

EN **Troll Basic DuoFern 5615 / 5615-AL**
Operating and Assembly Manual for 50mm Switch Range

Item No.:

3650 01 72 (ultra-white)

3650 01 82 (aluminium)



With your purchase of a **Troll Basic DuoFern**, you have chosen a quality product manufactured by RADEMACHER. Thank you for the trust you have placed in us.

The **Troll Basic DuoFern** has been designed both in order to provide optimal convenience and operability as well as to ensure solidity and durability. Having applied uncompromising quality standards and thorough testing, we are proud to be able to present this innovative product to you.

It's brought to you by all the highly-qualified personnel here at RADEMACHER.



These instructions...

...describe how to install, connect the electrical system and operate your **Troll Basic DuoFern**.

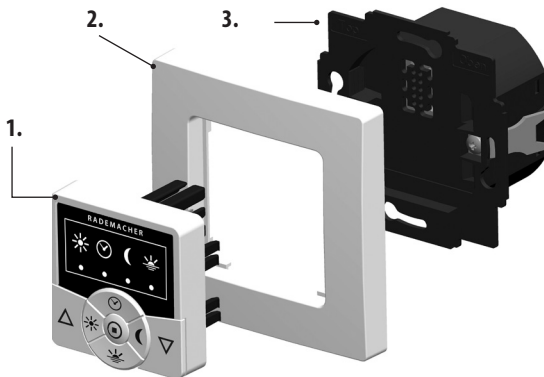


Before you begin, please read these instructions through completely and follow all the safety instructions.

Please store these instructions in a safe place and pass them on to any future owners.

Damage resulting from non-compliance with these instructions and safety instructions will void the guarantee. We assume no liability for any consequential damage.

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Legend

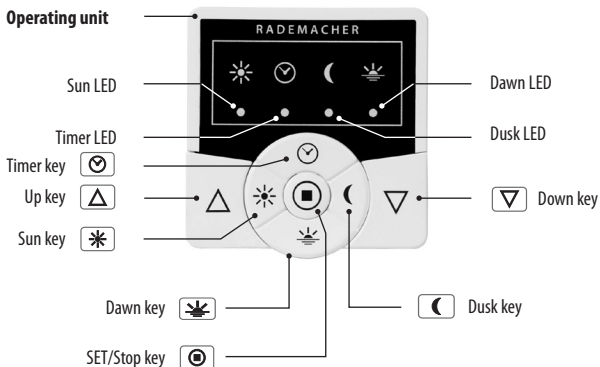
1. Control unit (50 x 50 mm)

2. Frame

3. Installation housing

Operating instructions (no illustration)

Installation, see page 18



i 2.1 Brief description of the keys

The operating keys [up / down]

- ◆ Manual operation [up  / down ].

SET/Stop key, []

- ◆ Manual stop or simultaneously switch all automatic functions on/off.

Timer key, []

- ◆ Switches the automatic timer on/off

Sun key, []

- ◆ Switches the automated solar function on/off.

Dawn key []



















































- ◆ Switches the automatic dawn function on/off.

Dusk key []

- ◆ Switches the automatic dusk function on/off.

NOTE:

- ◆ All of the keys are also used in various combinations in order to set the different functions.
- ◆ The Troll Basic DuoFern features automatic LED dimming. The LEDs dim as the roller shutters are lowered.

Function	Key	Duration	LED	Action
up / stop / down / stop	 			
Stop				
Automatic timer on / off		1 s		Lights red
Automated solar function on / off		1 s		Lights red
Automatic dawn function on / off		1 s		Lights red
Automatic dusk function on / off		1 s		Lights red
Automatic system on / off		1 s	   	max. all LEDs light up red or are switched off
End point setting only for RADEMACHER electronic tubular motors	 /  + 			Flashes red
Reversal of direction of rotation	 + 	4 s		Flashes red
Accept sunshine position	 + 	1 s		Flashes red
Accept ventilation position	 + 	1 s		Flashes red
Set the motor running time	 + 	4 s		Flashes red
Login for DuoFern transmitters	 + 	4 s		Flashes green
Logging off DuoFern transmitters	 + 	4 s		Flashes red
Clearing the DuoFern network	 +  + 	4 s		Flashes red > lights up green
Software reset	 +  +  + 	4 s	   	All of the LEDs flash red

**Risk of fatal electric shock.**

This sign warns of danger when working on electrical connections, components, etc. It requires that safety precautions be taken to protect the life and health of the person concerned.

