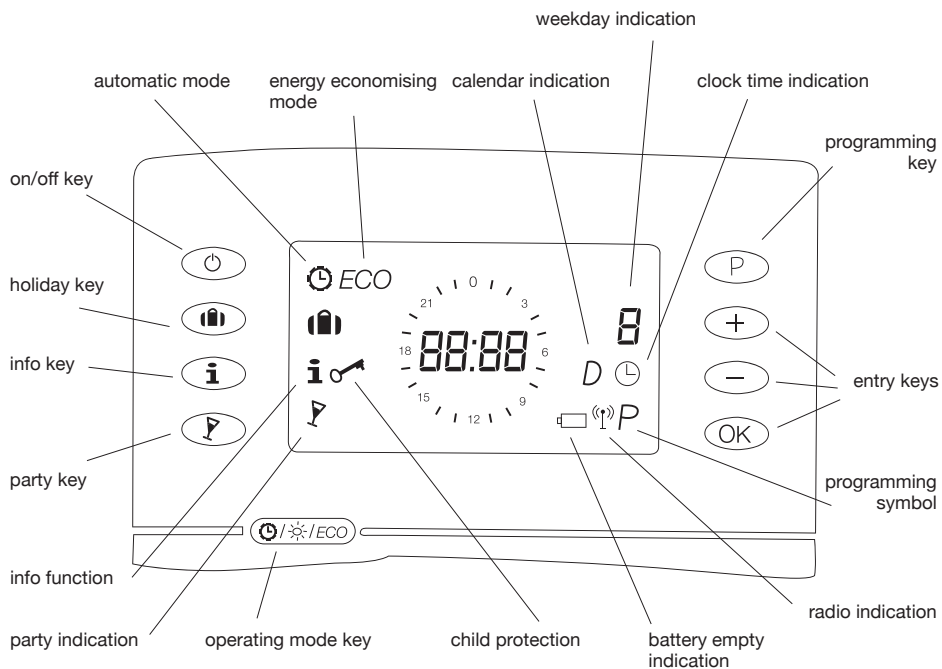


# INSTALLATION, OPERATION AND WARRANTY GUIDE



- |               |   |
|---------------|---|
| FTRFBu180.117 | Radio controlled room thermostat with clock               |
| FTRFBu180.121 | Radio controlled room thermostat with clock and backlight |


# OPERATION GUIDE





## 1. BASIC OPERATING INSTRUCTIONS


The device is operated with 6 main buttons, with the addition of the +/- and 'OK' buttons to change and confirm desired features.


### MAIN BUTTONS


- 


Used to activate and deactivate the control system. Once configured, the control system will return to previous setting if turned off and then on again.
- 


Is used to implement energy saving facilities when a long absence is expected and for re-heating a property prior to the return of occupants.
- 


Shows all changed functions such as when temperature has been changed within a program.
- 

Enables the user to have an extra amount of comfort heat for a set amount of time defined when the button is pressed.
- 

Is used for the adjustment of the 'ECO' temperature, time, date and different weekday programs.
- 

Is used to select between 3 operating modes, Automatic, Comfort and Energy-economising mode.
- 

Temperature control - Allows the user to select the desired comfort temperature.
- 

Is used to confirm all requests made by the user when defining operating modes and other parameters.
- 

Used to alter different parameters such as times.

## 2. DETAILED OPERATING INSTRUCTIONS

**Program** - To adjust the ECO temperature, time, date and weekday programs.

When pressed 'P' will be displayed on the screen indicating that program features are being changed. Any entries are confirmed with the 'OK' button. The controller will automatically go on to the next changeable feature. If at any point no button had been pressed within 2 minutes the programs will go back to the original settings.

