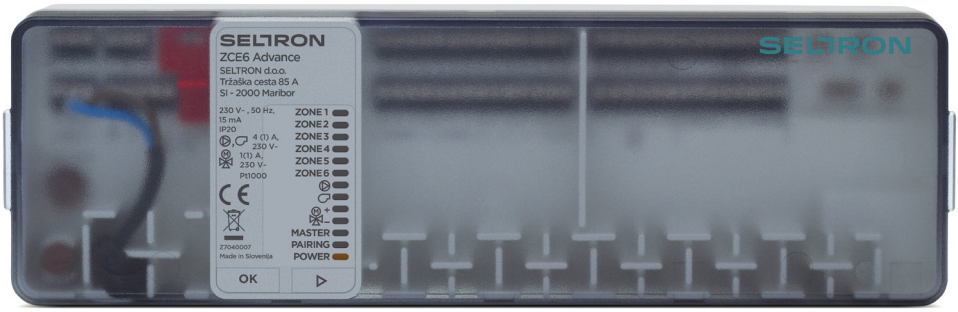
SELTRON

Zone heating / cooling controller
ZCE6 Basic and ZCE6 Advance

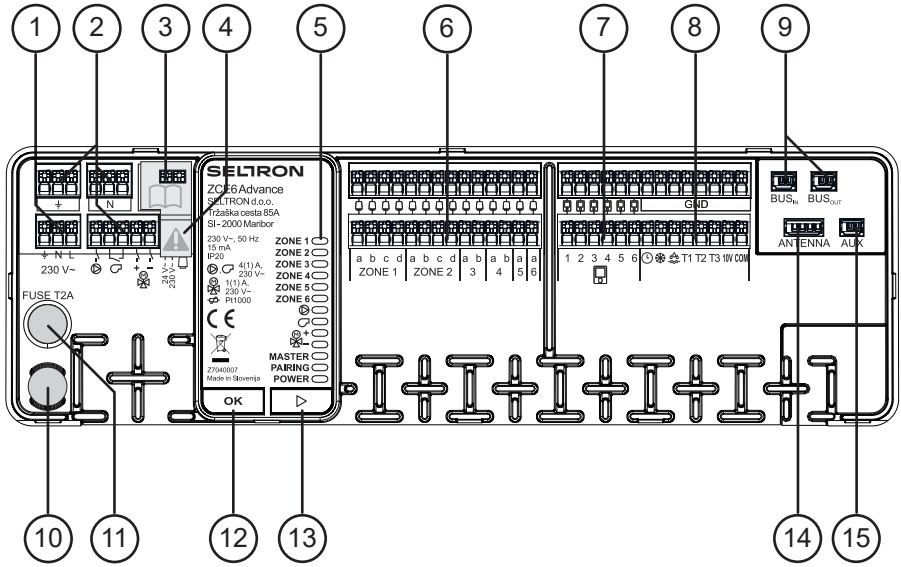


EN Instructions for use and setup

INTRODUCTION

ZCE6 controllers have been designed for the control of zone heating and/or cooling. The control is carried out using thermal actuators on the distributor valves based on the temperatures obtained from room units. There are six independent temperature zones with the possibility of controlling fourteen heating-cooling units in total. The ZCE6 Advance controllers also enable the control of the energy source, mixing valve and circulation pump. The controller allows wired or wireless connection of room units. The 24V thermal actuators can be used with additional 24V power supply. More controllers can be connected together when more temperature zones or units are needed.

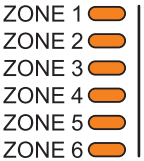
APPEARANCE OF THE CONTROLLER



1-Connection terminals for controller power supply (230V~).
2-Connection terminals for circulation pump, energy source and mixing valve control. *
3-Connection terminals for the control of 24V~ thermal actuators.**
4-Selector switch for the control voltage of thermal actuators. **
5-LED lights for the signalisation of operation.
6-Connection terminals for the control of thermal actuators.
7-Connection terminals for connecting wired room units.
8-Connection terminals for connecting temperature sensors and digital inputs.
9-Connection terminals for the BUS connection of controllers.
10-Spare electrical fuse.
11-Electrical fuse.
12-Confirmation key [OK].
13-Selection key [▷].
14-Connection terminals for the antenna for wireless room units.
15-AUX connection terminals.

**Only with ZCE6 Advance.*
***Connection terminals and the switch are located under a protective cover.*

SIGNALISATION OF OPERATION



Signalisation of temperature zone operation. When the LED light is on, the thermal actuators connected to the zone are in the open state, and vice versa.

Signalisation of circulation pump output operation. When the LED light is on, the output is active. *

Signalisation of energy source output operation. When the LED light is on, the output is active. *

Signalisation of mixing valve output operation. When the LED+ light is on, the mixing valve opens, when the LED- light is on, the mixing valve closes. *

Signalization of the leading (Master) controller in BUS connection. When the LED light is on, the controller in the BUS connection is the leading one (Master), and when the LED light flashes, the controller is the subordinate one (Slave).

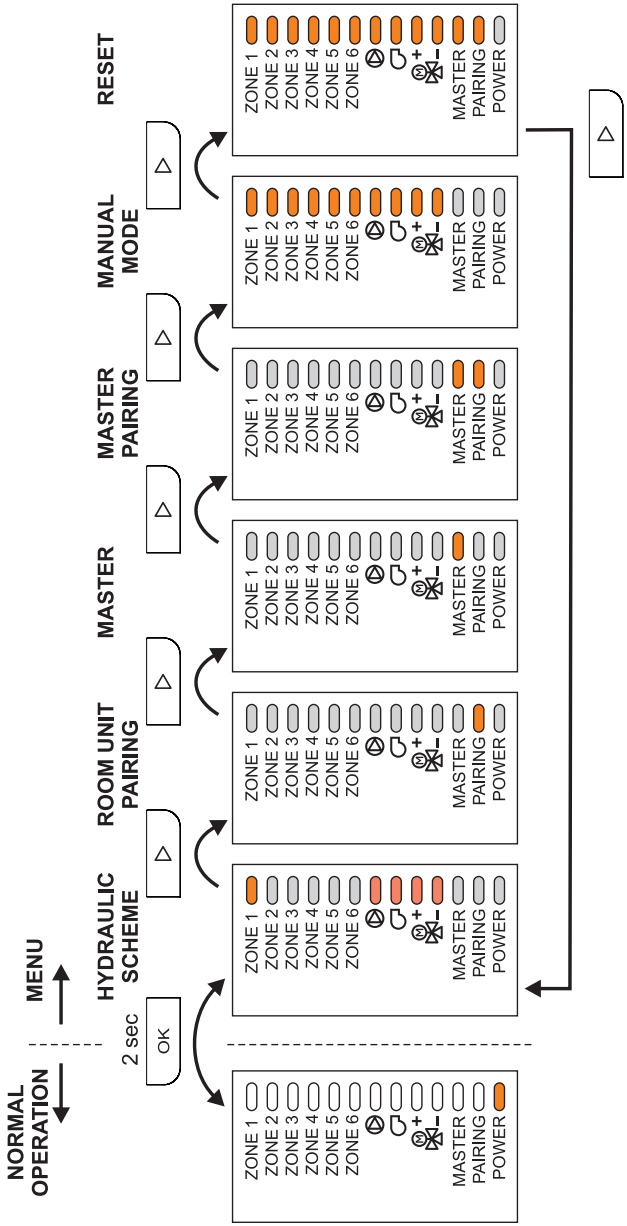
Signalisation of pairing process. When the LED light flashes, the controller is in the pairing phase.

Signalisation of the controller status. When the LED light is on, the controller is in normal operation, when the LED light is off, the menu page is displayed.

**Only with ZCE6 Advance.*

MENU

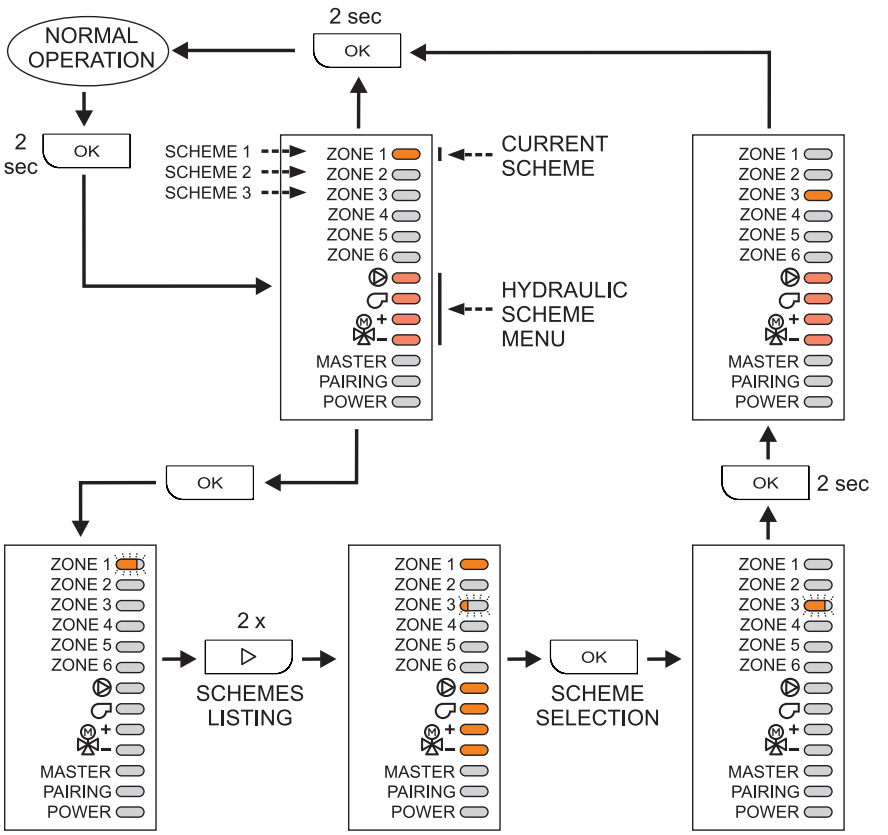
In the menu, we carry out basic settings of the controller. We move from the home screen to the menu by holding the OK key for 2 seconds; we move between individual groups in menu by pressing the ▷ key.



MENU – HYDRAULIC SCHEME

The ZCE6 Advance controller has three hydraulic schemes to choose from, the ZCE6 Basic only 1 scheme. Hydraulic schemes are shown in chapter »Hydraulic schemes«.