**This concerns your safety.**

Please pay particular attention and carefully follow all instructions marked with this symbol.

NOTE / IMPORTANT / CAUTION

This is to draw your attention to information that is important for trouble-free operation.



Please read the operating instructions for external devices described at this point, (e.g. a tubular motor).

**Danger due to electric shock when working on all electrical systems.**

- ◆ 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, see page 17.
- ◆ Carry out all installation and connection work only in an isolated, de-energised state.

**The use of defective equipment can lead to personal injury and damage to property (electric shocks, short circuiting).**

- ◆ Never use defective or damaged equipment. Please contact our Customer Service department in the event of faults, see page 40.

**Incorrect use leads to an increased risk of injury.**

- ◆ Children may not be permitted to play with the Troll Basic DuoFern.
- ◆ Train all personnel to use the Troll Basic DuoFern safely.
- ◆ Avoid allowing persons with limited abilities to operate the equipment and prevent children from playing with fixed controllers.
- ◆ Never remove the operating unit from the installation housing during operation.

Only use the **Troll Basic DuoFern** for connecting and controlling a tubular motor for:

- ◆ Roller shutters
- ◆ Venetian blinds and slats
- ◆ Awnings

Operating conditions:

- ◆ The tubular motor must be fitted with a mechanical or electronic end position switch.
- ◆ Only operate the Troll Basic DuoFern in dry rooms.
- ◆ A 230 V / 50 Hz power supply, together with a site-provided disconnecting device (fuse, MCB), must be available at the installation location.
- ◆ The installation and operation of the Troll Basic DuoFern is only permitted for those systems and devices where a malfunction in the transmitter or receiver would not cause a danger to personnel or property or where this risk is already covered by other safety equipment.

IMPORTANT

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

Using the Troll Basic DuoFern for purposes other than previously mentioned is impermissible and is regarded as improper use.

- ◆ Never use the DuoFern radio system and its components (e.g. Troll Basic DuoFern) for remote control of devices and systems with heightened safety-relevant requirements or where there is a heightened risk of accidents. This shall require additional safety equipment. Observe the respective statutory regulations for the installation of such systems.
- ◆ Do not install the Troll Basic DuoFern outside.

The **Troll Basic DuoFern** serves as a **DuoFern receiver** for controlling roller shutters, Venetian blinds, slats or awnings by connecting a corresponding tubular motor.

The Troll Basic DuoFern can be controlled individually on site or it can be integrated into a DuoFern network.

Central control of DuoFern devices with a HomePilot® or DuoFern manual central operating unit.

A **DuoFern network** generally includes the **HomePilot®** or the **DuoFern manual central operating unit** as central controllers.

The DuoFern receivers (actuators) and transmitters must be connected to the DuoFern network.

NOTE

You can find a detailed description of the various functions, configuration options and possible combinations for the DuoFern system at:

<http://www.rademacher.de/duofern>

Roller shutter control

The system enables roller shutters to be automated.

Manual operation (normal mode)

It is possible to manually control the connected tubular motor at any time by using the controls.

Manual operation (jog mode)

If Venetian blinds mode is activated for the DuoFern network from an overriding controller, then manual operation can also be undertaken on site in jog mode.

External controller via the two inputs E1 and E2

The **Troll Basic DuoFern** features two configurable inputs **E1** and **E2** (230 V / 50 Hz) for connecting an external switch (e.g. Venetian blinds switch, etc.), see page 17.

Automatic functions

All automated functions of the **Troll Basic DuoFern** are controlled via the DuoFern network. A complete overview of the functions can be found on page 12.

