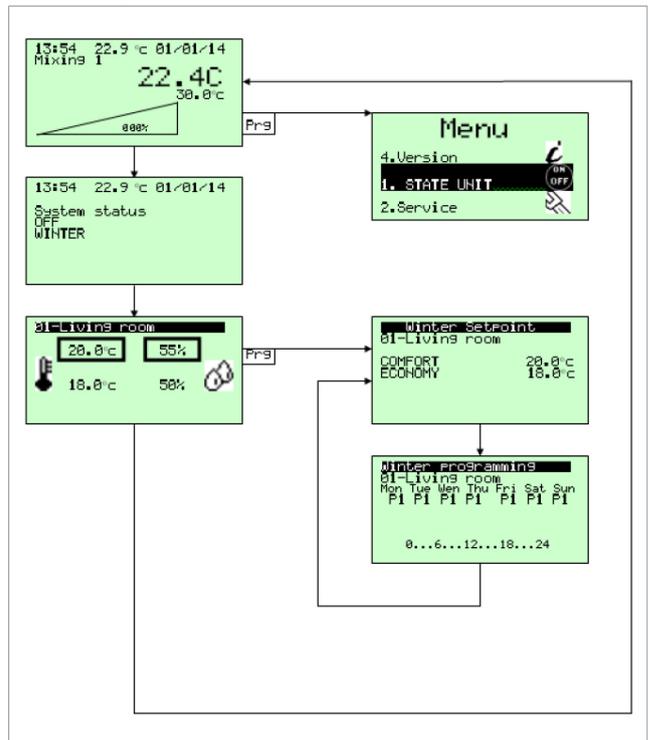
The main screen allows a quick check of the system's main water mixing functions. Displays time, outside temperature if configured, date, the mixing valve position displayed, the water temperature, the set water temperature must reach and the mixing valve position as a percentage.

Visible symbols:

- Summer / winter
- Circulator running
- Mixing valve closing

SCREED SET-UP screen set-up operation

### Main navigation



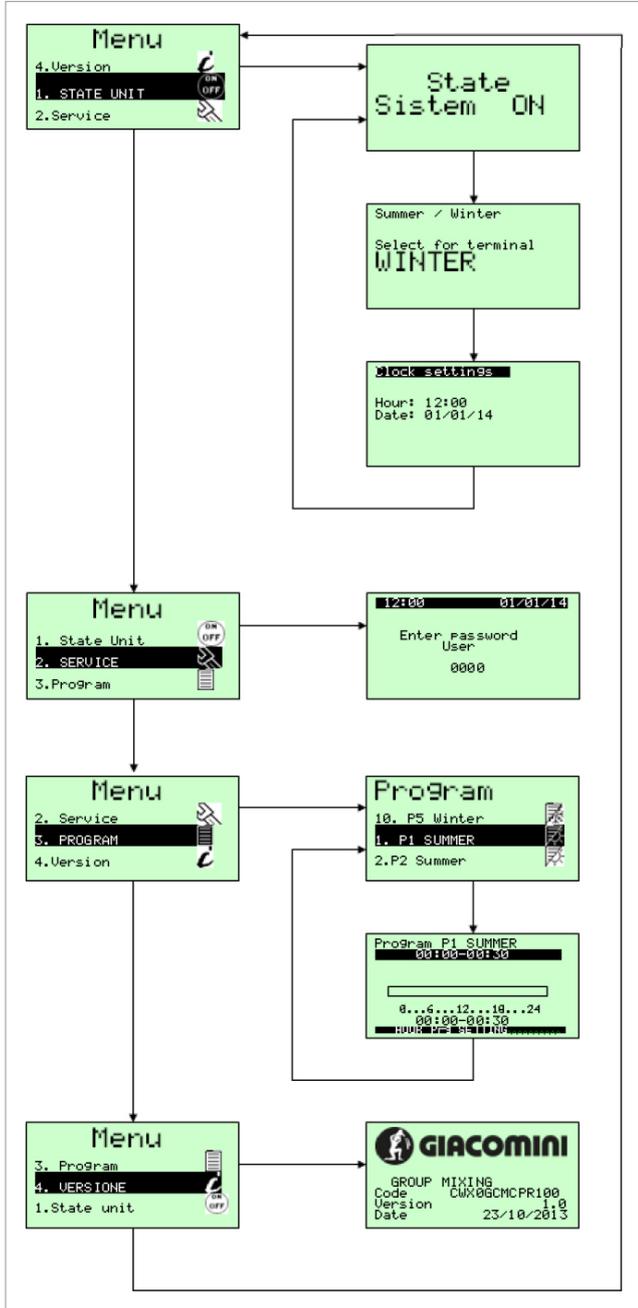
It is possible to navigate using the up and down arrow keys. To enter the main menu, press the PRG key. To enter the thermostat temperature menu, press the PRG key. The temperature set can be changed and associate the time schedule in the days of the week. For the time scheduling, refer to the Main Menu-Programs.

## Main menu

The sub-menu can be entered via the main menu for the detailed control of the system.

- STATE UNIT:** Allows to enable and disable the entire system. If it is set by the configuration, it allows the summer/winter change from the terminal and change the date and time.
- SERVICE:** allows to enter the technical parameters menu with password.
- PROGRAMS:** allows to set time slots between the Comfort and Economy sets of 5 summer and 5 winter programs, selecting the desired half hour, the space is blackened and Comfort is set.
- VERSION:** allows to analyse the version of the installed program.