- To change program features first press 'P'. 'ECO' will be displayed with the factory settings of 17°C. Change the temperature as required and press 'OK' to continue.
- A clock symbol will now be displayed, enter the correct time, first hours, then minutes and confirm with the 'OK' button.
- A 'D' will be displayed requiring you to enter the correct year, press 'OK', then enter the month press 'OK' and lastly the day confirmed with the 'OK' button.
- You are now ready to change the weekday programs. First select which day by using the +/- . Monday is number 1, confirm with 'OK'. 0:00 is displayed, by pressing + key once, heat will be added for 15 minutes. To advance the time press - key. (This is indicated on the display by marks around the time).

**For example:**

To have the heater come on at 7:00 am and go off at 7:30 am; press the - key until 7:00 is displayed, then press the + key twice (i.e. 2 x 15 minutes).

- If you press and hold either +/- the controller scroll onwards. Meaning for longer times of no heating it is quicker to hold down the - button and the clock will scroll onwards. Likewise it is quicker to add heating for longer periods by holding the + button instead of pressing it for incremental 15 minutes.
- Once you are happy with the day's settings confirm by pressing 'OK'. At this point, the previous day's settings will be copied for further days, this can be confirmed by pressing 'OK' a day at a time. If different settings are required, continue as previous to change the day's settings. Saturday must be entered as a different settings although these settings can be copied for Sunday, confirmed by the 'OK' button.
- After entering the last value for Sunday, which is indicated by the number 7 on the display, the controller will save the information and return to the normal display automatically,

## 2.1 CHOOSING BETWEEN THREE OPERATING MODES IS EASILY ACHIEVED BY PRESSING BUTTON.



Is fully automatic mode, where the controller uses the user defined program to adjust the required temperature at set time intervals. The controller uses the pre defined 'ECO' temperature and the temperature chosen via the temperature control. Times are chosen using the 'P' button as described previously.



By pressing this button the controller will maintain a constant comfort temperature which is chosen by adjusting the temperature control. (Described as 'Constant' mode)

*ECO*

By pressing this button the controller will maintain the 'ECO' temperature (default 17°C)



Holiday Mode - is designed for energy saving purposes whilst on holiday and to reheat the property for the arrival of the user. By pressing the holiday button the next day's date is displayed, press +/- to select the date on which you will return. Confirm with the 'OK' key. The holiday away temperature is now being displayed (default 17 ) which can be adjusted with the; +/- within a range of 5 - 30°C. Confirm with the 'OK' key. The holiday function is now active. Pressing the holiday key again cancels the holiday function, or by default the holiday function will cancel itself and return to the previous operating program and temperature at 0:00 on the day entered.

## 2.1 CHOOSING BETWEEN THREE OPERATING MODES IS EASILY ACHIEVED BY PRESSING BUTTON. (CONTINUED)



Info button - is used to display all changeable options so you can scroll through with the +/- buttons to see what the controller is operating. No values can be changed via the Info key, it is purely for displaying the actual temperatures, times and operating modes. To exit Info mode, press the button again or leave controller for two minutes.



Party function - used for a boost of heat at the comfort operating temperature set in the program mode. By pressing the party button the controller will show the time on the display that the comfort heat will turn off, this can be adjusted with the +/- keys and confirmed with the 'OK' button.

*For example:*

*The time is 17:00 and you have guest arriving in 15 minutes for one hour. Press the Party button and advance the time with the +/- button until 18:15 is displayed and confirm with the 'OK' button. The controller will now put the heating on at comfort temperature until 18:15 at which point it will go back to the previous operating setting or temperature.*

### 3. ADJUSTMENT FUNCTIONS

The adjustment functions are for one-time adjustments for individual user requirements. To access adjustment mode, press the 'OK' key first then the 'P' key. The first adjustment function (J.1) appears on display. Using the +/- keys enables the desired adjustments and can be confirmed by the 'OK' key. The 'P' button cancels the adjustment function at any time. If the action is not cancelled this way, it will be automatically cancelled if unused for two minutes.

The selection of the adjustment function does not impair any of the controls operations currently performed. After the cancellation, the control continues in the previous operating mode, and the related indications are displayed again.

