

OPERATING INSTRUCTIONS

Version 12/06



Radio heating control „FHT8B“

Item no. 75 04 04



Dear customer,

Thank you for purchasing this product.

This product meets the requirements of both current European and national guidelines.

In order to preserve this condition and ensure the safe operation of the product we kindly ask you to carefully follow these operating instructions!

Please read the operating instructions completely and observe the safety and operation notes before using the product!

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Should you have any further questions, please contact our technical advisory service:

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1. Prescribed use

The complete radio-controlled radiator thermostat system comprises three components:

- 'FHT80B' heating control
- 'FHT8V' valve operating mechanism
- 'FHT80TF' door/window contact sensor

The system is used for temperature control in individual rooms in which the heat that dissipates from radiators is controlled by reducing the flow of hot water in the heating system.

The 'FHT80B' heating control measures the room temperature by means of an integrated sensor and transmits the corresponding control data to the 'FHT8V' valve operating mechanisms.

The 'FHT80B' can analyse the status signals (window open/closed) of up to four 'FHT80TF' door/window contact sensors and, in order to save energy when a room is aired, for example, automatically reduce the temperature down to a so-called 'Window open' temperature, when the room's window is opened.

The 'FHT80B' also facilitates a bi-directional radio connection with the 'FHZ1000' home radio central unit.

Any other use of the heating control (for example, in cooling systems, floor heating systems, and so on) is not permitted and may lead to serious damage.

2. Scope of delivery

- 'FHT80B' heating control
- Wall mounting set (screws and dowels)
- User manual

3. Explanation of icons



The icon with a lightning flash in a triangle is used to alert you to potential personal injury hazards such as electric shock.



An exclamation mark in a triangle indicates important information in these operating instructions which must be observed without fail.



The 'hand' symbol provides special information and advice on operating the device.

4. General information

The radio-controlled radiator thermostat system has a number of advantages compared with simple mechanical thermostats:

- The system is separated into radiator-mounted valve operating mechanisms and freely positionable operation and control units (the 'FHT80B' heating control supplied here, for example), which makes it easy to carry out all the necessary settings.
- The time program option makes it possible to adapt the system to the lifestyle of its users, so that the room is always comfortably warm when it is used.

At other times energy can be saved by reducing the temperature. The inconvenient, manual turning up and turning down of thermostats is no longer necessary.

- A calcification protection function is integrated into the system. Once a week (the time can be set) the valve operating mechanism opens and closes the valve to prevent lime deposits from blocking the valve.
- If a room's windows are monitored by one or several 'FHT80TF' door/window contact sensors, then the control unit automatically reduces the target temperature while the room is aired.

Once the windows have been closed, the controller automatically restores the original temperature.

- The 'FHT80B' heating control also facilitates the bi-directional communication with the 'FHZ1000' home radio central unit, which can perform universal control tasks.



This means that changes to the temperature settings or the time program can also be carried out via the 'FHZ1000'.

a) Functionality

The room temperature is measured and compared to the target temperature in the 'FHT80B' heating control (set via the time program or manually).

The difference is used to calculate how far the valve has to be opened or closed to obtain the desired temperature. Within a time period of approx. 2 minutes commands are then radio-transmitted to the 'FHT8V' valve operating mechanism that is mounted to the radiator. The valve operating mechanism then reduces or increases the heat accordingly.

The heating control's integrated receiver also allows the 'FHT80B' to receive the status signals from up to 4 'FHT80TF' door/window contact sensors.

Changes ('Window open' or 'Window closed') are signalled to the heating control within a time period of about 1 minute. This allows the heating control to adjust the temperature after an average of 30 seconds, in order to save energy when a room is aired, for example.

b) Security code

The radio signal is protected by a two-part security code. This security code protects the system against interference from other radio systems and ensures that several radio-controlled radiator thermostat systems can be operated separately in a household.

Each part of the code comprises 100 setting options. This means that a total of 10,000 different security codes are available.

To ensure communication between the heating control and the valve operating mechanism/s the same security code has to be set for all devices in a room.



A random security code is set by the manufacturer.

When supplied as a set (heating control and valve operating mechanism) the valve operating mechanism is preset to the heating control's security code.

If you purchased the heating control and valve operating mechanism separately (or you want to use additional valve operating mechanisms for a heating control), then the security code has to be transmitted to each of the valve operating mechanisms. See section 13 d) or section 13 e).

The security code is also used for communicating with the 'FHZ1000' central unit.

The 'FHT80TF' door/window contact sensors are equipped with a randomly generated factory default code that cannot be changed. Since over 16 million different codes are possible for the 'FHT80TF', changing the code is not necessary.

Duplication is virtually impossible.

c) Information on the range

- The transmission power is less than 10mW, much below that of a mobile phone which may have a transmission power 200 times as great. Adverse effects on sensitive people and animals are not to be expected.
- The wireless radiator thermostat system uses the 868MHz range, which is also used by other radio services. Therefore devices that operate on the same or neighbouring frequencies may restrict both its operation and its range.
- The specified range of up to 100m (to the 'FHT8V' valve operating mechanism) or up to 300m (to the 'FHZ1000') is the free-field range, which means the range with visual contact between the transmitter and receiver. In practice, however, walls, ceilings, etc. between the transmitter and the receiver may affect and reduce the range.

Other causes of reduced ranges:

- All types of high-frequency interference
- Any buildings or vegetation
- Conductive metal parts that are located near the devices or within or near their transmission path, for example, radiators, metallised insulation glass windows, reinforced concrete ceilings, etc.
- Influence on the radiation pattern of antennas due to the distance from the transmitter or receiver to conductive surfaces or objects (also to human bodies or the ground)
- Broadband interference in urban areas that reduces the signal-to-noise ratio; the signal is no longer recognised due to this 'noise'
- Interference radiation resulting from insufficiently shielded electronic devices, for example, operating computers or similar

5. Safety instructions



The product's guarantee becomes invalid if the product is damaged as a result of failure to observe these operating instructions. We do not assume any liability for any resulting damages!

Nor do we assume liability for damage to property or personal injury caused by improper use or failure to observe the safety instructions. In such cases the product's guarantee becomes invalid!

a) General information

Do not use this product in hospitals or medical institutions. Although the product emits only relatively weak radio signals, these may cause life-support systems to malfunction. This may also be the case in other areas.

The product is only suitable for use in dry indoor rooms.

The product is not a toy and should be kept out of the reach of children.

For safety and licensing (CE) reasons any unauthorised alterations to and/or modification of the product are not permitted.

Do not leave packaging material lying around. This may become a dangerous plaything in the hands of children.

Handle the product with care; knocks, blows or even a fall from a low height can damage it.

b) Batteries and rechargeable batteries

- Keep batteries/rechargeable batteries out of the reach of children.
- Make sure that the polarity is correct when inserting the batteries/rechargeable batteries.
- Do not leave batteries/rechargeable batteries lying around as they could be swallowed by children or pets. In such case seek immediate medical care.
- Leaking or damaged batteries/rechargeable batteries may cause acid burns, if they come into contact with skin. Therefore, please make sure you use suitable protective gloves.
- Make sure that batteries/rechargeable batteries are not short-circuited or thrown into a fire. They might explode!
- Never disassemble batteries/rechargeable batteries!

- Conventional batteries must not be recharged. They might explode!
- If the device is not used for a longer period of time (when stored, for example), remove the inserted batteries/rechargeable batteries to prevent them from leaking and causing damage.

6. Inserting/replacing batteries

- Slide down and remove the wall holder on the back of the heating control.
- To open the battery compartment slide down and remove its cover (see the arrow imprinted on the cover).
- Insert two high-quality alkaline AA batteries; ensure correct polarity. You will find corresponding figures in the battery compartment.



Make sure that you insert the batteries correctly to avoid damaging the heating control's electronic components.

- Close the battery compartment again.



Although you can use rechargeable batteries to operate the heating control, both the battery life and the range will be reduced. If you experience any problems whilst operating the heating control with rechargeable batteries, use conventional alkaline batteries, as described above.

- The heating control performs a short display test, after which you can set the date and the time. See section 9, page 15.
- If the battery icon (🔋) appears, the batteries are used up and should be changed as soon as possible. The same applies if the radio range decreases or if data are no longer displayed on the LC display.

7. Control panel

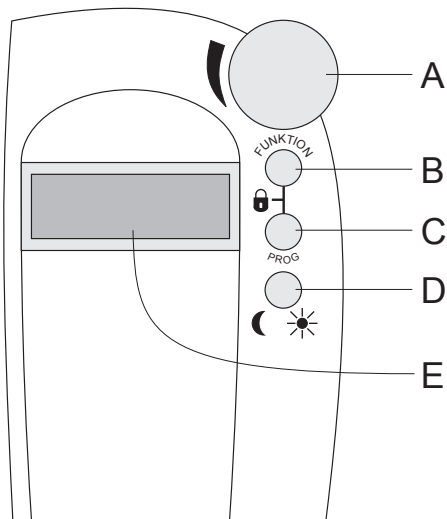


Figure 1

- A Scroller for settings
- B 'FUNKTION' button
- C 'PROG' button
- D '☾ ☀' button
- E LCD

8. Mounting the 'FHT80B' to a wall

a) Choosing a suitable installation location

Choose a suitable location for mounting the 'FHT80B' heating control. This has to meet the following requirements:

- Central position in the room in which the temperature is to be controlled
- Easy access for convenient operation
- Installation at eye level for easy reading of the display
- Not a poorly insulated outer wall
- No direct sunlight
- No interference from heat sources such as radiators, TVs, lamps, refrigerators, etc.
- No mounting next to a window
- The greatest possible distance to metal objects to avoid any unnecessary reduction of the operating range

b) Mounting the wall holder

Proceed as follows to mount the wall holder:

- Remove the wall holder from the back of the heating control, by sliding it down and out.
- Place the wall holder vertically against the wall with the round side pointing up, see figure 2.
- Mark the positions of the bore holes through the two slotted holes.
- Depending on the type of wall, drill 6mm holes and insert suitable dowels before mounting the holder.