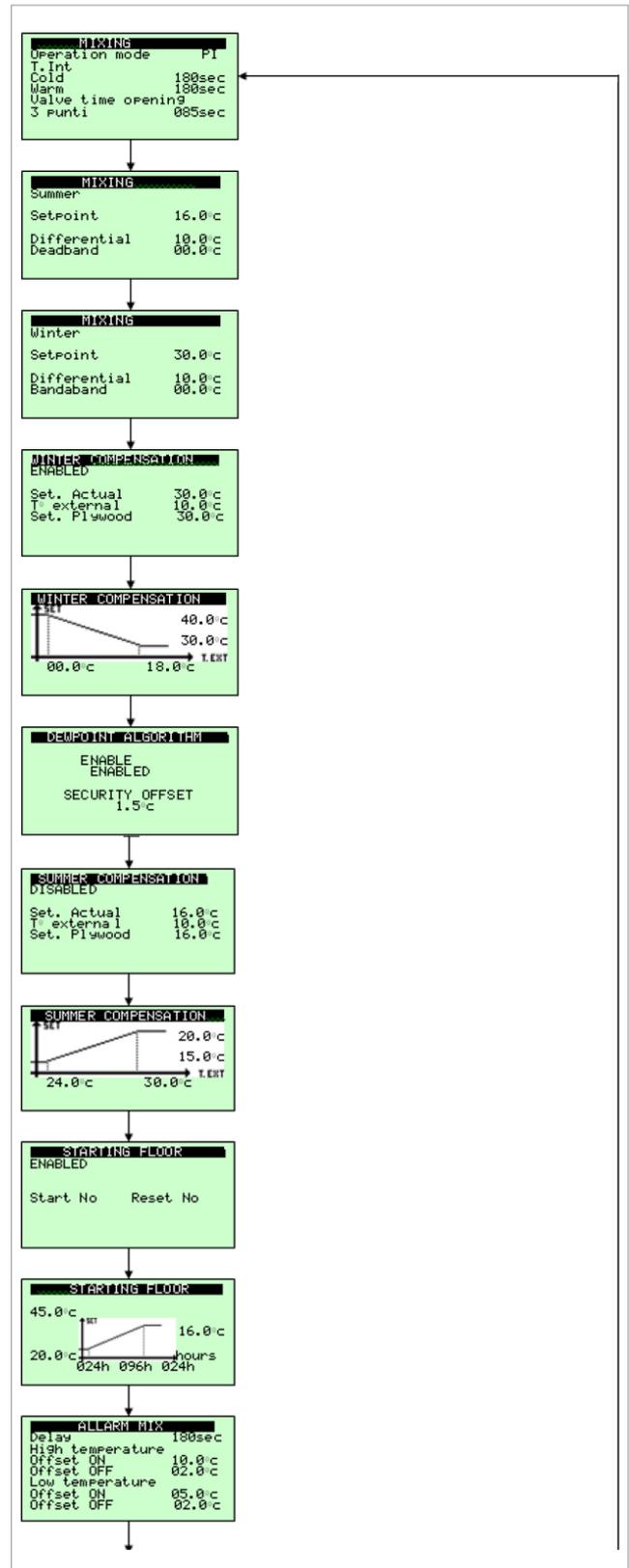
To navigate, use the Up Arrow and Down Arrow selecting with ENTER. ESC to exit.

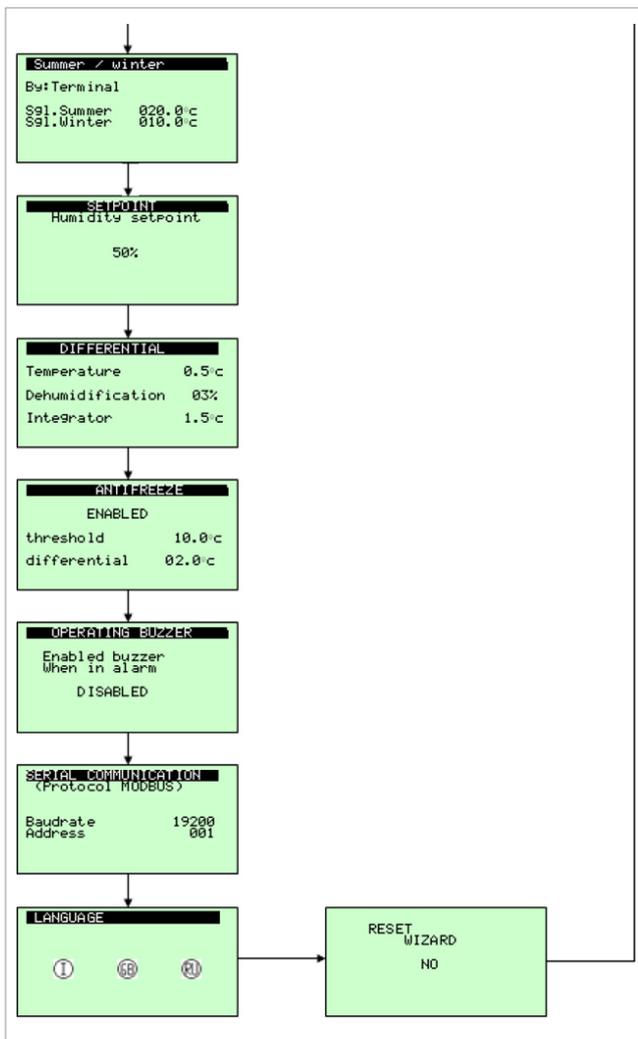


## Service menu

The service menu is accessible to the installer only. It allows to modify additional parameters and reset the guided configuration.

- Mixer parameters PI.
- Summer mixer parameters.
- Winter mixer parameters.
- Displaying of winter compensation.
- Winter compensation parameters.
- Displaying of summer compensation.
- Summer compensation parameters.
- Enabling set up of screed.
- Set-up parameters.
- Alarms parameters.
- Season change parameters from external probe.
- Buzzer management.
- Serial bus communication.
- Language.
- Guided configuration reset.





