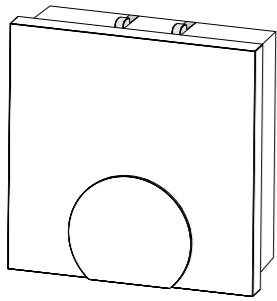
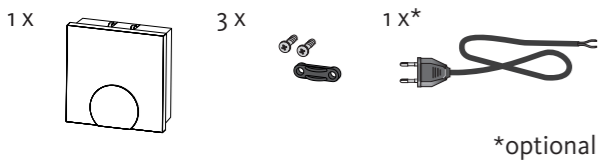


CU-MONO-RF



Scope of supply



*optional

About these instructions

These instructions are for electric equipment installers or electronic engineers and for maintenance and cleaning personnel. These instructions must be kept and to be handed over to future users.

Symbols and notes

- The following symbols show
- that an action must be performed.
 - ✓ that a precondition must be met.
 - a list

Safety notes are marked by horizontal lines:

WARNING
Electrical voltage! Danger to life!
 The shown symbol warns against electrical voltage.

CAUTION
Damage of the overall system
 The shown symbol warns against damage.

Safety notes

All safety notes in these instructions must be observed in order to avoid accidents with personal damage or property damage.

WARNING
Danger to life due to the electrical voltage at the base station

- Always disconnect from the mains network and secure against unintended activation before opening it.
- Disconnect external voltages and secure against unintended activation.
- Only use the product if it is in flawless state.
- This unit is not intended to be used by persons (including children) with restricted physical, sensory or mental skills or who lack experience or knowledge. If necessary, these persons must be supervised by a person responsible for their safety

or receive instructions from this person on how to use this unit.

- Ensure that children do not play with this device. Children must be monitored if necessary.
- In case of emergency, disconnect the complete room-by-room temperature control system.

Intended use

The base station Radio 230 V of the type BSF 20102-01 serves for

- the realisation of a room-by-room temperature control system (readjustment) with a heating zone for heating and cooling systems
- the connection of an actuator, a room control unit, a pump and a CO signalling unit
- a fixed installation
- the extension of a room-by-room temperature control with a base station Alpha 2 Radio

Every other use, modification and conversion is expressly forbidden and leads to dangers the manufacturer cannot be held liable for.

Personnel-related preconditions

Authorised specialists

The electrical installations must be performed according to the current VDE regulations as well as according to the regulations of your local electric power utility company. These instructions require special knowledge corresponding to an officially acknowledged **degree** in one of the following professions:

- ✓ **Electrical Equipment Installer or**
- ✓ **Electronics Engineer**

according to the profession designations officially announced in the Federal Republic of Germany, as well as according to comparable professions within the European Community Law.

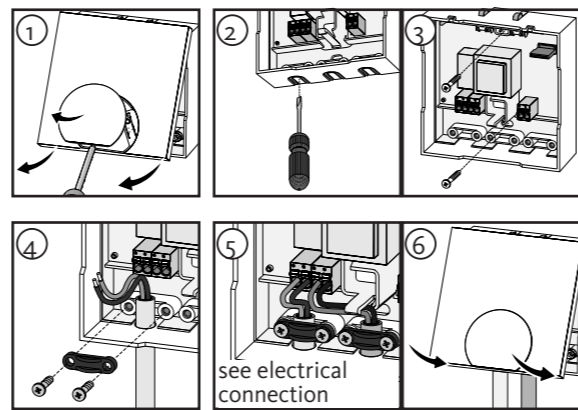
Conformity

This product is labelled with the CE Marking and thus is in compliance with the requirements from the guidelines:

- ✓ 2004/108/EG with amendments "Council Directive on the approximation of the laws of the Member States relating to Electromagnetic Compatibility"
- ✓ 2006/95/EG with amendments "Council for Coordination of the Regulations of EU Member Countries regarding the electrical equipment for use within certain voltage limits"
- ✓ "Radio and Telecommunications Terminal Equipment Act (FTEG) and Guideline 1999/5/EG (R&T-TE)"

Increased protection requirements may exist for the overall installation, the compliance of which is the responsibility of the installer.

