

# CONTROLLER SERIES CRS210



CRS211

ESBE Series CRS210 are combined actuators with controllers and offers constant flow temperature control for PHW (Potable Hot Water applications). The Series CRS210 is dedicated to valves series VRx.

## INTRODUCTION CRS230

Series CRS210 is built on the same platform and with the same smart software as CRx200, which makes it possible to upgrade the controller, just by adding components. Thanks to ESBE Smart Software, the controllers series CRS210 and CRx200 is a flexible platform with minimum handling time.

## THE SMART SOFTWARE

Thanks to updated software the controller is more accurate while controlling the temperatures and delivers a higher standard. The software of the controller makes it possible to add components such as a room unit to the actuator, recognize it and open the correct interface and unlock additional options. This means that it is possible to start with CRS210 and later add components e.g. room unit and unlock remote control, alternative temperature, and clock function. The feature is a part of the Smart Software and is included in whole CRx200 series range, which makes it possible to upgrade any controller to a version that fulfil the system and comfort requirements.

## THE AI BEHIND THE SMART SOFTWARE

The Smart software makes it possible to upgrade the controller, use the room unit as a remote control or setting device, delivers the highest comfort. This makes CRx200 a Plug&Play controller.

However, Plug&Play includes a lot more for ESBE. That is why we have created an Artificial Intelligence (AI) behind the software with the purpose of fixing all issues connected to reaction time and unbalanced performance. The ESBE AI is taking care of PI factors (Proportional gain and Integral response) by learning the system behaviours and fixing the issues which in the past needed to be taken care of by an installer at the controller installation site. The AI provides for smooth operation of the controller, eliminates issues connected to delays or controller response times and deliver a high control standard and comfort. This makes the CRx200 Series into controllers which are suited to work in any system setup or environment.

## QUICK GUIDE

Function	CRS210
Constant temperature control	●
Working with room unit	○
Auxiliary switch control	●
T <sub>1</sub> /T <sub>2</sub> via relay	●
T <sub>1</sub> /T <sub>2</sub> via room unit	○
Flushing schedule via room unit	○

● feature is available and can be set on the device

○ a room unit is required to unlock the features - see accessories

For more controllers and functions, please see series CRx200

## OPERATION CRS210

The CRS210 is a constant temperature controller dedicated to potable water applications where a constant flow temperature is required. The controller is integrated with an actuator and should be used with rotating mixing valves series VRx.

The Series CRS210 consist of two main components; an actuator and a flow temperature sensor. The flow temperature sensor is a highly sensitive and responsive sensor of immersion type. The settings are done via joystick and presented on a display.

The primary function of the controller is to keep a constant set temperature at the sensor. The series comes with the T/T<sub>2</sub> (main temperature and alternative temperature) setting, which in this case can be used for legionella flushing and thermal disinfection of the potable water system. The T/T<sub>2</sub> feature is available by using a relay but additional equipment, e.g. a clock, is needed to release the relay.

If a remote control is needed, the CRS210 can be upgraded with a room unit. An alternative target temperature can be activated by an external signal (T/T<sub>2</sub> relay) controlled via an ESBE room unit dedicated for CRx controllers. Beyond this, the room unit can be used to create a schedule for legionella flushing and thermal disinfection.

An additional relay, an auxiliary switch, can be installed in the CRS210, which gives the possibility to control another device, for example a pump, from the actuator/valve position.

The ESBE Room Unit and the auxiliary switch are available as accessory.

The CRS210 upgrade options can be found in the quick guide.

# CONTROLLER SERIES CRS210

## INSTALLATION

Power supply by 230 V AC adapter (complete with transformer, cable and plug).

Flow temperature sensor comes with 1m cable and mounting set for assembling the flow temperature sensor into the water stream. Flow temperature sensor should be mounted with direct contact to the liquid.

Thanks to the special interface between the controller series CRS210 and the ESBE series VRx, the unit as a whole has a unique stability and precision when regulating.