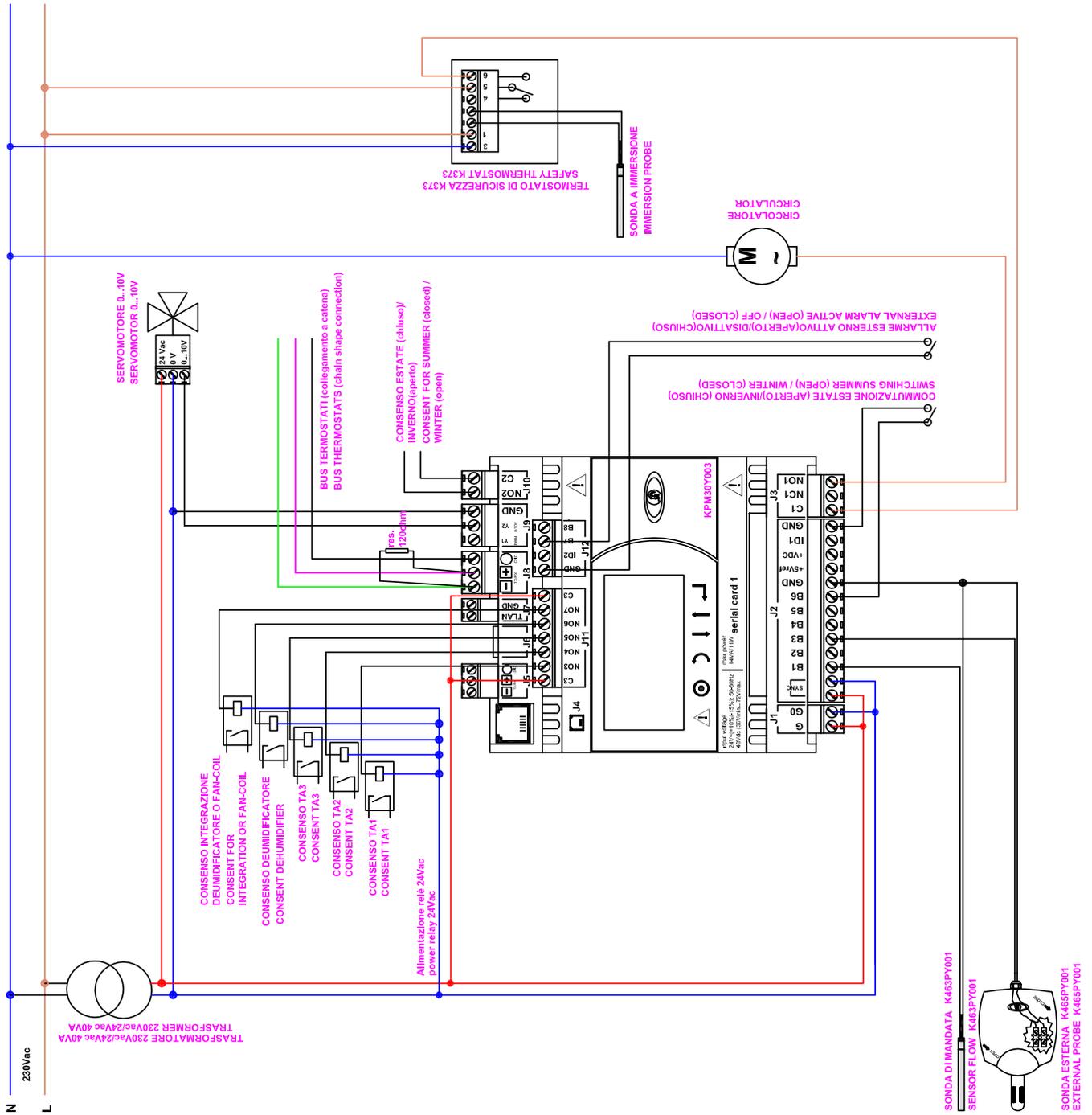
Use the Up Arrow and Down Arrow selecting with ENTER to navigate the various parameters in the window until the cursor is in the upper left to move to the next window.

Press ESC repeatedly to exit and return to the main screen.

## Terminals

J1 - G - G0	24Vac +10/-15% 50/60Hz from safety transformer Class II
J2 - SYNC	24Vac +10/-15% 50/60Hz from safety transformer Class II
J2 - B1	Delivery probe radiant 1
J2 - B2	Not used
J2 - B3	External probe
J2 - B4	Not used
J2 - B5	Not used
J2 - B6	Summer open/winter closed
J2 - GND	Common J2
J2 - +5Vref	Not used
J2 - +VDC	Not used
J2 - ID1	Consensus activation radiant 1
J2 - GND	Common J2
J3 - C1 - NC1 - NO1	Circulator command radiant 1
J4	Connection RJ12 for KD201
J5 - Rx/Tx - GND	Primary Bus
J6	Not used
J7 - TLAN - GND	Not used
J8 - Rx/Tx - GND	Thermostats secondary Bus
J9 - Y1 PWM	Not used
J9 - Y2 0..10V	0..10V output for mixer radiant 1
J9 - GND	Common for Y1 - Y2
J10 - NO2 - C2	Summer/winter consent
J11 - C3	Common J11
J11 - NO3	Consent TA1 addr128
J11 - NO4	Consent TA2 addr129
J11 - NO5	Consent TA3 addr130
J11 - NO6	Dehumidifier consent
J11 - C3	Integration consent:
J12 - GND	Common J12
J12 - ID2	Not used
J12 - B7	External alarm radiant 1
J12 - B8	External alarm radiant 2

Electric connections KPM30Y003 / KPM31Y003



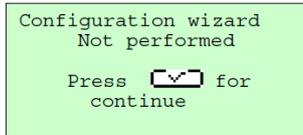
Commands

Legend	
1	Alarm button, allows to analyse the type of alarm and disable it after having fixed the problem
2	PRG button, allows to access the menus
3	ESC button, return to the previous menu
4	DOWN button, allows to navigate the menus
5	UP button, allows to navigate the menus
6	ENTER button, allows to select and confirm

