DuoFern Universal Dimmactuator flush-mounted (fm)

Item no. 3500 04 62

VBD 562-2 (04.13)

1. General safety instructions

⚠️ **The use of defective equipment can lead to personal injury and damage to property.**
Never use defective or damaged equipment. Please contact our Customer Service department in the event of faults

⚡ **Mortal danger in the event of connecting unsuitable devices.**
Overloading the Universal Dimmactuator (fm) by connecting unsuitable devices can lead to overheating, short circuits and fire under certain circumstances.

◆ For this reason, only connect lamps to the DuoFern Universal Dimmactuator (fm) as specified in the "**Correct usage**" chapter.

2. Correct usage

Only use the DuoFern Universal Dimmactuator (fm) for connection and control of the following electric lamps:

◆ Conventional bulbs
◆ Lamp transformers with:
- Leading-edge phase control or
- Trailing-edge phase control

2. Correct usage

Operating conditions

◆ Only use the DuoFern Universal Dimmactuator (fm) in dry rooms.
◆ For the electrical connection a 230 V/50 Hz power supply, together with a site-provided isolating device (fuse), must be available at the installation site.
◆ The installation and operation of the DuoFern radio system and its components (e. g. DuoFern Universal Dimmactuator (fm)) is only permitted for those 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.

3. Incorrect use

Never use the DuoFern radio system and its components for remote control of devices and systems with heightened safety-relevant requirements or a heightened risk of accident. Such use would require additional safety equipment. Observe the respective statutory regulations for the installation of such systems.
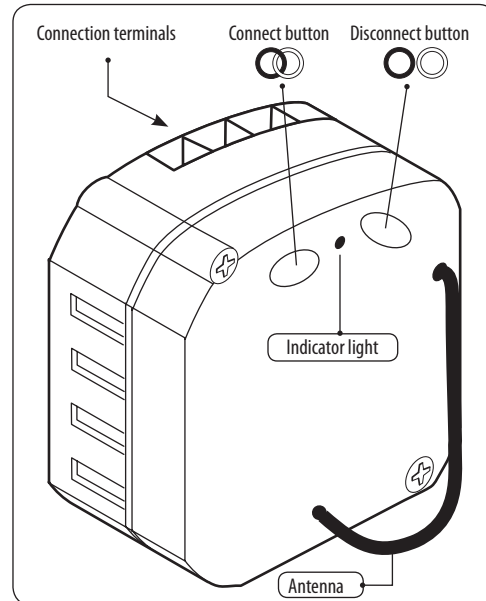
IMPORTANT
Do not install the DuoFern Universal Dimmactuator (fm) outdoors.

The following types of lamp may not be used as they cannot be dimmed:

◆ Fluorescent lamps
◆ Low-energy bulbs
◆ LED lamps
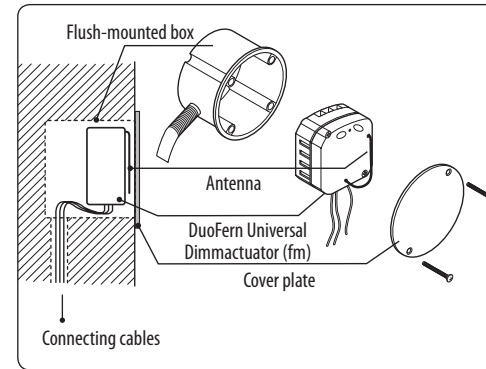
4. General view

4.1 Functional description

The DuoFern Universal Dimmactuator (fm) can be used to integrate and control electric lamps within a DuoFern network. In order to use the functions of the corresponding DuoFern controllers (e. g. DuoFern manual transmitter standard), you must connect the DuoFern Universal Dimmactuator (fm) to the DuoFern network.