#### 3.1 LEARN FUNCTION (J.1)

This function is required in addition to the learning procedure performed during installation. The learn function assigns a radio-controlled room temperature sensor (transmitter) to the right radio-controlled temperature controller (receiver) without any need to enter the clock time repeatedly. A flashing 'L' appears after selection by pressing the 'OK' key. Pressing the 'OK' key again triggers the procedure that lasts for 10 seconds. Once over, 'J.1' appears on display and indicates that transmitter can now be assigned to another receiver. For more details, please see page 13.

#### 3.2 LOG-OFF FUNCTION (J.2)

To log-off the transmitter from the receiver, press the 'OK' key. When the '-L' is flashing on the display, press the 'OK' key again to start the logging-off procedure, which lasts approx. 10 seconds. The indication light at the transmitter flashes red during this function. Press the learn key and the receiver logs off the transmitter completely.

### 3. ADJUSTMENT FUNCTIONS (CONTINUED)

#### 3.3 CHILD PROTECTION (J.5)

Child protection mode prevents an inadvertent change to the controller. After activation of the child protection function, all keys and the temperature control are locked three minutes after the last keystroke was made and the key symbol will appear on the display. The keys can be reactivated by pressing the 'OK' key for approx 10 seconds until the key symbol disappears from the display. In the event the temperature is changed during the Child protection function, this change only becomes active when the mode is exited.

#### 3.4 DAYLIGHT SAVING AND STANDARD TIME. (J.6)

The daylight saving time in the European Union (EU) takes effect as of the last Sunday in March at 02:00 o'clock a.m. CET and lasts until 03:00 o'clock a.m. on the last Sunday in October (CEST) each year. The transmitter changes automatically according to these settings. The automatic change to daylight saving can also be deactivated to enable the changing of the time at other dates or to match time conditions in other regions.



#### 4. RESET FUNCTION

The reset function restores the modes back to original factory settings. The clock time and the calendar display, however will not be reset. To prevent accidental reset, this function can only be triggered by pressing the 'OK' key and then holding the ON/OFF key for approx. 10 seconds until the indicator stops blinking. After that, the factory settings are restored.

#### 5. BATTERY LOW

In event of the flashing 'low battery' symbol is not detected early enough, the light at the transmitter starts flashing red for 5 seconds per minute. The battery low condition is indicated this way for at least seven days. The control operations are continued at this time. When the batteries are replaced, there is no need to repeat the learning procedure. Only the clock and date need to be re-entered in this case.

#### 6. LIGHT AND DISPLAY INDICATIONS

##### **Light off:**

The radio room temperature sensor works correctly. Condition: Batteries correctly inserted.

##### **Light flashes red:**

Batteries are low and should be replaced. See section 5.

##### **Light permanently red:**

Light is permanently red during the logging off procedure.

##### **Display indication: Fbr**

Sensor malfunction. The controller should be checked by manufacturer.

##### **Display indication: FSch**

Sensor short-circuit. The controller should be checked by the manufacturer.

##### **Display indication:**

This symbol appears only briefly to indicate a radio transmission to the receiver.

##### **Display indication:**

Batteries are low and should be replaced. See section 5.

##### **Indication: Shift segments ("shiftable heating stops") appear flashing**

If flashing during automatic mode, indicates the point the systems changes over from ECO to Comfort mode.

##### **Display indication: L**

Learning mode (see sections 3.1 and 11.)

##### **Display indication: -L**

Log-off mode (see section 3.2)

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# INSTALLATION GUIDE

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## SAFETY INFORMATION

This device, in conjunction with the corresponding radio temperature controller (receiver) forms a control unit. The first installation of the device is to be made by an expert electrician in accordance with the current and applicable safety regulations and rules. **Caution!** Operation of the radio room temperature sensor (transmitter) in the vicinity of other devices that do not comply with the EMC directives may affect its functions. Settings or changes of the adjustments made while operating in craftsmen mode may affect the control system and may therefore only be made by an expert. The company in charge of installation must, after completion of installation, instruct the user of the control systems into its functions and in how to operate it correctly. Please keep this guide in a safe place for future information.

