RADEMACHER

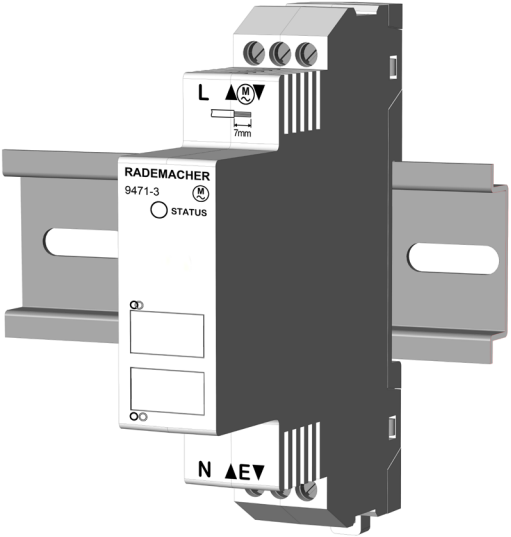
EN

DuoFern DIN Rail Tubular Motor Actuator 9471-3

Instruction manual for the electrical connection and for commissioning

Item no. 3520 06 62

Type 9471-3



VBD 714-02 (04.23)

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1. This manual...

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...describes how to install, connect and commission the DuoFern DIN Rail Tubular Motor Actuator 9471-3, hereinafter referred to as the DuoFern Tubular Motor Actuator 9471-3.

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 of the respective connected tubular motor.
- This manual is part of the product. Please store it in an easily accessible place.
- When passing the DuoFern Tubular Motor Actuator 9471-3 on to a third party, this manual must be passed on as well.
- Damage resulting from non-compliance with this manual and the safety instructions will void the warranty. We assume no liability for any consequential damage.

2. Hazard symbols

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.

2.2 Symbols and depictions used

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

3. Included in the delivery

Included in the delivery

- ◆ 1 x DuoFern DIN Rail Tubular Motor Actuator 9471-3
- ◆ 1 x Instruction manual (not illustrated)

4. Safety instructions

EN

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

- Never use defective or damaged devices.
- Check that the DuoFern Tubular Motor Actuator 9471-3 is intact.
- Consult our service department in the event that you discover damage.

4.1 Intended use

Only use the DuoFern Tubular Motor Actuator 9471-3 for connecting and controlling tubular motors for roller shutters and Venetian blinds with a 230 V / 50 Hz connection voltage. The relay outputs are not potential-free. Observe the permissible switching capacity, see "Technical specifications".

Operating conditions

- The DuoFern Tubular Motor Actuator 9471-3 is designed for installing on a type T35 mounting rail (e.g. in fuse boxes).
- Only use the DuoFern Tubular Motor Actuator 9471-3 in dry rooms.
- A 230 V / 50 Hz power supply, together with a site-provided disconnecting device (fuse), must be available for the electrical connection on site.

4.1 Intended use

- The installation and operation of radio systems are 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 transmission problems.

4.2 Improper use

Using the DuoFern Tubular Motor Actuator 9471-3 for any other purpose than previously mentioned is not permissible.

Improper use can lead to personal injury or property damage.

- Do not use the DuoFern Tubular Motor Actuator 9471-3 to disconnect the connected tubular motor.
- 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 systems of this kind.

4.2 Improper use

There is a risk to life caused through short circuiting and electric shocks if the DuoFern Tubular Motor Actuator 9471-3 is used outside.

- Do not use the DuoFern Tubular Motor Actuator 9471-3 in a roller shutter box / outside or in damp rooms.

4.3 Expert knowledge required by the installer

The electrical connection, installation and commissioning of the DuoFern Tubular Motor Actuator 9471- 3 must only be carried out by a qualified electrician in accordance with the instructions in this manual.

4.4 Glossary - definition

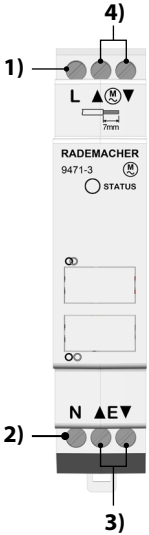
DuoFern

- RADEMACHER radio technology for controlling compatible products.