Assembly

The Troll Basic DuoFern can be integrated into most commercially available switch ranges with the help of a corresponding intermediate frame 50 x 50 (DIN 49075). Suitable switch ranges are detailed on the following page.

8.1 Compatible switch ranges (www.rademacher.de)

Manufacturer	switch range
BERKER	Arsys / K1 / S1
BUSCH-JAEGER	Busch-Duro 2000 Si / Reflex Si / alpha exclusive / alpha nea / solo / impuls
GIRA	Standard-System / S-Color-System / stainless steel range / Standard 55
JUNG	CD 500 / ST 550 / LS 990 / CDplus as per CD but with coloured rings
MERTEN	M1 / Atelier / Artec / Trancent / Antik Neu
PEHA	Standard / Dialog / Aura
LEGRAND	Creo / Tenara
VEDDER	Alessa (plus)

NOTE

- ◆ It may be necessary to use an intermediate frame 50 x 50 * (DIN 49075), depending on the respective switch range used.

* not included

DuoFern HomePilot®										
DuoFern environmental sensor										
DuoFern manual central operating unit										
¹ WR ConfigTool with DuoFern manual central operating unit										
RolloTron Comfort DuoFern										
DuoFern manual transmitter standard										
DuoFern wall controller										
DuoFern radio transmitter, flush-mounted										
DuoFern functions	Value range	Factory setting	A	B	C	D	E	F	G	H
1. Manual operation	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. Automatic 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. Automated solar 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. Travel direction wind *	Up / Down	Up					●	●		●
16. Rain function	-	-								●
17. Automatic rain function on / off **	on / off	Off					●	●		●
18. Travel direction rain *	Up / Down	Up					●	●		●
19. Running time	2 s - 150 s	150 s					●	●		●
20. Ventilation position	on / off	Off					●	●		●
21. Ventilation position	1 % - 99 %	80 %					●	●		●
22. Reversal of direction of rotation	on / off	Off		●	●		●	●		●
23. Connectivity test	-	-								●
24. Connect with radio code **	-	-					●	●		●
25. Remote log on/off	-	-					●	●		●

DuoFern functions	Value range	Factory setting	A	B	C	D	E	F	G	H
26. End point setting for RADEMACHER tubular motors via radio **	-	-			•			•		
27. Reset via radio (3-stage)	-	-					•			•
28. Single-button operation	-	-	•							
29. Jog mode	-	-	•	•				•		
30. Blinds mode	on / off	Off					•	•		•
31. Standard slat position * / #	0 % - 100 %	0 %					•			•
32. auto Tilt after manual stop direction "Down" * / #	on / off	On					•			•
33. auto Tilt in sunshine position * / #	on / off	Off					•			•
34. auto Tilt in sunshine position * / #	on / off	Off					•			•
35. auto Tilt after moving to a %-position * / #	on / off	On					•			•
36. Slat run time * / #	100 ms - 5000 ms	1500 ms (1.5 s)					•			•
37. Motor dead time *	0 ms / 160 ms / 480 ms	0 ms (off)					•			•

¹ The "WR ConfigTool" software can be downloaded from our website at www.rademacher.de

* Only available via radio

** Not supported by Troll Basic DuoFern.

only with Venetian blinds mode activated

- ◆ Manual operation on site
- ◆ Automatic timer on / off
- ◆ Switch the automatic solar function on/off
- ◆ Automatic dawn function on / off
- ◆ Automatic dusk function on / off
- ◆ End point setting (example circuit for RADEMACHER electronic tubular motors, from 2000 onwards)
- ◆ Switching reversal of rotation direction on/off
- ◆ Logging on/off in DuoFern network
- ◆ Clear
- ◆ Deleting all settings (Reset)
- ◆ External control via the two inputs **E1 / E2**
- ◆ Set total running time
- ◆ Set the sunshine position
- ◆ Set ventilation position

Description and configuration of the individual functions.

A precise description of the individual functions and settings is included starting on page 21.

