RADEMACHER

EN

# DuoFern Radiator Actuator 2

Translation of the original Installation and Commissioning Manual

Item no. 3500 30 74
Type: 9433-1

VBD 678-2-1 (11.21)

# Contents

EN


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# 1. This manual...

...describes how to install, commission and operate the DuoFern Radiator Actuator 2.

## How to use this manual

- Before you begin, please read this manual through completely and follow all the safety instructions.
- Please also read the instruction manuals for the logged-on DuoFern devices and the respective connected appliance.
- This manual is part of the product. Store the manual in an easily accessible place.
- When passing the DuoFern Radiator Actuator 2 on to a third party, this manual must be passed on as well.
- Damage resulting from non-compliance with these instructions and safety instructions will void the warranty. We assume no liability for any consequential damage.

## 2. Hazard symbols

**Danger area / dangerous situation**

## 2.1 Symbols and depictions used

| Depiction | Description |
|---|---|
| | Further useful information |
| | Please read the respective manual. |

## 3. Safety instructions

**The use of defective devices and improper use can lead to property damage.**

- Never use defective or damaged devices.
- Check the DuoFern Radiator Actuator 2 for damage.
- Consult our customer service department in the event that you discover damage, see page 32.
- Train all persons to use the DuoFern Radiator Actuator 2 safely.
- Children must not play with the device.

## 3.1 Intended use

Only use the DuoFern Radiator Actuator 2 for controlling a heating valve.

**Operating conditions**

- Only use the DuoFern Radiator Actuator 2 in dry rooms.
- The installation and operation of radio systems is only permitted for systems and devices where a malfunction in the transmitter or receiver would not cause a danger to persons or property or where this risk is already covered by other safety equipment.

Radio systems that transmit on the same frequency can cause interference.

## 3.2 Glossary - definition

**DuoFern**

- RADEMACHER radio system for controlling compatible products.

**HomePilot®**

- The HomePilot® is a central controller unit for RADEMACHER radio products.

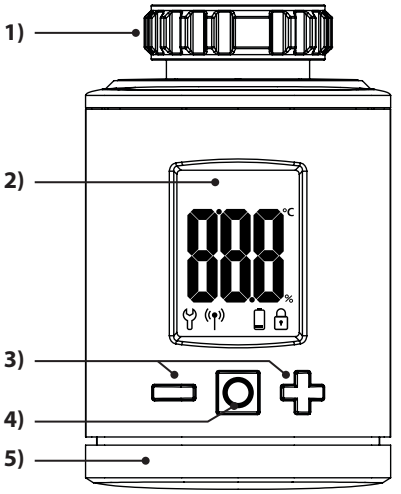
## 4. Included in delivery

1 x Radiator Actuator 2
1 x cover
3 x Danfoss adapter (RA / RAV / RAVL)
1 x screw with nut
2 x AA batteries 1.5 V / LR6
1 x installation and commissioning manual

**After unpacking please check and compare...**

... the contents of the package with those specified above.

## 5. General view




**1)** Union nut
**2)** Display
**3)** Control buttons and navigation in the menu
**4)** Menu and set button
**5)** Battery compartment

## 5.1 Display icons

| Symbol | Description |
|---|---|
| | Target value / actual value or setting parameter |
| | Menu / settings |
| | Automatic mode |
| | Low battery |
| | Child protection function / operating lock |

## 6. Product description

The DuoFern Radiator Actuator 2 is an electronic radiator thermostat for controlling a radiator valve and for regulating the room temperature.

The operation and setting of the DuoFern Radiator Actuator 2 can be performed on site directly on the device, via a smartphone app or with a computer.

The RADEMACHER HomePilot® is also required as a central controller (not included in delivery) for control via an app or computer.