SmartHome Box

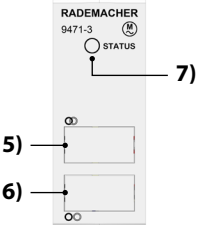
- The SmartHome Box is a central control unit for RADEMACHER radio products.

5. Overview and connections



Pos.	Symbol	Description
1) + 2)	L + N	**230 V / 50 Hz ∼** *Connection to the supply voltage*
3)	▲E▼	**Control input (up/down)** *Connection of a roller shutter switch / button for manual control.*
4)	▲M▼	**Motor output (up/down)** *Connecting cables to the tubular motor*

5.1 Operating buttons and indicator light



Pos.	Symbol	Description	
5)		**Connect button** *Logging on to the DuoFern radio network or a DuoFern transmitter.*	
6)		**Disconnect button** ◆ *Logging off from the DuoFern radio network or a DuoFern transmitter.* ◆ *Reset to the default factory settings*	
7)	**STATUS**	**Indicator light - status display**	
	green	*flashing*	*Connection is active*
		constantly lit up	*Connection or disconnection was successful*
	red	*flashing*	*Disconnection is active*
		constantly lit up	*Connection or disconnection was not successful*
		brief flashing	*Control command received*

Tubular motor controller in a DuoFern network

The DuoFern Tubular Motor Actuator 9471-3 can be used to integrate conventional tubular motors into a DuoFern network, for example, to use a wide range of the functions of DuoFern sensors and DuoFern transmitters, such as the SmartHome Box.

Manual operation on site

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

Random function (presence simulation)

The DuoFern Tubular Motor Actuator 9471-3 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.

During the delay time, the status display flashes green every second.

- Automatic movement commands of the automatic sun function are **not** delayed.
- Automatic switching times and dusk commands are delayed.

6.1 Functional characteristics

								DuoFern SmartHome Box
							DuoFern Environmental Sensor	
						DuoFern Manual Control		
					RolloTron Comfort DuoFern / Troll Comfort DuoFern			
				DuoFern Manual Transmitter Standard				
			DuoFern Wall Controller					
Function	**Value range**	**Factory setting**	A	B	C	D	E	F
1. Manual mode	Up / stop / down	-	●	●	●	●		●
2. Direct drive to a desired %-position	0% - 100%	-						●
3. Manual mode on / off	on / off	off			●	●		●
4. Automatic timer on / off	on / off	on			●	●		●
5. Random function	-	-			●	●		●
6. Dawn function	-	-			●	●	●	●
7. Automatic dawn function on / off	on / off	off			●	●		●
8. Automatic dusk function	-	-			●	●	●	●
9. Automatic dusk function on / off	on / off	off			●	●		●
10. Sun function	-	-			●		●	
11. Automatic sun function on / off	on / off	off			●	●		●
12. Sunshine position	0% - 100%	50%				●		●
13. Wind function	-	-					●	
14. Automatic wind function on / off	on / off	off				●		●
15. Wind rotation direction	Up / down	Up				●		●
16. Rain function	-	-					●	
17. Automatic rain function on / off	on / off	off				●		●
18. Rain rotation direction	Up / down	Up				●		●

6.1 Functional characteristics

								DuoFern SmartHome Box
							DuoFern Environmental Sensor	
						DuoFern Manual Control		
					RolloTron Comfort DuoFern / Troll Comfort DuoFern			
				DuoFern Manual Transmitter Standard				
			DuoFern Wall Controller					
Function	**Value range**	**Factory setting**	A	B	C	D	E	F
19. Run time	2 s - 255 s	150 s				●		●
20. Ventilation position	on / off	off				●		●
21. Ventilation position	1% - 99%	80%				●		●
22. Reversal of rotation direction	on / off	off	●	●		●		●
23. Connectivity test	-	-					●	●
24. Connect with radio code	-	-				●		●
25. End point setting for RADEMACHER tubular motors via radio	-	-		●		●		
26. Reset via radio (3-stage)	-	-						●
27. Single-button operation	-	-						
28. Jog mode	-	-	●	●		●		
29. Venetian blind mode	on / off	off						●
30. Standard slat position*	0% - 100%	0%						●
31. Automatic Tilt after manual stop direction "Down" *	on / off	on						●
32. Automatic tilt to sunshine position *	on / off	off						●
33. Automatic tilt to ventilation position *	on / off	off						●
34. Automatic tilt after moving to a %-position *	on / off	on						●
35. Slat run time *	100 - 5000 ms	900 ms						●
36. Motor dead time	0/160/480 ms	0 ms (off)						●