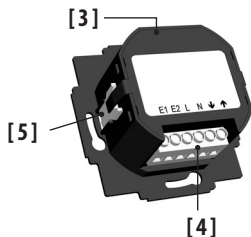


Installation and electrical connection of the Troll Basic DuoFern may only be undertaken with the supplied installation housing [3].

The connecting terminals [4] are located at the bottom of the installation housing [3].

NOTE

Installation housings for other variants of the Troll controller are not compatible.



Parallel connection of electronic tubular motors

A maximum of 3 tubular motors can be connected in parallel to the Troll Basic DuoFern (e.g. RADEMACHER electronic tubular motors).



To do so, please refer to the operating manual for the corresponding tubular motor.

Parallel connection of mechanical tubular motors

A cut-off relay is required in order to connect mechanical tubular motors in parallel.

**Danger due to electric shock when working on all electrical systems.**

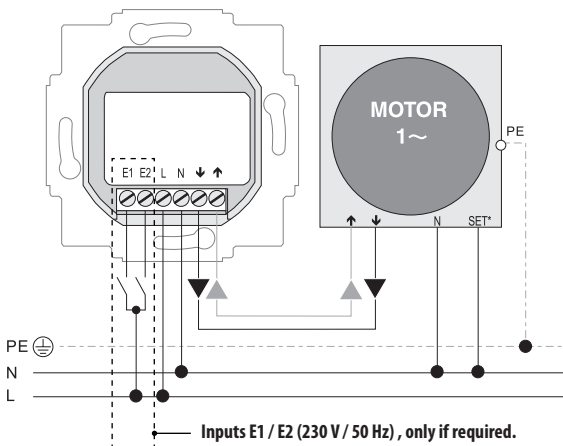
- ◆ The electrical connection and all work on electrical systems must only be carried out by a qualified electrician in accordance with the connection instructions in these operating instructions.
- ◆ Carry out all installation and connection work only in an isolated, zero-volts state.
- ◆ Disconnect all phases of the mains power supply cable and secure it to prevent any reconnection.
- ◆ Check the system for a zero-voltage status.
- ◆ Prior to connecting, compare the information about voltage / frequency on the device with that of the local electrical grid operator.

**Incorrect wiring may lead to short-circuits and destroy the device.**

- ◆ Follow the pin assignment detailed in the wiring diagram.
- ◆ Follow all the electrical connection specifications in the operating instructions of your tubular motor and that of the external controller (when using E1/E2).

**Connection of a second phase to E1 or E2 will cause the Troll Basic DuoFern to be damaged.**

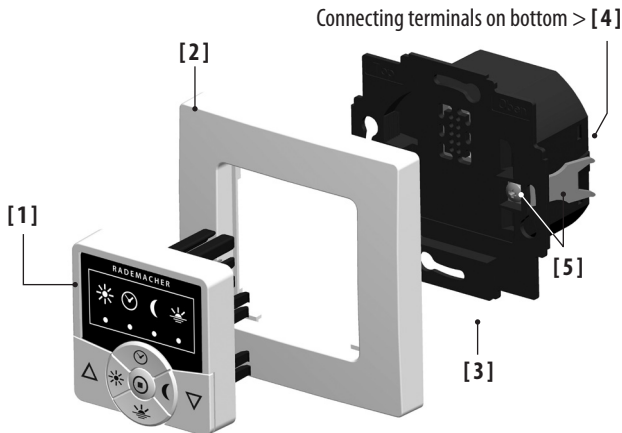
- ◆ When inputs **E1 / E2** are used, they must always be connected to **the same phase**.
- ◆ If another phase is connected, the **incorrect mains voltage (380 V / 50 Hz)** will be applied to the inputs and damage the Troll Basic DuoFern.



Connecting the white set cord (SET) from RADEMACHER tubular motors

- * The **white set cord (SET)** from RADEMACHER tubular motors must be connected to the **neutral terminal [N]** to ensure trouble-free operation of the tubular motor.

The **Troll Basic DuoFern** is designed for flush-mounted installation. For this, you require a **58mm flush-mounted box**. We recommend using a deep box.