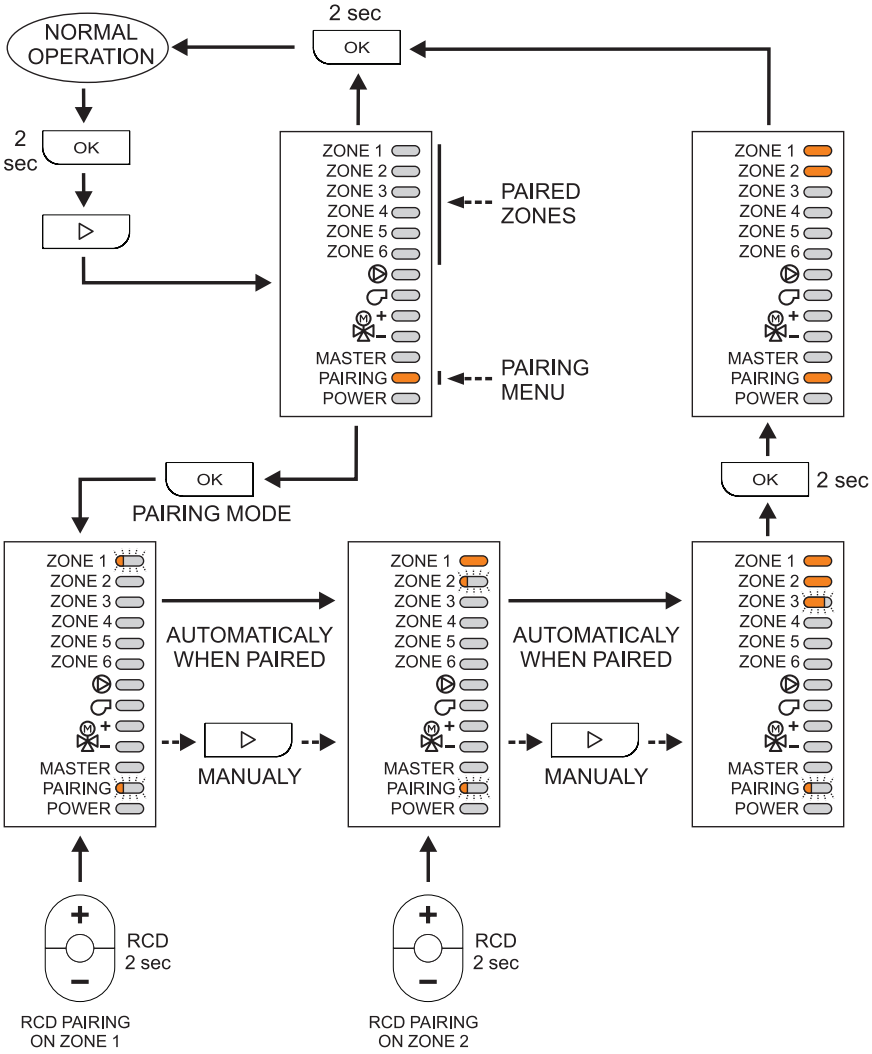
Example: Shift from scheme 1 to scheme 3.



MENU – PAIRING OF ROOM UNITS

With the pairing process, we connect the RCD room unit with the controller and at the same time assign zones to it.

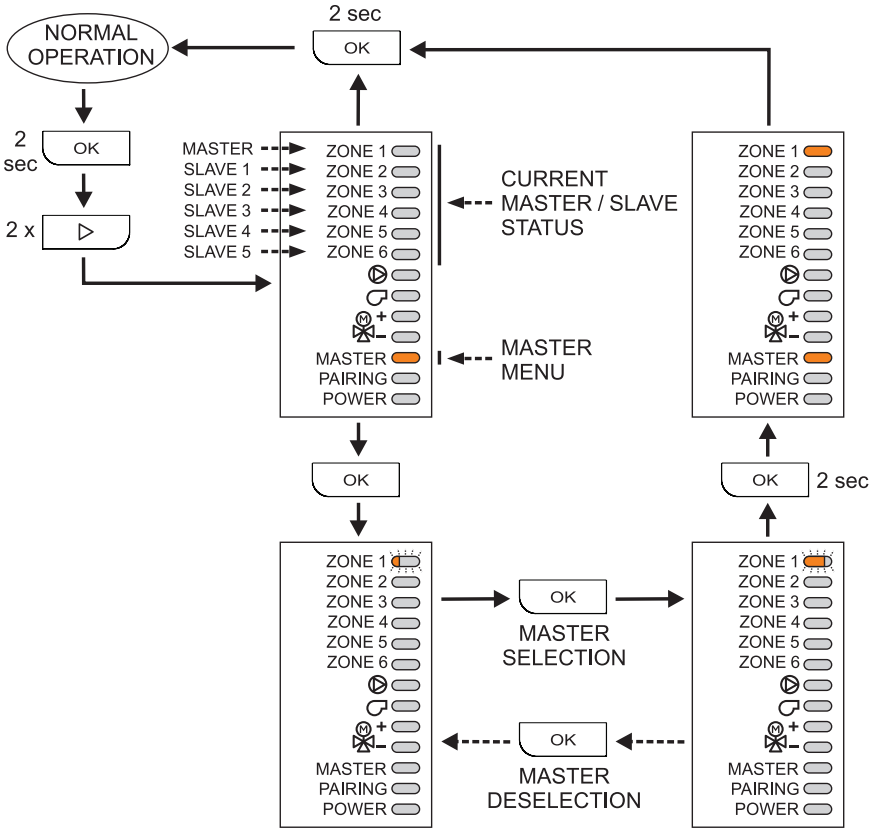
Example: Pairing the RCD room unit with zone 1 and 2.



MENU – MASTER CONTROLLER

If more controllers are connected to the BUS connection, one controller must be set as the leading (Master) controller.

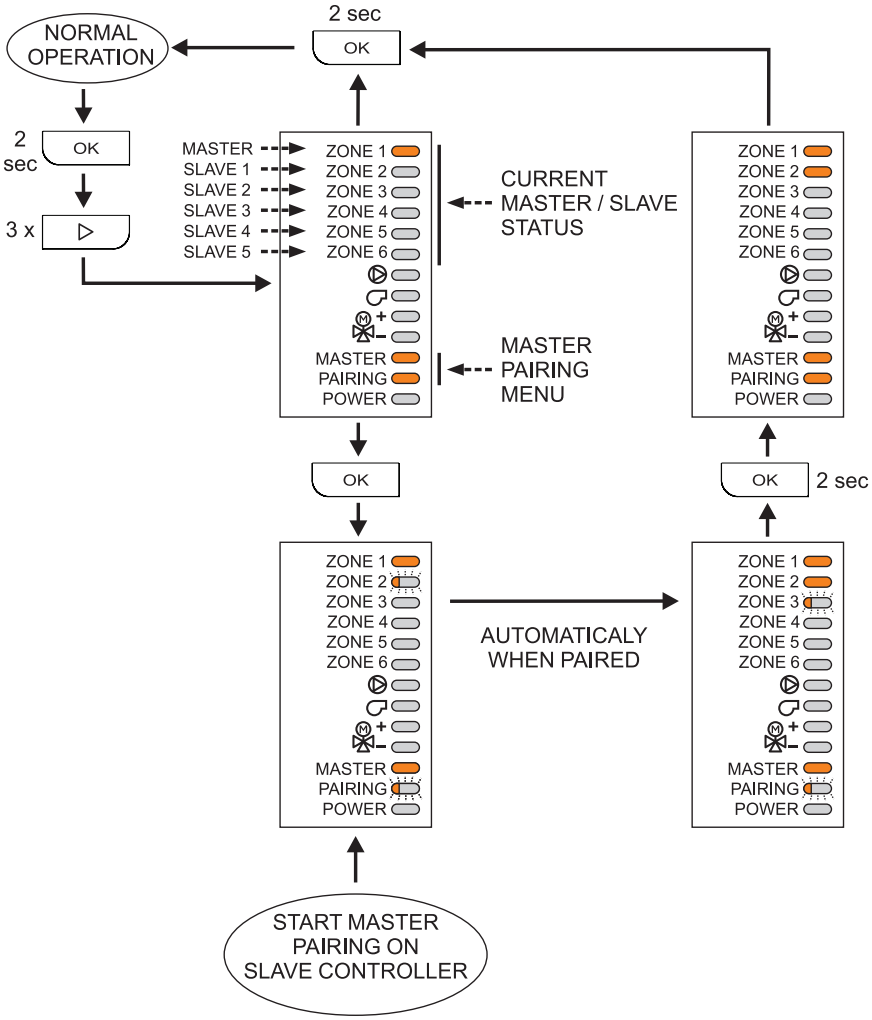
Example: Setting the master controller.



MENU – PAIRING OF THE CONTROLLERS (MASTER CONTROLLER)

When more controllers are interconnected in the BUS connection, the controllers must be connected – paired.

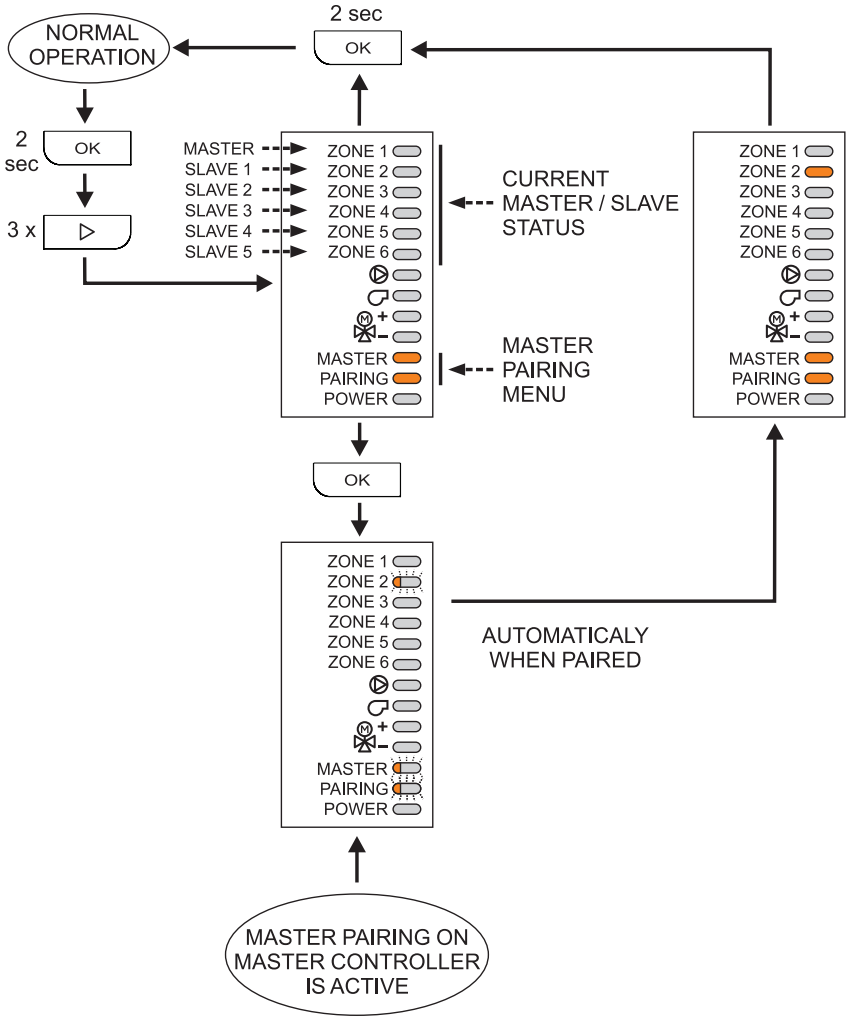
Example: Activation of the pairing process on the master controller.