** Only available if "Venetian blind mode" is activated.*

7. Technical specifications

Mains connection [L / N]	
Mains supply voltage:	230 V / 50 Hz ∼
Consumption:	Stand-by: < 0.5 W

Control input [▲ E ▼] for an external roller shutter switch / button *	
Input voltage:	230 V / 50 Hz (Ri = 200 kΩ)

** "Roller shutter button" recommendation*

Motor output [▲ Ⓜ ▼]		
Output voltage:	230 V / 50 Hz	
Maximum switching capacity:	Ⓜ	2.5 A / 550 W

Improper use can lead to personal injury or property damage.

- Small contact distance (µ), not suitable for disconnecting the device.
- Do not use the DuoFern Tubular Motor Actuator 9471-3 to disconnect the connected tubular motor.

7. Technical specifications

DuoFern radio technology	
Transmission frequency:	434.5 MHz
Transmission power:	max. 10 mW
Range:	Indoors: approx. 30 m * Outdoors: approx. 100 m ** Depending on the building structure*
Max. number of DuoFern devices:	20

General information	
Permissible ambient temperature:	-20 °C to + 40 °C
Dimensions (W x H x D):	18 x 91 x 71 mm (1 division unit)
Connecting terminals:	Screw terminals (up to 2.5 mm^2)

8. Installation

The DuoFern Tubular Motor Actuator 9471-3 is intended for installing on a type T35 mounting rail, e.g. in fuse boxes.

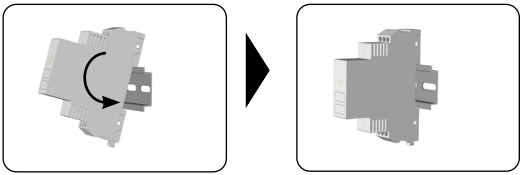
⚠ DANGER!

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

- All installation work must only be carried out in a de-energised state.
- Disconnect the fuse box from the mains power
- Then check that the system is de-energised.

1. Disconnect the fuse box from the mains power.

2. Press the DuoFern Tubular Motor Actuator 9471-3 onto the mounting rail from above until it engages.



9. Electrical connection

9.1 Safety instructions for the electrical connection

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 work must only be carried out in a de-energised state.
- Disconnect the fuse box from the mains power.
- Then check that the system is de-energised.

⚠ WARNING!

Short-circuiting, caused when the DuoFern Tubular Motor Actuator 9471-3 is overloaded poses a danger to life.

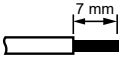
- The maximum switching capacity must not be exceeded. Please observe the details in the “Technical Specifications”, see page 15.

9.2 Important information regarding the electrical connection

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

- If possible, use a locking roller shutter button 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 Tubular Motor Actuator 9471-3 to the same phase **[L]**.
- The maximum length of lead to connect an external roller shutter switch / button must not exceed 10 m.

Minimum length of insulation stripped



All leads must be stripped to 7 mm.

Please read the specifications relating to the electrical connection detailed in the instruction manual for the tubular motor.