Installation procedure:

1. Switch off the mains.
2. Make the electrical connection according to the wiring diagram (see page 17).
3. Route the power cables to the flush-mounted box.
4. Slide the installation housing [3] into the flush-mounted box and clamp the claws [5] in place with the screws provided.
5. Fit the frame [2].
6. Carefully insert the operating unit [1] into the installation housing [3].
7. Switch the mains power back on again.






IMPORTANT

- ◆ Prior to initial commissioning of the Troll Basic DuoFern, it must be ensured that the end points are configured for the connected tubular motor.
- ◆ If the end points have not yet been configured, it is vital that both end points are configured for the tubular motor, as failure to do so can lead to malfunctions.
- ◆ In order to do so, follow the information provided in the operating manual for the respective tubular motor.
- ◆ For electronic RADEMACHER tubular motors from year of manufacture 2000 onwards, the end points can be configured with the help of the Troll Basic DuoFern, see page 35.

**12. Manual operation**

Manual operation is always possible and has priority over the programmed automatic functions.

Example for manual control of a roller shutter

1.  **Open the roller shutters.**
Briefly pressing the button causes the roller shutters to move to the upper end point.
2.  /  or  **causes the roller shutters to stop in the interim.**
3.  **Close the roller shutters.**
The roller shutters move to the configured **ventilation position** or to the lower end point.

Ventilation position, see page 33

If the ventilation position is configured, the roller shutters will first roll down to this position. Pressing the [**Down**] key once more causes the roller shutters to continue downwards.








As soon as Venetian blinds mode is activated with the help of a DuoFern controller (e.g. **HomePilot®**), it is possible to manually operate the **Troll Basic DuoFern** in jog mode.

Jog mode provides a convenient way to configure Venetian blinds. In doing so, the Venetian blinds motor is powered only as long as the control key is actuated.

NOTE

Pressing the respective operating key [**Up / Down**] for an extended period causes the Troll Basic DuoFern to automatically move the Venetian blinds to the corresponding end position.

Example for manual control of Venetian blinds in jog mode.

- | | | |
|------|--|---|
| 1. |  Press briefly | The Venetian blinds move upwards briefly. |
| | or | |
| 1.1. |  Press | The Venetian blinds open.
The Venetian blinds move up to the upper end point. |
| 2. |  /  or  | Causes the Venetian blinds to stop in the interim. |
| 3. |  Press briefly | The Venetian blinds move downwards briefly. |
| | or | |
| 3.1. |  Press | The Venetian blinds close.
The Venetian blinds move to the configured ventilation position or to the lower end point. |

Ventilation position, see page 33

If the ventilation position is configured, the roller shutters will first roll down to this position. Pressing the [**Down**] key once more causes the roller shutters to continue downwards.



13. Logging DuoFern transmitters on / off; brief description

EN

In order for your Troll Basic DuoFern to react to control signals from the DuoFern network, it is necessary to log **each DuoFern device** (e.g. DuoFern manual central operating unit, etc.) onto the Troll Basic DuoFern.



To do so, please read the operating instructions for the respective DuoFern device.

Maximum number of connected devices

You can assign a **maximum of 20 DuoFern devices** to a single Troll Basic DuoFern.

NOTE

- ◆ A Troll Basic DuoFern cannot be connected to another Troll Basic DuoFern device.
- ◆ Additional information about logging on can be obtained from the **login matrix** on our website under: **www.rademacher.de**

**Activate login mode.**

Simultaneously press and hold the buttons for approx. 4 seconds.



The timer LED flashes **green**:

Login mode remains active for approx. **120 seconds**.

2. **Switch the desired DuoFern transmitter to login mode.**

**Pay attention to the timer LED.****Flashes green**

Login mode is active.

**green (for 5 seconds)**

Login was successful. Afterwards, the LED will light up red again, if the automatic timer has been activated.