The DuoFern Room Thermostat 2 can be used as a central control for up to 20 DuoFern Radiator Actuators 2 in a standalone solution or can also be controlled centrally via HomePilot®.

| General information | |
|---|---|
| Supply voltage: | 2 x 1.5 V (DC), AA, alkaline |
| Battery life:<br>*Observe the information on page 11.* | approx. 2 years<br>*with three switching times daily and a set transmission interval of 15 minutes* |
| Mechanical loading capacity: | 70 N |
| Linear stroke: | 2 - 3 mm |
| Connection thread: | M 30 x 1.5 mm |
| Permissible ambient temperature: | 0 to 40°C |
| Frost protection temperature: | 4 °C |
| Automatic limescale protection: | once a week |
| Protection class: | IP20 (only for use in dry rooms) |
| Dimensions (W x H x D): | 56 x 68 x 89 mm |
| Weight (incl. battery): | 176 g |

| DuoFern radio technology | |
|---|---|
| Transmission frequency: | 434.5 MHz |
| Transmission power: | max. 10 mW |
| Maximum number of DuoFern devices: | 1 x HomePilot® or<br>1 x DuoFern Room Thermostat 2 |

## 8. Initial commissioning

## 8.1 Insert the enclosed batteries

**The use of rechargeable batteries or incorrect batteries can damage the DuoFern Radiator Actuator 2.**

- Only use leak-proof 1.5 V AA batteries (LR6).
- If a battery has leaked, we recommend replacing the DuoFern Radiator Actuator 2 with a new device.
- Pay attention to the correct polarity when inserting the batteries.

2 x AA 1.5 V (LR6)

Registering mode is then active.

If the Radiator Actuator 2 is already connected to the HomePilot® or with a DuoFern Room Thermostat 2, registering mode is bypassed and the drive moves automatically to the installation position, see page 13.

## 8.2 Logging on to the HomePilot®

If no login is to take place, continue with **8.4**.

**1.**

Switch the HomePilot® to registering mode. Login takes place automatically.

**2.**

The logged-on HomePilot® appears as “**1**” on the display after a successful login.

If no login takes place within 2 minutes, “0” appears on the display.

The DuoFern Radiator Actuator 2 must be installed immediately after logging on to the HomePilot®. Otherwise, “not ready for operation” is displayed in the HomePilot®.

If you regulate your heating system, for example, with night setback (or longer periods of temperature setback), you need to set up an appropriate scene for the temperature setback. This prevents unnecessary battery consumption.

If no login is to take place, continue with **8.4**.

**1.**

Switch the DuoFern Room Themostat 2 to registering mode. Login takes place automatically.

**2.**

The logged-on DuoFern Room Themostat 2 appears as "**1**" on the display after a successful login.

If no login takes place within 2 minutes, "0" appears on the display.

If you regulate your heating system, for example, with night setback (or longer periods of temperature setback), you must set up the temperature setback with two setpoints and two switching times. This prevents unnecessary battery consumption.

1.

**Activate installation mode by briefly pressing the button.**

The drive then moves to the installation position (**POS**). The display flashes as soon as the installation position is reached.

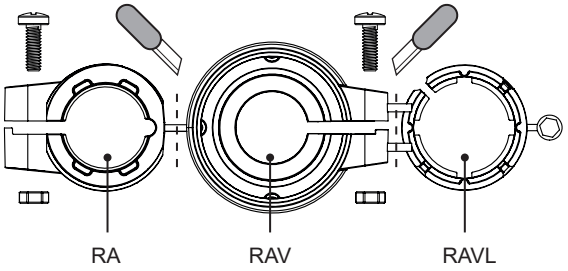
If a HomePilot® or DuoFern Room Thermostat 2 was already logged-on before the batteries were inserted, the installation mode is activated directly.

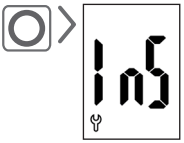
## 8.5 Mounting on the radiator valve

1. Attach the DuoFern Radiator Actuator 2 to the valve or the adapter and tighten the union nut.

The DuoFern Radiator Actuator 2 has minimal flexibility after the installation in order to be able to optimise the view on the display. You should therefore not overtighten the union nut.

You can use one of the enclosed adapters for mounting on Danfoss radiator valves.



1. 

Activate installation mode (**InS**) by briefly pressing the menu button.

The drive then automatically performs an installation run to define the end positions.

2.

The normal display appears with the set target temperature after a successful installation run.

The DuoFern Radiator Actuator 2 is now ready for operation.

## 9. Settings on the ready-to-use device

EN

The display switches off automatically to save energy.

Pressing any button
switches on the display again
and switches the DuoFern Radiator Actuator 2 to operating mode.