## SUITABLE MIXING VALVES

- |                 |                   |
|-----------------|-------------------|
| ● Series VRG100 | ● Series MG*      |
| ● Series VRG200 | ● Series G        |
| ● Series VRG300 | ● Series F ≤ DN50 |
| ● Series VRH100 | ● Series BIV      |
| ● Series VRB100 | ● Series T and TM |
|                 | ● Series H and HG |

\* Not 5MG

## ADAPTOR KITS

Required adaptor kits for easy fitting onto an ESBE rotary mixing valve series VRx is supplied with each controller. Adaptor kits can also be ordered separately.

Art. No.

16000500 \_\_\_\_\_ ESBE valve series VRG, VRH, VRB,  
G, MG, F, BIV, T, TM, H, HG

Adaptor kits for other mixing valves are available as follows:

Art. No.

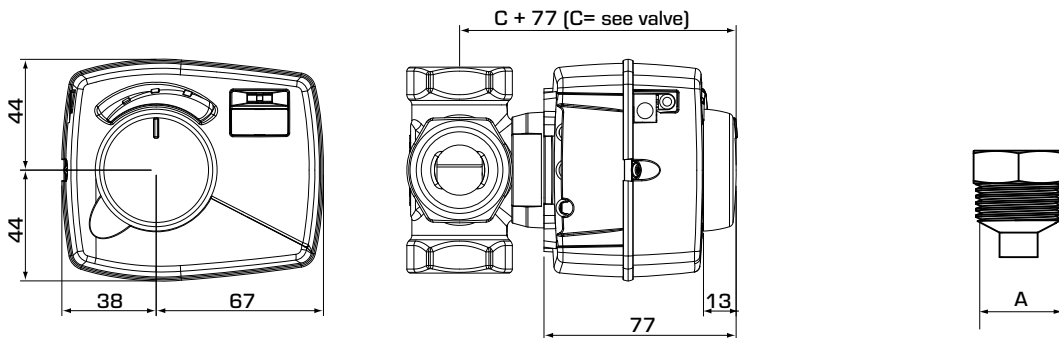
16000600 \_\_\_\_\_ Meibes  
16000700 \_\_\_\_\_ Watts  
16000800 \_\_\_\_\_ Honeywell Corona  
16000900 \_\_\_\_\_ Lovato  
16001000 \_\_\_\_\_ PAW  
16001100 \_\_\_\_\_ Wita Minimix, Maximix

## OPTIONAL EQUIPMENT

Art. No.

16200700 \_\_\_\_\_ ARA801 Auxiliary switch kit  
17052000 \_\_\_\_\_ CRS911 Flow temperature sensor  
17055300 \_\_\_\_\_ CRB912 Room unit for cable communication,  
without communication cable  
17055500 \_\_\_\_\_ CRB913 Room unit, wireless  
17055700 \_\_\_\_\_ CRB914 Communication cable, 20m  
17056400 \_\_\_\_\_ CRB916 Communication radio modul, wireless  
17056200 \_\_\_\_\_ CRA915 UK plug

# CONTROLLER SERIES CRS210



Mounting set

## SERIES CRS210

Art. No.	Reference	Voltage [VAC]	Temp. range	Torque [Nm]	Connection A	Weight [kg]	Note	Replaces
12727100	CRS211	230	5-95°C	6	R 1/2"	0,7		12723100

### TECHNICAL DATA

Ambient temperature: \_\_\_\_\_ max. +50°C  
 \_\_\_\_\_ min. -5°C  
 Sensor type: \_\_\_\_\_ NTC  
 Temperature range:  
 Flow temperature sensor (S1, S2): \_\_\_\_\_ +5 to +95°C  
 Outdoor sensor: \_\_\_\_\_ -50 to +70°C  
 Enclosure rating, Actuator unit: \_\_\_\_\_ IP41  
 Protection class: \_\_\_\_\_ II  
 Power supply, Actuator unit: \_\_\_\_\_ 230 ± 10% V AC, 50 Hz  
 Power consumption (230 V AC): \_\_\_\_\_ 10 VA  
 Torque (Actuator): \_\_\_\_\_ 6 Nm  
 Running time at max. speed (Actuator): \_\_\_\_\_ 30s  
 ErP Temperature control class: \_\_\_\_\_ N/A  
 Energy efficiency contribution: \_\_\_\_\_ N/A  
 Connection, mounting set: \_\_\_ External thread (R), EN 10226-1