**red**

The login process failed,
for example if:

- ◆ 20 DuoFern transmitters have already been registered.
 - ◆ An attempt was made to register an unsuitable device (e.g. other DuoFern actuator).
-

4. **Log the next DuoFern transmitter on / off. In order to do so, repeat steps 1 to 2.**

**Cancel registration.**

You can cancel the login process at any time by briefly pressing the [**SET/Stop**] key.

**Activate logout mode.**

Simultaneously press and hold the buttons for approx. 4 seconds.



The timer LED flashes **red**:

Logout mode remains active for approx. **120 seconds**.

2. **Switch the desired DuoFern transmitter to logout mode.**

**Pay attention to the timer LED.****flashes red**

Logout mode is active.

**green (for 5 seconds)**

Log off was successful. Afterwards, the LED will light up red again, if the automatic timer has been activated.

**red**

The logout process failed,
for example if:

- ◆ An attempt was made to log-off a DuoFern transmitter that is not logged-on.

4. **Log the next DuoFern transmitter on / off. In order to do so, repeat steps 1 to 2.**

**Cancel the logout process.**

You can cancel the logout process at any time by briefly pressing the [**SET/Stop**] key.



13.3 Clearing the DuoFern network

EN

This function enables you to log off all DuoFern transmitters from the Troll Basic DuoFern that are no longer accessible via radio.

NOTE

- ◆ Not all battery-operated DuoFern transmitters (e.g. the DuoFern manual central operating unit) can be logged off in this way.
- ◆ A software reset must be carried out in order to log out and delete all DuoFern transmitters (see page 37).

1.  +  + 

Activate the clear function.

Simultaneously press and hold the three buttons for approx. 4 seconds.

The timer LED flashes **red**:



2. 

The timer LED will light up green for 5 seconds as soon as the clearing process has completed.

Purge was successful. Afterwards, the LED will light up red again, if the automatic timer has been activated.



NOTE

You can cancel the clearing process at any time by briefly pressing the **[SET/Stop]** key.



The Troll Basic DuoFern features four automatic modes which can be switched on/off individually on the device.

- ◆ Automated solar function
- ◆ Automatic timer
- ◆ Automatic dusk function
- ◆ Automatic dawn function


The automatic functions are only available if the Troll Basic DuoFern is operated with a respective controller (e.g. HomePilot®, DuoFern manual central operating unit, etc.) (see page 21). All of the automatic functions can be combined as well as independently activated and deactivated on the Troll Basic DuoFern. The status of each automatic function is indicated by the respective LED.

The two automatic modes:

- ◆ Automatic wind function
- ◆ Automatic rain function

can also be switched on/off by an overriding DuoFern control system (e.g. HomePilot®, DuoFern manual central operating unit; etc.).

14.1 Switch all automatic functions on / off simultaneously

1.  **Press and hold [SET] for approx. 1 second.**
2. **All automatic functions will be simultaneously switched on or off.**
3. **Observe the LEDs indicating the status of the automatic functions.**
4. **Once automatic mode is deactivated, it is only possible to operate the system manually.**

NOTE

The automatic wind function is not affected by this procedure, if active, as this is a safety-related function.


In order to be able to use all of the functions, such as ventilation position and sunshine position, it is **vital** that the motor running time is correctly configured beforehand.





The running time can be configured directly with the Troll Basic DuoFern or you can enter it in the central DuoFern controller (e.g. HomePilot®).



NOTE

- ◆ Tubular motor running times can vary depending on temperature. For this reason, targeted movement to a specific position is subject to certain tolerances.
- ◆ The motor running time must be reconfigured if the end points are changed.


15.1 Setting the motor running time with the Troll Basic DuoFern

1.  **Move the roller shutters or blinds to the lower end point.**

2.  +  **Simultaneously press and hold the [Timer] and [Up] buttons.**


 After approx. 4 seconds, the solar LED flashes red and the roller shutters or blinds move to the upper end point.

3.  +  **Release both buttons as soon as the roller shutters stop at the upper end point.**
 The running time will be timed and stored during the up cycle.

i 15.2 Time the running duration of the motor and enter it into the DuoFern controller. **EN**

1.  Subsequently move the roller shutters to the upper end point and make a note of the time required.
2. Enter the noted time in the central DuoFern controller (e.g. HomePilot®).