First start-up

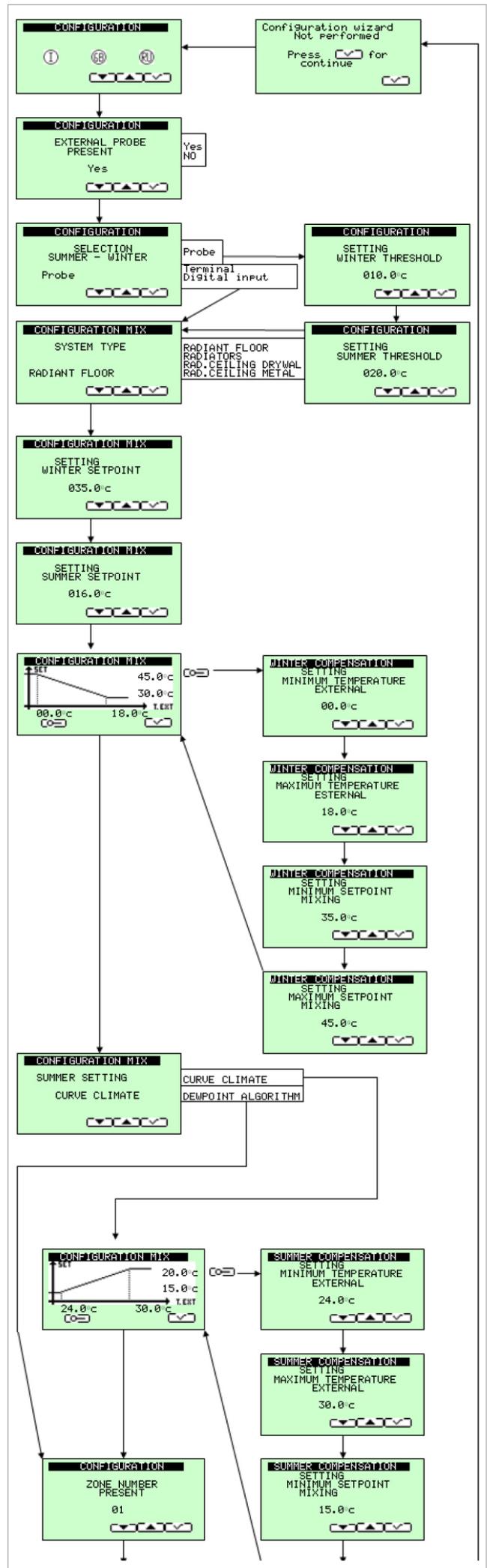
**Warning.**  
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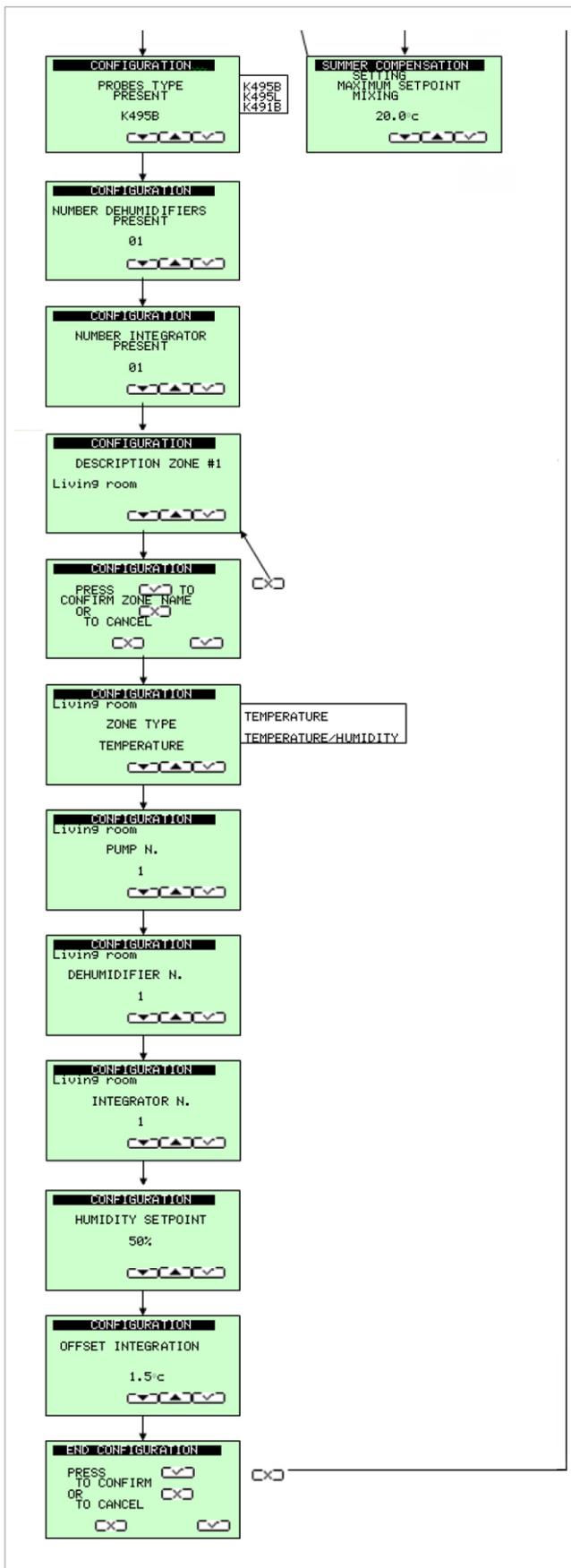
The control unit is not configured at the first start-up, warned by the first screen that appears on the display.



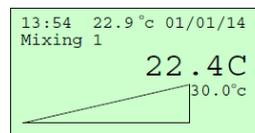
This screen allows to set the system installed in the control unit by following the wizard.