MENU – PAIRING OF CONTROLLERS (SLAVE CONTROLLER)

After activating the pairing process on the master controller, pairing on slave controllers must also be activated.

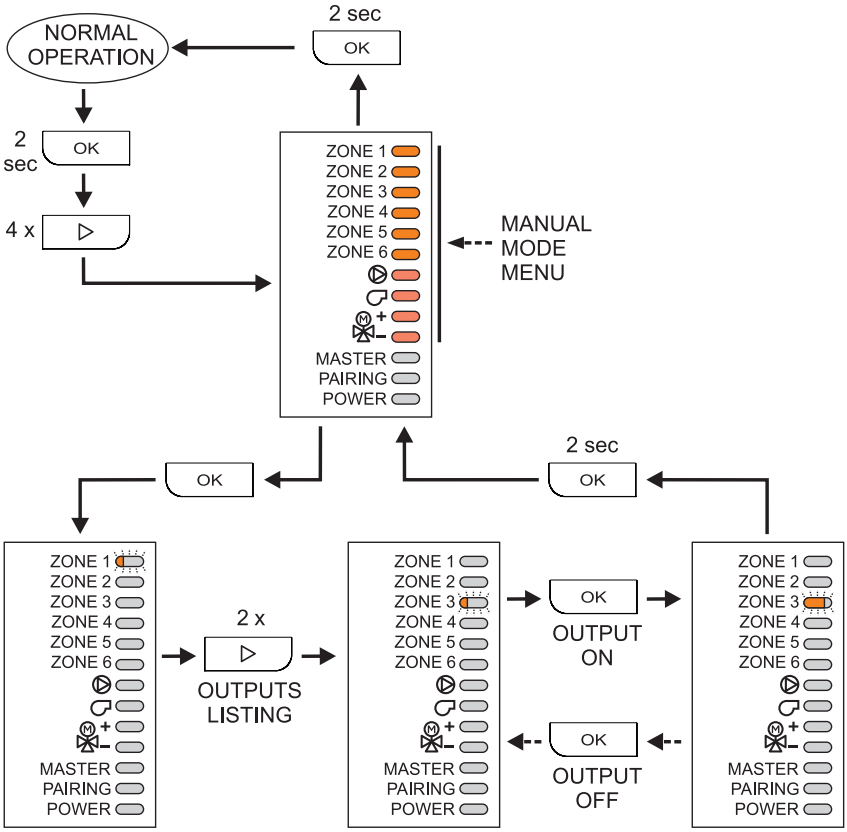
Example: Activation of the pairing process on the first slave controller.



MENU – MANUAL MODE

During start-up or testing of the controller, the zone outputs, circulation pumps, source or mixing valve can be manually switched on or off.

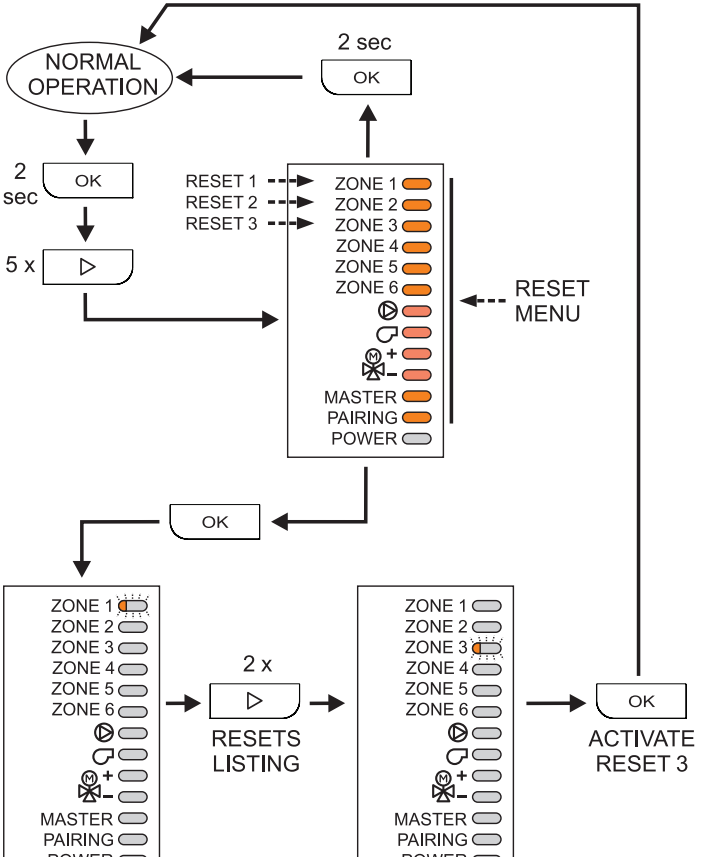
Example: Manual ON / OFF of the zone 3 output.



MENU – RESET

There are three types of resets available:
RESET 1 – pairing reset of room units,
RESET 2 – pairing reset of controllers,
RESET 3 – reset of the entire controller to the factory settings.

Example: Activation of reset 3.



CONTROLLER PARAMETERS

All additional settings and adjustments of the controller operation are carried out using the parameters. The parameters can be accessed using the room unit, as described in the instructions for the room unit in the section “SERVICE PANEL FOR CONTROLLER SETTINGS”.

Parameter	Function	Description	Setting range	Default value
GENERAL PARAMETERS				
C1.1	**HYDRAULIC SCHEME**	Selection of hydraulic scheme or system configuration. The ZCE6 Basic only has scheme 1 available.	1 ÷ 3	**1**
C1.2	**TYPE OF THERMAL ACTUATORS**	This setting defines whether the thermal actuators are NC or NO type.	1 - NC 2 - NO	**1**
C1.4	**OPERATION MODE OF DIGITAL INPUT “EXTERNAL TIMER”**	This setting defines the operation mode of the controller when a short circuit is detected on the digital input “External timer”.	0 - NOT IN USE 1 - DAY TEMP. 2 - NIGHT TEMP. 3 - FROST PROTECTION TEMP. 4 - TEMP. DEFINED WITH PARAMETER. C1.5	**0**
C1.5	**REQUESTED TEMPERATURE OF DIGITAL INPUT “EXTERNAL TIMER”**	This setting defines what kind of temperature shall be maintained in case of a short circuit if digital input “External timer” operation mode is set to value 4 (defined temperature).	4 ÷ 40 °C	**20**
C1.6	**HEATING / COOLING OPERATION MODE**	This setting defines what kind of mode the controller should perform. Value 0: operation mode is defined with auxiliary input “cooling” (short circuit = cooling mode) Value 1: Heating mode. Value 2: Cooling mode.	0 - AUXILIARY INPUT 1 - HEATING 2 - COOLING	**0**
C1.7	**OPERATION MODE OF INPUT “DEW POINT”**	This setting defines if the input “dew point” is operated by NC or NO signal from the digital sensor of the dew point or an analog sensor is on the input (FCD dew sensor).	0 - NOT IN USE 1 - DIGITAL INPUT - NC 2 - DIGITAL INPUT - NO 3 - ANALOGUE INPUT	**3**
C1.13	**AUTOMATIC SHIFT OF CLOCK TO SUMMER/WINTER TIME**	Based on the calendar, the controller automatically shifts the clock to summer or winter time.	0 - NO 1 - YES	**1**

Parameter	Function	Description	Setting range	Default value
C1.14	**ANTI-BLOCK FUNCTION**	All control outputs that haven't been activated in the last week are activated on Friday between 20:00 and 20:15. Circulation pump runs for 30 seconds, thermal actuators are activated simultaneously for 5 minutes, mixing valve is opened and closed.	0 - NO 1 - YES	**0**
C1.15	**OPERATION MODE OF OUTPUT "10V"**	This setting defines the 10V output operation mode. Value 1: Permanent 10V power supply for digital dew point sensor. Value 2: Analogue control signal 0-10V for energy source.	1 - 10V POWER SUPPLY FOR SENSOR 2 - 0 ÷ 10V FOR SOURCE CONTROL	**1**
C1.18	**SENSOR T1 CALIBRATION**	Correction of displayed measured temperature for sensor T1.	-5 ÷ 5°C	**0**
C1.19	**SENSOR T2 CALIBRATION**	Correction of displayed measured temperature for sensor T2.	-5 ÷ 5°C	**0**
C1.20	**SENSOR T3 CALIBRATION**	Correction of displayed measured temperature for sensor T3.	-5 ÷ 5°C	**0**
OPERATING MODE PARAMETERS				
C2.1	**CONTROL ALGORITHM**	This setting determines the control algorithm for temperature zones. When set to "0", the setting of the control algorithm on each individual room unit is taken into account, while by the "1", "2" and "3" settings, the control algorithm for all temperature zones is determined by the setting.	0 - ROOM UNIT SETTINGS 1 - P MODE 2 - PI MODE 3 - HYSTERESIS	**0**
C2.2	**I-CONSTANT**	This setting determines the value of the I-constant in PI mode.	0.2 ÷ 4.0	**1.0**
C2.3	**P ZONE**	This setting determines the width of the P zone.	0.5 ÷ 2.0°C	**1.0**
C2.4	**SHIFT OF P ZONE – HEATING**	This setting determines the shift of the P zone when the controller is in heating mode.	0.0 ÷ 1.0°C	**0.2**
C2.5	**SHIFT OF P ZONE – COOLING**	This setting determines the shift of the P zone when the controller is in cooling mode.	0.0 ÷ 1.0°C	**0.2**
C2.6	**MINIMUM OPERATION TIME OF OUTPUT (THERMAL ACTUATOR)**	After switching on the thermal actuator, it remains active for at least the set minimum time.	120 ÷ 300sec	**120**
CIRCULATION PUMP AND SOURCE PARAMETERS				
C3.2	**CIRCULATION PUMP SWITCH-ON DELAY**	This setting determines the circulation pump switch-on delay.	0 ÷ 900sec	**0**
C3.3	**CIRCULATION PUMP SWITCH-OFF DELAY**	This setting determines the circulation pump switch-off delay when there is no requirement for heating.	0 ÷ 900sec	**300**