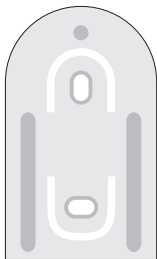


Figure 2



When drilling, be careful not to damage any power supply lines, gas or water pipes! Life-threatening danger!

- Fix the wall holder into place using, for example, the enclosed screws. Make sure that the two recessed slotted holes for the screws point in your direction.
- Before attaching the heating control to the wall holder insert the batteries, if you have not done so already. See section 6, page 11.
- You can now slide the heating control into the wall holder from above.

9. Set date and time

- If there is a protective film over the display, remove it first.
- If no batteries have been inserted yet, follow the instructions in section 6, page 11 to insert them.

After inserting the batteries, an automatic display test is performed (all segments and readouts of the LCD briefly appear).

After the display test you can set the year, month, day, hour and minute on the heating control.



Use the scroller to change the displayed values. To confirm your selection, briefly press the '**PROG**' button.

- After inserting the batteries, the year is displayed:

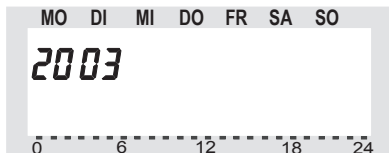


Figure 3

Use the scroller to set the year. To confirm your setting, briefly press the '**PROG**' button.

- The month is displayed:

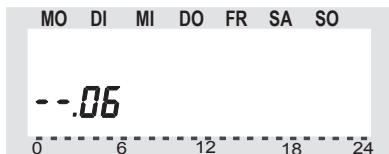


Figure 4

Use the scroller to set the month and confirm your setting by pressing the '**PROG**' button.

- The day is displayed:

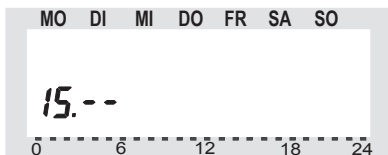


Figure 5

Use the scroller to set the day and confirm your setting by pressing the '**PROG**' button.

- The hours are displayed:

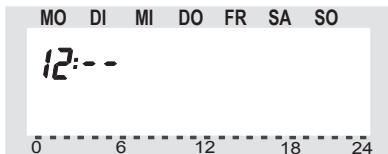


Figure 6

Use the scroller to set the hour of the day and confirm your setting by pressing the '**PROG**' button.

- The minutes are displayed:

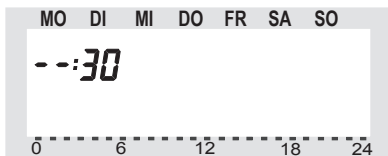


Figure 7

Use the scroller to set the minutes of the hour and confirm your setting by pressing the '**PROG**' button.

- The LCD then displays the current security code and '120'.

- The heating control counts down from '120' in steps of 1 second and then returns to the normal operating mode.



During this time the heating control cannot be operated. The heating control now synchronises its operation with the valve operating mechanisms.

Please make a note of the displayed security code on a slip of paper and write the name of the room, in which the heating control is installed, underneath the code.

You will need this information, if you intend to register the heating control to a 'FHZ1000' home radio central unit.

- Slide the heating control onto the wall holder from above until it snaps into place. See figure 8 on the right.



Figure 8

10. Mounting the 'FHT8V' valve operating mechanism

To save you from having to laboriously read through several user manuals (heating control and valve operating mechanism) we have included information on how to mount and start up the 'FHT8V' valve operating mechanism on the following pages.



The valve operating mechanism is not supplied with the heating control and must be ordered separately.

a) Removing the old thermostats

- Remove the old mechanical thermostats.
- If any of the screw connections have seized up you can use multigrip pliers. Release the thermostats by turning anticlockwise.



Figure 9

b) Inserting the batteries into the valve operating mechanism

- Remove the battery compartment cover of the valve operating mechanism by sliding it down and out.
- Insert two AA batteries into the battery compartment. Make sure that you observe the correct polarity when you insert the batteries. See the figures in the battery compartment and in the image on the right.
- 'C1' is displayed, followed by a two-digit number. 'C2' is then displayed, followed by another two-digit number. These two numbers are the currently stored 2-part security code of the valve operating mechanism (11 and 22 = security code 1122, for example).
- A signal tone is then generated and 'A1' is displayed.
- The valve operating mechanism fully retracts the control pin to facilitate mounting.
- After this 'A2' is displayed.



Figure 10

c) Mounting the valve operating mechanism to the radiator

- Manually turn the coupling nut to fasten the valve operating mechanism to the valve ('1' in the figure on the right).

When using 'Danfoss' valves mount one of the enclosed adapters to the valve first. The figures 12a, 12b, and 12c on the next page show the adapters that have to be used for each valve. Additional adapters for other valves may be purchased separately.


- Briefly press the button (2) on the valve operating mechanism once. See the figure on the right.
- 'A3' appears on the valve operating mechanism's LCD and the valve is closed.
- The antenna symbol  then blinks on the display and '0%' is displayed.
- Close the battery compartment again.




Figure 11



Please note:

If you purchased the valve operating mechanism separately and not as part of a set comprising a heating control and valve operating mechanism, for example, then the security code must first be transmitted. This is described in detail in section 13 d).

- The valve operating mechanism acknowledges receipt of the first wireless protocol with a signal tone.
- The antenna symbol  is now permanently displayed.
- This completes the installation and you can now adapt the pre-programmed settings to your individual needs.



Please note:

Proceed as described above, if you wish to install further valve operating mechanisms.

Afterwards, the number of radiators/valve operating mechanisms must be set on the heating control (section 13 e) and the security code must be transmitted (section 13 d).

Examples of 'Danfoss' adapters:

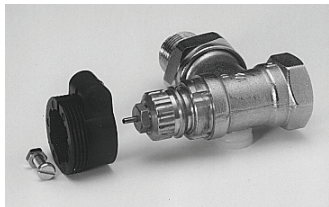


Figure 12a, type 'RA'

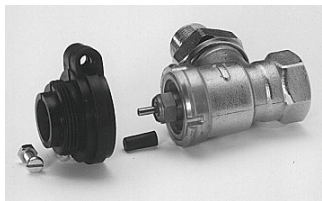


Figure 12b, type 'RAV'

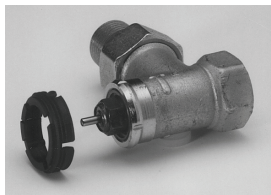


Figure 12c, type 'RAVL'

After attaching the adapters for valves of the type 'RAV' and 'RA' to the valve body, the adapters should be fastened using the enclosed screw and nut.

For valves of the type 'RAV' you should also place the cylindrical extension piece onto the valve pin.

11. Mounting the door/window contact sensor 'FHT80TF'

To save you from having to laboriously read through several user manuals we have included information on how to mount and start up the 'FHT80TF' door/window contact sensors on the following pages.



The 'FHT80TF' door/window contact sensor is not supplied with the 'FHT80B' and must be purchased separately!

a) General information

Magnetic contacts (reed contacts) are integrated into the left and right sides of the casing of the 'FHT80TF' door/window contact sensor. These enable you to mount the magnets supplied with the 'FHT80TF' on the left or on the right.

In addition, the screw-terminals inside the 'FHT80TF' allow external contacts to be attached. These external contacts must be NC (normally closed) contacts.



When a door or a window is opened, the contact must be open.

Three different operating modes are available:

- Only the internal contact is monitored
- Only the external contacts are monitored
- Internal and external contacts are monitored



Please note:

The door/window contact sensor should only be installed in dry indoor areas.

Do not install the device on or near large metal objects (radiators, mirrors, metal doors, aluminium laminated walls in pre-fabricated houses) as this can reduce the wireless range.

b) Installation notes

- Magnetic contacts (reed contacts) are located inside the 'FHT80TF' door/window contact sensor both on the left and on the right side.

This means that you can mount the supplied magnet either on the left or on the right side.



A two-sided installation of 2 magnets (one on the left and one on the right of the door/window contact sensor) is not possible!

- Make absolutely sure that the lower edge of the magnet is 20mm away from the lower edge of the door/window contact sensor.

Mounting the magnets higher or lower reduces the magnetic range; the magnet must be installed close to the door/window contact sensor!

The horizontal distance between the magnet and the door/window contact must not exceed 25mm. The ideal distance is approx. 10-15mm.

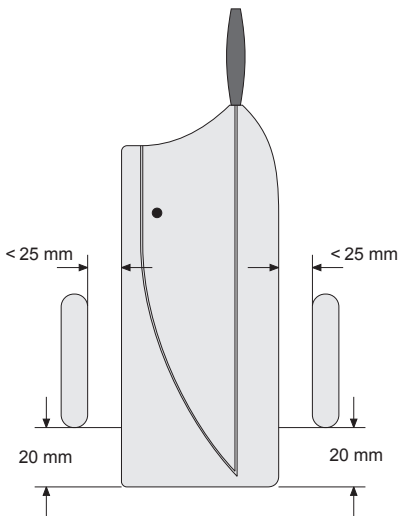


Figure 13

- You can attach several external sensors to the door/window contact sensor, such as when you have a wide window bank with several windows/doors.

These external contacts must be NC (normally closed) contacts.

When connecting several external NC contacts, they must be connected in series. See figure 14.

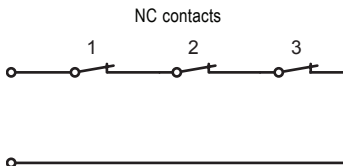


Figure 14



Do not connect terminating resistors!