1. **language:** select the desired language with the arrows and confirm with enter.
2. **external probe:** indicate if the external probe is connected.
3. **summer/winter selection:** probe=from external probe, digital input=from external contact, terminal=from display.
4. **system type:** indicate the type of system if floor, ceiling or radiators.
5. winter set point
6. summer set point
7. winter climatic curve
8. **summer regulation:** indicate whether from climatic curve, external probe or internal dew point
9. summer climatic curve
10. **number of zones present:** indicate the number of thermostats connected
11. **type of probes/thermostats:** indicate the code of the Giacomini thermostat connected
12. number of dehumidifiers
13. number of integrators
14. humidity set
15. integration offset
16. confirm configuration





### Main screen



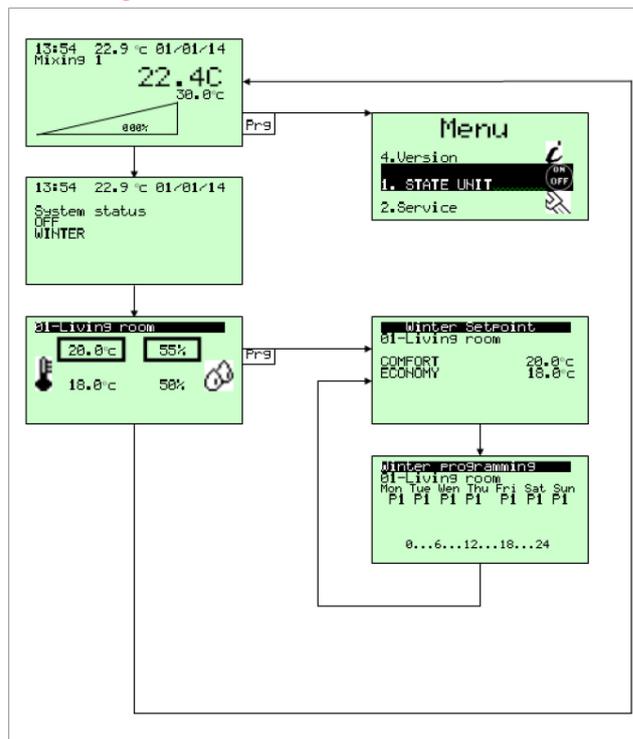
The main screen allows a quick check of the system's main water mixing functions. Displays time, outside temperature if configured, date, the mixing valve position as a percentage, the water temperature, the set water temperature must reach and the mixing valve position as a percentage.

Visible symbols:

- Summer / winter
- Circulator running
- Mixing valve closing

SCREED SET-UP screed set-up operation

### Main navigation



It is possible to navigate using the up and down arrow keys.

To enter the main menu, press the PRG key.

To enter the thermostat temperature menu, press the PRG key.

The temperature set can be changed and associate the time schedule in the days of the week.

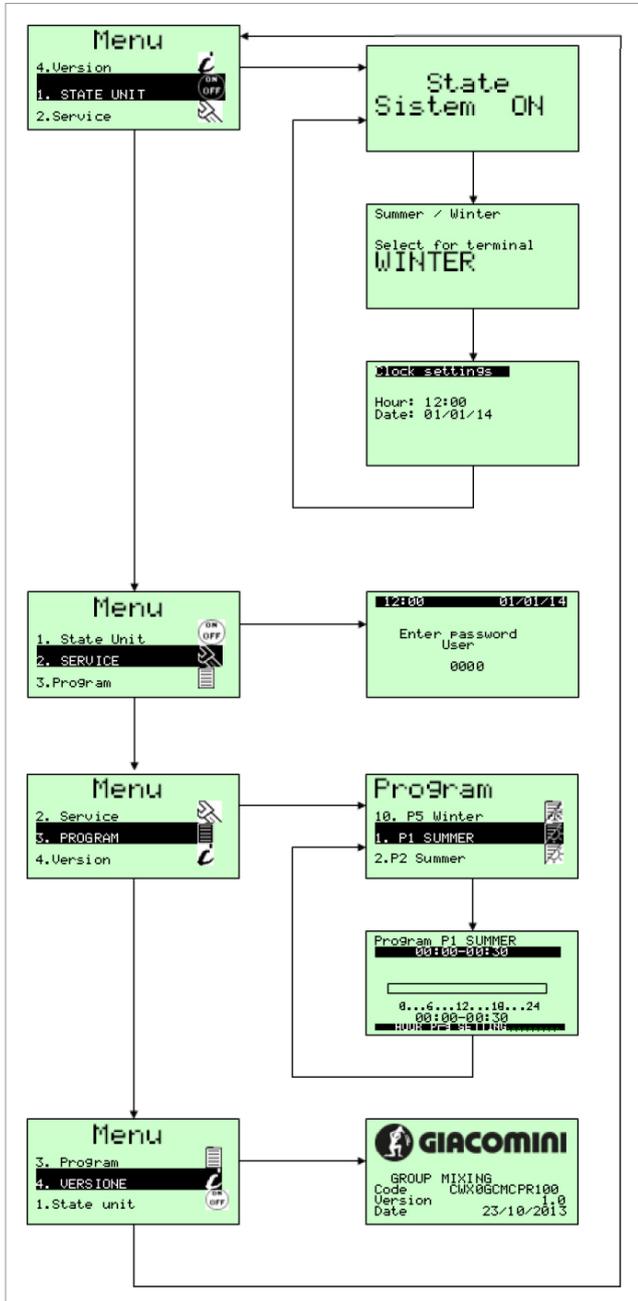
For the time scheduling, refer to the Main Menu-Programs.

## Main menu

The sub-menu can be entered via the main menu for the detailed control of the system.

- STATE UNIT:** Allows to enable and disable the entire system. If it is set by the configuration, it allows the summer/winter change from the terminal and change the date and time.
- SERVICE:** allows to enter the technical parameters menu with password.
- PROGRAMS:** allows to set time slots between the Comfort and Economy sets of 5 summer and 5 winter programs, selecting the desired half hour, the space is blackened and Comfort is set.
- VERSION:** allows to analyse the version of the installed program.