Parameter	Function	Description	Setting range	Default value
C3.4	TYPE OF CIRCULATION PUMP OUTPUT	This setting inverts the operation of the circulation pump output.	1 - NORMAL 2 - INVERTED	1
C3.12	SOURCE SWITCH-ON DELAY	Setting of source switch-on delay.	0 ÷ 900sec	0
C3.13	SOURCE SWITCH-OFF DELAY	Setting of source switch-off delay.	0 ÷ 900sec	0
C3.14	TYPE OF SOURCE OUTPUT	This setting inverts the operation of the source output.	1 - NORMAL 2 - INVERTED	1
MIXING CIRCUIT PARAMETERS				
C4.1	HEATING CURVE STEEPNESS	The heating curve steepness provides information about the required temperature of heating devices at a certain outdoor temperature.	0.2 ÷ 2.6	0.5
C4.2	PARALLEL SHIFT OF HEATING CURVE	This setting determines the parallel shift of the heating curve or the calculated temperatures of the supply line. The setting can be used to eliminate the deviation between the required and actual room temperature.	-5.0 ÷ 5.0°C	0.0
C4.3	INFLUENCE OF ROOM TEMPERATURE DEVIATION	Setting the influence of room temperature deviation. Lower value means lower influence, higher value means higher influence.	0.1 ÷ 3.0	1.0
C4.4	SUPPLY LINE TEMPERATURE	This setting determines how the supply line temperature is determined.	1 - WEATHER-COMPENSATED 2 - CONSTANT TEMP.	1
C4.5	CONSTANT SUPPLY LINE TEMPERATURE – HEATING	This setting determines the constant supply line temperature for heating when a constant supply line temperature is selected.	10 ÷ 55 °C	35
C4.6	CONSTANT SUPPLY LINE TEMPERATURE – COOLING	This setting determines the constant supply line temperature for cooling when a constant supply line temperature is selected.	16 ÷ 40°C	24
C4.10	MAXIMUM SUPPLY LINE TEMPERATURE – HEATING	This setting determines the maximum supply line temperature for heating.	20 ÷ 60°C	45
C4.11	MINIMUM SUPPLY LINE TEMPERATURE – HEATING	This setting determines the minimum supply line temperature for heating.	15 ÷ 40°C	20
C4.12	MAXIMUM SUPPLY LINE TEMPERATURE – COOLING	This setting determines the maximum supply line temperature for cooling.	20 ÷ 40°C	35
C4.13	MINIMUM SUPPLY LINE TEMPERATURE – COOLING	This setting determines the minimum supply line temperature for cooling.	15 ÷ 30°C	18
C4.14	MIXING VALVE P-CONSTANT	The setting indicates how intensely the controller corrects the position of the mixing valve. A lower value means shorter movements and a higher value longer movements of the mixing valve.	0.5 ÷ 2.0	1.0

Parameter	Function	Description	Setting range	Default value
C4.15	MIXING VALVE I-CONSTANT	The setting indicates how frequent the controller corrects the position of the mixing valve. Lower value means low frequency and higher value means higher frequency of mixing valve position corrections.	0.5 ÷ 2.0	1.0
C4.16	MIXING VALVE D-CONSTANT	Setting of the sensitivity of mixing valve for supply line temperature changes.	0.5 ÷ 2.0	1.0
C4.17	ACTUATOR RUNNING TIME	Setting of the actuator running time.	60 ÷ 240sec	120
C4.18	BACKLASH OF MIXING VALVE	Setting of the mixing valve running time to compensate the backlash of actuator and mixing valve assembly, which occurs by change of rotation direction.	1 ÷ 5sec	1
C4.19	INITIAL MIXING VALVE MOVEMENT FROM OPEN POSITION	Setting of initial mixing valve movement duration when moving from open position.	7 ÷ 30sec	15
C4.20	INITIAL MIXING VALVE MOVEMENT FROM CLOSED POSITION	Setting of initial mixing valve movement duration when moving from closed position.	7 ÷ 30sec	15
BACKUP OPERATION PARAMETERS				
C7.1	DELAYED SWITCHING TO BACKUP OPERATION	This setting determines a time-delayed changeover to backup operation after the loss of communication between the room unit and the controller.	0 ÷ 240min	120
C7.2	PERIOD OF BACKUP OPERATION	This setting determines the period of backup operation.	0 ÷ 240min	60
C7.3	BACKUP OPERATION OF ZONE 1 (PERIOD PERCENTAGE)	This setting determines the percentage of zone 1 operation in a period.	0 ÷ 50%	30
C7.4	BACKUP OPERATION OF ZONE 2 (PERIOD PERCENTAGE)	This setting determines the percentage of zone 2 operation in a period.	0 ÷ 50%	30
C7.5	BACKUP OPERATION OF ZONE 3 (PERIOD PERCENTAGE)	This setting determines the percentage of zone 3 operation in a period.	0 ÷ 50%	30
C7.6	BACKUP OPERATION OF ZONE 4 (PERIOD PERCENTAGE)	This setting determines the percentage of zone 4 operation in a period.	0 ÷ 50%	30

Parameter	Function	Description	Setting range	Default value
C7.7	BACKUP OPERATION OF ZONE 5 (PERIOD PERCENTAGE)	This setting determines the percentage of zone 5 operation in a period.	0 ÷ 50%	30
C7.8	BACKUP OPERATION OF ZONE 6 (PERIOD PERCENTAGE)	This setting determines the percentage of zone 6 operation in a period.	0 ÷ 50%	30
INTEGRATION PARAMETERS				
C8.1	INFLUENCE OF ROOM UNIT ON ZONE 1	Setting of influence of room unit on the heating zone 1.	0 - ROOM UNIT 1 1 - ROOM UNIT 2 2 - ROOM UNIT 3 3 - ROOM UNIT 4 4 - ROOM UNIT 5 5 - ROOM UNIT 6 6 - NO INFLUENCE	6
C8.2	INFLUENCE OF ROOM UNIT ON ZONE 2	Setting of influence of room unit on the heating zone 2.	0 - ROOM UNIT 1 1 - ROOM UNIT 2 2 - ROOM UNIT 3 3 - ROOM UNIT 4 4 - ROOM UNIT 5 5 - ROOM UNIT 6 6 - NO INFLUENCE	6
C8.3	INFLUENCE OF ROOM UNIT ON ZONE 3	Setting of influence of room unit on the heating zone 3.	0 - ROOM UNIT 1 1 - ROOM UNIT 2 2 - ROOM UNIT 3 3 - ROOM UNIT 4 4 - ROOM UNIT 5 5 - ROOM UNIT 6 6 - NO INFLUENCE	6
C8.4	INFLUENCE OF ROOM UNIT ON ZONE 4	Setting of the influence of room unit on the heating zone 4.	0 - ROOM UNIT 1 1 - ROOM UNIT 2 2 - ROOM UNIT 3 3 - ROOM UNIT 4 4 - ROOM UNIT 5 5 - ROOM UNIT 6 6 - NO INFLUENCE	6
C8.5	INFLUENCE OF ROOM UNIT ON ZONE 5	Setting of the influence of room unit on the heating zone 5.	0 - ROOM UNIT 1 1 - ROOM UNIT 2 2 - ROOM UNIT 3 3 - ROOM UNIT 4 4 - ROOM UNIT 5 5 - ROOM UNIT 6 6 - NO INFLUENCE	6

Parameter	Function	Description	Setting range	Default value
C8.6	**INFLUENCE OF ROOM UNIT ON ZONE 6**	Setting of the influence of room unit on the heating zone 6.	0 - ROOM UNIT 1 1 - ROOM UNIT 2 2 - ROOM UNIT 3 3 - ROOM UNIT 4 4 - ROOM UNIT 5 5 - ROOM UNIT 6 6 - NO INFLUENCE	**6**
C8.7	**ROOM UNIT ON WIRE INPUT 1**	Setting of room unit to be connected to wire input 1.	0 - ROOM UNIT 1 1 - ROOM UNIT 2 2 - ROOM UNIT 3 3 - ROOM UNIT 4 4 - ROOM UNIT 5 5 - ROOM UNIT 6 6 - NO INFLUENCE	**6**
C8.8	**ROOM UNIT ON WIRE INPUT 2**	Setting of room unit to be connected to wire input 2.	0 - ROOM UNIT 1 1 - ROOM UNIT 2 2 - ROOM UNIT 3 3 - ROOM UNIT 4 4 - ROOM UNIT 5 5 - ROOM UNIT 6 6 - NO INFLUENCE	**6**
C8.9	**ROOM UNIT ON WIRE INPUT 3**	Setting of room unit to be connected to wire input 3.	0 - ROOM UNIT 1 1 - ROOM UNIT 2 2 - ROOM UNIT 3 3 - ROOM UNIT 4 4 - ROOM UNIT 5 5 - ROOM UNIT 6 6 - NO INFLUENCE	**6**
C8.10	**ROOM UNIT ON WIRE INPUT 4**	Setting of room unit to be connected to wire input 4.	0 - ROOM UNIT 1 1 - ROOM UNIT 2 2 - ROOM UNIT 3 3 - ROOM UNIT 4 4 - ROOM UNIT 5 5 - ROOM UNIT 6 6 - NO INFLUENCE	**6**
C8.11	**ROOM UNIT ON WIRE INPUT 5**	Setting of room unit to be connected to wire input 5.	0 - ROOM UNIT 1 1 - ROOM UNIT 2 2 - ROOM UNIT 3 3 - ROOM UNIT 4 4 - ROOM UNIT 5 5 - ROOM UNIT 6 6 - NO INFLUENCE	**6**

Parameter	Function	Description	Setting range	Default value
C8.12	**ROOM UNIT ON WIRE INPUT 6**	Setting of room unit to be connected to wire input 6.	0 - ROOM UNIT 1 1 - ROOM UNIT 2 2 - ROOM UNIT 3 3 - ROOM UNIT 4 4 - ROOM UNIT 5 5 - ROOM UNIT 6 6 - NO INFLUENCE	**6**
C8.13	**ALL PAIRED ROOM UNITS**	The value converted in binary format represents the addresses of wired and wireless room units, which are connected (paired) to the controller. Example: Value 13 (001101 in binary format) means that the room units 1, 3 and 4 are paired.	Binary 0 - 000000 1 - 000001 2 - 000010 3 - 000011 …	**0**
C8.14	**WIRELESS (RF) PAIRED ROOM UNITS**	The value converted in binary format represents the addresses of wireless room units, which are connected (paired) to the controller.	Binary 0 - 000000 1 - 000001 2 - 000010 3 - 000011 …	**0**
C8.15	**RF CHANNEL**	Setting of the RF (frequency) channel through which the controller communicates with wireless room units.	0 ÷ 7	**0**
C8.16	**CONTROLLER RF ADDRESS**	Setting of the controller RF address for wireless communication with room units.	0 ÷ 9	**0**
C8.17	**RF ADDRESS OF PAIRING**	Setting of an additional RF address for pairing of wireless communication with room units.	0 ÷ 255	**0**
C8.18	**PAIRED SUBORDINATE (SLAVE) CONTROLLERS**	The value converted in binary format represents the addresses of Slave controllers, which are connected (paired) to the Master controller.	Binary 0 - 000000 1 - 000001 2 - 000010 3 - 000011 …	**0**
C8.19	**LEADING (MASTER) CONTROLLER**	Setting of the controller as the leading (Master) controller or not.	0 - NO 1 - YES	**0**
C8.20	**SUBORDINATE (SLAVE) CONTROLLER ADDRESS**	Setting of the address of subordinate (Slave) controller.	0 - NOT SLAVE 1 - SUBORDINATE 1 2 - SUBORDINATE 2 3 - SUBORDINATE 3 4 - SUBORDINATE 4 5 - SUBORDINATE 5	**0**

Zone control (thermal actuators)

Parameter C1.2 is used to select the type of thermal actuators connected to the controller. Type NC opens the thermal actuator when the output is under control voltage, type NO opens the thermal actuator when there is no control voltage at the output.

