

CONTROLLER

SERIES CRx200



OPERATION CRA210

The series CRA200 is a constant temperature controller dedicated to applications where a constant flow temperature is required. The controller is integrated with an actuator and should be used with rotary mixing valves series VRx100, VRx200 and VRx300.

The settings are done via joystick and presented on a display. If a remote control is needed, the CRA200 can be upgraded with a room unit.

An alternative temperature can be activated by an external signal (T/T2 relay). This feature can be activated and controlled via the room unit. An additional relay, an auxiliary switch, can be installed in the CRA200 which makes it possible to control another device, for example a pump, from the actuator/valve position.

The series CRA200 can be upgraded to series CRB200, CRC200 or CRD200 by adding required accessory (see quick guide)

OPERATION CRB210, CRB220

The CRB200 is a room temperature controller providing a high level of comfort. There are two versions of CRB200 available; wireless (CRB220) and wired (CRB210).

The CRB200 consists of two main parts, the actuator and room unit:

- Actuator unit which can be connected to the room display unit either by wireless radio connection (CRB220) for easy installation or by cable (CRB210).
- Room display unit which contains the indoor temperature sensor and in which all settings, such as day to day climate adjustments as well as the internal day and weekly program, are set.

The room unit has a timer, with daily and weekly programming, which gives the possibility to have day and night settings with alternative temperatures. The alternative temperature can also be activated by an external device, via relay. An additional relay, an auxiliary switch, can be installed in the CRB200, which makes it possible to control another device, for example a pump, from the actuator/valve position.

The CRB200 can be used as a CRA200 by changing the software settings. The CRB200 can also be changed to a CRC200 or upgraded to a CRD200 by adding required accessories (see quick guide).

OPERATION CRC210

The CRC200 is an outdoor temperature controller providing a high level of comfort.

The CRC200 consists of two main parts, the actuator

and an outdoor sensor:

- actuator, to be mounted to the mixing valve controlling the heat supply.
- Outdoor sensor with 20 m cable. The sensor should be mounted on the north side of the building under the eaves in order to protect the sensor from direct sunlight and rain.

The regulation is based on the outdoor sensor readings and an adjustable characteristic heating curve. An offset / parallel adjustment of the characteristic heating curve can be activated by an external signal via relay, for example night settings. This can also be done by upgrading the CRC200 with a room unit, which in this case will be used as a remote control, information display and timer with daily and weekly program for alternative heating curve.

The smart software and self-adaptive system secures that, for example in a well insulated building with quick heating system, an imbalance between estimated and actual heating demand will not occur (the filter option in the software is still available for additional fine tuning).

An additional relay, an auxiliary switch, can be installed in the CRC200, which makes it possible to control another device, for example a pump, from the actuator/valve position.

The CRC200 can be changed to CRB200, or upgraded to CRD200, by adding required accessories (see quick guide).

OPERATION CRD220

The CRD200 is a combined outdoor and room temperature controller providing the highest level of comfort thanks to the input from both sensors, ESBEs Smart Software and Self-Adaptive System. The ESBE Smart Software and Self-Adaptive System are responsible for advanced heating curve adaptation; in other words the heating curve will be built and shaped ideally for specific building, system requirements and weather conditions. Thanks to smart software feature only one setting needs to be set and it is the room temperature.

The Controller consist of three main parts; actuator, room wireless room unit and outdoor sensor.

- Actuator unit connected to the room display unit by wireless radio connection for easy installation.
- Room display unit which contains the indoor temperature sensor and in which all settings, such as day to day climate adjustments as well as the internal day and weekly program, are set.
- Outdoor sensor with 20 m cable.

The room unit has a timer, with daily and weekly

schedule, which makes it possible to have day and night settings with alternative temperatures. The alternative temperature can also be activated by an external device (via relay). An additional relay, an auxiliary switch, can be installed in the CRD200, which makes it possible to control another device, for example a pump, from the actuator/valve position.

INSTALLATION

Power supply by 230 V AC adapter complete with transformer, 1,5 m cable and wall socket plug.

Flow temperature sensor with 1,5 m cable included (longer cable is available as accessory). The flow temperature sensor must be carefully insulated from the ambient temperature.

Room display unit (CRB200 and CRD200) should be placed in a central open area in the house, out of direct sunlight to provide the best comfort.