## OVERVIEW AND CONTENT

7. Advice to the installer
8. Application
9. General functioning
10. First start-up
11. Learning function
12. Adjustment function
  - 12.1 Temperature unit
  - 12.2 Valve and pump protection
  - 12.3 Self-learning function
  - 12.4 Correction function
13. Control of radio link for the adaptation of the actual valve recording to the room temperature.
14. Accessories
15. Mounting
16. Technical data
17. Dimensional drawings
18. Warranty

## 7. ADVICE TO THE INSTALLER

A description of the following functions can be found in the operating instructions within this guide:

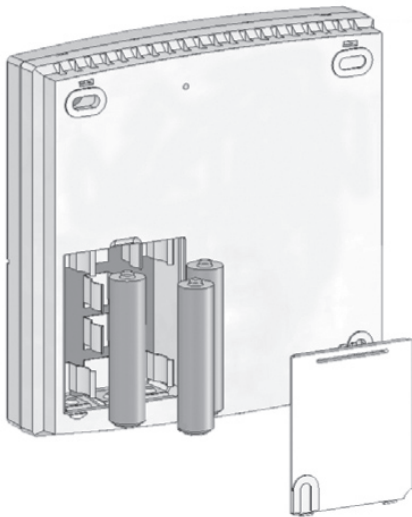
- Average value control (acquisition of the temperature values sensed by several radio room temperature controls)
- Master-slave control (automatic multiple room operation piloted by one central controller)
- Radio link loss (interruption of the radio link)
- Emergency operation function in case of a radio link loss (control if an interruption of the radio link occurs)

## 8. APPLICATION

This radio room temperature sensor (transmitter) has been specifically devised for living spaces, offices and hotel rooms and is collectively run with one or several radio-controlled room temperature sensor and radio-controlled temperature controllers (receivers). The complete unit of transmitters and receivers is for controlling individual room temperatures. The receiver is chiefly used in the building reconstruction sphere or wherever heating systems are to be extended and where the avoidance of costly cutting up and/or plaster work for the laying of electrical cables is of importance. The same also applies to modern office complexes where emphasis is on interior design flexibility. The valid safety provisions in other fields of use is not anticipated by the manufacturer and are to be headed. For suitability see 16. Warranty.

## 9. GENERAL FUNCTIONING

The FTRFBu's internal sensor takes the temperature of the room and transmits it to the appropriate radio-controlled temperature controller. The adjusted temperature set point is also transmitted. The system provides the option to attune the transmitter to an arbitrary number of receivers, so that several heaters or hot-water valves can be triggered by one sensor. The transmission range of the radio temperature sensor depends largely on the room conditions. Reinforced walls, ceiling or metal casing will reduce the range.



## 10. FIRST START-UP

The sensor type or packaging size determines whether the sensor is delivered in a closed condition or -for quick mounting - in an open condition. In this condition, the radio-controlled room temperature sensor is not ready for operation. Only when batteries are inserted and the transmitter is trained to the receiver (see 11. Learning function) is the system ready for use.

The model FTRFBu 180.121 requires an additional battery for the display backlight. A short green flash of the light will confirm correct insertion. Once the batteries have been inserted, the system performs a self-check operation which will last only a few seconds. During this self-check all the display symbols will appear on the display.

Once the self test is over, the transmitter will automatically go into learning mode for two minutes at a time. Once over, the user will be required to enter the correct date and time. If no data is entered, the automatic mode \_\_\_ is activated.

**Caution!** If no clock time and date are entered, the clock will start running from 00:00 and the comfort heating times are not consistent with the actual time of the day.

## 11. LEARNING FUNCTION

The learn function assigns a radio-controlled room temperature sensor (transmitter) to the right radio-controlled temperature controller (receiver).