- The maximum attainable wiring length is greatly dependent upon the cable used and the transmission resistance of the NC contacts. Under ideal circumstances a wiring length of 100m or more is possible.
- When installing the door/window contact sensor and magnet on metal doors or windows the wireless range may be reduced.
- As a rule, the magnet is mounted on the moving part (window or door, for example) and the 'FHT80TF' door/window contact sensor is attached to the static part (window or door frame). Please observe the recommended distances between the magnet and the door/window contact that are illustrated in figure 13 on the previous page.



Tip:

Before using screws to mount the device, you should first check that it is working properly so as to avoid drilling any unattractive holes in the 'wrong' location.

c) Installing the 'FHT80TF'

- Open the casing. Use an appropriately sized flat screwdriver to carefully push the catches on the left side of the casing approx. 1 millimetre inwards ('A'), until the half shells separate.

First press one side catch inwards and pull the casing approx. 1 millimetre apart at this location. Then press the other catch inwards; the casing now opens.

- Before the 'FHT80TF' door/window contact sensor can be installed at the desired location, both external magnet sensor cables (NC contacts) must be inserted, if available.

On the back side of the door/window contact sensor are 2 openings ('C'), through which the cables can be fed inwards.

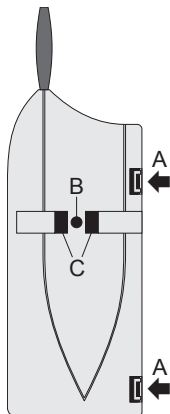


Figure 15

- Attach the door/window contact sensor using the enclosed double-sided tape. Or you can attach it with a screw through the opening 'B'. See figure 15.



Make sure not to damage any power supply lines, gas or water pipes – this may cause life-threatening danger!

- If you use the supplied magnet (for the internal magnet contact), attach it using the enclosed double-sided tape (please note the recommended distances that are illustrated in figure 13 on page 22). Alternatively, you can use 2 screws to attach the magnet (remove the magnet's casing with a flat screwdriver).
- If you intend not to use the internal magnet contact (left or right) and only intend to connect external NC contacts, then you can install the door/window contact sensor anywhere near the window to be monitored (hidden behind a curtain, for example).

- If you are using external NC contacts, connect both cables (fed through the openings near screw 'B') with the screw terminals 'KL1' (position 'D' in figure 16).

- A** LED 'D1'
- B** Opening for wall mounting (in the figure a screw is already inserted).
- C** 'TA1' button
- D** Screw terminals for external NC contacts ('normally closed')
- E** Battery compartment for 2 AAA batteries.

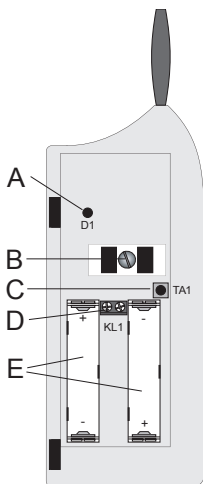


Figure 16

d) Initial operation of the 'FHT80TF'

- Insert 2 size AAA batteries into the battery compartment. Make sure that you observe the correct polarity (see the illustration in the battery compartment or figure 16).
- The current operating mode of the door/window contact sensor is indicated by the blinking 'D1' LED.

| | |
|----------------|---|
| Blinks 3 times | Internal contact is monitored |
| Blinks 4 times | External contacts are monitored |
| Blinks 5 times | Internal <u>and</u> external contacts are monitored |



Afterwards a synchronisation phase takes place (for approx. 1 minute), during which the signal LED blinks every second

If you purchased the door/window contact sensor separately and not as part of a set, then it must now be registered to the heating control. Afterwards, the operating mode can be selected.

e) Setting the operating mode of the 'FHT80TF'

In the delivery state the door/window contact sensor 'FHT80TF' only monitors the internal contact.

When external contacts are also to be monitored (or only external contacts), then the operating mode must be adjusted accordingly. The initial operation blinking sequence (begins once the batteries have been inserted) indicates the current operating mode:

Blinks 3 times Internal contact is monitored

Blinks 4 times External contacts are monitored

Blinks 5 times Internal and external contacts are monitored

To change the operating mode, proceed as follows:

- Keep the 'TA1' button on the 'FHT80TF' door/window contact sensor pressed.
- LED 'D1' begins to light up.



Continue to keep the 'TA1' button pressed; do not release it!

- The 'D1' LED goes out. Now release the 'TA1' button.
- The 'FHT80TF' is now in programming mode.
- Open and close all the windows that are to be monitored several times in order to activate the magnetic contacts. In this way, you can determine whether the internal and/or external contact(s) are activated.
- Briefly press the 'TA1' button.
- The 'D1' LED now blinks to indicate the new operating mode. After synchronising again (approx. 1 minute) the door/window contact sensor 'FHT80TF' returns to the normal operating mode.

12. Programming the system

All the required system settings are preset to standard settings in the factory:

- Heating phase: Comfort temperature 21°C from 6.00 am to 11.00 pm
- Lowering phase: Lowering temperature 17°C from 11.00 pm to 6.00 am
- 'Window open' temperature: 12°C
- Decalcification cycle: Saturday, 11 am



All these settings may, of course, be changed and adapted to suit your individual requirements.

a) Setting the comfort temperature, lowering temperature and the 'Window open' temperature

When the automatic mode has been activated and switching between the lowering temperature and the comfort temperature is performed automatically, a bar in the lower part of the display indicates the time of day at which the temperature will be set to the comfort temperature.

A sun symbol on the display indicates that the comfort temperature is active; a moon symbol indicates that the lowering temperature is active.

If one or several 'FHT80TF' door/window contact sensors are installed in a room, then the so-called 'Window open' temperature is automatically activated after the monitored door or monitored window has been opened (irrespective of which operating mode has been set).

Proceed as follows to change the settings:

- Press and hold the '☀' button longer than 3 seconds.
- The comfort temperature is displayed on the LCD. The sun symbol ☀ blinks.

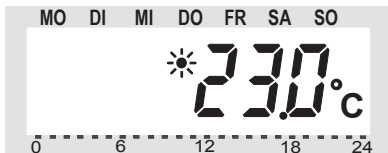


Figure 17

Use the scroller to set the desired comfort temperature. To confirm briefly press the '☀' button.

- The lowering temperature is then displayed on the LCD. The moon symbol '☾' blinks.

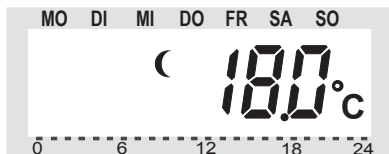


Figure 18

Use the scroller to set the desired lowering temperature. To confirm briefly press the '☀' button.

- The LCD displays the 'Window open' temperature. The door/window symbol '🚪' blinks.

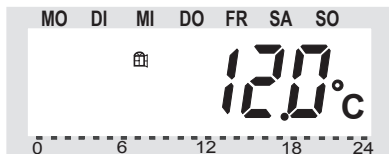


Figure 19

Use the scroller to set the 'Window open' temperature you require. To confirm briefly press the '☀' button.

- The heating control now returns to the normal operating mode.

b) Setting/changing the week profile

The time for automatic switching between the comfort temperature and the lowering temperature can be programmed to different settings for each day of the week. This way you can adapt the desired room temperature to your individual lifestyle.



4 switching times (comfort temperature on, lowering temperature on, comfort temperature on, lowering temperature on) can be set for each day of the week.

These 4 switching times can be different for each day of the week. This makes it possible to start heating later on weekends, for example, or on certain days of the week ('bath day').

- Briefly press the '**PROG**' button.
- '**Prog**' appears on the LCD and the '▲' arrow points to '**MO**' (**Monday**). See figure 20.

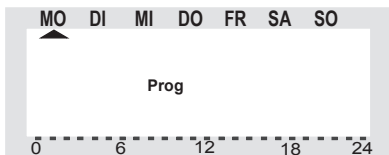


Figure 20

- Use the scroller to select the day for which you want to change the time program. You may either select each day of the week individually (**MO** = Monday, **DI** = Tuesday, **MI** = Wednesday, **DO** = Thursday, **FR** = Friday, **SA** = Saturday, **SO** = Sunday) or program a combination of days in one block, such as:
 - Weekend (**SA**, **SO**)
 - Weekdays (**MO**, **DI**, **MI**, **DO**, **FR**)
 - All days (**MO**, **DI**, **MI**, **DO**, **FR**, **SA**, **SO**)

This facilitates and speeds up the programming process.

Briefly press the '**PROG**' button to confirm your selection of a weekday or a block of days (weekend, weekdays, all days).

- The time when the comfort temperature will be switched on is displayed (the sun symbol '☀' is displayed), in our example this is '6:00' hrs:

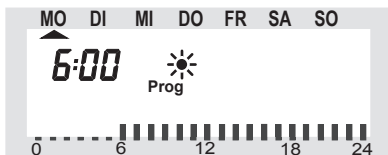


Figure 21

Use the scroller to select the time when the appliance should begin warming up to the target comfort temperature. A scale for facilitating orientation appears on the bottom of the LCD (long lines = comfort temperature is active).

Briefly press the 'PROG' button to confirm the starting time.

- The time when the lowering temperature will be activated appears in the LCD (the moon symbol '☾' is displayed):

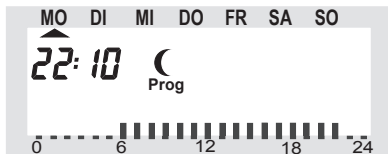


Figure 22

Use the scroller to select the time when the temperature should begin to reduce to the target lowering temperature.

Briefly press the 'PROG' button to confirm the setting.

- Repeat the steps described above to program the second comfort temperature time and the second lowering temperature time.



If one of the switching times is not to be used, turn the scroller to the right side until four bars are displayed ('-- : --', bars are displayed after the displayed time 11:50 pm), see figure 23:

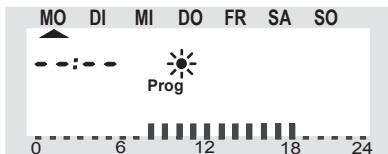


Figure 23

If you set the second comfort temperature time to '--:--', the setting of the second lowering temperature time is irrelevant, since nothing changes.