### Material

Flow temperature sensor: \_\_\_\_\_ Stainless steel  
 Mounting set flow temperature sensor:  
 \_\_\_\_\_ Dezincification resistant brass DZR\*

\* Suitable for drinking water applications

CE LVD 2014/35/EU  
 EMC 2014/30/EU  
 RoHS3 2015/863/EU

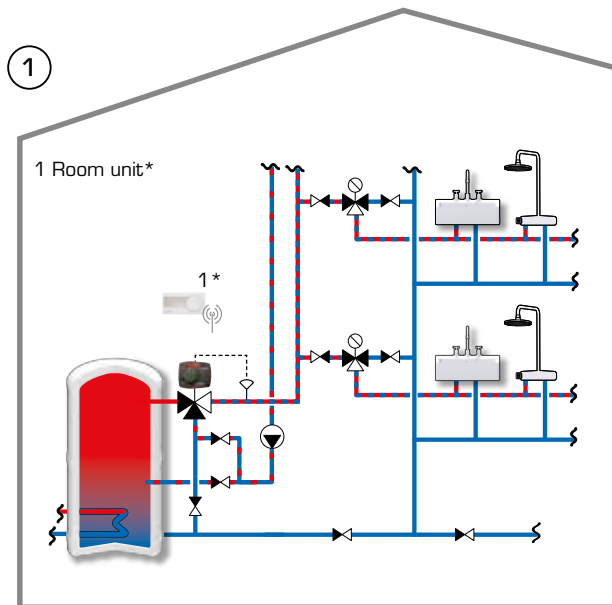


### WIRING

Please see the Installation Instruction

# CONTROLLER SERIES CRS210

## INSTALLATION EXAMPLES



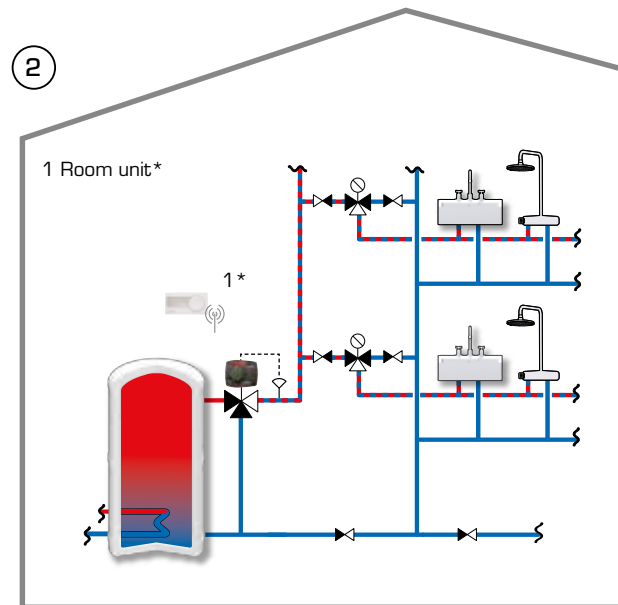
### CRS210 with additional accessory, CRB912 room unit as a remote control

This application shows how to control the potable water temperature.

The Controller CRS210 is controlling the temperature of the potable water and will keep it constantly at the desired set level. The controller can work in systems with circulation.

In case of Legionella flushing, an alternative temperature can be released on CRS210 via relay. This can also be done via CRB912 Room unit (accessory), which has a clock function. The clock allows to plan for regular legionella flushing, e.g. every Sunday at 00:00 for 30min with  $T_2 = 80^\circ\text{C}$ ; normal mode  $T = 50^\circ\text{C}$ .

\* Cable or wireless connection depending on requirements.



### CRS210 with additional accessory, CRB912 room unit as a remote control

This application shows how to control the potable water temperature.