### Before learning:

A transmitter can be trained to a receiver from the following 3 at the outset:

- 1.) No transmitter is trained to the receiver. In this case, the light at the receiver is continuously red.
- 2.) A transmitter has been trained to the receiver within the last hour. In this case, the light at the receiver is green, meaning correct contact.
- 3.) A transmitter has been trained to the receiver for over an hour. In this case, the light at the receiver is off and indicates correct contact with the sensor.

### Learn process:

There are two ways to start the learning procedure to be performed by the transmitter. Either after the insertion of battery during first start-up (10.) or while operating in adjusting mode.

### Learning procedure after the insertion of batteries:

After the insertion of batteries, and the self-test has completed, an 'L' will be displayed to indicate that the system is now in learning mode. Once this is the case, the 'OK' key should be pressed briefly. This key triggers the transmission of a learn identifier for 10 seconds.


Once over, the transmitter changes over and requests the entry of clock time.

- 1.) Change the transmitter over to learning mode by pressing the learn key at the receiver once briefly → The light at the receiver will flash for a maximum of 30 seconds. If no transmitter is trained within this time, the light stops flashing and returns to its starting state.
- 2.) Press the 'OK' key at the transmitter once shortly → The light at the receiver flashes red for approx. 10 seconds. Once this is completed, the light will remain green permanently. The radio link has been established successfully.

Once the learning procedure has been performed correctly, the pilot light on the receiver shows green for approximately one hour. The system is active now. For all other light indications please see 6. After the placement of a transmitter in a room, the operation must be checked again to ensure it is still working correctly.

## 12. ADJUSTMENT FUNCTION

**Caution!** Control settings can only be made by a qualified heating specialist or an expert electrician. The settings made while operating in this mode cannot be reset via the reset function.

Craftsman mode takes place while operating within adjustment mode (see section 3.), illustrated on the display as 'J.6'. After that, press the  key first and then the key '+', the first adjustment function that is available in craftsman mode (J.7) is displayed. Using the +/- keys can select all 10 adjustment functions. The 'P' key cancel craftsman mode at any time. If no entries are made within two minutes, it will automatically exit the mode. Entries are confirmed using the 'OK' key.

### 12.1 TEMPERATURE UNIT (J.7)

The system can be enabled to display the temperatures in units Celsius or Fahrenheit. (Factory setting: °C)

### 12.2 VALVE AND PUMP PROTECTION (J.8)

The valve and pump protection function serves to prevent the valve seat and/or the pump from corroding during periods when the systems isn't used.

The radio room temperature sensor transmits each Monday within the period of 11:00 to 12:00 o'clock a special signal. The radio temperature controller, upon the receipt of this signal, activates the related valve, at each time, the pump for 5 minutes a time. The valve and pump protection is rendered active if only no heating operation has been activated in the course of the last week. Any unnecessary additional heating is then avoided and the control system is not affected.

## 12. ADJUSTMENT FUNCTION (CONTINUED)

### 12.3 SELF-LEARNING FUNCTION (J.9)

The self-learning function automatically obtains the comfort temperature at the adjusted time. The preceding point at which the system switches from ECO to comfort temperature sets itself automatically and is indicated by a blinking shift segment ('shiftable heating stop'). Depending on the outside temperature, the switchover point will vary.

### 12.4 CORRECTION FUNCTION

This correction function assists for the adapting of the actual value recording to the room temperature. This is always required whenever a temperature is permanent and unchanged. If, for instance, the transmitter is affected by a foreign heat source, a room temperature will result that is cooler than the one adjusted.

#### **Example in case the sensor is affected by a foreign heat source:**

Assumption: A room temperature of 20°C occurs at an initially adjusted temperature of 22°C.

In order to acquire a room temperature of 22°C, the actual value correction function must subtract the necessary difference of 2K → subtracter: -2°C. Based on

this operation, the transmitter corrects the actual measured value by a value of -2K, which results in an increase in room temperature to 22°C → set value scale/actual value indication = room temperature.