Two different periods of comfort temperature can be set, for example, from 6.00 am to 9.00 am and from 4.00 pm to 11.00 pm.

After the second lowering temperature time has been set and confirmed by pressing the '**PROG**' button, the device returns to normal operating mode.



The bar displayed in the lower part of the LCD adjusts to the changes as they are being made; this means the effect on the day profile is immediately visible.

Please note that the temperature at the end of the previous day is not displayed. This means that, if the previous day ended with a comfort temperature, for example, then this heating phase is continued the next day. However, this is not displayed during programming!

c) Operating modes

Press the 'FUNKTION' button to change the operating mode. Press this button several times to scroll through the different operating modes:

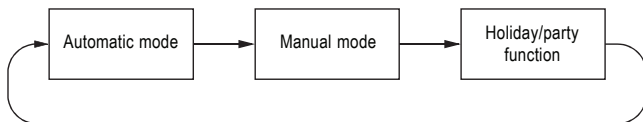


Figure 24

- **Automatic mode**

In the Automatic operating mode ('Auto' appears in the LCD) the room temperature is controlled according to the program set for the day of the week. The temperature history for the current weekday is displayed on the bar scale in the lower part of the display. The '☀' and '☾' icons reveal whether the comfort temperature or the lowering temperature is active.



A temporary temperature change can be made at any time using the scroller. The next time a regular temperature change is scheduled the thermostat will then automatically return to the time-controlled program.

- **Manual mode**

In the manual operating mode ('Manu' is displayed) the heating control maintains the set temperature. An automatic time-controlled change will not be performed.




This function is identical to the function of a conventional thermostat.

- **Holiday/party mode**

In this operating mode (suitcase symbol '🧳' appears in the display) the temperature is maintained at a certain fixed value for a defined period of time (for example, the duration of a party or a holiday). After this, the heating control automatically switches to the automatic mode.

Setting the holiday/party function:

- Select this operating mode (suitcase symbol  appears in the display) with the '**FUNKTION**' button and set the period of time this function is to be active.

During the following 24 hours the temperature will be reduced in stages every 30 minutes (party function). Furthermore, the temperature will be reduced every day (holiday function).

Set the day you will return from your holiday. As of 12 midnight on this day heating is then carried out using the normal time program.

- Confirm your desired time settings by briefly pressing the '**PROG**' button.
- Use the scroller to set the target temperature.



If you select a different operating mode using the '**FUNKTION**' button, you will automatically quit the holiday/party mode.

d) Button lock (for buttons and scroller)

The heating control is equipped with an integrated lock for both the buttons and the scroller in order to prevent and protect it from being inadvertently operated (by children, for example).

Proceed as follows:

- To activate the button lock, simultaneously press the '**FUNKTION**' and '**PROG**' buttons.
'**LOC**' appears briefly on the LCD and all the operating functions are now locked.

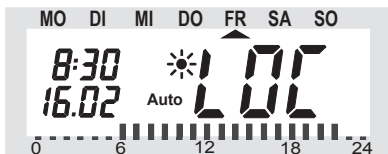


Figure 25

- To deactivate the button lock, simultaneously keep the '**FUNKTION**' and '**PROG**' buttons pressed until '**LOC**' disappears from the display (approx. 2 seconds).

e) Switching between comfort temperature and lowering temperature

If a room is used at different times than set in the time program, you may change the temperature any time using the scroller. You can also switch directly from the comfort temperature to the lowering temperature by pressing the '☾ ☀' button.

f) Heating pause

Switching off the heating during the summer conserves the actuator's batteries and extends the service life of the batteries.



During the heating pause the valve is opened completely and remains in this position. However, the weekly decalcification cycle is still carried out.

Proceed as follows to activate the heating pause:

- Press the 'FUNKTION' button to switch to the 'Manu' operating mode.
- Turn the scroller clockwise until 'On' appears on the LCD.

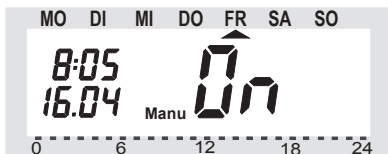


Figure 26

g) Closing the valve

Select this operating mode, if you do not want to heat the room at all.



The valve is closed and remains in this position.

The valve is only opened, if the temperature drops below 5°C (danger of freezing). The weekly decalcification cycle is still carried out.

- Press the '**FUNKTION**' button to switch to the '**Manu**' operating mode.
- Turn the scroller anticlockwise until '**OFF**' appears on the LCD.

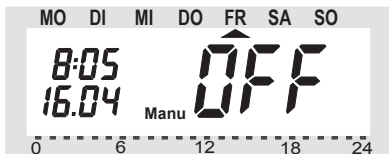


Figure 27

h) Emergency operation of the valve operating mechanism

If an error occurs that cannot be eliminated (because the batteries of the heating control or valve operating mechanism are low and no new batteries are at hand, for example) it may be necessary to operate the valve manually. To do so, proceed as follows:

- Remove both batteries from the valve operating mechanism.
- Remove the control pin by pressing on the position marked with a (1).
- Place the control pin onto the peg marked with a (2).
- Turn the control pin:
 - Clockwise = increase heat
 - Anticlockwise = reduce heat

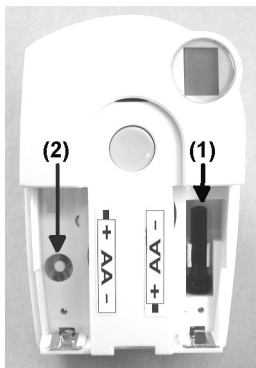


Figure 28

i) 'Window open' detection

The installed 'FHT80TF' door/window contact sensors require no operation. They detect when a window or a door has been opened and notify the heating control by radio signal accordingly. The heating control then reduces the target temperature to the 'Window open' temperature that has been set.

Likewise, when all the windows are closed, the heating control is notified of this again by radio signal and restores the original temperature.



The temperature can also be changed manually to a different value at any time while the window is open.

The 'FHT80TF' indicates that it has detected a change of state via its signal LED:

| | |
|----------------|---------------|
| 1 long blink | Window opened |
| 3 short blinks | Window closed |

13. Special functions

The heating control has several special functions.



To access the special functions menu press the '**PROG**' button until '**Sond**' appears on the LCD. Then release the '**PROG**' button.

The special functions menu can only be accessed when the heating control is in the normal operating mode (time and date are displayed on the left of the display and the temperature is displayed on the right of the display).

The following special functions are available:

| | |
|-------------|---|
| CALC | Setting the time for the decalcification cycle |
| °C°F | Selecting the temperature unit (°C or °F) |
| dAt | Date and time setting |
| Code | For changing the radio transmission security code or setting codes for new valve operating mechanisms |
| An A | Setting the number of valves controlled by the heating control or extending the system |
| SYNC | Synchronising the valve operating mechanisms |
| tEst | Test function for radio transmission |
| StEL | Displaying the valve position |
| CEnT | Default setting for the radio connection to the central unit |
| FEn | Door/window contact sensor's menu |
| OFFS | Setting the offset (this option is only displayed, if there is more than one valve operating mechanism) |

a) Setting the decalcification time ('CALC')

The valve is completely opened and closed once a week. This prevents deposits from blocking the valve. You can use the special '**CALC**' function to change the time at which the decalcification cycle is carried out.

- Press the '**PROG**' button until '**Sond**' is displayed. Then release the '**PROG**' button.
- Use the scroller to select the special '**CALC**' function.
- Confirm this by pressing the '**PROG**' button.

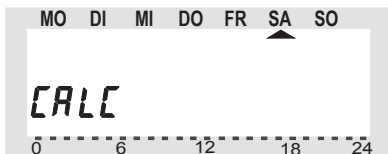


Figure 29

- Use the scroller to select the day of the week (arrow up symbol '▲' beneath the respective day of the week).
- Confirm the day of the week you have selected by pressing the '**PROG**' button. The time at which the decalcification cycle will be carried out now appears in the first line of the LCD.

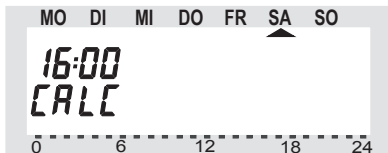


Figure 30

- Use the scroller to change the time.
- Confirm the decalcification time that you have set by pressing the '**PROG**' button. The heating control now returns to the normal operating mode.

b) Selecting the temperature unit ('°C°F')

Here you can select whether the temperature is to be displayed in degrees Celsius (°C) or degrees Fahrenheit (°F).

- Press the '**PROG**' button until '**Sond**' appears on the LCD (for special function).
- Use the scroller to select the special '**°C°F**' function.
- To confirm your selection, briefly press the '**PROG**' button.
- You can use the scroller to switch between '°C' and '°F'.
- To confirm your selection, briefly press the '**PROG**' button. The heating control now returns to the normal operating mode.

c) Setting the date and time ('dAt')

- Press the '**PROG**' button until '**Sond**' appears in the LCD.
- Use the scroller to select the '**dAt**' function.
- To confirm your selection, briefly press the '**PROG**' button.



Carry out all further settings as described in section 9, page 15.

d) Setting the security code ('Code')

To protect the heating control against interference from other radio systems the device uses a two-part security code.

Each part of the code comprises 100 setting options. This means that a total of 10,000 different security codes are available.



To ensure communication between the 'FHT80B' heating control and the 'FHT8V' valve operating mechanism/s the same security code has to be set for all the devices in a room.

This is particularly important, if you use more than one valve operating mechanism or you have not purchased a set (heating control and valve operating mechanism).

Proceed as follows to change or set the code:

- Press the '**PROG**' button until '**Sond**' appears in the LCD.
- Use the scroller to select the '**Code**' function.
- To confirm your selection, briefly press the '**PROG**' button.