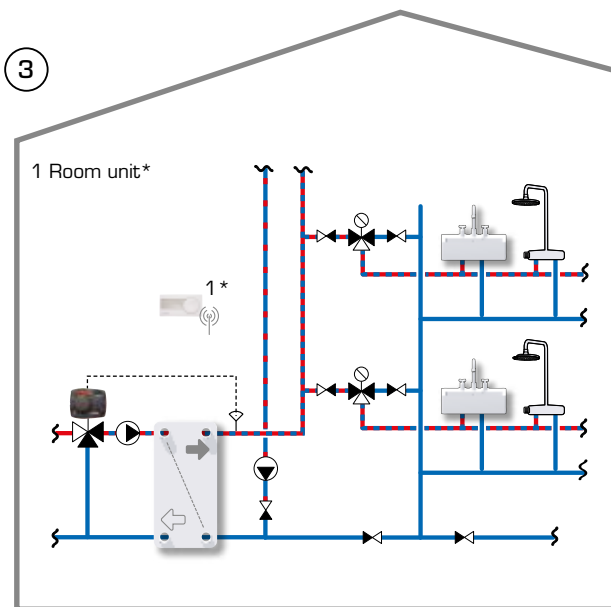
The CRS210 is controlling the temperature of the potable water and keeps it constantly on the desired set level. The controller can work in systems where no circulation of potable water is provided.

In case of Legionella flushing, an alternative temperature can be released on CRS210 via relay. This can also be done via CRB912 Room unit (accessory), which has a clock function. The clock allows to plan for regular legionella flushing, e.g. every Sunday at 00:00 for 30min with  $T_2 = 80^\circ\text{C}$ ; normal mode  $T = 50^\circ\text{C}$ .

\* Cable or wireless connection depending on requirements.

*The shown applications are only examples of product use!  
Before using the product in any application, the regional and national regulations need to be checked.*

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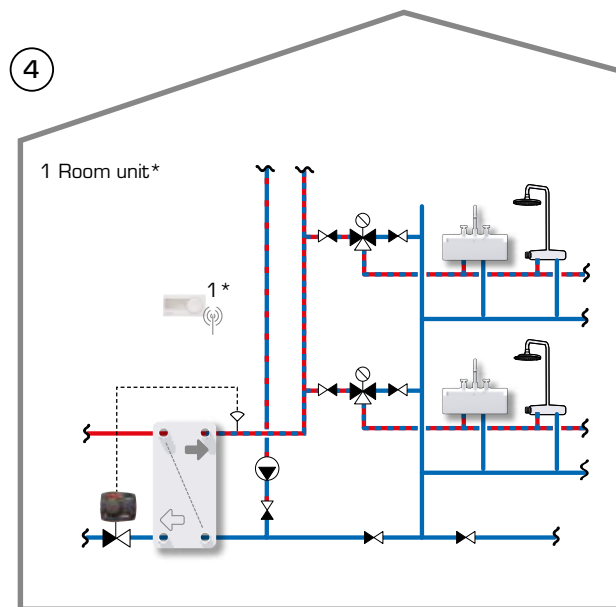
**CRS210 with additional accessory, CRB912 room unit as a remote control**

This application shows how to control the potable water temperature indirect.

The Controller CRS210 is controlling the temperature of the potable water by controlling the amount of heating water supplied to the plate heat exchanger. The controller can work in systems with circulation of potable water.

In case of Legionella flushing, an alternative temperature can be released on CRS210 via relay. This can also be done via CRB912 Room unit (accessory), which has a clock function. The clock allows to plan for regular legionella flushing, e.g. every Sunday at 00:00 for 30min with  $T_2 = 80^\circ\text{C}$ ; normal mode  $T = 50^\circ\text{C}$ .

\* Cable or wireless connection depending on requirements.



**CRS210 with additional accessory, CRB912 room unit as a remote control**

This application shows how to control the potable water temperature indirect.

The CRS210 is controlling the temperature of the potable water water by controlling the amount of heating water supplied to a plate heat exchanger. The controller can work in systems without circulation of potable water.

In case of Legionella flushing, an alternative temperature can be released on CRS210 via relay. This can also be done via CRB912 Room unit (accessory), which has a clock function. The clock allows to plan for regular legionella flushing, e.g. every Sunday at 00:00 for 30min with  $T_2 = 80^\circ\text{C}$ ; normal mode  $T = 50^\circ\text{C}$ .

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