Outdoor sensor with 20 m cable (CRC200 and CRD200). The sensor should be mounted on the north side of the building under the eaves in order to protect the sensor from direct sunlight and rain.

Thanks to the special interface between the controllers series CRx200 and the ESBE valve series VRx, the unit as a whole has a unique stability and precision when regulating.

SUITABLE MIXING VALVES

- Series VRG100
- Series VRG200
- Series VRG300
- Series VRH100
- Series VRB100
- Series F ≤ DN50
- Series T
- Series HG

ADAPTOR KITS

Required adaptor kits for easily 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.

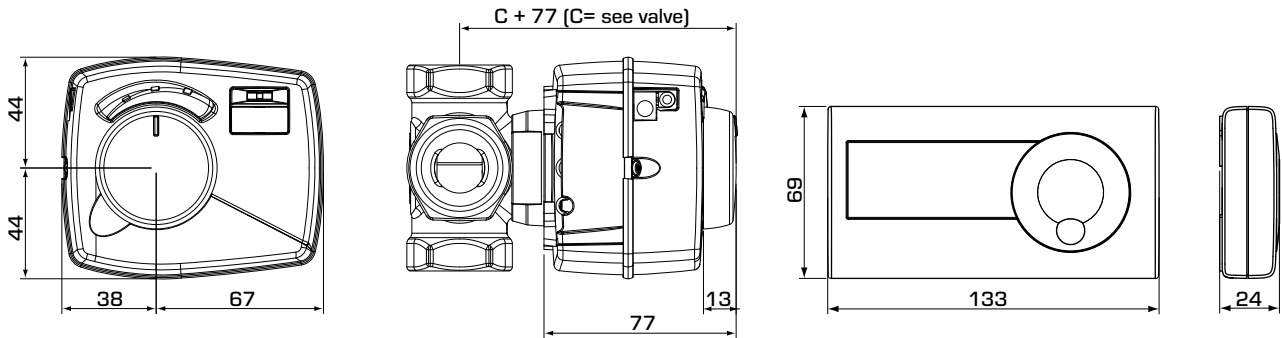
16000600 _____ Meibes
16000700 _____ Watts
16000800 _____ Honeywell Corona
16000900 _____ Lovato
16001000 _____ PAW
16001100 _____ Wita Minimix, Maximix

OPTIONAL EQUIPMENT

Art. No.

16200700 _____ ARA801 Auxiliary switch kit
17053100 _____ CRA911 Flow temperature sensor, 5m cable
17055300 _____ CRB912 Room unit for cable communication,
without communication cable
17055500 _____ CRB913 Room unit, wireless
17055600 _____ CRA913 Pump control module, On/Off
17055700 _____ CRB914 Communication cable, 20m
17056000 _____ CRC911 Outdoor sensor,
without communication cable
17056200 _____ CRA915 UK Plug
17056400 _____ CRB916 Communication radio module, wireless

CONTROLLER SERIES CRx200



Room display units

SERIES CRA210

Art. No.	Reference	Voltage [V AC]	Temperature range	Torque [Nm]	Weight [kg]	Note	Replaces
12721100	CRA211	230	5-95°C	6	0,8		12720100
12721500	CRA215	230				Transformer with UK plug	12720500

SERIES CRB210, CRB220

Art. No.	Reference	Voltage [V AC]	Torque [Nm]	Room display unit	Weight [kg]	Note	Replaces
12663100	CRB211	230	6	Cable	1,3		12660100
12665200	CRB221			Wireless		12662200	

SERIES CRC210

Art. No.	Reference	Voltage [V AC]	Torque [Nm]	Weight [kg]	Note	Replaces
12821100	CRC211	230	6	1,1		12820100

SERIES CRD220

Art. No.	Reference	Voltage [V AC]	Torque [Nm]	Room display unit	Weight [kg]	Note	Replaces
12684200	CRD221	230	6	Wireless	1,3		12682200