Installation



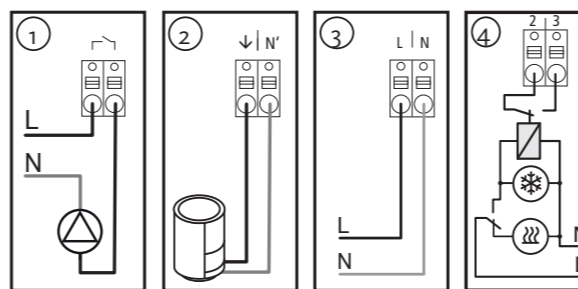
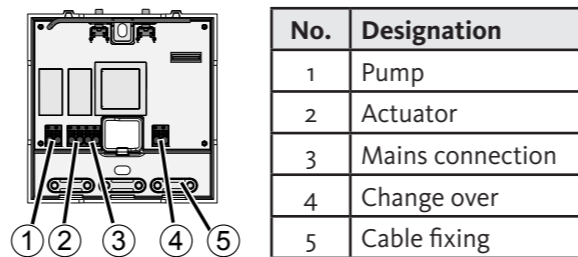
Electric connection

WARNING
Danger to life due to the electrical voltage at the base station

- All installation work must be performed under the absence of voltage.

The wiring of a room-by-room temperature control system depends on several factors and must be planned and carried through carefully by the installer. The following preconditions must be met for the terminal connections:

- ✓ solid wire: 0.5 – 1.5 mm²
- ✓ flexible wire: 1.0 – 1.5 mm²
- ✓ 8 - 9 mm insulation stripped off the wire
- ✓ The wires of the actuators can be used with factory-mounted end sleeves
- ✓ In addition to the cable fixing, a strain relief must be provided by the customer



If an external change-over signal is used as shown in 4, the overall installation switches accordingly between heating and cooling.

Commissioning

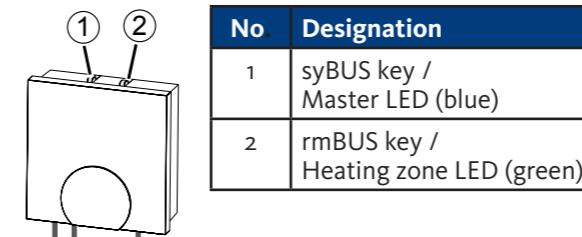
The base station is in installation mode during the first 30 minutes after switching on the mains voltage. The target and actual temperatures are compared in this mode, all other functions are deactivated. If the actual temperature is below the target temperature, the output is activated at the base station. This allows signalling at the base station without delay, enabling the control of the allocation between the room control

unit and the output of the base station.

- Switch on the mains voltage.
 - The LED light up for about 15 seconds.
 - The base station initialises the installation mode for 30 minutes.
 - If the base station is parametrised for NC actuators, all heating zones are activated for 10 minutes in order to unlock the first-open function of the NC actuators.

Indications and operating elements

The base station is operated with the two push-buttons with integrated LED at the top of the base station.



| Action | Display | Function |
|--|------------------|---|
| Without pressing a key | LED Master | Operating mode display on: Cooling off: Heating |
| | LED Heating zone | Operating mode display: on: Actuator activated off: Actuator not activated |
| Pressing the syBUS key for approx 1 second | LED Master | Display of base pairing mode for 1 minute: on: Master flashing: Slave off: Individual device |
| | LED Heating zone | Shows the status of the base station for 10 seconds: off: mains voltage missing lighted: base station ready for operation |

Connecting (pairing) / separating base stations

If several base stations are used in one heating system, a maximum of seven units can be paired for the exchange of global system parameters via radio. In order to enable a stable communication between the base stations, they must be within the radio range. Communication is done according to the Master/Slave principle. Requirements and status messages are exchanged between the units. The master unit centrally controls the directly connected functions/components.

- CO input
- Pump connection

Note: The base station the pump is connected to must

be configured as master.

The pairing of base stations is done as follows:

- Press the syBUS button of the base station to be configured as master for three seconds in order to start the pairing mode.
 - ✓ The LED "Master" flashes.
 - ✓ For three minutes, the pairing mode is ready to receive the pairing signal of another room control unit.
- Press the syBUS button of the base station to be configured as slave two times consecutively for one second, in order pair it with the master.
 - ✓ The pairing mode ends automatically after the process has finished.
 - ✓ The LED "Master" **lights up** for one minute if the base station was configured as master.
 - ✓ The LED "Master" **flashes** if the base station has been configured as slave.

The separation of paired base stations can be performed as follows:

- Press the syBUS button of the base station to be separated, for three seconds in order to start the pairing mode.
 - ✓ The LED "Master" flashes.
- Press the syBUS push-button again for a duration of 10 seconds.
 - ✓ The base station restarts.

