

EN DuoFern Motor Actuator 9471-2

Instruction manual for the electrical connection and for commissioning

Item no. 3514 06 63

Type: 9471-2



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...describes how to install, connect and commission the DuoFern Motor Actuator 9471-2.

1.1 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 manual for the appliance being used.
- ◆ This manual is part of the product. Please store it in an easily accessible place.
- ◆ When passing the DuoFern Motor Actuator 9471-2 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 guarantee. We assume no liability for any consequential damage.



2. Hazard symbols

EN

The following hazard symbols are used in this manual:



Risk of fatal electric shock



Danger area / dangerous situation



2.1 Levels of danger and signal words



DANGER!

This hazard will lead to serious injury or death if not avoided.



WARNING!

This hazard may result in serious injury or death if not avoided.





CAUTION!

This hazard may result in minor or moderate injury if not avoided.



ATTENTION!

This hazard may lead to property damage.

Depiction	Description
1. 2.	Steps to be taken
◆	Itemisation
1) or a)	Lists
	Further useful information
	Please read the respective manual

DuoFern

- ◆ RADEMACHER radio technology for controlling compatible products.

WR ConfigTool

- ◆ RADEMACHER software for programming the DuoFern Manual Control incl. automatic software updates for the DuoFern Manual Control.

SmartHome Box

- ◆ The SmartHome Box is a central control unit for RADEMACHER radio products.

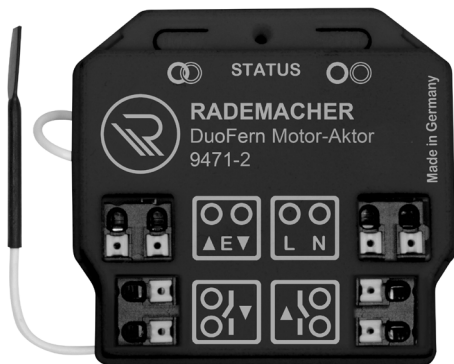
ELV

- ◆ Extra-low voltage

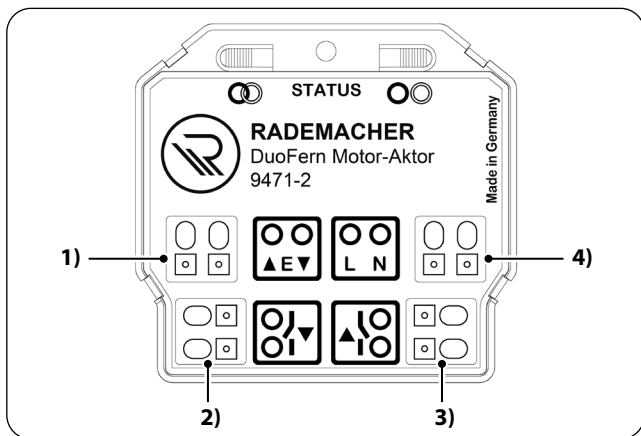
SELV

- ◆ Safety extra-low voltage

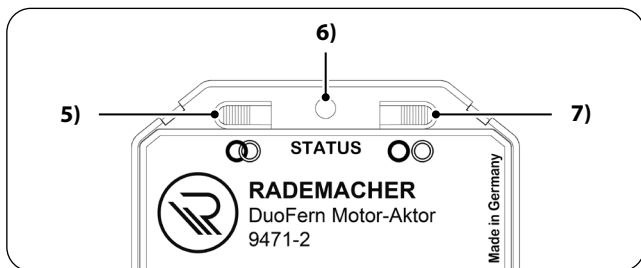
a)

**Included in delivery**

- a) 1 x DuoFern Motor Actuator 9471-2 incl. antenna
- b) 1 x Instruction manual (not illustrated)



Pos.	Symbol	Description
1)		Control input (Up / Down or On / Off) <i>Connection of an external switch / button for manual control on site.</i>
2)		Potential-free relay contact - rotation direction (down) <i>Connection of an electrical appliance (e.g. a motor).</i>
3)		Potential-free relay contact - rotation direction (up) <i>Connection of an electrical appliance (e.g. a motor).</i>
4)		230 V / 50 Hz ~ <i>Connection of the supply voltage.</i>