#### **Example in case the sensor is affected a foreign cold source:**

Assumption: A room temperature of 24°C occurs at an initially adjusted temperature of 22°C.

In order to acquire a room temperature of 22°C (the set value), the value correction function must add the necessary difference of 2K → augementer: +2°C. Based on this operation, the transmitter corrects the actual measured value by a value of +2K, which results in the lowering of the room temperature to 22°C → set value scale/actual value indication = room temperature.

### 13. FUNCTION AND ASSIGNMENT CHECK OF THE RADIO CONTACT

This function is for subsequently checking the correct assignment of the transmitters to either various receivers or to various channels of the receiver. This makes it easier to spot mix-ups at a later date.

- Activate the registration process by pressing 'OK' and 'P' simultaneously.
- The light at the transmitter flashes red simultaneously. If the light at the receiver (on/beside the heater) starts to flash green, it means the transmitter has contact.

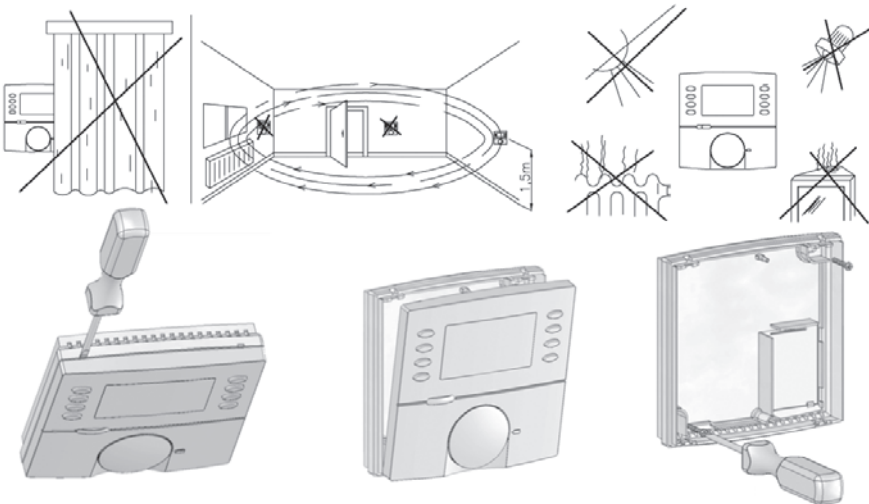
**Caution!** Do not press the learn key at the receiver for more than 10 seconds - otherwise it will change over to logging-off mode.

### 14. ACCESSORIES

JZ-18 - Adapter please, suitable for use for wall mounting of the 'Berlin 3000' design housings.

### 15. MOUNTING

The FTRBu should, for practicability reasons, be mounted on an internal wall opposite the related heater at a height of 1.5 meters above floor level using double-sided adhesive tape or commercially available screws. Surface should be clean and free from dust and grease and be able to bear the load of the device. Tables, shelves or cupboards are not advisable in view of unfavorable air currents and effects from extraneous heating sources (e.g. people, equipment, candles, sunlight) which may affect the functioning of the device in these cases.