NOTE

- ◆ As soon as the motor running time is transferred from the central DuoFern controller to the Troll Basic DuoFern, you will receive confirmation from the system by way of the roller shutter briefly starting up.









16. Setting the sunshine position

You can set an arbitrary position (**sunshine position**) which your roller shutters will lower to when the automated solar function is activated.






NOTE

The running time must be configured prior to setting the sunshine position, see page 26.

1.  /  Move the roller shutters to the desired position and stop.
2.  +  Save the sunshine position.

 The solar LED flashes rapidly by way of confirmation. Once the key is released, the automated solar function is activated and the LED lights up permanently red.

The automated solar function enables brightness-dependent control of your roller shutters. The control signals for this function are provided by a light sensor on the DuoFern network.

When the automated solar function is triggered, your roller shutters will then lower to the configured **sunshine position**. Once the solar program is ended, the roller shutters move completely up to the upper end point.

1.  **Press and hold the solar button for approx. 1 second.**
2. 

Observe the solar LED:
OFF
The automatic solar function is switched off.

ON
The automatic solar function is switched on.

Flashing
The automated solar function is active, the roller shutters will be lowered to the **sunshine position**. The LED continues to flash when the roller shutters are in the **sunshine position**.



17. Switching the automatic timer on/off

EN

Execution of control signals from the DuoFern network.

If the automatic timer is activated, control signals for opening and closing times will be received from the DuoFern network and executed by the system.

NOTE

◆ Executing a random function.

If the Troll Basic DuoFern receives a control signal from a DuoFern transmitter with activated random function (e.g. from a HomePilot®), then it is also able to execute the random function. The random function enables a random delay of between 0 and 30 minutes.

- ◆ The random function cannot be switched on/off on site.

1.



Press the timer key for approx. 1 second.

2.



Pay attention to the timer LED.



OFF

The automatic timer is switched off.



ON

The automatic timer is switched on.







18. Switching the automatic dusk function on/off

EN

The automatic dusk function causes the roller shutters to close automatically to their lower end point or the configured ventilation position (see page 33).

The control signals for this function are provided by a DuoFern transmitter on the DuoFern network.





1.  **Press and hold the dusk button for approx. 1 second.**
2. 
 **OFF**
The automatic dusk function is switched off.
 **ON**
The automatic dusk function is activated.



19. Switching the automatic dawn function on/off.

The automatic dawn function causes the roller shutters to open automatically to the upper end point.

The control signals for this function are provided by a DuoFern transmitter on the DuoFern network.

1.  **Press and hold the dawn button for approx. 1 second.**
2. 
 **OFF**
The automatic dawn function is switched off.
 **ON**
The automatic dawn function is switched on.





This function enables you to use the Troll Basic DuoFern to operate, for example, connected Venetian blinds or awnings in relation to the weather conditions. The automatic wind function can also be switched on/off by an overriding DuoFern controller (e.g. HomePilot®).

As soon as an external "wind" signal transducer is detected, the control signal can be transferred from the **DuoFern network** on the Troll Basic DuoFern.

The direction of operation in the event of wind can also be configured by an overriding DuoFern controller (e.g. HomePilot®).

In the event of windy conditions, the Venetian blinds or awnings can be retracted or a draught stop closed.

If the automatic wind function is active ...

- ◆ the timer LED [ ] flashes green in a 2 second cycle.
- ◆ manual operation is no longer possible. automatic movements are no longer executed.
 - the last automatic movement command to be received will be stored and will be resumed as soon as the wind subsides.

Manual mode and the automatic wind functions are active again:

- ◆ as soon as a period of 15 minutes has elapsed where no wind command was received or the registered signal transducer (e.g. DuoFern environmental sensor) deactivates the automatic wind functions.