Parameter C2.1 is used to select between three zone control modes:
C2.1=0 - operation after setting the RCD room unit,
C2.1=1 - P control mode,
C2.1=2 - PI control mode,
C2.1=3 - hysteresis control mode.

Parameter C2.6 is used to set the minimum switch-on time for zone output (thermal actuator).

In P and PI control mode, the operating (modulating) time of zone output is calculated on the basis of deviation of measured temperature from required room temperature within the ED time constant (period). The length of the ED period is set on the room unit, for each heating zone separately. With parameter C2.3, the width of the zone is defined, in which the ED modulation is carried out.
With parameter C2.2, the size of the I-constant in PI mode is defined. In case of greater deviation of measured temperature from required room temperature, I-constant influences the speed of the automatic shift of P zone (+/-0.1°C in one step). Manual shift of the P zone can be carried out by parameter C2.4 for heating and parameter C2.5 for cooling.

In hysteresis control mode, the condition (ON/OFF) of zone output is defined on the basis of deviation of measured temperature from the required room temperature and the value of set hysteresis. The value of the hysteresis is set on the room unit, for each heating zone separately.

Room units

Up to 6 RCD room units can be connected to the controller. Wire and wireless room units can be connected. Wire units must connected to the connection terminals with label “room units” (1, 2, 3, 4, 5, 6), and for the operation of wireless room units, antenna must be connected to the terminal “ANTENNA”.

Each room unit represents one temperature zone and can affect one or more heating zones. Establishing a connection between the controller and the room units and determining the effect of the room unit on the zones is carried out by a pairing process.
The pairing process is the same for wire and wireless room units.

The room unit exchanges the measured and desired values for its temperature area with the controller:
- measured room temperature,
- measured air humidity,
- measured air pressure,
- desired daytime temperature,
- desired nighttime temperature,
- desired protection temperature,
- operating regime,
- user features ON/OFF.

Energy source and circulation pump (ZCE6 Advance)

The condition for the activation of energy source and circulation pump is the demand for heating or cooling in at least one zone.

Energy source settings:
Parameter C3.12 is used to set the energy source output switch-on delay.
Parameter C3.13 is used to set the energy source output switch-off delay.
Parameter C3.14 is used to set the energy source output operation:
C3.14=1 - normal operation (when the energy source is on, the output is under operating voltage),
C3.14=2 - inverted operation (when the energy source is on, there is no operating voltage at the output).

Circulation pump settings:
Parameter C3.2 is used to set the circulation pump output switch-on delay.
Parameter C3.3 is used to set the circulation pump output switch-off delay.
Parameter C3.4 is used to set the circulation pump output operation:
C3.4=1 - normal operation (when the circulation pump is on, the output is under operating voltage),
C3.4=2 - inverted operation (when the circulation pump is on, there is no operating voltage at the output).

Mixing valve (ZCE6 Advance)

The mixing valve is controlled by closing and opening impulses (P-constant) in time periods (I-constant). When in heating mode, the measured temperature of supply line is below the desired temperature, the mixing valve opens, when the measured temperature is above the desired temperature, the mixing valve closes. In case of quick temperature changes of supply line, the mixing valve can (due to the influence of D-constant) also close when the measured temperature is below the desired temperature and vice versa.

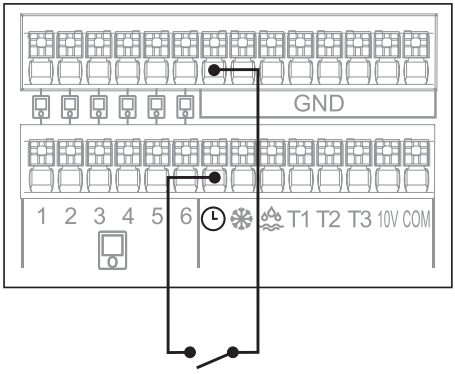
In the cooling mode, the opening and closing direction of the mixing valve is reversed!

The mixing valve constants are set with parameters C4.14, C4.15 and C4.16.

Digital input "external timer"

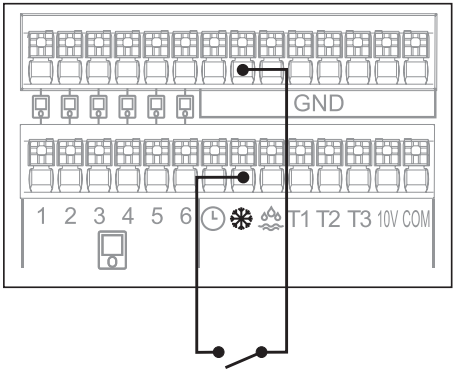
The digital input "external timer" enables remote switch-on of operation based on desired temperature.
Parameter C1.4 is used to select between four operation modes:
C1.4=0 - input not used,
C1.4 = 1 - desired daytime temperature,
C1.4=2 - desired nighttime temperature,
C1.4=3 - switch-off temperature,
C1.4=4 - desired room temperature set with parameter C1.5.

The selected operation mode is activated when a short circuit on the digital input "external timer" is detected, and is valid for all zones.



Digital input “cooling”

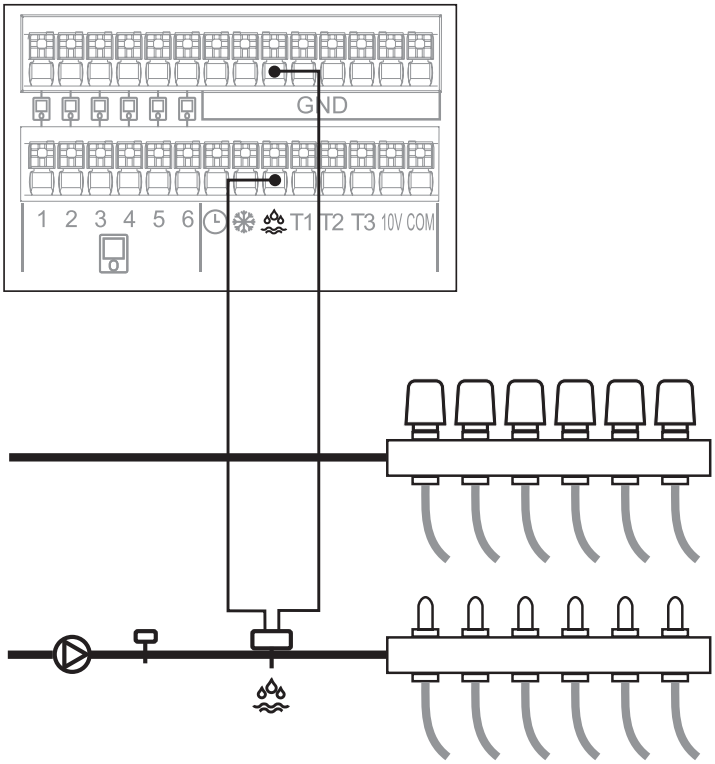
The digital input “cooling” enables a remote switchover of operation from cooling to heating. When a short circuit is detected on the digital input “cooling”, the controller switches over to the cooling mode.
For the operation of digital input “cooling”, the parameter C1.6 must be set to value 0.



d

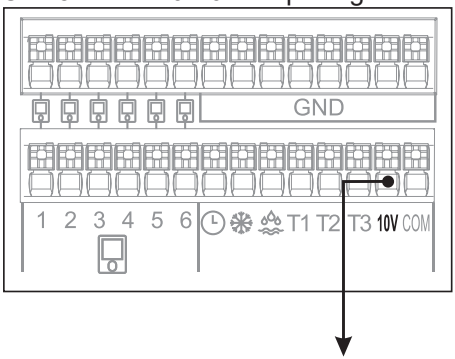
The input “dew point” enables the connection of digital or analogue dew point sensor.
Parameter C1.7 is used to set the type of dew point sensor, which is connected to the input “dew point”.
C1.7=0 - input is not used,
C1.7=1 - digital sensor of type NC (short circuit when dew point is detected),
C1.7=2 - digital sensor of type NO (open connection terminals when dew point is detected),
C1.7=3 - analogue sensor (FCD dew sensor).

The sensor is mounted on the supply line. In case of detected dewing, the cooling stops.



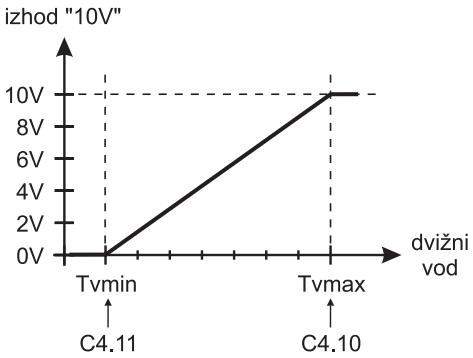
Output “10V”

Parameter C1.15 is used to set the output “10V” operation mode:
C1.15=1 - the voltage of 10V for sensor power supply is always available at the output,
C1.15=2 - the 0-10V output signal is used to operate the source.

