RADEMACHER

DuoFern Sun Sensor

Installation and Operating Manual

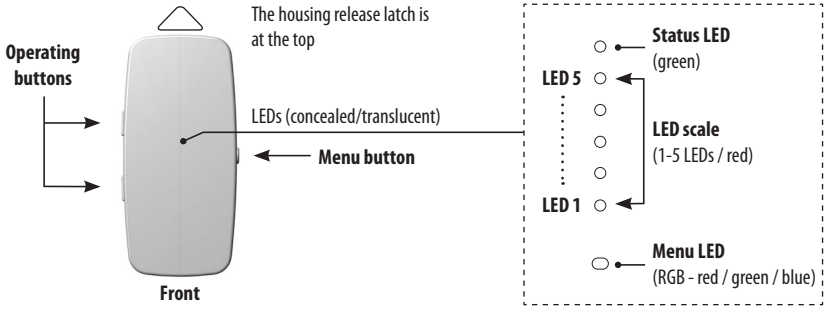
Type: 9478-1

Item no.: 3221 00 69

VBD 720-2 (01.22)

EN

Back with suction cup



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1. This manual...

describes how to install, commission and operate the DuoFern Sun Sensor. Please read this manual through completely and follow all the safety instructions.

1.1 Symbols used

Dangerous situation

Other useful information

2. Safety instructions

If the coin-cell battery is swallowed, it can cause severe internal burns and death within just 2 hours.

- Children must not replace batteries.
- Do not swallow the battery, risk of acid burns.
- Store new and used batteries out of the reach of children. If the battery compartment does not close securely, stop using the product and keep it away from children. If you believe that batteries may have been swallowed or made their way into any part of the body, seek medical advice immediately.

Risk of fire and explosion

- There is a risk of fire or explosion if the battery is replaced with an incorrect type. In addition, replacing a battery with an incorrect type can override a safety device.
- Throwing a battery into a fire or hot oven or mechanically crushing or cutting a battery can lead to an explosion.
- If the battery is placed in an environment with extremely high temperatures, this can lead to an explosion or a spill of flammable liquid or flammable gas.
- A battery exposed to extremely low air pressure can cause an explosion or the release of flammable liquids or gases.

The ingress of liquids (e.g. cleaning agents during window cleaning) can damage the DuoFern Sun Sensor.

- Remove the DuoFern Sun Sensor from the window before cleaning the window.
- The vibration function is activated when removing it from the window and when installing it at a later stage.

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

3. Intended use

Use the DuoFern Sun Sensor solely for the control of DuoFern devices as well as for detecting vibrations (e.g. glass breakage).

- Only install and use the DuoFern Sun Sensor in dry internal rooms.
- Using the DuoFern Sun Sensor for any other purpose than previously mentioned is not permissible.

4. Product description / functions

The battery-operated DuoFern Sun Sensor is used for the brightness-dependent control of logged-on DuoFern devices. In addition, the built-in vibration sensor detects vibrations, for example, due to glass breakage.

Please also read the operating manuals of the logged-on DuoFern devices.

Menu selection and configuring set limits

The buttons on the device can be used to select the menus of the above functions and to configure the set limits for the functions.

Manual operation (UP/STOP and DOWN/STOP)

The two operating buttons on the side of the housing can be used for the manual operation of logged-on DuoFern devices.

Detection of the installation position (horizontal/vertical) and automatic assignment of the operating buttons

The respective installation position (horizontal or vertical) is detected by the DuoFern Sun Sensor and the operating buttons or the LED scale are assigned according to the position (horizontal or vertical).

5. Installation

The DuoFern Sun Sensor can be installed not only vertically, but also horizontally (and in each of these positions also the other way round).

Automatic change of the operating buttons depending on the position of the sensor

Operating buttons on the left

Operating buttons at the top

Recommendation

1. Secure the DuoFern Sun Sensor as far down window pane as possible using the suction cup.
   - Make sure that the fixing point on the window is as free as possible of grease and dust to ensure the sensor sticks well.
   - Determine a position so that the sunlight can fall onto the sensor with as little impediment as possible.

The DuoFern Sun Sensor must not be shaded at any point.

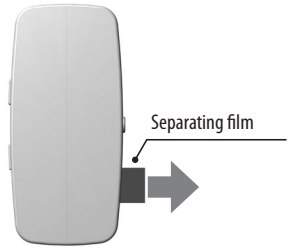
Shade must not be cast over the DuoFern Sun Sensor either by the roller shutter moving into the sunshine position or by trees or similar.

To avoid damage to the suction cup, the sensor must be detached from the window pane before changing its position (vertical/horizontal).

6. Commissioning

The DuoFern Sun Sensor is supplied with a type CR2450 battery inserted.

1. Carefully remove the separating film from the device. The device does not need to be opened.



2. A short hardware test is then performed.

   All LEDs light up once and the sensors (vibration sensor) are subjected to a self-test. If all the test steps are completed successfully, the sensor switches to operating mode.

7. Settings

By pressing the **menu button** several times, you can open the sun sensor menus one after the other and also exit them again.

The multi-coloured **menu LED** indicates which menu is open.

Yellow	= "Sun function" menu
Red	= "Vibration function" menu
Blue	= Menu for "Logging DuoFern devices on/off"
Off	= No menu is open (normal mode)

You can use the "**UP/DOWN" or "+ /–"** buttons to make the desired settings, see next page.

8. Configuring the sun function

Only possible if a DuoFern device is logged on.