TECHNICAL DATA

Ambient temperature: _____ max. +50°C
 _____ min. +5°C
 Sensor type: _____ NTC
 Temperature range,
 Flow temperature sensor: _____ +5 to +95°C
 Outdoor sensor: _____ -50 to +70°C
 Room unit (indoor sensor): _____ +5 to +30°C
 Enclosure rating,
 Actuator unit: _____ IP41
 Room unit: _____ IP20
 Protection class: _____ II
 Power supply,
 Actuator unit: _____ 230 ± 10% V AC, 50 Hz
 Room unit (wireless): _____ 2x1,5V LR6/AA
 Power consumption: _____ 10 VA
 Battery endurance (wireless room unit): _____ 1 year
 Torque (actuator): _____ 6 Nm
 Running time at max. speed (actuator): _____ 30s

ErP Temperature control class,

CRA210: _____ N/A
 CRB210, CRB220: _____ IV
 CRC210: _____ III
 CRD220: _____ VII

Energy efficiency contribution,

CRA210: _____ N/A
 CRB210, CRB220: _____ 2%
 CRC210: _____ 1,5%
 CRD220: _____ 3,5%

Radio frequency (wireless room unit): _____ 868 MHz
 ITU region 1 approved acc. to EN 300220-2



LVD 2014/35/EU
 EMC 2014/30/EU
 RoHS3 2015/863/EU
 RED 2014/53/EU

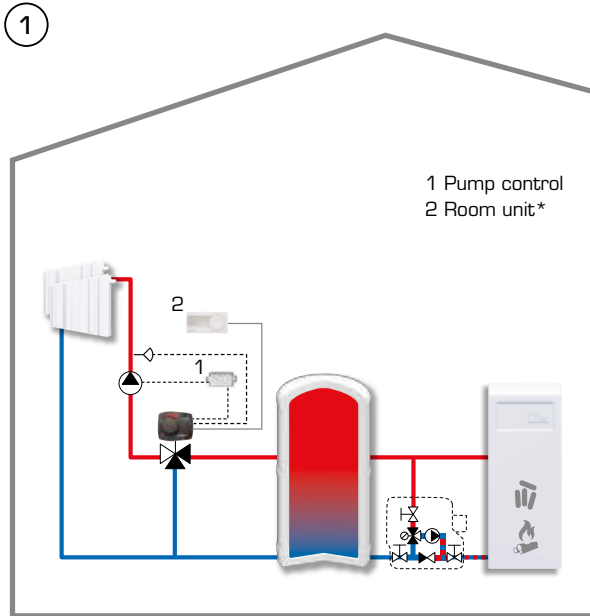


SI 2016 No. 1101
 SI 2016 No. 1091
 SI 2012 No. 3032
 SI 2017 No. 1206

WIRING

Please see the Installation Instruction

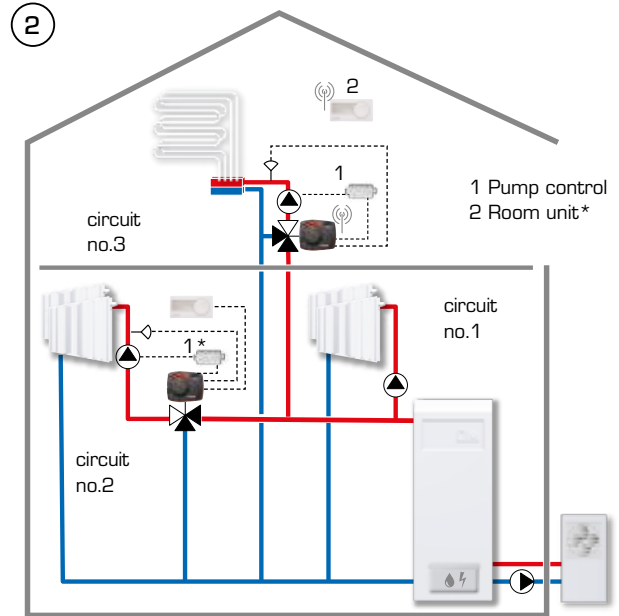
APPLICATION EXAMPLES



CRA210 with additional accessory; CRB912 Room unit as a remote control and CRB916 Pump control via valve position

This application shows how to control a constant flow temperature supplied to the heating circuit. The CRA210 controls and secures the set flow temperature.

The setting of the flow temperature can be done via CRB912 room unit (remote control function). The heating circuit pump will be shut off via CRB916 pump control when the valve is closed - no heat demanded.



CRB210 and CRB220 with additional accessory, CRB916 Pump control via valve position

This application shows how to control the indoor temperature on different floors.

Heating circuit no.1 has no mixing valve and the temperature sent out to the receivers will be the same as from the heat source.

