

# **COMPUTHERM Q10Z**

**zone controller**

(for controlling 1 to 10 heating zones)



***Operating Instructions***



# 1. A GENERAL DESCRIPTION OF THE **COMPUTHERM Q10Z** ZONE CONTROLLER

Since in the boilers a connector has been installed only for one room thermostat, a zone controller is needed to divide the heating network into zones, to control zone valves and to operate the boiler from several thermostats. The zone controller receives switch signals from room thermostats **T1 to T10**, opens zone valve(s) connected to valve outputs **VALVE ZONE 1 to ZONE 10**, starts pump(s) connected to pump outputs **PUMP ZONE 1 to ZONE 10** and to common outputs **C1 to C4** and starts heating/cooling devices connected to output **NO-COM**.

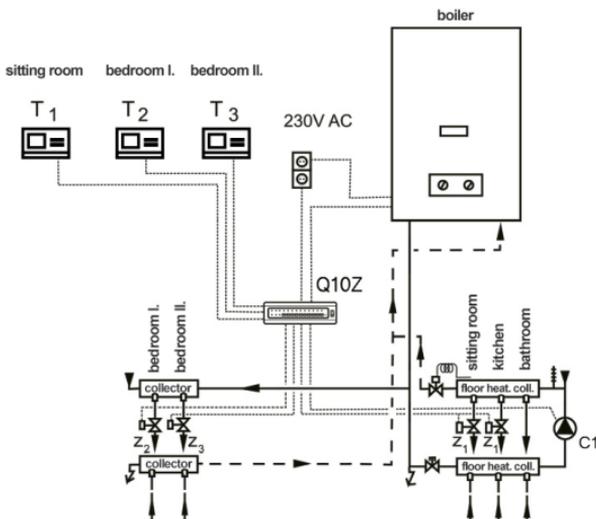
The **COMPUTHERM Q10Z** zone controller is able to control 1 to 10 heating zones regulated by switch mode room thermostats so that various zones can operate either simultaneously or independently of each other.

Controlling more than 10 zones can be solved by using additional zone controller **COMPUTHERM Q4Z** (1 **Q4Z** zone controller for every 4 zones) or **Q10Z** (1 **Q10Z** zone controller for every ten zones). In this case potential-free boiler controller outputs (**NO-COM**) should be connected in parallel to the heating/cooling devices, while zone outputs operate independently of each other.

By means of the **COMPUTHERM Q10Z** zone controller a heating/cooling system can be easily divided into zones and in this way heating/cooling of various rooms can be controlled separately to improve comfort to a great extent.

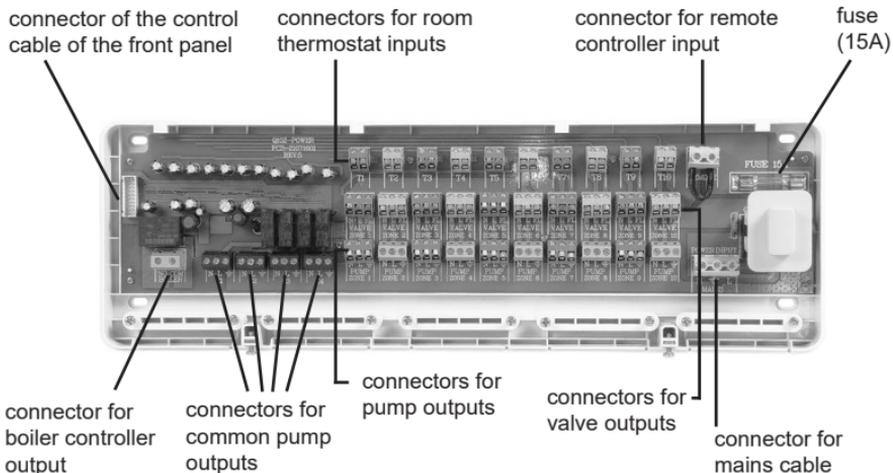
Besides, dividing the heating/cooling system into zones highly contributes to the reduction of energy costs because in this way only those rooms will be heated whenever and wherever it is needed.

The figure below shows an example of dividing the heating system into zones:



For the sake of energy saving, it is recommended that comfort temperature is set only in those rooms and in those periods which and when are being used, because an every temperature reduction of 1 °C results in 6 percent energy savings during a heating season.

### Connection points of the zone controller and the most important technical information relating thereto.



All 10 zones have a connection point to a room thermostat, a valve controller output and a pump controller output. The **NO-COM** output points of the potential-free room thermostats should be connected to the thermostat connection points (**T1 to T10**) of the zones. Each of the valve outputs (**VALVE ZONE 1 to ZONE 10**) has a fixed neutral conductor (**N**), a switched phase (**L**) and a fixed phase (**FL**) connection points (to operate some zone valve adjustment motors a fixed phase connection point is also required). Fixed phase connectors are active only when the main switch of the zone controller is on. Each of the valve controller outputs (**PUMP ZONE 1 to ZONE 10**) has a fixed neutral conductor (**N**), a switched phase (**L**) and a fixed ground ( $\perp$ ) connection points. For easier installation terminals of the same colour are mounted onto thermostat, zone valve and pump connectors that belong to various zones.