The following information is displayed:



Figure 31

- Use the scroller to select the first part of the code (a number between '000' and '099') and confirm your selection by briefly pressing the '**PROG**' button.
- The following information is displayed:

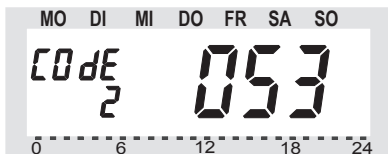


Figure 32

- Use the scroller to select the second part of the code (a number between '000' and '099') and confirm your selection by briefly pressing the '**PROG**' button.
- The following information is displayed:

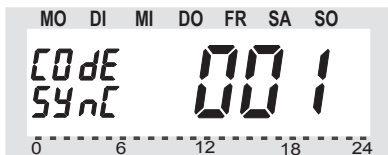


Figure 33



Now you need to synchronise the (first) valve operating mechanism ('001' on the display) to the new security code.

Proceed as follows to carry out this synchronisation:

- Remove the battery compartment cover of the (first) valve operating mechanism by sliding it down.
- Press the button on the valve operating mechanism for approx. 3 seconds until you hear 3 signal tones. The valve operating mechanism is now ready to receive and '**AC**' is displayed.
- Press the '**PROG**' button on the 'FHT80B' heating control to start transmitting the security code to the valve operating mechanism.
- The valve operating mechanism acknowledges that it has received the code correctly with a tone sequence.
- Replace the valve operating mechanism's battery compartment cover.
- The valve operating mechanism acknowledges that it has received the first normal radio signal with a signal tone.



Now repeat these steps for all the other valve operating mechanisms in the room ('002', '003'... on the display).

After the last valve operating mechanism has been coded the heating control automatically returns to the normal operating mode.

If the heating control is used to control several valve operating mechanisms, in other words, several radiators are located in one room, you should make a note of which valve operating mechanism belongs to which radiator, that means the number.

If coding of a valve operating mechanism fails (for example, due to bad reception, a low battery or similar), the security code can be transmitted to this valve operating mechanism again at a later time.

- Proceed as described above and skip the valve operating mechanisms that have already been coded by briefly pressing the '**PROG**' button.
- If the LCD shows the number of a valve operating mechanism that has not yet received a security code, press the control button on this valve operating mechanism until '**AC**' is displayed on the valve operating mechanism and you hear 3 signal tones. Also see the information above.
- Now press the '**PROG**' button on the heating control to get the heating control to transmit the security code. The valve operating mechanism uses a tone sequence to acknowledge that it has received the code correctly.

Afterwards, replace the valve operating mechanism's battery compartment cover. The valve operating mechanism uses a signal tone to acknowledge the first receipt of a normal radio signal.

e) Setting the number of valve operating mechanisms ('An A')

You use this menu item to set the number of radiators (valve operating mechanisms) to be controlled when the heating control is used to control several valve operating mechanisms in one large room, for example.



If you install an additional valve operating mechanism, you must ensure that this valve operating mechanism is assigned the same security code as the valve operating mechanisms, which are already installed.

- Press the '**PROG**' button until '**Sond**' appears in the LCD.
- Use the scroller to select the special '**An A**' function.
- To confirm your selection, briefly press the '**PROG**' button.
- The following information is displayed:

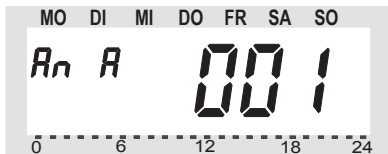


Figure 34

- Use the scroller to set the number of radiators (1 to 8) and confirm your setting by briefly pressing the '**PROG**' button.



The (first) valve operating mechanism is now synchronised to the new security code. '**CodE SynC 001**' appears on the heating control's LCD.

Repeat the following 6 steps (see next page) for each installed valve operating mechanism:

1. Remove the battery compartment cover of the (first) valve operating mechanism by sliding it down and out.
2. Press the button on the valve operating mechanism for approx. 3 seconds until you hear 3 signal tones. The valve operating mechanism is now ready to receive and '**AC**' is displayed.
3. Press the '**PROG**' button on the heating control to start transmitting the heating control's security code to the valve operating mechanism.

4. The valve operating mechanism acknowledges that it has received the code correctly with a tone sequence.
 5. Replace the valve operating mechanism's battery compartment cover.
 6. The valve operating mechanism acknowledges that it has received the first normal radio signal with a signal tone.
- Repeat these 6 steps for all the other valve operating mechanisms that are located in the room ('002', '003' ... on the display) according to the number of valve operating mechanisms that has been set.

Once all the valve operating mechanisms have been coded the heating control automatically returns to the normal operating mode.



You can skip any valve operating mechanisms that have already been synchronised/programmed to the heating control's security code.

All you need to do is briefly press the '**PROG**' button on the heating control (do not open the respective valve operating mechanism/do not press the button on the valve operating mechanism!)

f) Synchronising the valve operating mechanisms ('SYnC')

When this menu item is selected, the heating control starts to signal (for approx. 2 minutes) to all the valve operating mechanisms that they should resynchronise.

Afterwards the normal transmission program is continued and the valve operating mechanisms generate a signal tone as soon as they receive the first correct signal.

- Press the '**PROG**' button until '**Sond**' appears in the LCD.
- Use the scroller to select the special '**sync**' function.
- To confirm your selection, briefly press the '**PROG**' button.
- The LCD then displays the security code and the heating control counts down from '120' in steps of 1 second. After these 120 seconds the heating control returns to the normal operating mode.

g) Test mode ('tEST')

You can use this function to check whether all the valve operating mechanisms receive the radio signal correctly. The addressed valve operating mechanisms acknowledge correct reception with an acoustic signal. Use the scroller to select the valve operating mechanisms to be tested.

If the large display shows a '0', then all the receivers are tested, otherwise, only the valve operating mechanism assigned to the displayed number is tested. The timer in the left corner of the display counts down to the time at which the next test cycle is to be started.

- Press the '**PROG**' button until '**Sond**' appears in the LCD.
- Use the scroller to select the special '**tEST**' function.
- To confirm your selection, briefly press the '**PROG**' button.
- Use the scroller to select the valve operating mechanism/s to be tested.
- Press the '**PROG**' button to quit the test function.

h) Displaying the valve position ('StEL')

When you select this menu item the heating control's LCD indicates how far the valve is opened as a percentage (only for valve operating mechanism 1).

- Press the '**PROG**' button until '**Sond**' appears in the LCD.
- Use the scroller to select the special '**StEL**' function.
- To confirm your selection, briefly press the '**PROG**' button.
- The display shows the valve opening as a percentage (only possible for valve operating mechanism 1).
- Press the '**PROG**' button to quit this function.

i) Connecting to the home radio central unit ('CEnt')

You only require this special function, if you want the heating control to work with a new 'FHZ1000' central unit or no central unit at all, in other words, you wish to unregister the heating control from the central unit.

Radio communication between the heating control and the central unit is also protected by the heating control's security code. For this purpose the respective heating control is 'registered' with the central unit.



To ensure that the heating control only works with your central unit and not with your neighbour's central unit, for example, the heating control can only be registered with one central unit.

If you want to register the heating control with another central unit, then you must first to re-enable the heating control. 3 different settings are possible:

- 'On':** Heating control is registered with the central unit
- 'off':** No radio communication with the central unit. Registration is not possible.
- 'nA':** Heating control is enabled for registration with the central unit

To set, proceed as follows:

- Press the **'PROG'** button until **'Sond'** appears on the LCD.
- Use the scroller to select the special **'CEnt'** function.
- To confirm your selection, briefly press the **'PROG'** button.
- The LCD displays the current setting (**'On'**, **'off'**, **'nA'**).
- Use the scroller to select the setting you require (**'On'**, **'off'**, **'nA'**) and confirm your selection by pressing the **'PROG'** button.

The heating control then returns to the normal operating mode.

j) Querying the status of a door/window contact sensor ('FEn')

You can use the '**FEn**' special function menu to request the current status of a 'FHT80TF' door/window contact sensor. You can also use this menu to newly register or delete door/window contact sensors.

Proceed as follows to access the door/window contact sensor's menu:

- Press the '**PROG**' button until '**Sond**' appears on the LCD.
- Using the scroller, select the special '**FEn**' function.
- To confirm your selection, briefly press the '**PROG**' button.
- The LCD shows the status of the door/window contact sensor stored at the first memory location:

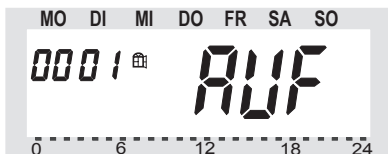



Figure 35

The following status signals are possible:

| | |
|--|---|
| 'nA': | Not registered, in other words, no door/window contact sensor is registered to this memory location |
| 'AUF' | The window is open |
| 'EA' | Reception failure, in other words, no signals have been received from the door/window contact sensor over a long period of time |
| no display | Window closed, reception OK |
| Battery symbol  | This door/window contact sensor's batteries are low and must be replaced |



By turning the scroller you can select which of the four memory locations should be displayed.

- Briefly press the '**PROG**' button to quit the door/window contact sensor's status indicator. The heating control returns to the normal operating mode.

k) Registering a door/window contact sensor

Proceed as follows to register a door/window contact sensor with the 'FHT80B' heating control:

- The 'FHT80B' door/window contact sensor must be properly installed.
- Press the '**PROG**' button until '**Sond**' appears on the LCD.
- Using the scroller, select the special '**FEN**' function.
- To confirm your selection, briefly press the '**PROG**' button.
- Use the scroller again to select the desired memory location.
- Keep the '**FUNKTION**' button pressed until '**Code**' appears on the display. See figure 36 on the next page.

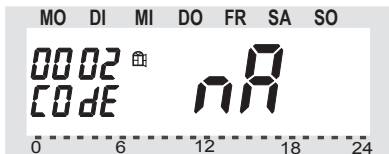


Figure 36

- Now press the button located inside the door/window contact sensor's casing ('**TA1**') until the red LED lights up. Then release the button.
- The door/window contact sensor transfers its coding to the heating control.
- '**EA**' now appear on the heating control's LCD.