The normal display then appears with the set target temperature.

## 9.1 Setting the target temperature

You can adjust the desired target temperature in 0.5 °C steps by briefly pressing the button.

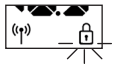
Pressing and holding a button causes the numbers to progress quickly.

The room temperature measured by the DuoFern Radiator Actuator 2 may vary from the perceived temperature depending on the installation location.

First activate the normal display by pressing any button, see page 16.

### Activating the child protection function

Press briefly 1 x,

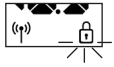


until the lock symbol flashes. Manual operation is still possible.

After the display goes off and is re-activated, the lock symbol is displayed continuously and the device cannot be operated.

### Switching off the active child protection function for a short time

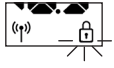
Press briefly 1 x,



until the lock symbol flashes. The child protection function switches off for a short time to enable the device to be operated.

### Deactivating the child protection function

Press briefly 1 x,



until the lock symbol flashes.

Briefly release and press 1 x again at the same time,

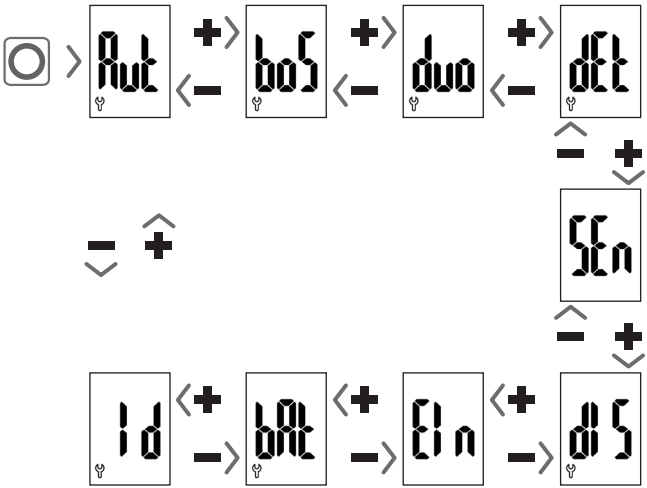
until the lock symbol disappears.

## 10. Introduction to opening the menus and setting the functions

EN

Different settings can be made and functions can be activated (**On**) or deactivated (**OFF**) in the DuoFern Radiator Actuator 2 menu.

### Navigation in the menu



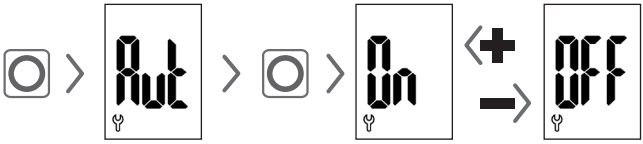

### Setting parameters, see next chapter

The settings are saved by pressing the menu button.

### Return to the normal view

- Automatically after approx. 10 seconds without any input.
- By pressing and holding the menu button.

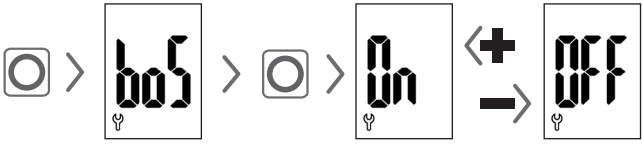
## 10.1 Automatic function (Aut)




**Automatic mode On (factory setting)**
All control commands are permitted from a HomePilot® or DuoFern Room Themostat 2.

**Automatic mode OFF = manual mode**
Only on-site changes or manual changes are implemented by the HomePilot® or DuoFern Room Themostat 2.

## 10.2 Boost function (boS)




The boost function enables the room to be heated for a short time and is automatically deactivated after 15 minutes.

You can activate the boost process in the normal display with ✚ or ▬.

The boost process cannot be started if “Window open” has been detected by the internal window open detection (see page 22). Incoming automatic control commands are executed at the end of the process.

## 10.3 DuoFern menu (duo) Logging on / logging off / clearing

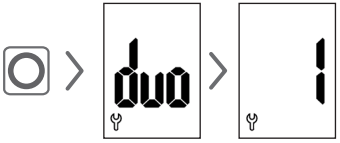


You can log the HomePilot® or the DuoFern Room Thermostat 2 onto the DuoFern Radiator Actuator 2 in this menu **(duo)**.