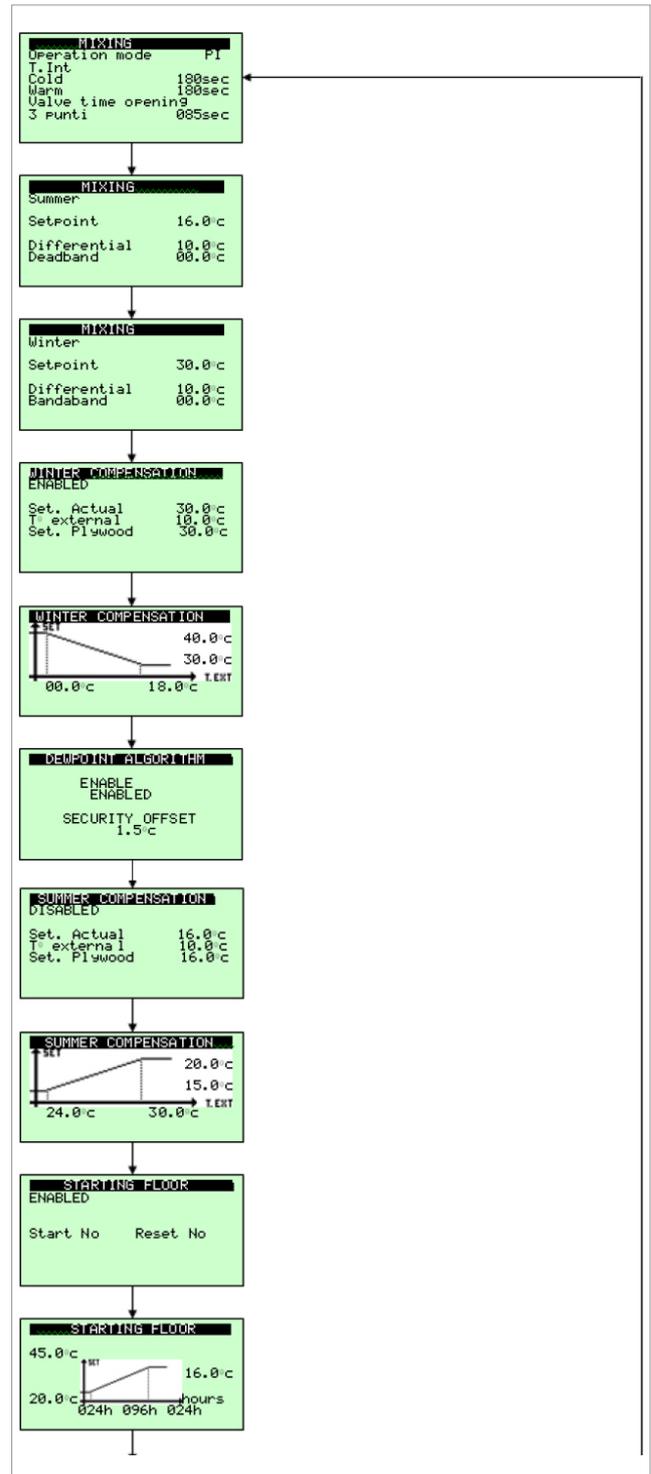
To navigate, use the Up Arrow and Down Arrow selecting with ENTER. ESC to exit.

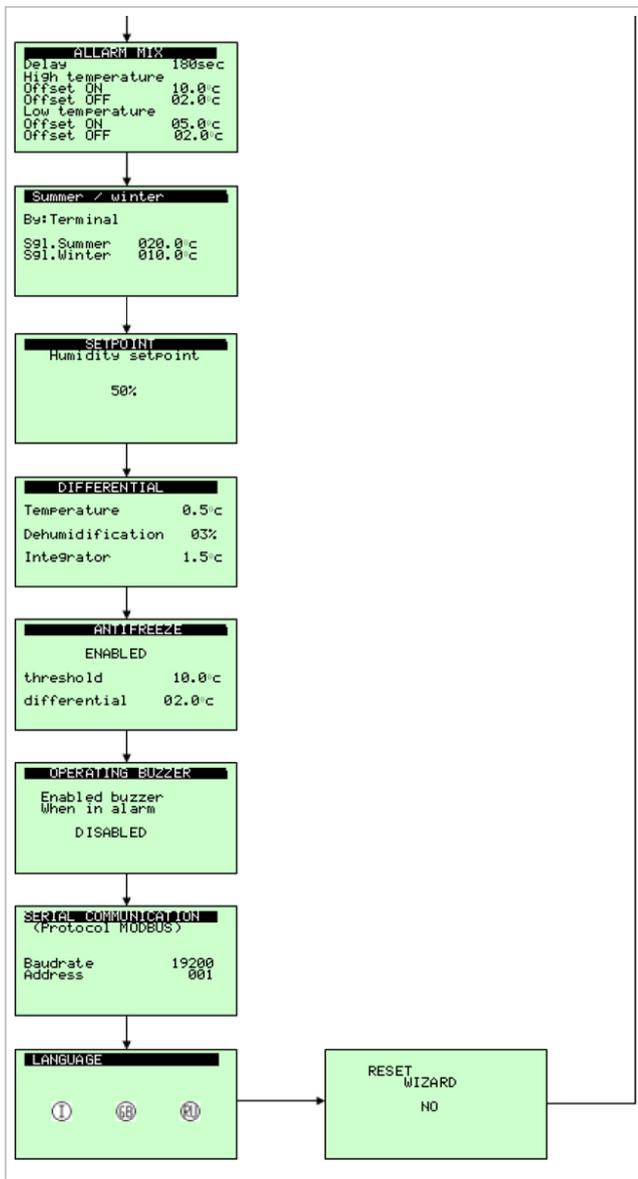


## Service menu

The service menu is accessible to the installer only. It allows to modify additional parameters and reset the guided configuration.

- Mixer parameters PI.
- Summer mixer parameters.
- Winter mixer parameters.
- Displaying of winter compensation.
- Winter compensation parameters.
- Dew-point algorithm parameters
- Displaying of summer compensation.
- Summer compensation parameters.
- Enabling set up of screen.
- Set-up parameters.
- Alarms parameters.
- Season change parameters from external probe.
- Humidity Set-point.
- Differentials.
- Antifreeze parameters.
- Buzzer enabling.
- Serial communication.
- Language.
- Guided configuration reset.