Pairing the room control unit to a heating zone

- Press the rmBUS button of the base station for three seconds in order to start the pairing mode.
 - ✓ The LED "Heating zone" flashes.
 - ✓ For three minutes, the heating zone is ready to receive the pairing signal of a room control unit.
- Activate the pairing function at the room control unit (see Room Control Unit Manual).
 - ✓ The pairing mode is left after establishing a successful allocation.
 - ✓ The LED rmBUS will light up for 1 minute.

Perform a radio test

The radio test allows to verify the communication between the base station and a paired room control unit. The radio test must always be carried through at the planned installation location of the room control unit.

- ✓ The base station is not in pairing mode for this.
 - Start the radio test at the room control unit (see Room Control Unit Manual).
- ✓ The heating zone allocated to the room control unit is activated for 1 minute and switched off or on depending on the status of operation.
 - If there is no activation, the reception conditions are unfavourable. Proceed as follows:
 - Taking into account the installation conditions of the room control unit, change the installation position until you have a reception signal, or
 - Use the optional accessory "Repeater" in order to amplify the radio signal. Observe the respective manual for installation.

Configuration of the base station with room control unit Radio Display

CAUTION Damage to the overall system

➤ Faulty configuration leads to errors and installation damage.

The Service level of the base station Radio Display is protected with a PIN code and may only be used by authorized specialists.

- Press the rotary control.
- Select the menu "Service Level" and activate by pressing.
- Enter the 4-digit PIN (standard: 1234) by rotating and pressing.
- Select parameters (PAr) by pressing again and enter the number code of the desired parameter (see following table).
- Change parameters as required and confirm by pressing.

| PAr | Description | Unit |
|-----|---|--|
| 010 | Setting the heating system Floor heating (FBH) standard / FBH low energy / radiator / convactor passive / convactor active | FBH St.=0 FBH NE=1 RAD=2 KON pas.=3 KON act.=4 |
| 020 | Blocking the switching outputs depending on the activated operating mode (heating/cooling) | normal=0 Block heating=1 Block cooling=2 |
| 030 | Unlocking the operating lock (child safety lock) | Deactivated=0 Activated=1 |
| 031 | Set PIN for operating lock if par. 30 is activated | 0000..9999 |
| 040 | Logging on an additional sensor, connected to the room control unit, for the registration of the floor temperature (FBH), the room temperature or the dew point | no sensor=0 dew point sensor=1 floor heating temp=2 room temp=3 |
| 060 | Registration of the actual temperature with a correction factor | -2.0...+2.0 K in increments of 0.1 |
| 110 | global change-over of the control direction of the switching output for NC and NO actuators | NC=0 NO=1 |
| 120 | Toggle function of the temperature display between degree Celsius and degree Fahrenheit | °C=0 °F=1 |
| 130 | Use the control of a local recirculation pump (in the heating circuit distributor) or a global recirculation pump (heating installation). | local=0 global=1 |
| 131 | Selection of the used pump: Conventional Pump (KP) / High efficiency Pump (HP) | CP=0 HP=1 |
| 132 | Time elapsing from the moment of the command from a switching output until the pump is actually switched on. | [min] |

| PAr | Description | Unit |
|-----|--|------------------------------|
| 133 | Time from the moment of switching off the switching outputs until the pump is actually switched off. | [min] |
| 134 | The control direction can be inverted if the pump relay is used as control output | normal=0 inverted=1 |
| 135 | The minimum running time indicates how long the HP must run until it may be switched off again. | [min] |
| 136 | High efficiency pump: The pump may only be switched off if a minimum standstill time can be ensured. | [min] |
| 160 | Setting the antifreeze function of the switching output | Deactivated=0 Activated=1 |
| 161 | Setting the antifreeze limit value | [°C] |
| 170 | Smart Start function: Teaching-in the temperature behaviour of the heating zone | Deactivated=0 Activated=1 |
| 180 | Duration until activation of emergency operation | [min] |
| 181 | Duration of a PWM cycle in emergency operation | [min] |
| 182 | Activation duration of the PWM in heating mode during emergency operation | [%] |
| 183 | Activation duration of the PWM in cooling mode during emergency operation | [%] |
| 190 | Duration until the activation of the valve protection function after the last trigger | [d] |
| 191 | Valve activation duration when valve protection function is active | [min] Deactivated =0 |
| 200 | Duration until the activation of the pump protection function after the last trigger | [d] |
| 201 | Activation duration of the pump | [min] Deaktiviert = 0 |
| 210 | Setting the First Open function (FO) for activation of all switching outputs at power-up | [min] off = 0 |
| 220 | Automatic switching between summer and winter time according to CET | Deactivated=0 Activated=1 |

Antifreeze protection

Independent from the operating mode, the switching output is equipped with an antifreeze function. As soon as a previously set antifreeze temperature (5...10°C) is fallen short of, the valve of the allocated heating zone is activated until this temperature is reached. The antifreeze temperature can be set via the service level of the RBG display or via the microSD card (parameter 161).