The zone controller has 4 freely configurable common outputs (**C1 to C4**) which have a fixed neutral conductor (**N**), a switched phase (**L**) and a fixed  $\perp$  ground connection points. Each of these outputs can freely be set to switch on when one or more predefined zones of the zone controller are being switched on. The process to adjust common outputs can be found in Chapter **4.1**.

The zones of the device have a common potential-free boiler controller output (**NO-COM**) which starts the heating/cooling device connected thereto at the switch-on command of any thermostat.

The zone controller has a remote-control input (**REMOTE**), with the help of which the heating/cooling system can easily be made remotely controllable. For a detailed description of this process please refer to Chapter **4.2**.

Mains supply to the device should be connected to connection points neutral (**N**) and phase (**L**) of the mains input of the controller (**POWER INPUT**). The zone controller is a non-earthed, double-insulated device whose input earth connection point ( $\perp$ ) is exclusively used to secure earth connection points of the outputs.

A 15 A fuse located in the right upper part of the electrical panel protects the components of the zone controller against overload. In case of overload the fuse element melts and the fuse protects the controller component against overload. If the wire element of the fuse has melted, before using the controller again please check the condition of and load on the devices connected to the zone controller, and remove any faulty device or those which can cause overload then replace the melted fuse.

## 2. CONNECTING THE ZONE CONTROLLER AND PUTTING IT INTO OPERATION

**Attention!** It is reasonable to locate the zone controller close to the distributor/collector of the heating system so that it is protected against dust, chemicals, harmful effects of heat and mechanical damages.

**Attention!** The device should be installed / put into operation by a competent person! Before putting it into operation, make sure that neither the zone controller nor the device to be connected to the controller is connected to the 230 V network. Any modification to the device can lead to a risk of an electric shock or a failure.

**Attention!** We recommend that you establish the heating system to be regulated with the **COMPUTHERM Q10Z** zone controller so that the heating medium can circulate even when all zone valves are in closed position and a circulating pump is on. This can be done either by a permanently open heating circuit or installing a by-pass valve.

**Attention!** The operating voltage of the zone valves and pumps connected to the zone controller is 230 V, and the maximum loadability of all zone outputs and the common output of the zone controller is 2 A (0.5 A inductive load). Since the loads connected to the valve output and pump control output belonging to a given zone go through the thermostat of the respective zone, the total maximum load on the valve output and pump control output belonging to a given zone must not exceed the maximum loadability of the thermostat of the respective zone either. Please also make sure that the maximum combined load on all zone outputs and the common output is 15 A, regardless of individual maximum loadabilities of various outputs. The loadability of the boiler controller output is 16 A (4 A inductive load). We propose to install connecting cables by taking these parameters into account.

The dimensions of the connectors of the **COMPUTHERM Q10Z** zone controller are suitable for receiving cables of maximum 2 – 3 parallel connected devices (zone valve, pump, etc.). If you intend to connect more devices (e.g. 4 zone valves) in parallel to a zone output than you have to join the cables thereof before connection, and connect the common cable to the zone controller.

To put the zone controller into operation follow the steps below:

- Loosen the screws on the lower edge of the box of the device and separate the cover plate from the base plate. Then the connectors of the thermostats, zone valves, pump(s), the boiler and the network cable become accessible.
- Select the location of the zone controller in the vicinity of the boiler (distributor/collector of the heating system, zone valves), and prepare the holes needed for fixing the device in the wall.
- Fix the base plate of the zone controller (its half equipped with cable connectors) to the wall by means of the screws provided.
- Connect the cables of the devices needed for heating control (thermostats, zone valves, pumps and boiler) and the mains cable to the zone controller.
- Where necessary, break out the easily removable plastic covers of cable outlets on the lower edge of the box of the zone controller and fix the cables with the cable clamps. To do so, first loosen the screws of the cable clamps, put the cables into the grooves then replace the cable clamps in-place.
- Connect the control cable connected to front panel of the zone controller to the corresponding socket of the back cover then replace the front panel of the zone controller and fix it with the screws on the lower edge of the box of the device.
- Connect the zone controller to the 230 V network.

### **3. OPERATION OF THE ZONE CONTROLLER**

After making connections, connecting the device to the network and switching on the network slide switch of the device (**ON** position), all LEDs of the zone controller will flash for approx. 2 seconds, and the controller is ready for operation which is indicated by the continuous light of the green LED labelled with „**POWER**” on the front panel of the device.