The two buttons can be used to switch the Universal Dimmactuator (fm) between connect and disconnect mode. A bi-coloured indicator light shows whether the DuoFern actuators connected to the Universal Dimmactuator (fm) have received and confirmed the control commands.
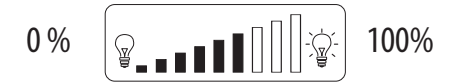
4.2 The installation principle

4.3 Functional characteristics

	DuoFern environmental sensor Item no. 3200 00 64	DuoFern manual central operating unit Item no. 3481 00 60	RolloTron Pro Comfort DuoFern Item no. 1523 45 11	DuoFern Standard manual transmitter Item no. 3248 03 66	DuoFern Wall controler Item no. 3216 02 11
Manual control (on/off)	●	●	●	●	
Random function			●	●	
Manual operation (on/off)			●	●	
Timer (on/off)			●	●	
Automatic solar function (on/off)			●	●	
Solar program			●		●
Automatic dawn function (on/off)			●	●	
Automatic dawn function			●	●	●
Automatic dusk function (on/off)			●	●	
Automatic dusk function			●	●	●
Mode change	●	●		●	
Connection test			●	●	
Radio code			●		
Runtime			●		

4.4 Overview of switching commands and actions

0 %   100%

Switching commands	Mode 1		Mode 2	
UP #	▁▂▃▅▆▇ 100 %	▇▆▅▃▂▁ 0 %
STOP	▇▆▅▃ 0 %	▇▆▅▃ 0 %
DOWN #	▇▆▅▃▂▁ 0 %	▁▂▃▅▆▇ 100 %
Automatic dawn function	▁▂▃▅▆▇ 100 %	▇▆▅▃▂▁ 0 %
Automatic dusk function	▇▆▅▃ 0 %	▁▂▃▅▆▇ 100 %
Solar program	▇▆▅▃ 0 %	▇▆▅▃ 0 %
Up with current dimming direction 100%	▁▂▃▅▆▇ 100%	▁▂▃▅▆ STOP*
Up with current dimming direction 0%	▇▆▅▃▂ STOP*	▇▆▅ 0%
STOP with current dimming direction 100%	▁▂▃▅▆ STOP*	▁▂▃▅▆ STOP*
STOP with current dimming direction 0%	▇▆▅▃▂ STOP*	▇▆▅▃▂ STOP*
Down with current dimming direction 100%	▁▂▃▅▆ STOP*	▁▂▃▅▆▇ 100 %
Down with current dimming direction 0%	▇▆▅ 0%	▇▆▅▃▂ STOP*

\# If the last intermediate state has been reached, then the Universal Dimmactuator (fm) stops here. No intermediate state is stored upon connecting the mains.

* The current brightness of the lamp is stored as the intermediate state.

NOTE

◆ Automatic commands are dimmed to the target value as quickly as possible.
◆ The dimming time for manual commands can be configured via the running time feature.
◆ Use mode 2 when operating the DuoFern Universal Dimmactuator (fm) in combination with roller shutters.

Manual control behaviour for use with a local switch.

Brief press = switches ON/OFF, no stop when reaching the intermediate state

Press and hold = dims alternately (on to 100% and off to 0%), the new dimmed value will be stored as the intermediate value.

Random function

The actuator can process random function switching commands. If a switching command is received which is to be delayed by the random function, then processing of the switching command is delayed by up to 30 minutes. The LED flashes green once per second during the delay period.

5. Installation

⚠️ **During both installation and dismantling of the DuoFern Universal Dimmactuator (fm) there is a risk of fatal electric shocks.**

Observe the safety instructions for electrical connection in chapter 7.

The DuoFern Universal Dimmactuator (fm) is intended for flush mounting. We recommend using a deep box.

You require for installation a 58 mm flush-mounted box.

NOTE
In order to ensure optimal operation, the DuoFern Universal Dimmactuator (fm) should not be installed on a metallic base or near metal objects.