Pos.	Symbol	Description
5)		Connect button <i>Logging on to the DuoFern radio network or a DuoFern transmitter.</i>
6)	STATUS	Indicator light - status display
	green	<i>flashing</i> <i>Connection is active</i> <i>constantly lit up</i> <i>Connection or disconnection was successful</i> <i>flashes briefly</i> <i>Control command received</i>
	red	<i>flashing</i> <i>Disconnection is active</i> <i>constantly lit up</i> <i>Connection or disconnection was not successful</i>
7)		Disconnect button <ul style="list-style-type: none"> ◆ <i>Logging off from the DuoFern radio network or a DuoFern transmitter.</i> ◆ <i>Reset to the default factory settings</i>

You can use the DuoFern Motor Actuator 9471-2 for the following applications:

- ◆ Control of motors with a different supply voltage (e.g. DC motors)
- ◆ Connection to the control inputs of other actuators and controllers
- ◆ Control of other suitable appliances

Potential-free relay contacts

The switching contacts of the DuoFern Motor Actuator 9471-2 are potential-free and isolated in terms of safety for the 230 V / 50 Hz supply voltage of the actuator.

Use in the DuoFern network

You can integrate the device into a DuoFern radio network, for example, to use a wide range of the functions of DuoFern sensors and DuoFern transmitters, such as the SmarthHome Box.

Manual operation on site

An additional external locking roller shutter switch or button can be connected to enable manual operation on site.

Installation and electrical connection

The DuoFern Motor Actuator 9471-2 is designed for flush mounting. The electrical connection is carried out by means of clamping the connecting cable in the existing spring clip.



6. Technical specifications

Mains connection [L / N]





Mains supply voltage:	230 V / 50 Hz ~
Consumption:	Standby: < 0.5 W

Control input [▲ E ▼]

for an external roller shutter switch / button on site

Input voltage:	230 V / 50 Hz (Ri = 200 kΩ)
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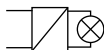
Potential-free relay contacts - rotation direction [▲ / ▼]

Maximum switching capacity for a 230 V / 50 Hz relay contact voltage ~ :	6.5 A / 1500 W per channel	
	Ohmic load, e.g. bulbs	
		6.5 A / 1500 W
	Inductive loads such as: fluorescent lamps, motors, iron core transformers, e.g. for extra-low voltage bulbs such as halogen bulbs	
		5 A / 1150 W
		
		

Potential-free relay contacts - rotation direction [▲/▼]

Maximum switching capacity for a 230V / 50 Hz \sim relay contact voltage

Capacitive loads such as: electronic transformers, AC/DC transformers, e.g. for extra-low voltage bulbs such as halogen bulbs, LEDs, etc.



5 A / 1150 W

Maximum switching capacity for a DC \equiv relay contact voltage :

Ohmic loads

up to 30 V:

6.5 A

up to 48 V:

1.5 A

up to 100 V:

0.5 A

up to 200 V:

0.3 A

up to 300 V:

0.2 A

Inductive loads (DC13 category):
max. 1 A at 24 V

Capacitive loads:

The maximum current (inrush current) of capacitive loads must not exceed the current of the ohmic loads mentioned above.



DuoFern radio technology

Transmission frequency:	434.5 MHz
Transmission power:	max. 10 mW
Range:	Indoors: approx. 30 m * Outdoors: approx. 100 m <i>* Depending on the building structure</i>
Maximum number of DuoFern devices:	20

General information

Permissible ambient temperature:	-20°C to + 55°C
Dimensions (W x H x D):	48.7 x 45.7 x 19.8 mm
Connecting terminals:	Spring resistance connecting terminals (0.1 mm ² - 1.5 mm ²)



Improper use can lead to serious injuries or property damage.

- ◆ Small contact distance (μ), not suitable for disconnecting the device.
- ◆ Do not use the DuoFern Motor Actuator 9471-2 to disconnect the connected appliance.



The use of defective devices can lead to personal injury and property damage (electric shocks / short circuiting).

- ◆ Never use defective or damaged devices.
- ◆ Check that the DuoFern Motor Actuator 9471-2 is intact.
- ◆ Consult our customer service department in the event that you discover damage.