Heating circuit no.2 is equipped with a VRG and CRB210 with cable connection. The CRB210 controls the indoor temperature of this zone by mixing the flow temperature with the return temperature.

Heating circuit no.3 is equipped with a VRG and CRB220 with wireless connection. The CRB210 controls the indoor temperature of this zone by mixing the flow temperature with the return temperature.

In circuit no. 2 and 3 the heating circuit pump will be shut off via CRB916 Pump control if the valve is closed - no heat demanded.

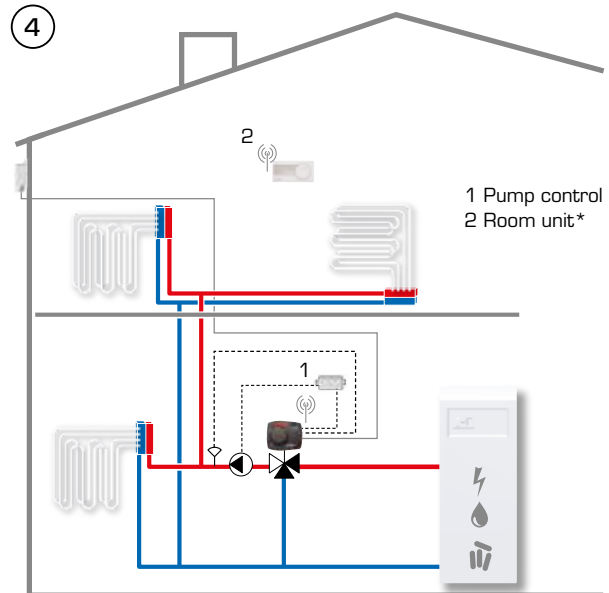
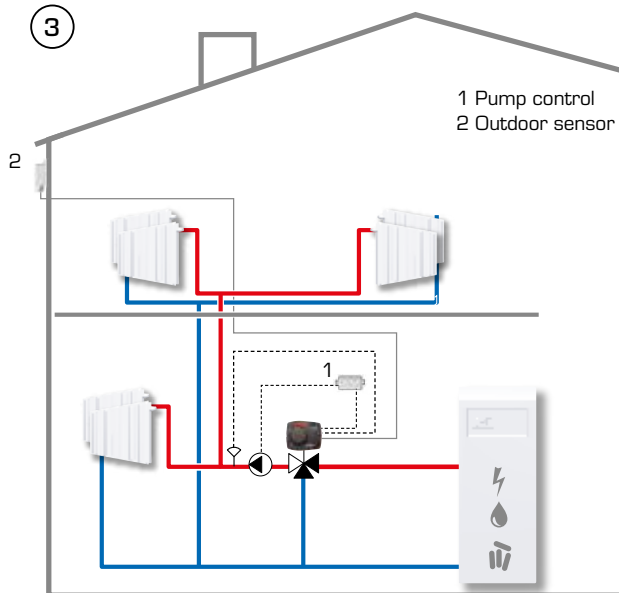
* Cable or wireless connection depending on requirements.

*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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CONTROLLER SERIES CRx200

APPLICATION EXAMPLES



CRC210 with additional accessory, CRB916 Pump control via valve position

This application shows how to control the indoor temperature based on the outdoor temperature.

This control setup is used for buildings where a room unit cannot be used for indoor temperature reference, e.g. buildings with complicated structure, no open spaces or many zones. The CRC210 controls the indoor temperature based on the outdoor temperature via the heating curve.

All heat emitters are supplied with the same flow temperature calculated by CRC210. The heating circuit pump will be shut off via CRB916 Pump control if the valve is closed - no heat demanded.

CRD220 with additional accessory, CRB916 Pump control via valve position

This application shows how to control the indoor temperature based on the outdoor and indoor temperature.

This control setup is used for buildings where a room unit can be used for indoor temperature reference, e.g. buildings with open space and where the most accurate temperature control is needed. The CRD220 controls the indoor temperature based on the outdoor and indoor temperature. The heating curve is constantly adjusted by ESBE Smart Software for the best indoor comfort.

All heat emitters are supplied with the same flow temperature calculated by CRD220. The heating circuit pump will be shut off via CRB916 Pump control when the valve is closed - no heat demanded.

* Cable or wireless connection depending on requirements.

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