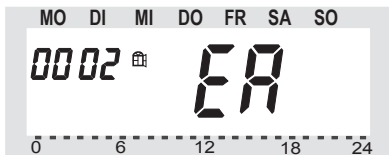


Figure 37

- If no further door/window contact sensors need to be registered, return to the normal operating mode by pressing the '**PROG**' button.
- After a few minutes the heating control is synchronised to the transmissions from the door/window contact sensor and the system is ready for use.

I) Deleting door/window contact sensors

Door/window contact sensors that are no longer required or are no longer in operation should be deleted in order to avoid repeated error messages from being displayed ('reception failure'). The power consumption also increases as attempts are regularly made to receive signals from the door/window contact sensors.

Proceed as follows to delete a door/window contact sensor:

- Press the '**PROG**' button until '**Sond**' appears on the LCD.
- Using the scroller, select the special '**FEn**' function.
- To confirm your selection, briefly press the '**PROG**' button.
- Using the scroller, select the door/window contact sensor that you wish to delete.
- Keep the '☾ ☀' button pressed until the status is displayed as 'not registered' ('nicht angemeldet', '**nA**').

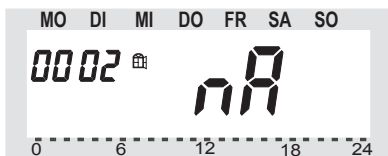


Figure 38

- Briefly press the '**PROG**' button to quit the status indicator. The heating control returns to the normal operating mode.

m) Radiator offset ('OFFS')



This setting option is only displayed, if you use more than one valve operating mechanism.

If several radiators are controlled by one heating control, it may be that these radiators do not heat up to the same level.



The reason for this is that the flow rates of the valves differ greatly, depending on varying or poorly dimensioned radiators. This problem may be solved by adjusting the settings of single radiators so that they give off more (positive offset) or less (negative offset) heat.


- Press the '**PROG**' button until '**Sond**' appears in the LCD.
- Use the scroller to select the special '**OFFS**' function.
- To confirm your selection, briefly press the '**PROG**' button.
- Use the scroller to select the valve operating mechanism/radiator you require, and confirm your selection by pressing the '**PROG**' button.
- Use the scroller to set the offset, and confirm your setting by pressing the '**PROG**' button. The heating control then returns to the normal operating mode.



You may have to repeat this process several times until the heating power has been optimally distributed.

14. Replacing the batteries

a) 'FHT80B' heating control

If the  symbol appears on the LCD, this means that the batteries are low and must be replaced.

To replace the batteries, proceed as follows:

- Remove the heating control from the wall holder and open the battery compartment cover (slide down).
- Remove the batteries from the battery compartment and dispose of them according to the applicable environmental regulations. See section 18, page 58.
- Insert two new AA batteries; make sure the polarity is correct. If possible, use alkaline batteries.
- Close the battery compartment.
- If a 'FHZ1000' central unit is present, the heating control automatically requests the current time and date and then sets these. Otherwise you need to set these manually.

The time program settings, the comfort/lowering temperature settings and so on are maintained.

- As the heating control and the valve operating mechanism are no longer synchronised with each other, the heating control performs a synchronisation procedure ('SYnC Auto') that lasts approx. 2 minutes. After this synchronisation the heating control returns to the normal operating mode.

b) 'FHT8V' valve operating mechanism


The battery symbol appears when the valve operating mechanism's batteries are low. In addition, an acoustic signal is generated every 2 minutes for one hour, three times a day.

To replace the batteries, proceed as follows:

- Remove the battery compartment cover from the valve operating mechanism by sliding it down.
- Remove the old batteries and dispose of them according to the applicable environmental regulations. See section 18.
- Wait until all the segments of the valve operating mechanism's LCD have gone out. You can speed up this process by keeping the button on the valve operating mechanism pressed.

- Insert two new AA batteries into the valve operating mechanism's battery compartment, making sure that the polarity is correct. Otherwise you may destroy the valve operating mechanism's electronic components!
- The display shows '**C1**' followed by a 2-digit number. The display then shows '**C2**', followed by another 2-digit number (both numbers are the currently stored security code of the valve operating mechanism).
- A signal tone is then generated and '**A1**' is displayed.
- The valve operating mechanism now fully retracts the control pin.
- '**A2**' is then displayed.
- Briefly press the button on the valve operating mechanism.
- '**A3**' is displayed and the valve operating mechanism closes the valve completely.
- The antenna symbol then blinks and '**0%**' is displayed.
- The first radio signal that is received is acknowledged by a signal tone, and the antenna symbol is permanently displayed.
- Replace the battery compartment cover.

c) 'FHT80TF' door/window contact sensor


When the batteries in the door/window contact sensor are low, the device sends this information to the heating control. The corresponding error message (the window icon  blinks) is shown on the heating control's display.

You can use the 'FEn' special function menu to identify the door/window contact sensor whose batteries are low.

To replace the batteries, proceed as follows:

- Open the casing by pushing the two catches on the left side of the casing approx. one millimetre inwards using a flat screwdriver while simultaneously pulling the lid forwards.
- Remove both of the old batteries and dispose of them according to the applicable environmental regulations. See section 18.
- Insert 2 new AAA batteries into the battery compartment, observing the correct polarity.
- Close the casing cover.
- If necessary, the door/window contact sensor now conducts a synchronisation procedure that lasts approx. 1 minute (the LED blinks every second).

15. Troubleshooting

| Problem | Possible cause | Solution |
|--|--|---|
| Permanent signal tone and 'F1' is displayed on the valve operating mechanism | <ul style="list-style-type: none"> The valve is too tight or the valve operating mechanism is blocked | <ul style="list-style-type: none"> Remove the valve operating mechanism Manually check valve operation Mount the valve operating mechanism again If necessary, consult a heating technician |
| Permanent signal tone and 'F2' is displayed on the valve operating mechanism | <ul style="list-style-type: none"> Control range is too large Valve operating mechanism is not mounted to the heat ventilator | <ul style="list-style-type: none"> Mount the valve operating mechanism again Unsuitable valve Insert a spacer that is 1mm thick (a washer, for example) between the heat ventilator and the actuator |
| Permanent signal tone and 'F3' is displayed on the valve operating mechanism | <ul style="list-style-type: none"> Control range is too small | <ul style="list-style-type: none"> Mount the valve operating mechanism again Unsuitable valve |
| No radio symbol displayed on the valve operating mechanism. The valve operating mechanism generates a tone sequence every hour. The valve is 30% opened. | <ul style="list-style-type: none"> Radio connection failure due to interference Heating control's batteries are low Heating control's code is not right (or has been misadjusted) | <ul style="list-style-type: none"> Install the heating control in a different location Replace the heating control's batteries Transmit the current security code to the valve operating mechanism |
| 'Low battery' symbol is displayed. The valve operating mechanism generates a tone sequence every 2 minutes for one hour. | <ul style="list-style-type: none"> The valve operating mechanism's batteries are almost empty | <ul style="list-style-type: none"> Replace the batteries |
| 'LOC' is displayed when a button is pressed | Button lock is activated | <ul style="list-style-type: none"> Deactivate the button lock |
| The window symbol  blinks | <ul style="list-style-type: none"> Radio connection failure to a door/window contact sensor Empty batteries | <ul style="list-style-type: none"> Identify and rectify the fault Replace the batteries |

16. Handling

- Protect the product against humidity, cold, heat, dust, and direct sunlight.
- Never dismantle the product. Only have the device repaired by a skilled technician otherwise the device's licence will become invalid.
- Even a fall from a low height can damage the product.

17. Maintenance and cleaning

The product requires no servicing except for battery replacement.

Clean the product with a soft, clean, dry and lint-free cloth. To remove heavier dirt, use a cloth which is slightly moistened with lukewarm water.

Do not use solvent-based cleaning agents, as these may damage the surface of the plastic casing and its inscription.

18. Disposal

a) General information



When the product is no longer usable, dispose of it in accordance with the applicable statutory regulations.

b) Battery/rechargeable battery disposal

As the consumer, you are legally obliged to return all your used batteries and rechargeable batteries. **Do not dispose of your used batteries via the household rubbish!**



Batteries/rechargeable batteries containing harmful substances are marked with the following icons, which alert you to the fact that disposal via the household rubbish is prohibited. The identifiers for the respective heavy metals are: **Cd**=cadmium, **Hg**=mercury, **Pb**=lead (identifier is on the battery/rechargeable battery, for example, under the rubbish bin icons on the left).



You can return your used batteries/rechargeable batteries free of charge to any authorised disposal station in your area, in our stores or in any other store where batteries/rechargeable batteries are sold!

By doing so you comply with your legal obligations and also make a contribution to environmental protection.

19. Technical specifications

- Range
 - to the valve operating mechanism (free-field): up to 100m
 - to the home radio central unit (free-field): up to 300m
- Max. number of actuators per heating control: 8
- Max. number of door/window contact sensors per heating control: 4
- Radio frequency: 868.35MHz
- Power supply for the heating control: 2 x AA batteries
(if possible, use alkaline batteries)
- Battery life: approx. 1 year
- Temperature range when in operation: 6°C to 30°C
- Number of switching times: 4 per day
- Two-part security code, up to 10,000 possible codes
- Bi-directional radio transmission with the 'FHZ1000'
- Data is preserved when batteries are replaced
(when a 'FHZ1000' is present the date and time are transmitted from the 'FHZ1000' to the heating control. If necessary, data may still need to be entered manually)

20. Declaration of conformity (DOC)

We, Conrad Electronic, Klaus-Conrad-Straße 1, D-92240 Hirschau (Germany), hereby declare that this product complies with the fundamental requirements and other relevant regulations of directive 1999/5/EG.