7.1 Intended use

Only use the DuoFern Motor Actuator 9471-2 for the applications mentioned on page 10.

The DuoFern Motor Actuator 9471-2 is suitable for switching mains voltage, basic-insulated extra-low voltage (ELV) and separated extra-low voltage (SELV).

Operating conditions

- ◆ Only use the DuoFern Motor Actuator 9471-2 in dry rooms.
- ◆ A 230 V/50 Hz power supply, together with a site-provided disconnecting device (fuse), must be available at the installation location.
- ◆ The installation and operation of the 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.

- ◆ A separate power supply (e.g. mains adapter) may be needed to supply power to the motor used. During installation, pay attention to the respective operating and installation conditions and check whether the motor power is within the range of the actuator's switching capacity.

Using the DuoFern Motor Actuator 9471-2 for any other purpose than previously mentioned is not permissible.



Improper use can lead to serious injuries or property damage.

- ◆ Do not use the DuoFern Motor Actuator 9471-2 to disconnect the connected appliance.
- ◆ Never use the radio system (e.g. DuoFern radio system) and its components for the remote control of devices and systems with increased safety-relevant requirements or where there is an accident risk. Applications of this kind require additional safety equipment. Observe the respective statutory regulations for the installation of such systems.



There is a risk to life caused through short circuiting and electric shocks if the DuoFern Motor Actuator 9471-2 is used outside.

- ◆ Do not install and use the DuoFern Motor Actuator 9471-2 in a roller shutter box / outside or in damp rooms.

7.3 Expert knowledge required by the installer

The electrical connection, installation and commissioning of the DuoFern Motor Actuator 9471- 2 must only be carried out by a qualified electrician in accordance with the instructions in this manual.

Prior to the electrical connection, check that the voltage / frequency on the type plate corresponds to that of the local mains supply.

**DANGER!**

There is a risk of fatal electric shock when touching electrical components.

- ◆ All connection and installation work must only be carried out in a de-energised state.
- ◆ Disconnect all phases of the mains power lead and secure it to prevent any reconnection.
- ◆ Check that the system is de-energised.

**WARNING!**

Short-circuiting, caused when the DuoFern Motor Actuator 9471- 2 is overloaded, poses a danger to life.

- ◆ The maximum switching capacity must not be exceeded. Please observe the details in the “Technical Specifications”, see page 11.

**ATTENTION!**

A defective antenna can lead to malfunctions or failure of the DuoFern Motor Actuator 9471- 2.

- ◆ The antenna lead must not be shortened and damaged.

Connection instructions for operating with an external roller shutter switch / button on site

- ◆ It is imperative that a locking roller shutter switch / button is used in order to avoid increased current consumption and excessive heat build-up.
- ◆ When using the control input [▲E▼], you must connect the external roller shutter switch / button and the DuoFern Motor Actuator 9471-2 to the same phase [L].
- ◆ The maximum length of lead to connect an external roller shutter switch / button must not exceed 10 m.

Length of insulation stripped:



All wires must be stripped to 9 mm.