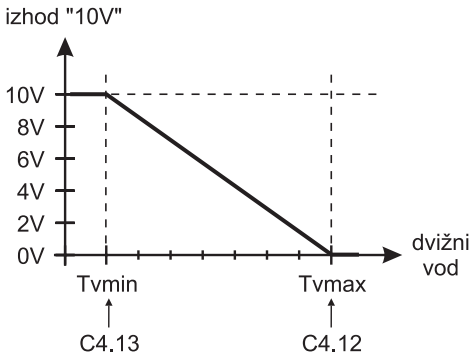


Dependency graph of output voltage from desired temperature of supply line:

Heating



Cooling



Backup operation

When the communication with the room unit is lost, the controller switches to back-up operation. Delayed switching to backup operation is set with parameter C7.1.
In backup operation, the zone is switched on in a period set with parameter C7.2.
The operating time (percentage of period) of a certain zone is set with parameters C7.3 (for zone 1) to C7.8 (for zone 6).

Antiblock function

All control outputs that haven't been activated in the last week are activated on Friday between 20:00 and 20:15.
Circulation pump runs for 30 seconds, thermal actuators are activated simultaneously for 5 minutes, and the mixing valve is opened and closed.

CONTROLLER INSTALLATION

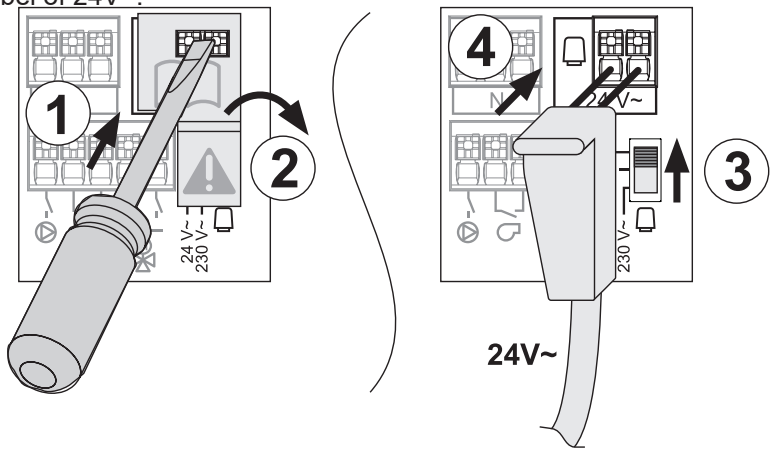
ELECTRICAL CONNECTION

Each project must be based on your calculations and plans, which have to be in accordance with regulations in force. Figures and text in this instructions are only an example and the publisher shall not be held liable. The liability of the publisher for unprofessional or incorrect interpretation and the consequential damage shall be expressly excluded. We reserve the right to technical errors and changes without any prior notice.

The connection of controlling devices should be performed by an expert with appropriate qualifications, or by an authorised organisation. Before interfering with the wiring, make sure the main switch is switched off. Follow the regulations for low-voltage installations IEC 60364 and VDE 0100, legal regulations for the prevention of accidents, statutory provisions for the protection of the environment and other national regulations. Every time you open the housing, make sure all poles of the power supply are disconnected. Non-compliance with present instructions can cause serious injuries such as burns or even danger to life. All low-voltage connections, such as connections of temperature sensors, have to be placed separately from the connections which are under network voltage.

Setting voltage for the control of thermal actuators

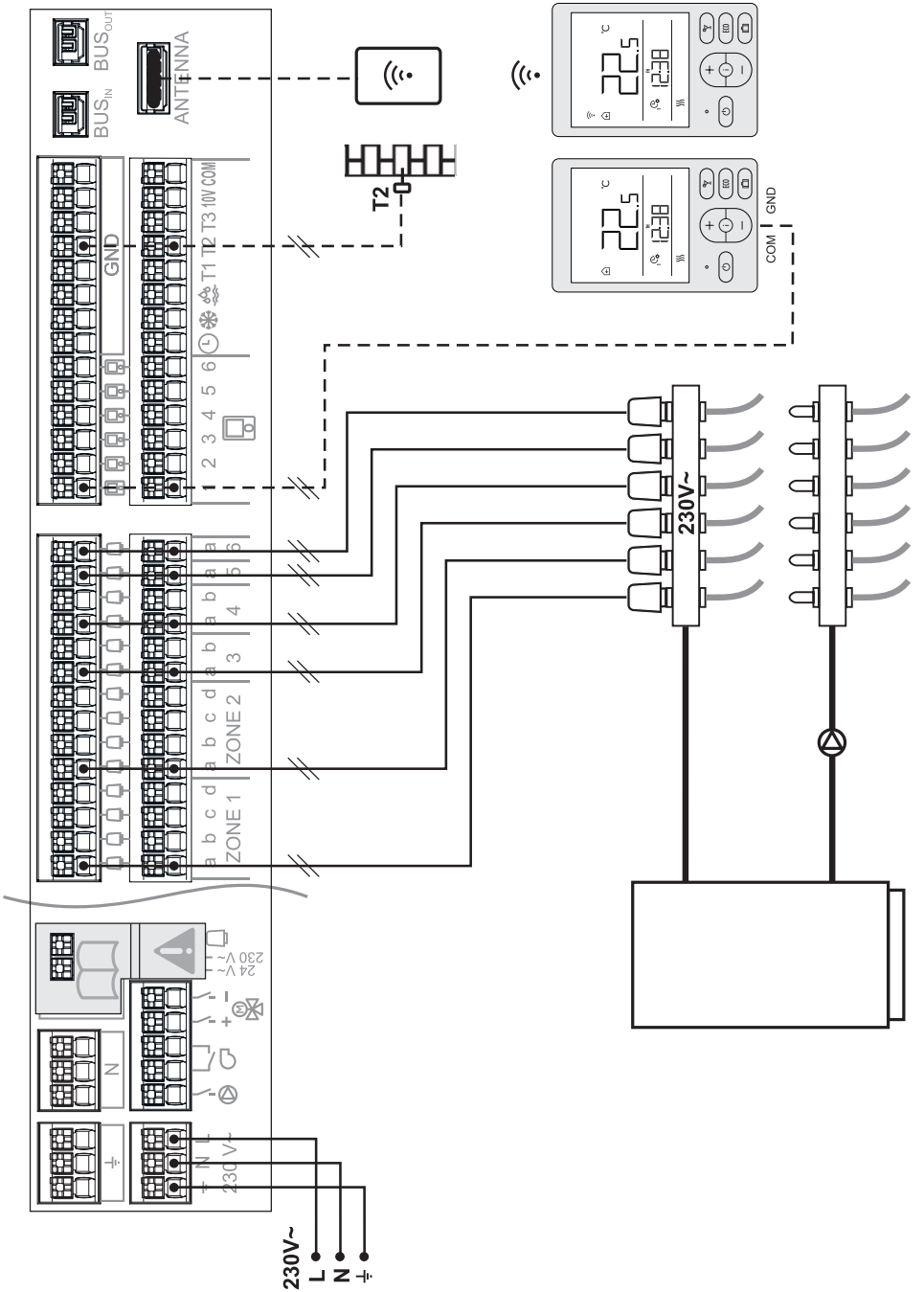
The controller enables the connection of thermal actuators with control voltage of 230V~ or 24V~. The controller is pre-configured for the control with a voltage of 230V~. For the control with a voltage of 24V~, the protective cover has to be removed, the switch has to be put in the position of 24V~ and a special purpose transformer with a voltage of 24V~ has to be connected to the connection terminal with a label of 24V~.



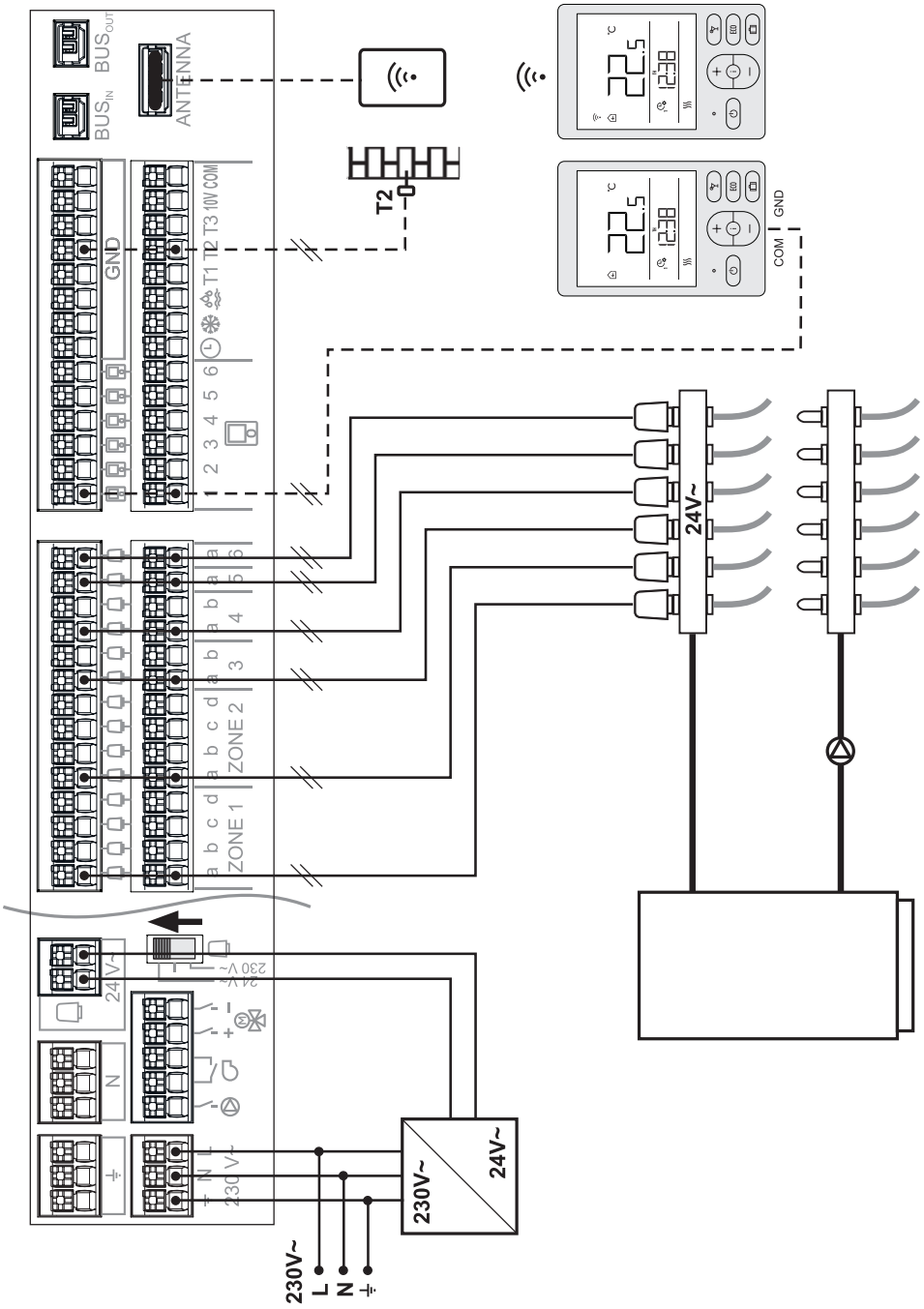
It is not possible to connect thermal actuators of different control voltages to one controller!