You can log on a maximum of one HomePilot® or one DuoFern Room Thermostat 2. Observe the information on battery consumption on page 11.

Please refer to the instruction manual for the registered device.

### Logging on to / logging off the HomePilot® or DuoFern Room Thermostat 2

**1.** 

Open the DuoFern menu **(duo)** in the Radiator Actuator 2.

A logged-on device is displayed, if available.

**2.** Switch the HomePilot® or the DuoFern Room Thermostat 2 to registering or log-off mode as required.

**3.** Activate the desired function on the DuoFern Radiator Actuator 2, see next page.

**Logging on to the HomePilot® or DuoFern Room Thermostat 2**

**LED signals when logging on**

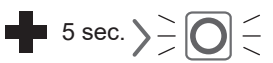
- Flashes green: during the login
- Lights up green for 2 seconds: after a successful login
- Lights up red for 2 seconds: if the login has not taken place within 2 minutes or an error has occurred

**Logging off the HomePilot® or DuoFern Room Thermostat 2**

**LED signals when logging off**

- Flashes red: during the login
- Lights up green for 2 seconds: after a successful log-off
- Lights up red for 2 seconds: if the logout has not taken place within 2 minutes or an error has occurred

You can cancel the login or log-off at any time by pressing ✚ or ▬ .



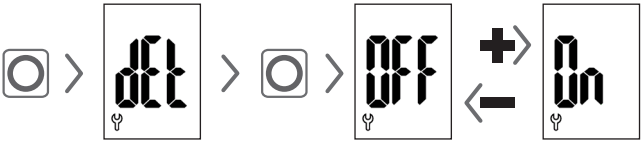

**Clearing the DuoFern Radiator Actuator 2**

The radio connection to a HomePilot® or DuoFern Room Thermostat 2 that can no longer be accessed is deleted.

**LED signals during the clearing process**

- Flashes red: during the clearing process
- Lights up green for 2 seconds: after completing the clearing process

## 10.4 Internal window open detection (dEt)




**Factory setting = OFF**

If the internal window open detection is active, the drive regulates to the frost protection temperature for 15 minutes if a drop in temperature is detected. Once this time has elapsed, the drive attempts to regulate back to the previous target temperature.

## 10.4 Internal window open detection (dEt)

Window open detection takes place irrespective of whether the DuoFern Radiator Actuator 2 is in manual or automatic mode.

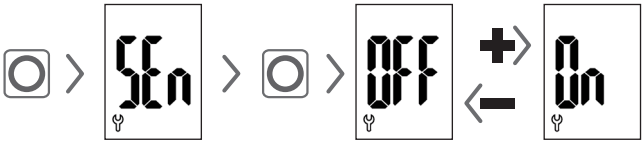
If an open window is detected, this message (**OPn**) appears for the duration of the process.

Alternatively, you can also use an external DuoFern window/door contact (Item no. 3200 31 64) for control purposes via the HomePilot® or DuoFern Room Thermostat 2 in case of an unfavourable installation position (e.g. in a niche).

## 10.5 External window open detection

If an open window is detected by an external DuoFern window/door contact, this message (**OPn**) appears for the duration of the process.

You can cancel the message and switch the DuoFern Radiator Actuator 2 back to normal mode by pressing + or −.




**Factory setting = OFF**

This menu is only visible in connection with a DuoFern Room Thermostat 2. Optionally, the measured actual (IST) temperature of a DuoFern Room Thermostat 2 can be used as the controlled variable of the DuoFern Radiator Actuators 2.

This can be useful, for example, if the DuoFern Radiator Actuators 2 are mounted in a niche and the temperature detection is not sufficient there.

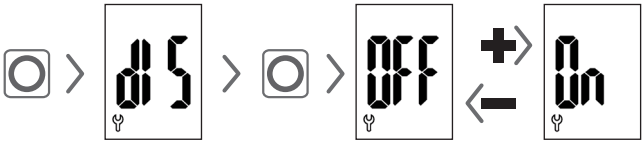
OFF The temperature determined by the DuoFern Radiator Actuator 2 itself is used for control.