You can find the declaration of conformity for this product at www.conrad.com.



100%
recycling
paper.

Bleached
without
chlorine.

Imprint

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Wichtiger Hinweis

Ventilantrieb

Best.-Nr. 57 00 56

Version 5/2002



Sehr geehrter Kunde,

Der Ventilantrieb hat sich im Design etwas geändert. Technisch entspricht er jedoch der Beschreibung in der Bedienungsanleitung.

Wir bitten um Ihr Verständnis.

Ihr Conrad-Team



www.conrad.de



Ventilantrieb zum Funk-Heizkörperthermostat STA 800 C

Best.-Nr. 57 00 56

Bitte lesen Sie diese und die gesamte Anleitung des Heizkörperthermostats vor der ersten Inbetriebnahme komplett und sorgfältig, sie enthalten zahlreiche Hinweise zum bestimmungsgemäßen Gebrauch dieser Geräte. Diese Bedienungsanleitung gehört zu diesem Produkt. Achten Sie hierauf, auch wenn Sie dieses Produkt an Dritte weitergeben. Heben Sie deshalb diese Bedienungsanleitung zum Nachlesen auf!

Die Beschreibungen und Hinweise nachfolgender Themen entnehmen Sie bitte der gesamten Bedienungsanleitung des Heizkörperthermostats mit Ventilantrieb. (Conrad Electronic Best. Nr. 570055)

Nachfolgende Inhalte finden Sie mit Angabe der entsprechenden Seitenzahlen in der Hauptanleitung des Heizkörperthermostats.

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Bestimmungsgemäße Verwendung

Der Ventilantrieb dient zum Verstellen von Ventilen an Heizkörpern. Er enthält alleine oder gemeinsam mit weiteren Ventilantrieben über Funk Befehle von der zugehörigen Regeleinheit. Diese Befehle setzt der Ventilantrieb in entsprechende Stellwerte am Ventil um. Das Gesamtsystem dient so zur Temperaturregelung in Einzelräumen in denen die Regelung der über Heizkörper abgegebenen Wärme durch die Drosselung des Heizwasserflusses erfolgt. Der Ventilantrieb darf nicht für andere, hiervon abweichende Zwecke verwendet werden. **Der Betrieb ist nur mit der zugehörigen Regeleinheit möglich**, darum entnehmen Sie bitte alle zur Installation, Inbetriebnahme und Bedienung benötigten Informationen aus der gesamten Bedienungsanleitung des Heizthermostats. (Conrad Electronic Best. Nr. 570055)

Lieferumfang

- 1 Stk. Ventilantrieb, bestehend aus Unter- und Oberteil.
- 1 Satz (3 Stk.) Adapterringe für Danfoss-Ventile
- 2 Stk. Mignon-Batterien
- 1 Stk. Kurzanleitung



Diese Bedienungsanleitung ist eine Publikation der Conrad Electronic GmbH, Klaus-Conrad-Straße 1, D-92240 Hirschau.
Diese Bedienungsanleitung entspricht dem technischen Stand bei Drucklegung. Änderung in Technik und Ausstattung vorbehalten.

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Wireless heater thermostat with automatically-powered-valve STA 800 C

Item-No. 57 00 56

Please carefully and completely read this operating manual as well as the complete operating manual of the heater thermostat before you start to use the device. The operating manual contains important information regarding the use of this device. These instructions belong to the above mentioned product. The present operating manual is part of this product. Please note it duly even if you pass it on to third people.

So please keep this operating manual for your future reference!

Descriptions and references concerning the following points are in the complete operating manual of the heat thermostat with automatic-powered valve. (Conrad Electronic Item-No. 570055)

You will find the following contents with indication to the corresponding pages in the main operating manual of the heater thermostat.

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Prescribed use

The function of the automatically-powered valve is to regulate valves on heaters. It receives wireless commands singly or together with other automatic-powered valves from its specific control unit. The automatically-powered valve converts these commands to the corresponding settings onto the valve. The complete system is used to control the temperature in individual rooms, where the control of temperature conveyed by heaters occurs via the regulation of hot water flow. The automatically-powered valve should not be used for other purposes than those describe above. **Operating the device is possible only in connection with the respective control unit.** Therefore use all information relative to installation, putting-into-operation and use from the complete operating manual of the heater thermostat (Conrad Electronic Item-No. 570055)

Contents of the package

- 1 automatically-powered valve consisting of lower and upper part.
- 1 Set (3 pieces) Adapter rings for Danfoss-Valves
- 2. Mignon size batteries
- 1 Operating manual



These operating instructions are published by Conrad Electronic GmbH, Klaus-Conrad-Straße 1, D-92240 Hirschau/Germany.
The operating instructions reflect the current technical specifications at time of print. We reserve the right to change the technical or physical specifications.

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Entraînement de vanne pour thermo- C € stat sans fil pour radiateur STA 800 C

N° de commande 57 00 56

Veuillez, avant la première mise en service, lire attentivement et complètement cette notice d'emploi ainsi que le mode d'emploi complet du thermostat pour radiateur qui vous donnera de nombreux conseils utiles pour l'emploi de ces appareils dans le cadre de l'utilisation prévue. Ce mode d'emploi correspond au produit ci-dessus mentionné. Il faut respecter ces instructions, même si ce produit est transmis à tierce personne !

Gardez ce mode d'emploi pour toute consultation ultérieure !

Les descriptions et conseils des sujets suivants sont à consulter dans le mode d'emploi d'ensemble du thermostat pour radiateur avec entraînement de vanne (Conrad Electronique n° de commande 570055)

Vous trouverez les explications correspondantes aux chapitres de l'index ci-dessous sous la page à consulter dans le mode d'emploi d'ensemble du thermostat pour radiateur.

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Utilisation prévue

L'entraînement de vanne sert à réguler les vannes de radiateurs. Il reçoit, seul ou en groupe avec plusieurs autres entraînements de vanne, les ordres de l'unité de commande correspondante par radio-transmission. Il exécute ces ordres en ajustant la vanne en conséquence. L'ensemble du système sert ainsi à réguler la température de pièces séparées dans lesquelles la régulation de la chaleur dégagée par le radiateur se fait par réduction du flux de l'eau de chauffage. Il est interdit d'utiliser l'entraînement de vanne pour une autre utilisation. **L'utilisation n'est possible qu'avec l'unité de commande associée**, c'est pourquoi nous vous prions de bien vouloir consulter le mode d'emploi d'ensemble du thermostat pour radiateur pour prendre connaissance des informations nécessaires à l'installation, à la mise en service et au maniement (Conrad Electronique n° de commande 570055).

Contenu de l'emballage

- 1 entraînement de vanne, constitué d'une partie inférieure et d'une partie supérieure.
- 1 jeu (3 pièces) d'anneaux adaptateurs pour vannes Danfoss
- 2 piles R6 mignon
- 1 mode d'emploi abrégé



Cette notice est une publication de la société Conrad Electronic GmbH, Klaus-Conrad-Straße 1, D-92240 Hirschau/Allemagne.

Cette notice est conforme à la réglementation en vigueur lors de l'impression. Données techniques et conditionnement soumis à modifications sans aucun préalable.

Version 10/09



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1. Introduction

Dear Customer,

Thank you for purchasing this product.

This product complies with the applicable national and European specifications.

To maintain this status and to ensure safe operation, you as the user must observe these operating instructions!

Before operating the product, read the whole manual carefully and observe all operating and safety instructions!

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In case of any technical inquiries, contact or consult:

Germany: Tel. no.: +49 9604 / 40 88 80
Fax. no.: +49 9604 / 40 88 48
E-mail: tkb@conrad.de
Mon. to Thur. 8.00am to 4.30pm
Fri. 8.00am to 2.00pm

2. Intended Use

Together with the two-way "FHT80B" room control, the "FHT80TF-2" enables heating rooms as required and while saving energy.

If a door or window monitored by the "FHT80TF-2" is opened, e.g. for airing the room, the room control is informed of this. It will then lower the target temperature to a predefined value, to avoid wasting heat.

When the window or door is closed again, the room control automatically returns to the original target value. The cumbersome and often forgotten manual opening and closing of heating valves is no longer required.

Any use other than that described above damages the product and involves dangers such as short-circuits, fire, electric shock, etc.

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3. Scope of Supply

- Radio controlled "FHT80TF-2" door/window contact
- Magnet Contact
- Operating instructions

4. Explanation of symbols



An exclamation mark in a triangle indicates important instructions in this operating manual which must be observed.



The "hand" symbol can be found when you are to be given tips and information on operation.

5. Safety Notices



The guarantee/warranty will be void if damage is incurred resulting from non-compliance with these operating instructions. We will not assume any responsibility for consequential damage!

Nor do we assume liability for damage to property or personal injury, caused by improper use or failure to observe the safety instructions. In such cases the guarantee/warranty will be void.

a) General Information

Do not use this product in hospitals or medical institutions. The product does only emit relatively weak radio signals. These radio signals could, however, lead to malfunctions in life-supporting systems. The same may possibly apply to other areas.

The unauthorized conversion and/or modification of the product is prohibited for safety and approval reasons (CE).

Operate the product in dry indoor locations only. It must not get damp or wet.

The product is not a toy; it is not suitable for children.

Do not leave packaging material unattended. It may become a dangerous toy for children.

Handle the product with care. It can be damaged through impact, blows or when dropped even from a low height.

b) Batteries and Rechargeable Batteries

- Keep batteries/rechargeable batteries out of the reach of children.
- Make sure to insert the batteries/rechargeable batteries with the correct polarity.
- Do not let batteries/rechargeable batteries lie around openly. There is a risk of batteries being swallowed by children or pets. If swallowed, consult a doctor immediately.
- Leaking or damaged batteries/rechargeable batteries may cause acid burns when coming into contact with skin. Use suitable protective gloves.
- Do not short-circuit batteries/rechargeable batteries or throw them into fire. There is a danger of explosion!
- Never dismantle batteries/rechargeable batteries!