HYDRAULIC SCHEMES

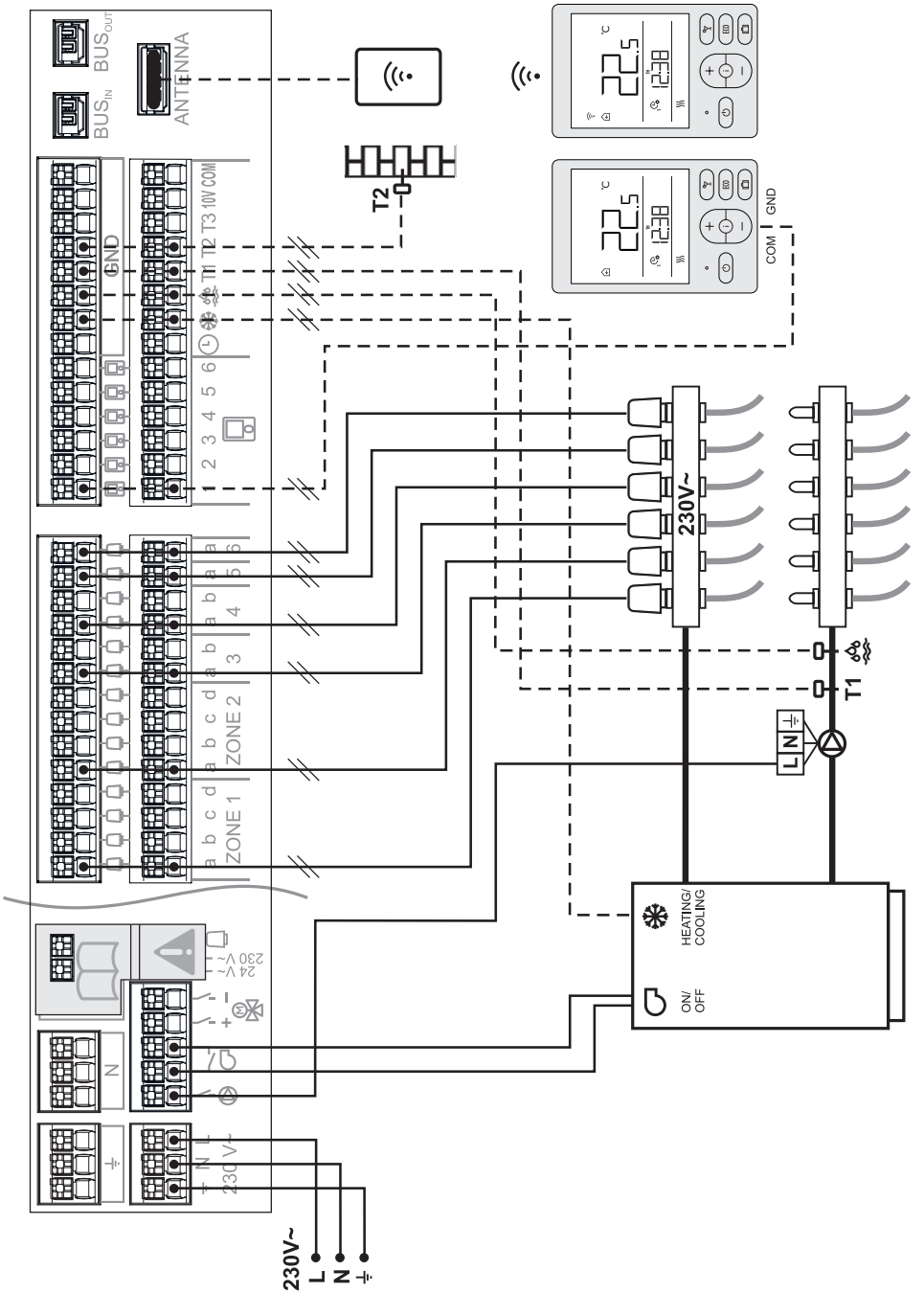
Hydraulic scheme 1 (230V~) - ZCE6 Basic and Advance



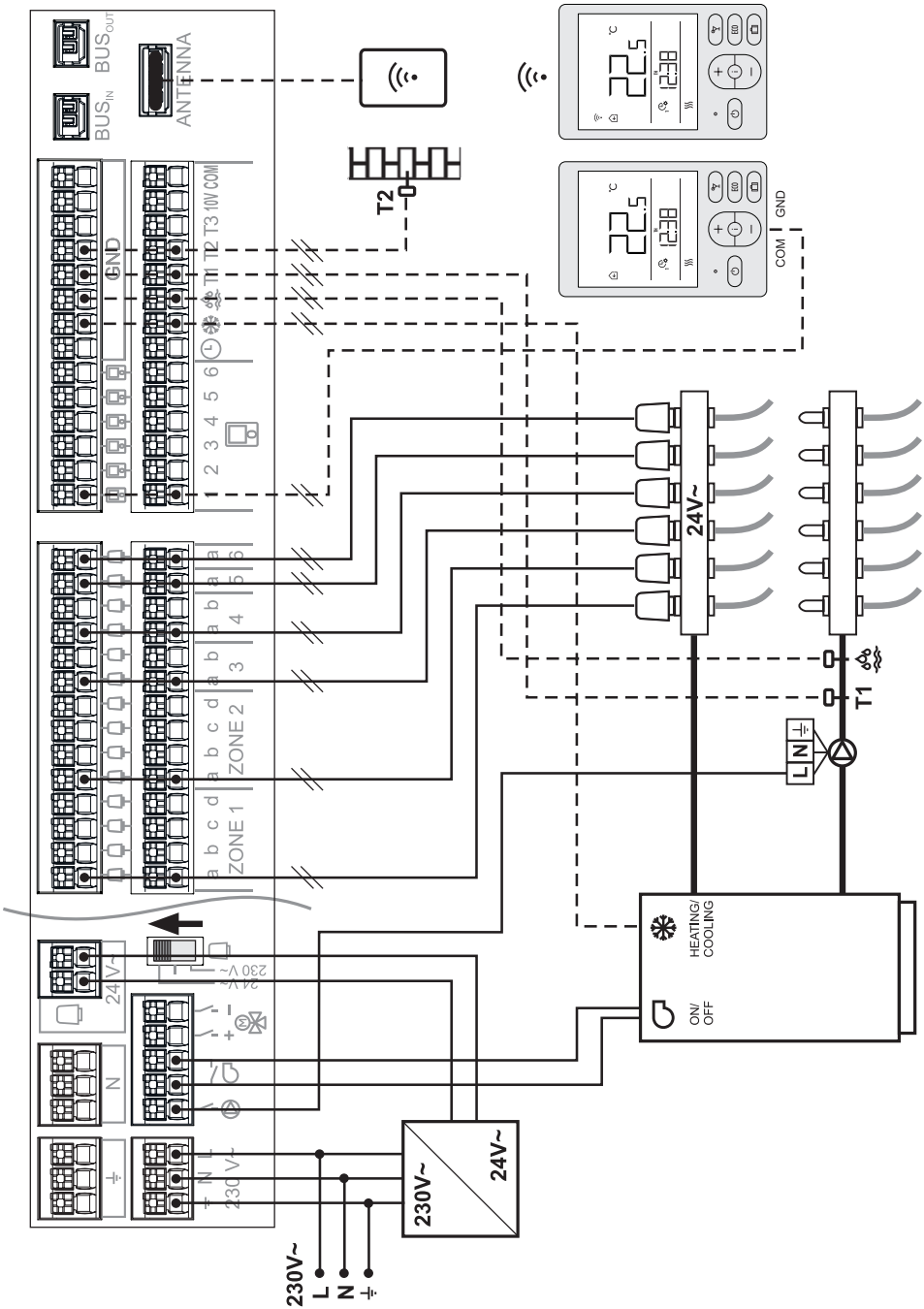
Hydraulic scheme 1 (24V~) - ZCE6 Basic and Advance



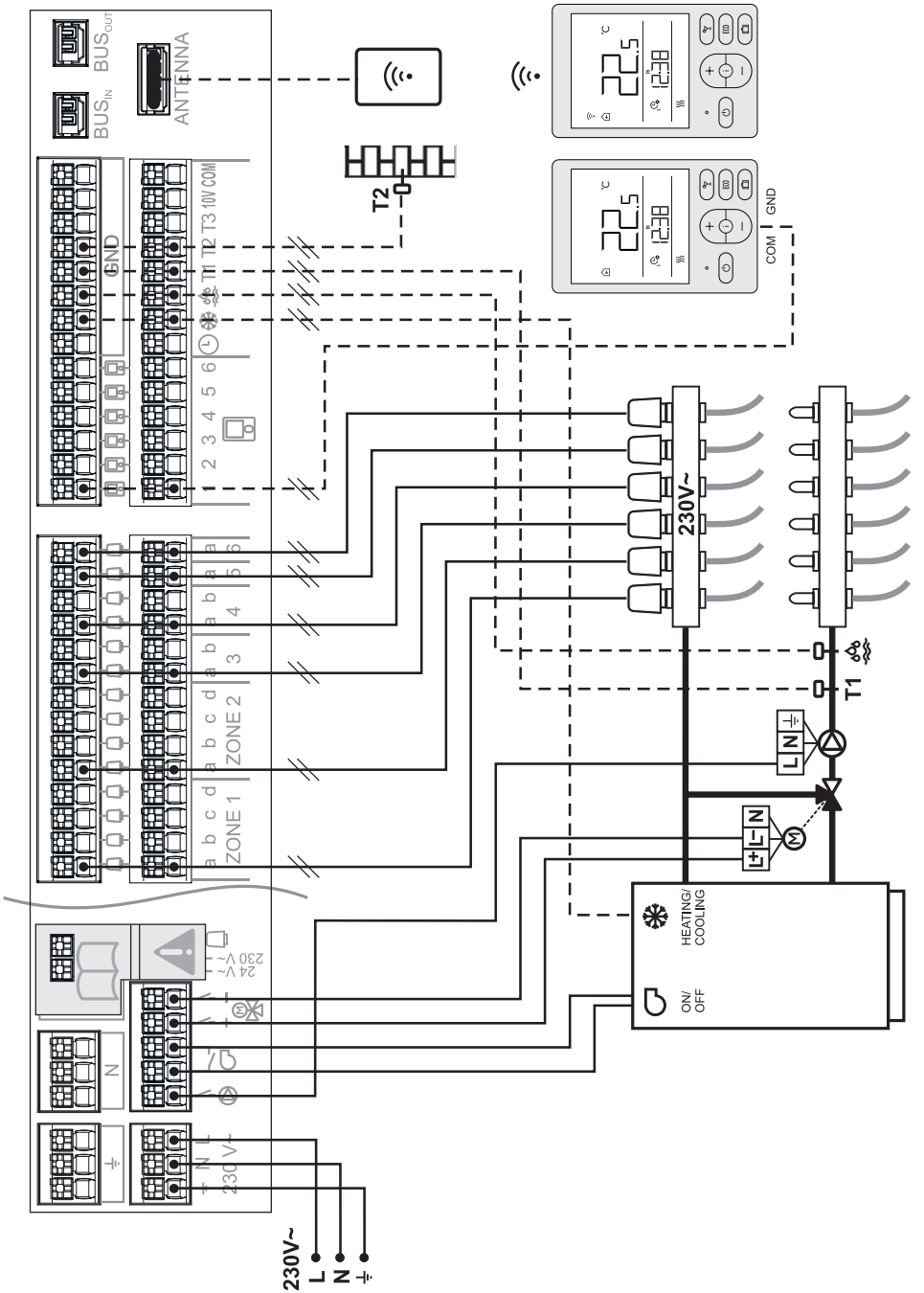
Hydraulic scheme 2 (230V~) - ZCE6 Advance