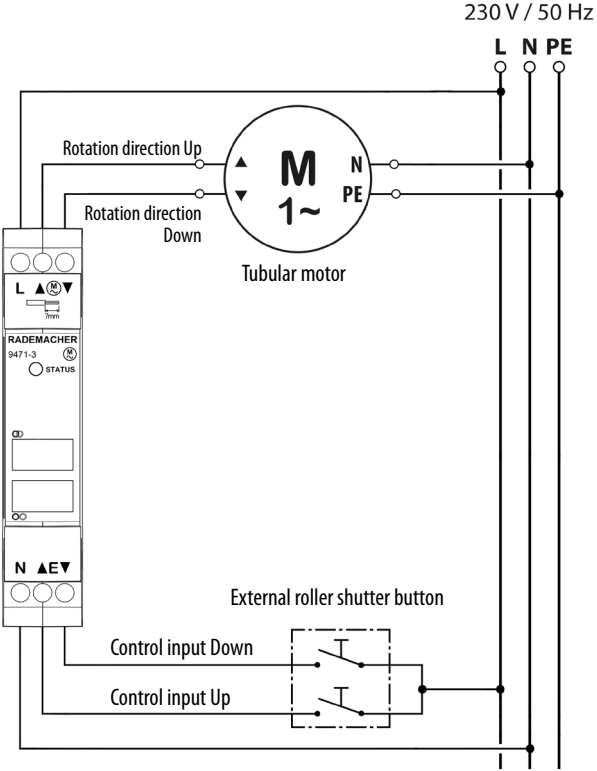
Further installation instructions

- In order to ensure optimal radio operation, the DuoFern Tubular Motor Actuator 9471-3 should wherever possible not be installed on a metallic base or near metal objects.

9.3 Connecting the DuoFern Tubular Motor Actuator 9471-3

1. Disconnect the fuse box from the mains power.
2. Securely lay all connecting cables right into the fuse box.
3. Remove the insulation on all leads down to 7 mm.
4. Connect the DuoFern Tubular Motor Actuator 9471-3 in accordance with the connection diagram on page 20.
5. Secure the connecting terminals against contact with the corresponding fuse box cover.

9.4 Connection diagram



10. Logging DuoFern transmitters on / off

For the DuoFern Tubular Motor Actuator 9471-3 to be operated with a DuoFern transmitter, you must log each desired transmitter onto the DuoFern Tubular Motor Actuator 9471-3. 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 button" [ ] or the "Disconnect button" [ ] of the DuoFern Tubular Motor Actuator 9471-3.
3. The actuator then transmits either a log-on or log-off signal. Log-on / log-off mode remains active for 120 seconds.
4. After successfully logging on / off, the STATUS LED lights up green for approx. 4 seconds.
5. Log on / log off 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 a DuoFern transmitter that is not logged on.

10.1 Logging on / off via radio code

Using the radio code, you can log the DuoFern Tubular Motor Actuator 9471-3 directly onto the HomePilot or manual control without having to press the button on the device.

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 or the SmartHome Box.

You can find the radio code for the DuoFern Tubular Motor Actuator 9471-3 on the type plate mounted on the side (42xxxxxxxx).

11. Deleting all settings (reset)

A reset can be carried out to reset the DuoFern Tubular Motor Actuator 9471-3 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 Tubular Motor Actuator 9471-3 is then reset to the default factory settings.

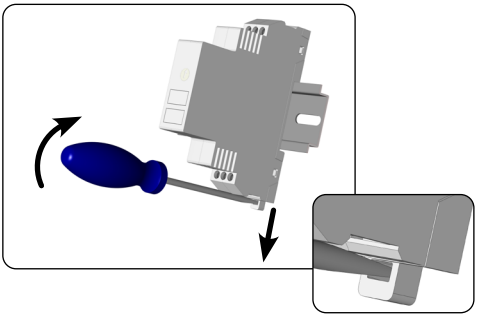
12. Dismantling

DANGER!

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

- Disconnect the fuse box from the mains power.
- Then check that the system is de-energised.

1. Log the DuoFern Tubular Motor Actuator 9471-3 off from the DuoFern network.
2. Disconnect the fuse box from the mains power.
3. Disconnect the DuoFern Tubular Motor Actuator 9471-3.
4. Insert a suitable screwdriver into the slide on the underside of the device and press until the device is released from the mounting rail. The device can then be removed from the mounting rail.



13. Simplified EU declaration of conformity

RADEMACHER Geräte-Elektronik GmbH hereby declares that the DuoFern Tubular Motor Actuator 9471-3 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.

RADEMACHER
Geräte-Elektronik GmbH
Buschkamp 7
46414 Rhede (Germany)

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