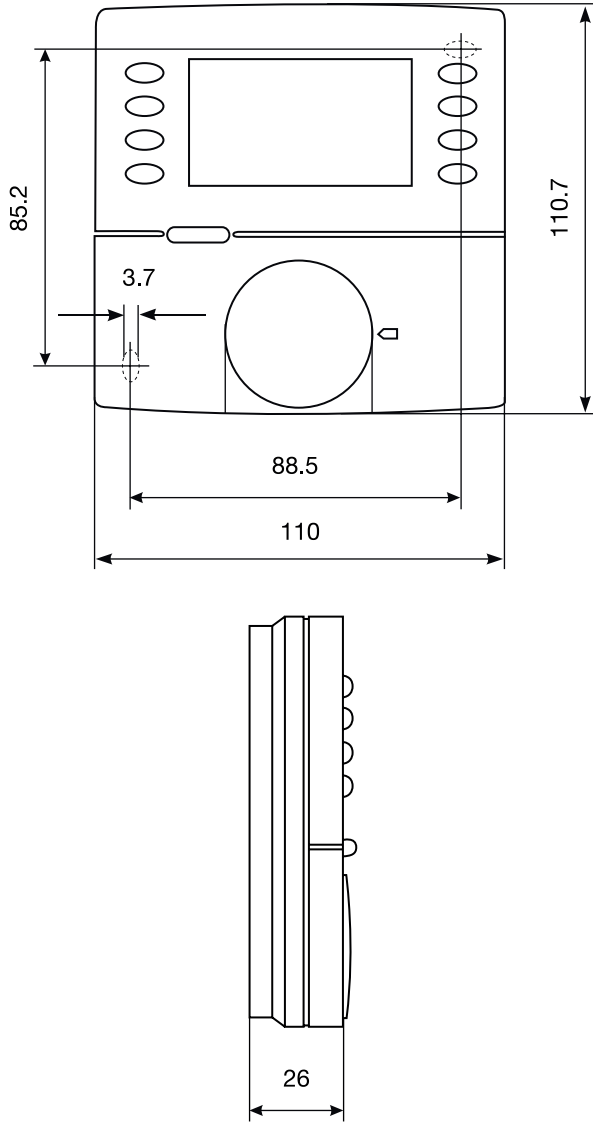




## 16. TECHNICAL DATA

|  |   |
|--|---|
| <b>Supply voltage:</b>                 | Batteries (2 x or 3 x Micro AAA)<br>do not use rechargeable batteries!    |
| <b>Battery lifetime:</b>               | Approx. 5 years<br><b>Caution!</b> Replace <i>at least</i> every 5 years. |
| <b>Temperature sensor:</b>             | Internal  |
| <b>Setting range:</b>                  | 5...30°C  |
| <b>Measuring accuracy:</b>             | 0.1K  |
| <b>Sensor tolerance:</b>               | approx ± 1K   |
| <b>Adjusting scale:</b>                | °C scale  |
| <b>Transmit frequency:</b>             | 868.3 MHz   |
| <b>Admissible ambient temperature:</b> | 0...50°C  |
| <b>Admissible storage temperature:</b> | -20...+70°C   |
| <b>Admissible air moisture:</b>        | max. 95%r.h., non condensing  |
| <b>Housing design:</b>                 | Berlin 3000   |
| <b>Housing material and colour:</b>    | ABS plastic, pure white   |
| <b>Protection class:</b>               | III   |
| <b>Degree of protection:</b>           | IP20  |
| <b>Installation:</b>                   | see section 15.   |

17. DIMENSIONAL DRAWING



## 18. WARRANTY

The technical data specified herein have been determined under laboratory conditions and in compliance with generally approved test regulations, in particular DIN standards.

Technical characteristics can only be warranted to this extent. The testing of the device with regard to the qualification and suitability for the client's intended application or the use under service conditions shall be the client's own duty. We refuse to grant any warranty with regard thereto.

Any warranty issues arising out the use of this device should be referred to the manufacturer at the following address:

ALRE-IT Regeltechnik GmbH  
Richard-Tauber-Damm 10  
D-12277 Berlin  
**Tel:** +49(0)30/399 84-0  
**Fax:** +49(0)30/39170 05  
mail@alre.de  
www.alre.de

SÜKA HEATING AND CONTROL SYSTEMS LTD  
COUNTY GATES, ASHTON ROAD  
BRISTOL, AVON  
BS3 2JH

**Phone:** 0117 9114 017  
**Freephone:** 0800 5200 333  
**Fax:** 0845 5087 333  
**Website:** [sukacontrols.co.uk](http://sukacontrols.co.uk)

[www.sueka.co.uk](http://www.sueka.co.uk)

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