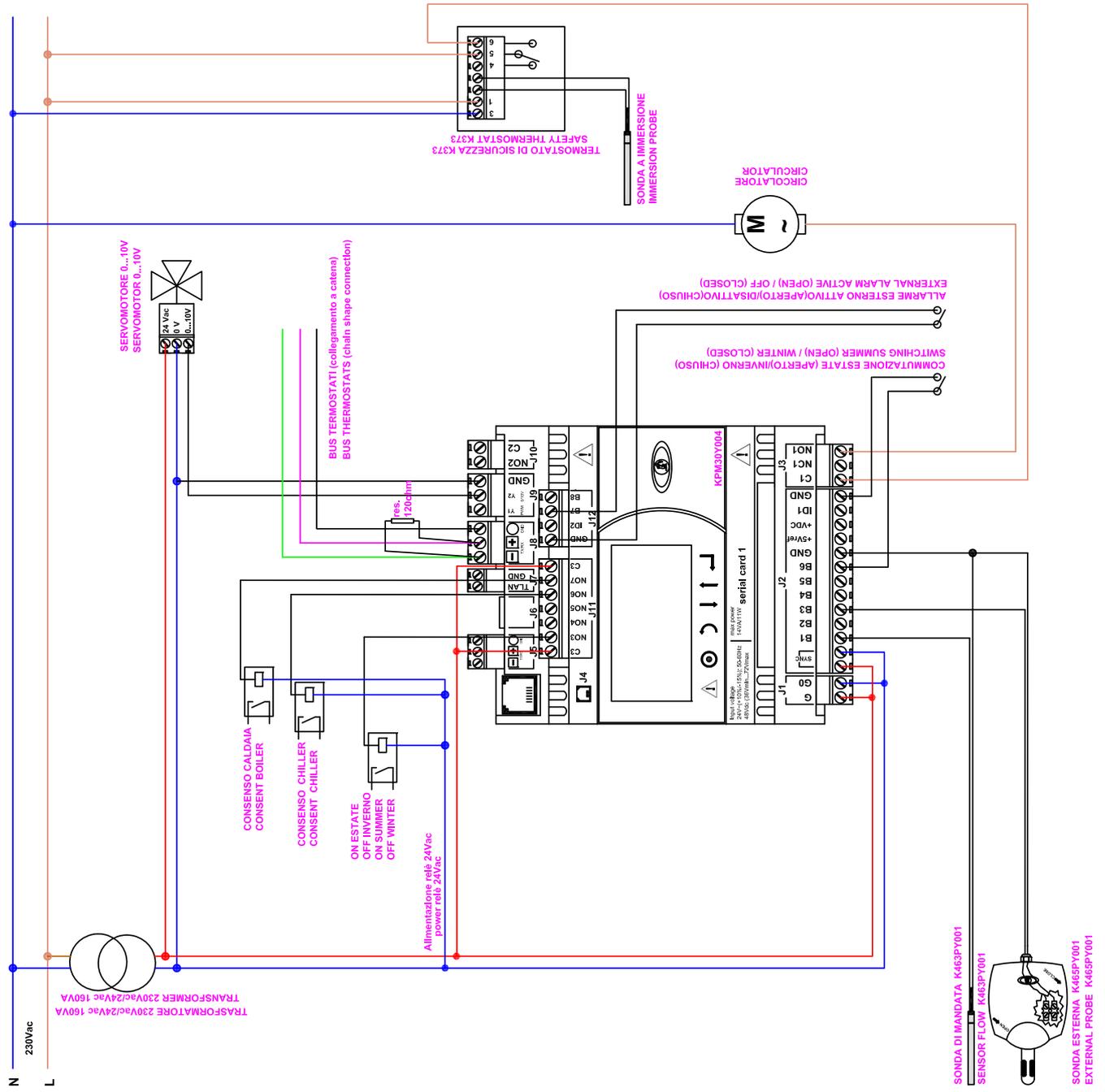
Use the Up Arrow and Down Arrow selecting with ENTER to navigate the various parameters in the window until the cursor is in the upper left to move to the next window.

Press ESC repeatedly to exit and return to the main screen.