5.1 Installation procedure

1. **Switch off the mains (at the fuse box or consumer unit).**
2. **Electrical connection in accordance with chapter 7. / 7.1.**
3. **Reconnect the mains power.**
4. **Register the DuoFern Universal Dimmactuator (fm) in the DuoFern radio network, see chapter 8.**
5. **Switch off the mains voltage again after registration has been successfully completed.**
6. **Insert the DuoFern Universal Dimmactuator (fm) in the flush-mounted box and lay the connecting cables in the box.**
   ATTENTION
   ◆ Avoid bending the antenna too far as it could otherwise break off.
7. **Mount the cover plate on the flush-mounted box.**
8. **Reconnect the mains power.**
9. **The DuoFern Universal Dimmactuator (fm) automatically detects the connected load.**
   The DuoFern Universal Dimmactuator (fm) is then ready for operation after approx. 15 seconds.

6. Dismantling

1. **Switch off the mains (at the fuse box or consumer unit).**
2. **Open the flush-mounted box.**
3. **Disconnect the DuoFern Universal Dimmactuator (fm) and remove it from the flush-mounted box..**

7. Electrical connection

⚠️ **Safety instructions**
There is a risk of fatal electric shocks.

The electrical connection and all work on electrical systems must only be carried out by a qualified electrician in accordance with the connection instructions in these operating instructions.

◆ Carry out all installation and connection work only in an isolated, deenergised state.
◆ Disconnect all phases of the mains power supply cable and secure it to prevent reconnection.
◆ Check that the system is dead.
◆ Prior to connecting, compare the information about voltage/frequency on the device with those of the local electrical grid operator.

7. Electrical connection

⚠️ **Incorrect wiring may lead to short-circuits and destruction of the device.**
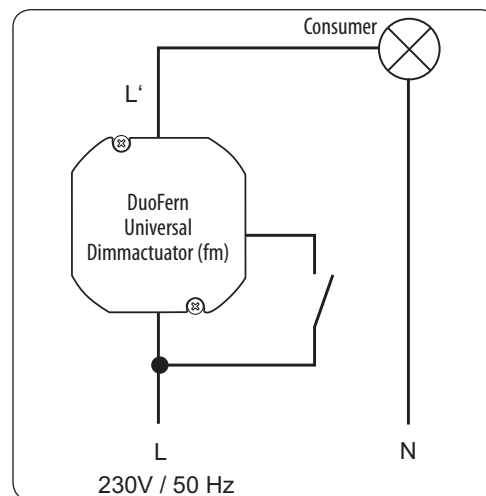◆ Observe the sequence of connector pin assignments in the wiring diagram and on the type plate.

Connection instructions for local operation
You can use a switch to enable local control via the 230 V control input. The **maximum permissible cable length amounts to 10 m**.
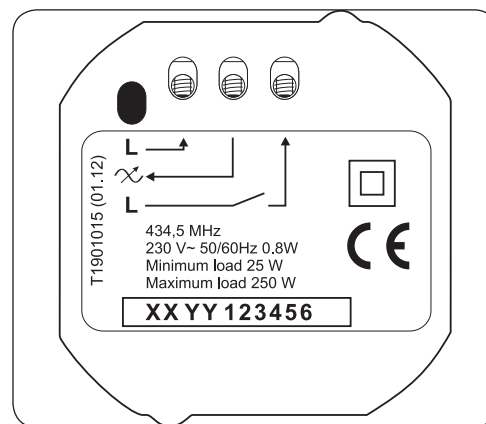
IMPORTANT
When the control input is used, the switch and the actuator must be connected to the **same phase (L)**. If the control input is not used, then nothing may be connected to the terminal!

7.1 Wiring diagram

Consumer

L'

DuoFern Universal Dimmactuator (fm)

L   N

230V / 50 Hz

7.2 Connection terminals

T1901015 (01.12)

L
L

434,5 MHz
230 V~ 50/60Hz 0.8W
Minimum load 25 W
Maximum load 250 W

CE

XX YY 123456

8. Logging DuoFern transmitters on/off

You must assign **every** required DuoFern transmitter to the DuoFern Universal Dimmactuator (fm) in order that the Universal Dimmactuator (fm) can be controlled with a DuoFern transmitter. You can assign max. 20 DuoFern transmitters, e. g. DuoFern manual transmitter Standard to the Universal Dimmactuator (fm).