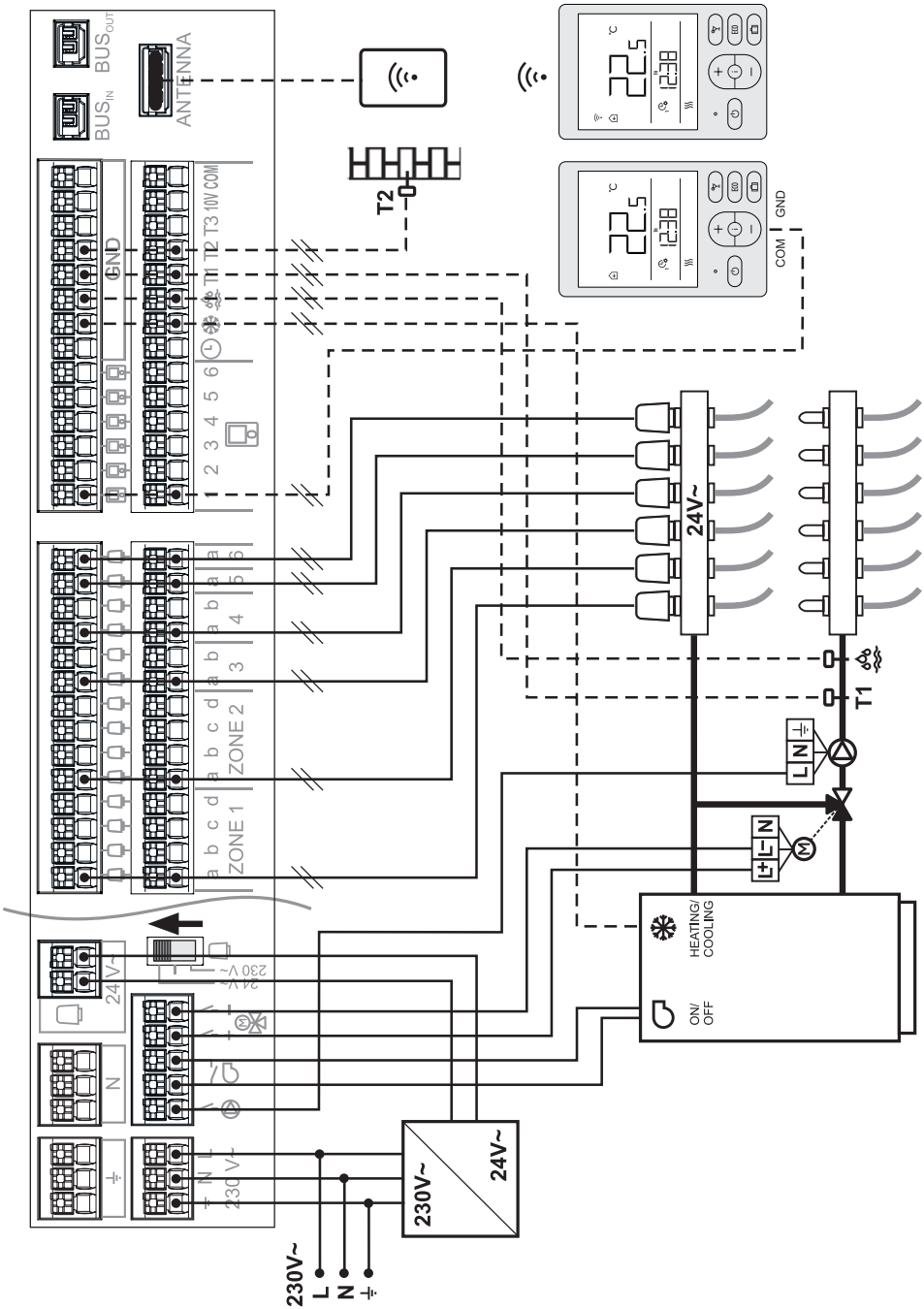
Hydraulic scheme 2 (24V~) - ZCE6 Advance



Hydraulic scheme 3 (230V~) - ZCE6 Advance



Hydraulic scheme 3 (24V~) - ZCE6 Advance

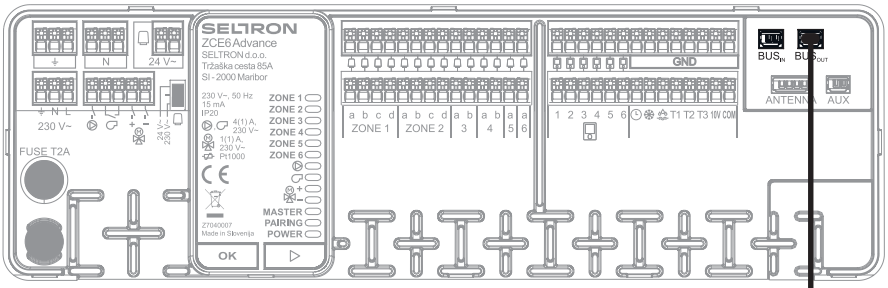


BUS connection of the controllers

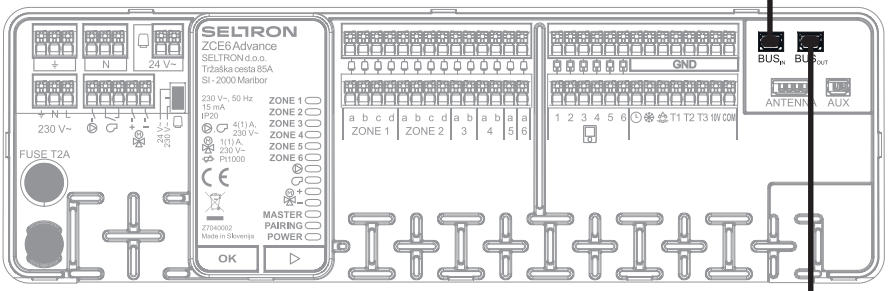
For the expansion of the system with more zones or branches, it is possible to connect more controllers (6 at most) in a BUS connection. The first controller in the BUS connection (which controls the energy source, mixing valve and pump) has to be set as the leading (Master) controller, whereby the other controllers are subordinate (Slave) controllers (see chapter “MENU – MASTER CONTROLLER”). Using the enclosed cable, the controllers have to be paired (see chapter “MENU – PAIRING OF CONTROLLERS”). With the pairing process, the communication connections between controllers and the order of the controllers (address) in the BUS connection (master, first slave, second slave, etc.) are established.

Via the BUS connection, the master controller sends information about measured temperatures and the operation mode, and other information to the slave controllers, and receives desired zone temperatures and a request for energy source switch-on from slave controllers.

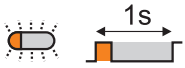
Leading (Master) controller



First subordinate (Slave) controller



ERROR DESCRIPTION

Signalisation	Error
On the home screen, the LED light exhibits short or long flashes to show the zone operation. ZONE 1  ZONE 1 	**Error in connection to the room unit.** What can I do? For the wired connection, check the connection on the room unit and the controller. For the wireless connection, check the antenna connection on the controller. If the error is not resolved, the room unit and the controller must be serviced. The operation will automatically be adjusted as follows: After the configured time, the controller switches to the so-called emergency operation.
On the home screen, the LED MASTER light on the master controller exhibits long flashes. MASTER 	**Error in connection with slave controllers.** What can I do? Check the cable connection to BUS connection on master and slave controllers. If the error is not resolved, the controllers must be serviced. The operation will automatically be adjusted as follows: The master controller operates undisturbed, while the slave controllers operate without the data from the master controller.
On the home screen, the LED MASTER light flashes every 2 seconds on the slave controller. MASTER 	**Error in connection with the master controller.** What can I do? Check the cable connection to BUS connection on master and slave controllers. If the error is not resolved, the controllers must be serviced. The operation will automatically be adjusted as follows: The master controller operates undisturbed, while the slave controllers operate without the data from the master controller.

TECHNICAL SPECIFICATIONS

	ZCE6 Basic	ZCE6 Advance
Weekly program timer	Yes	
Power supply	230V~, 50Hz	
Timer power supply	Battery R1025 (Li-Mn) 3V	
Timer accuracy	+/-1s (24h) at 20°C	
Temperature sensor type	Pt1000	
Maximum energy consumption	2100W	
Energy consumption in the standby mode	0.5W	
Degree of protection	IP 20 acc. to EN 60529	
Safety class	I according to EN 60730-1	
Housing	PC+ABS – thermoplastic	
Dimensions (w × h × d)	233 × 163 × 48mm	
Method of installation	Installation ladder	
Ambient temperature	5–40°C	
Storage temperature	-20°C to +65°C	
Weight	350g	370g
Relay outputs	/	4(1)A, 230V~
Triac outputs	1(1)A, 230V~	

DISPOSAL OF WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

Disposal of waste electrical and electronic equipment (applies to EU member states and other European countries with a waste separation system).

This symbol on the product or packaging indicates it should not be discarded as household waste. It needs to be taken to a collection point for waste electrical and electronic equipment (WEEE). Suitable disposal of this product prevents negative impact on the environment and health, which could otherwise be caused by improper disposal. Recycling of materials reduces usage of new raw materials. For more information about recycling of this product please contact the competent authorities, municipal service or the dealer where you purchased the product.

SELTRON

SELTRON d.o.o.
Tržaška cesta 85 A
SI-2000 Maribor
Slovenija

tel: +386 (0) 2 671 96 00
fax: +386 (0) 2 671 96 66
http://www.seltron.si
email: info@seltron.si

V1.0