Valve protection function

During periods without valve activation (e. g. outside the heating period) the heating zone with logged-in room control unit is activated in a cyclic way in order to avoid a clogging of the valve.

Emergency operation

If the base station is unable to establish a radio connection to the room control unit after a set time has elapsed, emergency operation is activated automatically. In emergency operation, the switching outputs at the base station are activated with a modified PWM cycle duration (parameter 181) independent from the heating system in order to avoid complete cooling of the rooms (in heating operation) or dewing (in cooling operation).

Resetting the factory settings

WARNING Danger to life due to the electrical voltage at the base station

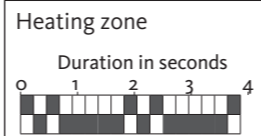
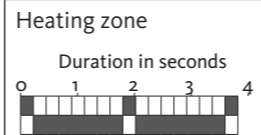
- Only authorised specialists may open the base station.
- Always disconnect from the mains network and secure against unintended activation before opening the base station.

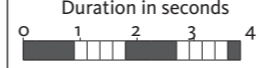
- If present, remove the MicroSD Card from the base station and delete the parameter file "params_usr.bin" at the PC.
- Press the rMBUS key of the base station for three seconds in order to start the pairing mode.
- ✓ The LED "rMBUS" flashes.
- Press the rMBUS push-button again for a duration of 10 seconds.
- ✓ A restart will be performed.
- ✓ Now the base station is reset to factory settings and behaves as it did during the first commissioning.

Note:

- All user settings will be lost.
- A previously allocated room control unit must be paired newly.

Error indication and elimination of errors

| LED signalling | Meaning |
|--|---|
| Heating zone Duration in seconds  | Radio connection to the room control unit faulty: <ul style="list-style-type: none"> • Change the position of the room control unit or use a repeater or an active antenna. |
| Heating zone Duration in seconds  | Low battery capacity of the room control unit: <ul style="list-style-type: none"> • Change the batteries in the room control unit |

| LED signalling | Meaning |
|--|--|
| Heating zone Duration in seconds  | Emergency operation activate: <ul style="list-style-type: none"> • Change the batteries in the room control unit • Perform a radio test • If necessary, reposition the room control unit. • Replace a defective room control unit |

Cleaning

Only use a dry and solvent-free, soft cloth for cleaning.


Decommissioning

WARNING Danger to life due to the electrical voltage at the base station

- Always disconnect from the mains network and secure against unintended activation before opening it.
- Disconnect external voltages and secure against unintended activation.

- Pull the mains plug and disconnect the entire installation.
- Remove the wiring to all externally connected components as e. g. CO input/output and actuator.
- Uninstall the device and dispose of properly.

Disposal

 The base station must not be disposed with domestic waste. The operator has the duty to hand the device to appropriate collection points. The separate collection and orderly disposal of all materials will help to conserve natural resources and ensure a recycling in a manner that protects human health and the environment. If you need information about collection points for your devices, please contact your local municipality or your local waste disposal services.

Technical data

| | |
|--|---|
| Number of heating zones | 1 |
| Number of actuators | 1 |
| Max. nominal load of actuator | 10 W |
| Switching power | max. 1 A |
| Operating voltage | 230 V / ±10% / 50 Hz |
| Mains connection | NYM connection terminals 2 x 1.5 mm ² |
| Power consumption (without pump) | <11 W |
| Power consumption in idle operation | <1 W |
| Protection class | II |
| Degree of protection | IP20 |
| Overvoltage category | II |
| Environment temperature | 0 °C to +60 °C |
| Storage temperature | -25 °C to +70 °C |
| Humidity | 5 to 80%, not condensing |
| Dimensions | 86 x 86 x 33 |
| Material | ABS |
| Colour | RAL9010 (pure white) |
| Weight | 120 g |
| Controlling precision of the target value: | ±1 K |
| Hunting | ±0,2 K |
| Modulation | FSK |
| Carrier frequency | 868 MHz, bidirectional |
| Range | 25 m in buildings / 250 m in open air |
| Radiated power | max. 10 mW |