On The temperature determined by the DuoFern Room Thermostat 2 is used for control.

The DuoFern Room hermostat 2 should be in the same room as the DuoFern Radiator Actuator 2.

The quality of the regulation depends on the reception interval (see chapter 10.8, page 26).

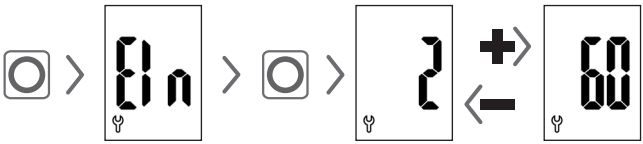
## 10.7 Rotating the information on the display (dIS) (180°)



**Factory setting = OFF**

It may be beneficial to rotate the information shown on the display through 180° depending on the installation. The display is rotated only after confirming with the menu button, see page 18.

## 10.8 Reception interval (Eln)



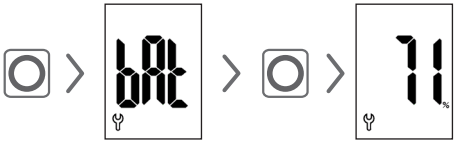
**Factory setting = 15 minutes**

Here you can set the frequency of communication between the DuoFern Radiator Actuator 2 and HomePilot® or DuoFern Room Thermostat 2.

The set value describes the time in minutes that the DuoFern Radiator Actuator 2 waits before it automatically asks for new information.

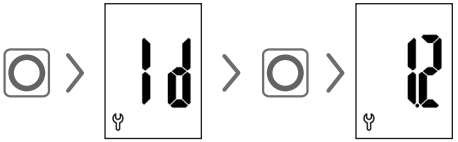
If the value is set small, the system quickly checks for changes on the HomePilot® or DuoFern Room Thermostat 2. However, the battery life is also reduced.

## 10.9 Viewing the battery charge level (bAt)




Observe the information on battery consumption on page 11.

## 10.10 Viewing the current software version (Id)



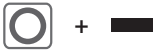
## 11. Deleting all settings and resetting to the factory settings

EN

**1.** First activate the normal display by pressing any button, see page 16.

**2.** Deactivate the child protection function if it is active, see page 17.

**3.** Press and hold, additionally

 press and hold.

Be sure to follow the specified sequence.

**4.** Release the buttons only when the text on the display appears.

**5.** Confirm the reset by pressing the button.

**6.** The DuoFern Radiator Actuator 2 restarts with the factory settings, see page 10 “Initial commissioning”.

If no confirmation is made after pressing the menu button, the menu is automatically closed after 10 seconds and no reset is performed.

Errors that have occurred are shown on the display with an error code.

**E1 = The drive is not installed**

- Install the DuoFern Radiator Actuator 2 at a suitable place.

**E2 = Error in the mechanics**

*An error has been detected during the installation run.*

- Repeat the installation run.

**E3 = Installation run too short**

- Check the installation position of the DuoFern Radiator Actuator 2.
- Adjust the installation with an adapter if necessary.
- Replace a defective device.

**E4 = Error in the DuoFern network**

*The logged-on HomePilot® is no longer accessible via radio.*

- Ensure that there is no disruptive radio source nearby.
- Ensure that the DuoFern Radiator Actuator 2 is in the radio range of the HomePilot® or DuoFern Room Thermostat 2.

**Information about E1 - E3**

You can start a new installation run by reinserting the batteries, see page 10.

## 13. Cleaning / maintenance

**Chemical solvents may damage the DuoFern Radiator Actuator 2.**

- Use only a soft, slightly damp cloth to clean the device.

## 14. Simplified EU declaration of conformity

RADEMACHER Geräte-Elektronik GmbH, hereby declares that the DuoFern Radiator Actuator 2 complies with the Directive **2014/53/EU** (**Radio Equipment Directive**).

The full text of the declaration of conformity is available at the following website:

www.rademacher.de/ce

### Warranty terms and conditions

Information about the warranty conditions of our products can be found on our homepage.

## 15. Information about environmental protection

### Removal of the batteries prior to the final disposal

The batteries must be removed again prior to disposal

### Disposal of used batteries

Batteries may not be disposed of in domestic waste and must be disposed of separately.

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