1. **Switch the desired DuoFern transmitter to connect-/ disconnect mode (please refer to the corresponding operating instructions).**
2. **Press the "Connect (log-on)" or "Disconnect (log-off)" button on the upper side of the housing.**
3. **The Universal Dimmactuator (fm) then transmits either a log-on or log-off signal. Registering mode remains active for 120 seconds.**
4. **If registration is successful, the indicator light will light up green constantly.**
5. **Register the next DuoFern transmitter. In order to do so, repeat steps 1 to 3, or else terminate Logging on/off.**

   NOTE
   The indicator LED lights up red if the registration process fails, for example if:
   ◆ 20 DuoFern transmitters have already been registered.
   ◆ A unsuitable device (e. g. other DuoFern actuator) is registered.
   ◆ An attempt is made to log-off a DuoFern transmitter that is not logged-on.

9. Logging on and off per radio code

You can control the DuoFern Universal Dimmactuator (fm) directly using the radio code in order, for example, to be able to connect further DuoFern transmitters to the Universal Dimmactuator (fm) after installation. You will find the radio code on the enclosed label and on the rear side of the Universal Dimmactuator (fm).

1. **Enter the Universal Dimmactuator (fm)'s radio code in menu "2.2. Radio code" of the DuoFern central operating unit.**
2. **Activate and confirm connect / disconnect mode for the Universal Dimmactuator (fm) on the DuoFern central operating unit.**
3. **Call up menu "2. Radio Settings".**
4. **Activate function "2.1 Connect/disconnect" on the DuoFern central operating unit.**
5. **Connect the Universal Dimmactuator (fm) with the DuoFern central operating unit or disconnect from the DuoFern central operating unit.**
6. **Assign the Universal Dimmactuator (fm) to the respective groups / member numbers and names.**

   A more detailed description can be found in the DuoFern central operating unit's operating manual.

10. Deleting all settings (Reset)

1. **Press the Disconnect button until the indicator LED lights up continuously red.**
2. **All of the settings are deleted and the logged in DuoFern transmitters are automatically logged off.**
3. **All of the settings will be reset to the factory settings. Subsequently, the DuoFern Universal Dimmactuator (fm) will be reset to its delivery setting.**

11. Technical Data

Supply voltage:	230 V / 50 Hz
Standby consumption:	< 0,5 W
Minimum load:	25 W
Maximum load:	250 W
Transmitting power:	10 mW
Range in a building:	approx. 30 m (depending on construction)
Range outside:	approx. 100 m
Transmission frequency:	434.5 MHz
Maximum no. of DuoFern transmitters:	20
Permissible ambient temperature:	+ 5 °C to + 40°C
Dimensions (Diameter / Hight):	48 mm / 24 mm
Dimming of:	- Ohmic loads (e. g. bulbs) - Leading-edge phase control * - Trailing-edge phase control * * transformer

12. CE Mark and EC Conformity

The DuoFern Universal Dimmactuator (fm), (Item no. 3500 04 64) complies with the requirements of the current European and national directives.

CE

1999/5/EC	R&TTE directive
2006/95/EC	Low voltage directive
2004/108/EC	EMC directive

Conformity has been verified. The corresponding declarations and documentation are available on file at the manufacturer's premises.

13. Warranty conditions

RADEMACHER Geräte-Elektronik GmbH provides a 24-month warranty for new systems that have been installed in compliance with the installation instructions. All construction faults, material defects and manufacturing defects are covered by the warranty.

The following are not covered by the warranty:
◆ Incorrect fitting or installation
◆ Non-observance of the installation and operating instructions
◆ Improper operation or wear and tear
◆ External influences, such as impacts, knocks or weathering
◆ Repairs and modifications by third party, unauthorised persons
◆ Use of unsuitable accessories
◆ Damage caused by unacceptable excess voltage (e.g. stroke of lightning)
◆ Operational malfunctions caused by radio frequency overlapping and other such radio interference

RADEMACHER shall remedy any defects, which occur within the warranty period free of charge either by repair or by replacement of the affected parts or by supply of a new replacement unit or one to the same value. There is no general extension of the original warranty period by delivery of a replacement or by repair as per the terms of the warranty.