When the zone controller is on, at the switch-on command of the thermostat of any zone 230 V AC voltage appears on the valve outputs belonging to the respective zone, on zone outputs and common output(s) synchronized with the zone, as a result of which zone valve(s) connected to the outputs open, and the pump(s) start(s). The room thermostat of the 1<sup>st</sup> zone (**T1**) controls the valve output (**VALVE ZONE 1**) and pump output (**PUMP ZONE 1**) of the 1<sup>st</sup> zone, the room thermostat of the 2<sup>nd</sup> zone (**T2**) controls the valve output (**VALVE ZONE 2**) and pump output (**PUMP ZONE 2**) of the 2<sup>nd</sup> zone, and so on.

The zone controller has a common potential-free output (**NO-COM**) as well, which normally (when all thermostat connected to the zone controller give switch-off command) is in open position This output will get into closed position when at least one thermostat gives a switch-on command, thereby starting the heating/cooling device connected thereto.

For all outputs the continuous light of the respective red LED indicates that the output is on.

## **4. SPECIAL FUNCTIONS OF THE ZONE CONTROLLER**

### **4.1 Adjusting the common outputs**

For all four freely configurable common outputs (**C1 to C4**) you can set the zones of the zone controller which should be matched with the outputs. When any of the zones matched with the respective common output switches on then the 230 V AC voltage appears on the respective output, and as a result the device (e.g. a pump) connected thereto will switch on. By means of these common outlets a heating circulating pump can be started which is responsible for circulating heating water in several zones.

In factory settings the common outputs are not matched with any zone. To set the common outlets follow the steps below:

- Depending on which common outlet you intend to set, push the button of the zone with the same serial number (e.g. the button that belongs to zone **Z3** in case of common output **C3**) for 5 seconds. Then the red LED of the common output starts to flash at 1 second intervals.
- Press the button that belongs to the zones with which you intend to match the respective common output. The selected state of a given zone is indicated by the continuous light of the corresponding red LED.
- To complete and save setting of a common output wait for approx. 5 seconds until flashing of the red LED belonging to the common output ends.

By means of the steps described above settings of the common outlets can be modified at any time. Pressing the „**RESET**” button the common outputs can be reset to factory default settings (at the same time all synchronizations will be deleted). Use a non-conducting thin, pointed object to press the „**RESET**” button (e.g. a toothpick).

## 4.2 Remote control of the zone controller

The zone controller has a remote-control input (**REMOTE**), with the help of which the heating/cooling system can easily be made remotely controllable. This function has been disabled by a short wire loop at the factory. After the wire loop has been removed, the remote control of the zone controller can be easily provided by connecting the **NO-COM** connection points of an optional switch mode (potential-free) thermostat to the remote-control input, depending on the output of the thermostat.

When the output of the thermostat connected to **REMOTE** connection point switches on (the **NO-COM** connection points of the thermostat are being closed) then the zone controller is functioning normally (in accordance with thermostats **T1 to T10**). When the output of the thermostat connected to **REMOTE** connection point switches off, the zone controller disables all of its outputs and the heating/cooling system stops. During this time the orange LED labelled **REMOTE** of the thermostat permanently lights, indicating the activated **REMOTE** function. When you connect a remotely controllable thermostat (e.g. a **COMPUTHERM Wi-Fi thermostat**) to these connection points then by modifying the set temperature of the thermostat remotely the whole heating system can be switched to an “away” (e.g. frost-free) temperature then can be reset to the normal (e.g. comfort) operation.

**Attention!** When selecting and connecting the **REMOTE-control** thermostat, make sure that it bears the theoretical maximum total ampere rating of all devices connected to the zone controller, because the starting and operating currents of all controlled zone valves and pumps flows through it.

**Attention! The manufacturer assumes no responsibility for any direct or indirect damages and loss of income occurring while the appliance is being used.**

## TECHNICAL DATA

- Supply voltage: 230 V AC; 50 Hz
- Standby power consumption: max 0.5 W
- Voltage of zone outputs and common outputs: 230 V AC; 50 Hz
- Loadability of zone outputs and common outputs: 2 A (0.5 A inductive load)  
**Attention!** Ensure that the combined load of 2 outputs belonging to a zone does not exceed the maximum loadability of the thermostat of the respective zone, and the combined load of all zone outputs and the common output is not more than 15 (4) A.
  
- Switchable voltage of the relay that controls the boiler: 30 V DC / 250 V AC, 50 Hz
- Switchable current of the relay that controls the boiler: 16 A (4 A inductive load)
- Storage temperature: -10 °C to +40 °C
- Operating humidity: 5% to 90% (non-condensing)
- Protection against environmental impacts: IP 30
- Dimensions: 385 x 125 x 45.7 mm (L x W x H)
- Weight: 895 g



The **COMPUTHERM Q10Z** type zone controller complies with Directives EMC 2014/30/EU, LVD 2014/35/EU and RoHS 2011/65/EU.



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**ORIGIN:**

**designed in the EU, manufactured in China**



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