1. Press the **menu button** several times until the **menu LED lights up yellow**.

8.1 Configuring the set limit (yellow menu)

1. Observe the **LED scale**.
   - The red LEDs indicate the set limit in 10 steps (5 LEDs - flashing / lit).
   - If the current reading is higher than the set limit, the **status LED also lights up green**. The sensor will trigger the sun programme of the logged-on DuoFern devices in 10 minutes.
2. Configure the required set limit with the "+" or "–" **button**.
   - **Low set limit**
     Little sun is required to trigger the function.
   - **High set limit**
     More sun is required to trigger the function.

8.2 Accepting the current brightness as the set limit (yellow menu)

1. Press the **menu** and **"+" button** at the same time.

8.3 Accepting the sunshine position (yellow menu)

The current position of the logged-on DuoFern devices should be accepted as the sunshine position.

1. Press the **menu** and **"–" button** at the same time.

This function is then transmitted to all logged-on DuoFern devices.

8.4 Testing the sunshine function (yellow menu)

1. Press the **"+"** and **"–" button** at the same time.

Test sequence (alternating)

Sun start / Sun end / Sun start

The logged-on DuoFern devices react accordingly.

In the case of roller shutter controllers, a position change only occurs above the sunshine position.

9. Configuring the vibration function

Only possible when the HomePilot® is logged on.

1. Press the **menu button** several times until the **menu LED lights up red**.

9.1 Configuring the set limit (red menu)

1. Observe the **LED scale**, see chapter 8.1.
   If a vibration is detected, the **status LED briefly lights up green**.
2. Configure the required set limit with the "+" or "–" **button**.
   - **Low set limit**
     Minimal vibration is required to trigger the function.
   - **High set limit**
     More vibration is required to trigger the function.

10. Logging DuoFern devices on/off

1. Press the **menu button** several times until the **menu LED lights up blue**.

10.1 Logging on devices (blue menu)

1. Switch the DuoFern device to log-on mode.
2. **1 x** Tap on the "+" **button** once.
   The **status LED** flashes **green**.
   After successfully logging on, the **status LED** lights up **green** for 2 seconds.
   If the log-on is unsuccessful, **LED 5** lights up **red** for 2 seconds.

10.2 Logging off devices (blue menu)

1. Switch the DuoFern device to log-off mode.
2. **1 x** Tap on the "–" **button** once.
   LED 5 flashes **red**.
   After successfully logging off, the **status LED** lights up **green** for 2 seconds.
   If the log-off is unsuccessful, **LED 5** lights up **red** for 2 seconds.

10.3 Clearing (blue menu)

This function enables you to log off all DuoFern devices from the DuoFern Sun Sensor that are no longer accessible via radio.

1. **5 sec.** Press and hold the "+" **button** for 5 seconds.
   LED 5 flashes red.
   After a successful clearing process, the **status LED** lights up green for 2 seconds.

10.4 Connectivity test (blue menu)

1. **2 x** Tap on the "+" **button** twice.
2. All logged-on DuoFern devices are briefly activated and acknowledge the signal accordingly.

10.5 Factory setting/Reset (blue menu)

1. **5 sec.** Press and hold the "–" **button** for 5 seconds until the red LEDs of the LED scale flicker.
2. The device then restarts.
   - All logged-on DuoFern devices have been removed.
   - All settings have been reset to the factory settings.

11. Normal mode

The DuoFern Sun Sensor is in normal mode after successfully configuring the settings.

Sun function

- The current brightness is measured at regular intervals.
- If sunlight is detected for 10 minutes, a signal is transmitted to all the logged-on DuoFern devices.
- After 20 minutes of shade, a signal is transmitted to all the logged-on DuoFern devices again.

Vibration function

If the DuoFern Sun Sensor experiences a vibration, all the logged-on DuoFern devices are controlled by a corresponding signal.

A new vibration is only detected after one minute without any vibrations.

Testing the vibration function

You can test the function by pressing on the DuoFern Sun Sensor housing.

Manual mode

You can use the **UP and DOWN buttons** to operate the logged-on DuoFern devices manually.

Switching sequence:

UP / STOP or **DOWN / STOP**

The stop command must be issued within 90 seconds, otherwise the UP or DOWN movement command will follow again.

12. Battery replacement

An empty battery is indicated by a **red flash** in the **menu LED** (once a minute).

Possible problems/errors in the case of an empty battery

- Commands - such as "Sun start" - are not transmitted to all participants.
- In some cases, roller shutters remain in the sunshine position

Changing the battery

1. Use a blunt object to gently press in the housing release latch from above and remove the top part of the housing.
2. Replace the battery with a new one of the same type (CR 2450).
   - When inserting the battery, pay attention to the correct polarity. The minus pole (-) is located at the top.
   - The battery is inserted correctly when the hooks engage.
3. Reattach the top part of the housing.

13. Technical specifications

GENERAL INFORMATION	
Battery type:	1 x CR2450
Supply voltage:	3 V
Battery life:	approx. 4 years (with nine signals/day)
Permissible ambient temperature:	+ 5 °C to + 40 °C
Dimensions (W x H x D):	35 x 74 x 21.4 mm (incl. suction cap)
RADIO DATA	
Transmission frequency:	434.5 MHz
Transmission power:	max. 10 mW
Radio range within a building:	up to 30 m, depending on the building structure
Maximum number of DuoFern end units:	5

14. Simplified EU declaration of conformity

CE RADEMACHER Geräte-Elektronik GmbH hereby declares that the DuoFern Sun Sensor complies with the Directive **2014/53/EU (Radio Equipment Directive)**. The full text of the EU declaration of conformity is available on our website.
www.rademacher.de/ce

Warranty terms and conditions

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