- Batteries may not be recharged. There is a danger of explosion!
- If the device is not used for a longer period of time (e.g. storage), take out the inserted batteries/ rechargeable batteries to avoid damage from leaking batteries/rechargeable batteries.

6. Installation

a) General information

One magnetic contact each (reed contacts) is integrated on the left and right sides in the "FHT80TF-2" casing.

These internal contacts make it possible to install the detector directly at the door or window to be monitored. Furthermore, a screw clamp may be used to connect external contacts (not included). The external contacts must be NC (Normally Closed), i.e. the contact is interrupted when the window is opened. This is usually the case for magnetic contacts.

There are three different operating modes

- only the internal contact is monitored
- only external contacts are monitored
- the Internal and external contacts are monitored

b) Installation site

First, choose the installation site for the door/window contact.

When using the internal contact, the magnet is usually installed on the moving part of the window (sash) and the "FHT80TF-2" is attached to the fixed part (frame).

Concerning alignment, the following notes should be observed. In doubt, first mount the pieces temporarily and attach the components only when they are working properly.

- Position the "FHT80TF-2" at the frame in a way so that the magnet can be placed directly to the left or right of it at the sash.
- The lateral distance between "FHT80TF-2" and magnet must not be more than 25 mm (see chapter 6. d)
- The magnet should be aligned 12 mm under the upper edge of the "FHT80TF-2" casing (see chapter 6. d).
- Installation levels of different height and distances that are too wide may be compensated for by using spacers under the magnet. Concerning this, read chapter 6.e).

If only an external contact is to be used, the casing may be installed in any position near the window to be monitored (e.g. covered behind the curtain).

However, the installation site must be chosen under consideration of the radio range. Sufficient distance should be kept to larger metal objects (e.g. heater), as well as to interfering electronic devices (e.g. computers).

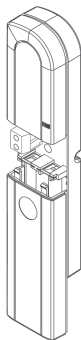
c) “FHT80TF-2” installation

Once the installation site is chosen, the “FHT80TF-2” casing may be attached. The casing may be attached with screws or by the adhesive strips included in the scope of supply.

- The casing is opened by pulling down the cover. If an external magnet sensor is to be connected, it must first be attached (see chapter 6. f).
- Now mount the casing at the desired location. When using the double-faced adhesive tape included in the scope of delivery, ensure that the surfaces are clean and dry.

The adhesive strips must be used when the casing is directly attached to the frame.

- When the casing is to be screwed to a wall, use the included drill template to mark the positions for both screws.



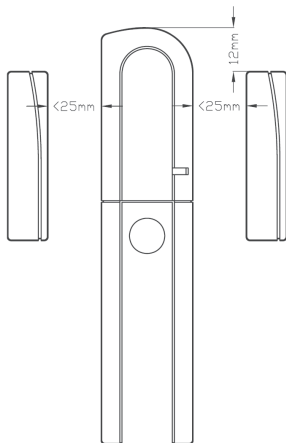
If the casing is screwed to the frame, the door or window will be damaged. This may lead to damages claims if done in a rented apartment, or your rent deposit may not be returned.

d) Mounting the magnet

The figure shows how the magnet is aligned to the device. To achieve maximum range, the height of the lower edge of the "FHT80TF-2" should be approx. 12mm.

The distance between the magnet and the "FHT80TF-2" should not be greater than 25 mm.

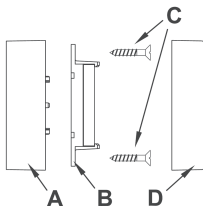
Please observe that only one magnet may be installed to the left or right. It is not possible to monitor both sides at the same time.



To bring the magnets and the door/window detector to the same level, use the spacers (A) if required. Concerning this, also read chapter 6.e).

You may attach the door/window contact using the included double-faced adhesive tape or the included screws.

Using double-faced adhesive tape will not damage the doors or windows. When using double-faced adhesive tape, however, spacers must not be used for reasons of stability.

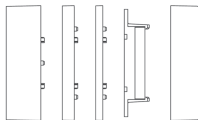


- When screwing it on, use the lens head screws (C) for attaching the magnet.
- For hard surfaces, pre-drill the holes with a 1.5 mm drill; for soft surfaces, this is not necessary.
- Attach the magnet holder (B) with screws and then attach the cover cap (D).

e) Using the spacers

When using spacers for the magnet, use screws for reasons of stability.

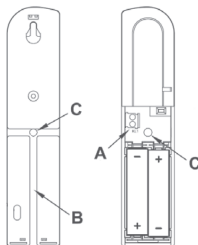
There are three different spacers to choose from for adjusting the installation height.



- When using the 14.5 mm spacer (A), attach it first with two 2.2 x 16 mm screws and then attach the magnet unit (B) to it with two more screws.
- When the installation height must be even higher, stack the flat spacers on the high one.
- The flat spacers are simply attached by two 2.2 x 16 mm screws (C) together with the magnet.
- Afterwards, shut the cover (D) over the magnet holder (B).

f) Installing external magnetic contacts

- Install external contacts to the window to be monitored according to their instructions.
- The magnet contact connection cable must be pulled into the "FHT80TF-2" casing from behind through the cable opening (C).
- On the back of the casing, there is a cable duct (B), through which the cable can be guided to the left, right or to the bottom of the device.
- The cables are to be connected with the screw clamp (A). Use a small cable tie for strain relief if necessary. Attach it tightly to the cable jacket on the inside, directly before the opening in the casing.



If several external sensors are to be connected to the "FHT80TF-2", they must be connected sequentially.

To change the operating mode, proceed as follows:

- Hold down the "FHT80TF-2"s button (B). The indicator LED (A) lights up.
- When the LED goes out, the "FHT80TF-2" is in programming mode. Now you may release the button.
- Open and close all windows to be monitored several times to open and close the magnetic contacts.

Then press the button.

- Now the indicator LED flashes to indicate the new operating mode.
- After a synchronisation period of about 1 minute, the "FHT80TF-2" will be in normal operation again.

c) Signing on at a control unit

A door/window contact may be used by a wall thermostat to automatically lower the settings of the heaters when the room is aired. In order for the control unit ("FHT80B") to know to which door/window contact to respond, it must first be signed on:

- First put the control unit in learning mode, as described in the respective instructions.
- Now put the door/window contact in learning mode by holding down the button (B) until the LED lights up.
- Then release the button. Now the "FHT80TF-2" is signed on, and the casing may be closed.

8. Operation

The "FHT80TF-2" does not have to be operated after commissioning.

It will automatically recognise when the window is opened and closed, and inform the room control of the change in condition. The radio transmission takes place each minute, so that the new state may be indicated at the control with a slight lag.

The "FHT80TF-2" indicates that it has recognised a closing/opening of the window through its optical indicator (red LED):

- 3 short flashes – closing recognised
- 1 long flash – opening recognised

9. Replacing the Batteries

When the batteries for the door/window contact are low, it will inform the control unit of this. The control unit display will then show the respective error message (the window symbol flashes).

Replace the batteries in the door/window contact:

- The casing is opened by pulling down the cover.
- Remove the old batteries.
- Insert two micro-batteries (AAA) into the battery compartment. Please observe the correct polarity.
- Close the casing cover.
- The door/window detector may go through a synchronisation period of 1 minute (the LED will flash once every second).

10. General notes on radio operation

Radio transmission is conducted as non-exclusive transmission. Because of this, there may be interferences. Interferences may be caused by switching operations, electric motors or defective electric devices.


The range inside of buildings may strongly differ from the range outside. In addition to the broadcasting performance and receiving properties of the receivers, environmental conditions such as humidity and structural conditions on-site are important.

11. Maintenance and Cleaning

The product requires no servicing except for battery replacement. Repair or maintenance work must be carried out by a specialist. Clean the product with a soft, clean, dry and lint-free cloth. If you have to remove more dirt, moisten the cloth with lukewarm water.

Never use solvent-based cleaning agents, since this might damage the surface of the plastic housing and inscription.

12. Troubleshooting

| Problem | Possible cause | Troubleshooting |
|---|--|--|
| The "Window" symbol  flashes on the control unit display | <ul style="list-style-type: none">• Interference of radio connection• Door/window contact batteries are empty | Determine reason and fix the problem (see. Instruction for control unit) |
| LED does not flash when opening or closing the window. | <ul style="list-style-type: none">• Range of magnet is too low• Wrong operating mode | <ul style="list-style-type: none">• Optimise magnet position• Change operating mode (See chapter 6. b). |

13. Disposal

a) General Information



At the end of its service life, dispose of the product according to the relevant statutory regulations.

b) Disposal instructions for battery/accumulators

You as the end user are required by law (Battery Ordinance) to return all used batteries/rechargeable batteries. Disposing of them in the household waste is prohibited!



Batteries/rechargeable batteries that include hazardous substances are labelled with these symbols to indicate that disposal in domestic waste is forbidden. The symbols for the respective heavy metal are: Cd=cadmium, Hg=mercury, Pb=lead (the designation is written on the rechargeable battery e.g. under the rubbish can symbols depicted at the left).



You can return used batteries/rechargeable batteries free of charge at the official collection points of your community, in our stores, or wherever batteries/rechargeable batteries are sold!

You thus fulfil your statutory obligations and contribute to the protection of the environment.

14. Declaration of Conformity (DOC)

We, Conrad Electronic, Klaus-Conrad-Straße 1, D -92240 Hirschau, hereby declare that this product adheres to the fundamental requirements and the other relevant regulations of Directive 1999/5/EC.



The declaration of conformity for this product can be found at www.conrad.com.

15. Technical Data

Transmission frequency: 868.35 MHz

Modulation: AM

Range in free field: max. 100 m

Dimensions (W x H x D): 25 x 117 x 17 mm

Power supply: 2x 1.5 V Micro (LR03/AAA)

Battery life: approx. 5 years

D Impressum

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