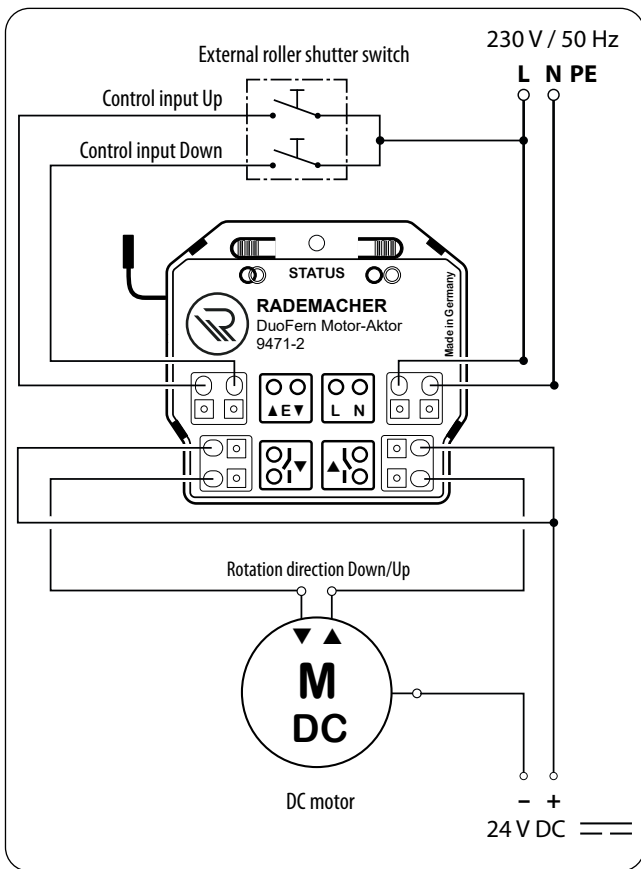


Read the specifications relating to the electrical connection detailed in the instruction manual of the motor or the appliance used.



Further installation instructions

- ◆ In order to ensure optimal operation, the DuoFern Motor Actuator 9471- 2 should not be installed on a metallic base or near metal objects.
- ◆ The DuoFern Motor Actuator 9471-2 is intended for flush mounting. We recommend installation in a deep 58 mm flush-mounted box or in an electronic socket.

1. Ensure the mains are current-free and check whether the inlet leads are current-free.
2. Securely lay all connecting cables right into the flush-mounted box.
3. Remove the insulation on all leads down to 9 mm as specified above and connect them according to the following connection diagram.
4. Insert the DuoFern Motor Actuator 9471-2 into the flush-mounted box and lay the connecting cables as well as the antenna in the box.
5. Finally, install the cover of the flush-mounted box and switch on the mains power supply again.



For the DuoFern Motor Actuator 9471- 2 to be operated with a DuoFern transmitter, you must log each desired transmitter onto the DuoFern Motor Actuator 9471- 2. You can log on a maximum of 20 DuoFern transmitters (e.g. DuoFern Manual Transmitter Standard, etc.).

1. Switch the desired DuoFern transmitter to log-on/log-off mode (please refer to the respective instruction manual).
2. Press the "Connect" (log-on ) button or the "Disconnect" (log-off ) button of the DuoFern Motor Actuator 9471-2.
3. The actuator then transmits either a log-on or log-off signal. Log-on / log-off mode remains active for 120 seconds.
4. If the log-on/log-off process is successful, the STATUS LED will light up green constantly.
5. Log on / log off from the next DuoFern transmitter. To do so, repeat steps 1 to 3 or else terminate the log-on / log-off process.

Observe the STATUS LED

The STATUS LED lights up red if the log-on / log-off process fails, for example if:

- ◆ 20 DuoFern transmitters have already been logged on
- ◆ An unsuitable device (e.g. other DuoFern actuator) is logged on.
- ◆ An attempt was made to log off from a DuoFern transmitter that is not logged on.

You can control the DuoFern Motor Actuator 9471-2 directly using the radio code in order, for example, to be able to connect further DuoFern transmitters to the actuator after installation. You will find the radio code on the enclosed label and on the rear side of the DuoFern Motor Actuator 9471-2.




Please note that the use of the radio code is limited to 120 minutes after switching on the power supply.



A detailed description on activating the radio code function can be found in the instruction manual of the DuoFern Manual Control and the SmartHome Box.

A reset can be carried out to reset the DuoFern Motor Actuator 9471-2 to the default factory settings.

1.  Press and hold the disconnect button for approx. 5 seconds until the STATUS LED constantly lights up red.
2. All of the settings are deleted and reset to the default factory settings and the logged-on DuoFern transmitters are automatically logged off.
3. The DuoFern Motor Actuator 9471-2 is then reset to the default factory settings.

**DANGER!**

There is a risk of fatal electric shock when touching electrical components.

- ◆ Disconnect all phases of the mains power lead and secure it to prevent any reconnection. Check that the system is de-energised.

1. Log the DuoFern Motor Actuator 9471-2 off from the DuoFern network.
2. Ensure the mains power is current-free and open the flush-mounted box.
3. Disconnect the DuoFern Motor Actuator 9471- 2 and completely remove it from the flush-mounted box.



RADEMACHER Geräte-Elektronik GmbH hereby declares that the DuoFern Motor Actuator 9471-2 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 on our warranty conditions is enclosed separately with this product.

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