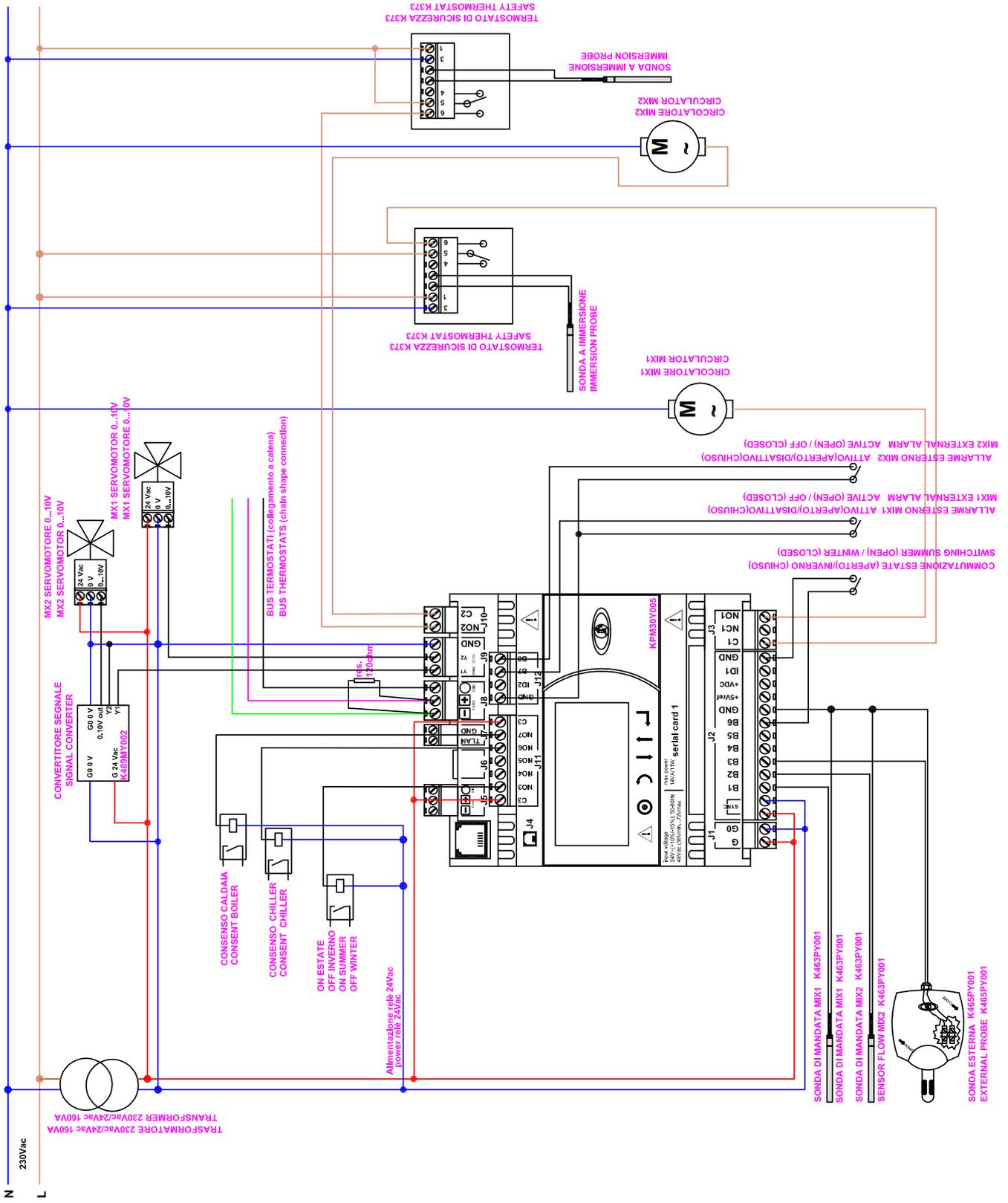
## Terminals

J1 - G - G0	24Vac +10/-15% 50/60Hz from safety transformer Class II
J2 - SYNC	24Vac +10/-15% 50/60Hz from safety transformer Class II
J2 - B1	Delivery probe radiant1
J2 - B2	Delivery probe radiant2
J2 - B3	External probe
J2 - B4	Not used
J2 - B5	Not used
J2 - B6	Summer open/winter closed
J2 - GND	Common J2
J2 - +5Vref	Not used
J2 - +VDC	Not used
J2 - ID1	Consensus activation radiant 1
J2 - GND	Common J2
J3 - C1 - NC1 - NO1	Circulator command radiant 1
J4	Connection RJ12 for KD201
J5 - Rx/Tx - GND	Primary Bus
J6	Not used
J7 - TLAN - GND	Not used
J8 - Rx/Tx - GND	Not used
J9 - Y1 PWM	PWM output for K489M mixer radiant 2
J9 - Y2 0..10V	0..10V output for mixer radiant 1
J9 - GND	Common for Y1 - Y2
J10 - NO2 - C2	Circulator command radiant 2
J11 - C3	Common J11
J11 - NO3	Summer/winter command
J11 - NO4	Not used
J11 - NO5	Chiller command
J11 - NO6	Boiler command
J11 - C3	Common J11
J12 - GND	Common J12
J12 - ID2	Consensus activation radiant 2
J12 - B7	External alarm radiant 1
J12 - B8	External alarm radiant 2

# Electric connections KPM30Y004 / KPM31Y004

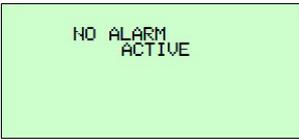
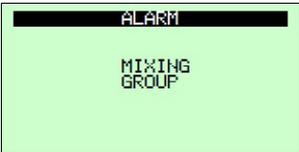
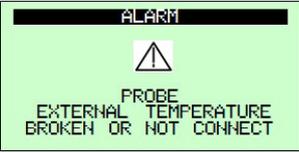


# Electric connections KPM30Y005 / KPM31Y005



**Alarms langed**

By pressing the “alarm” button you can analyze the alarm type this:

	<p>No alarm present</p>
	<p>Alarm from external source control terminal J12 close between GND-B7</p>
	<p>Alarm from external source control terminal J12 close between GND-B8</p>
	<p>Alarm flow sensor, control terminal between GND J1-B1</p>
	<p>Alarm flow sensor, control terminal between GND J1-B2</p>
	<p>Alarm outdoor sensor, control terminal J1 between GND-B3</p>
	<p>Low temperature alarm flow sensor, check connections mixing</p>
	<p>High temperature alarm flow sensor, check connections mixing</p>
	<p>Alarm device offline, check connections and addresses devices on the bus cable</p>

After repairing the fault press the “alarm” button to delete the alarm memory.

**Product specifications**

**KPM30**

Regulation unit for heating and/or cooling systems. With integrated display panel for the monitoring, configuration, and management of the system. Power supply 24 Vac, dimension 6 DIN modules. Possibility to control mixing valve, circulator and voltage free contacts output. Optional connection with remote terminal KD201. Possibility of connection with field-bus, inputs/outputs expansion boards KPM35 and with room sensors K492B and K495B/L. CE Certification.

**KPM31**

Regulation unit for heating and/or cooling systems. Without built-in display, to combine with remote terminal KD201 for the monitoring, configuration, and management of the system. Power supply 24 Vac, dimension 6 DIN modules. Possibility to control mixing valve, circulator and voltage free contacts output. Possibility of connection with field-bus, inputs/outputs expansion boards KPM35 and with room sensors K492B and K495B/L. CE Certification.

**Additional information**

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