NOTE

- ◆ The automatic wind function is interrupted in the event of power failure.
 - ◆ If the direction of rotation for wind is set to **DOWN** and wind is detected when the drive is at the upper end position, then the drive moves back to the upper end position as soon as no more wind is detected.
-

Behaviour of the automatic wind function when the automated solar function is active:

- ◆ If the automatic wind function is started when the automated solar functions are active, then the awning moves back to the sunshine position as soon as the automatic wind function is ended, assuming the automated solar functions are still active.
 - This does not apply if the automatic rain function has activated in the mean time.




This function enables you to use the Troll Basic DuoFern to operate, for example, a connected awning in relation to the weather conditions. The automatic rain function can also be switched on/off by an overriding DuoFern controller (e.g. HomePilot®).

As soon as an external "rain" signal transducer is detected, the control signal can be transferred from the **DuoFern network** on the Troll Basic DuoFern.

The direction of operation in the event of rain can also be configured by an overriding DuoFern controller (e.g. HomePilot®).

The awning can be retracted (**up**) or used as a rain cover (**down**) in the event of rain.

Once the automatic rain function is active ...

- ◆ the timer LED [] flashes green in a 2 second cycle.
- ◆ manual operation is still possible.
- ◆ automatic movements are no longer executed.
 - The previously received automatic movement commands are no longer carried out but will be resumed as soon as the rain subsides.

Manual mode and the automatic wind functions are active again:

- ◆ as soon as a period of 15 minutes has elapsed where no rain command was received or the registered signal transducer (e.g. DuoFern environmental sensor) deactivates the automatic rain functions.

NOTE

- ◆ The automatic rain function is interrupted in the event of power failure.
 - ◆ If the direction of rotation for rain is set to **DOWN** and rain is detected when the drive is at the upper end position, then the drive moves back to the upper end position as soon as no more rain is detected.
-

Behaviour of the automatic rain function when the automated solar function is active:

- ◆ If the automatic rain function is started when the automated solar functions are active, then the awning moves back to the sunshine position as soon as the automatic rain function is ended, assuming the automated solar functions are still active.
 - This does not apply if the automatic wind function has been activated in the mean time.

If you do not want the roller shutters to close fully to the lower end point, you can use this function to configure an arbitrary position (e.g. as ventilation position).

- ◆ When closing automatically, the roller shutters will stop at the ventilation position, however, they can subsequently be closed completely via manual operation.
- ◆ The ventilation position can be changed at any time.

NOTE

The motor running time must be configured prior to setting the ventilation position, see page 26.



Move the roller shutters to the desired ventilation position and stop.



Store the ventilation position. In order to do so, press both keys for approx. one second.



The dawn LED flashes red by way of confirmation.



Revoke the ventilation position.

If you want to revoke the ventilation position, first close the roller shutters fully and then save the position again. This will set the ventilation position to the lower end point.

This function enables you to use the Troll Basic DuoFern to control Venetian blinds. The Venetian blinds mode can also be switched on/off by an overriding DuoFern controller (e.g. HomePilot®).

The following modes are possible:

- ◆ Jog mode
- ◆ Automatic wind function / tilting time

Additional Venetian blinds functions can be configured, for example, with a HomePilot®:

- ◆ Standard slat position
- ◆ Automatic tilt after manual stop in direction "Down"
- ◆ Auto tilt to sunshine position
- ◆ Auto tilt to ventilation position
- ◆ Automatic tilt after moving to a target position
- ◆ Slat run time
- ◆ Motor dead time

Brief description of jog mode, see page 20.

Briefly tapping the operating buttons enables Venetian blinds slats to be conveniently configured.

NOTE

Pressing the respective operating key [**Up / Down**] for an extended period causes the Troll Basic DuoFern to automatically move the Venetian blinds to the corresponding end position.

Brief description of automatic slat adjustment function

If the Troll Basic DuoFern controls the Venetian blinds motor in the **down direction** until the total running time has elapsed or the Venetian blinds motor is stopped manually, then the motor reverses automatically for a brief period (automatic slat adjustment). This serves to position the slats to the desired angle, in order to provide sun shading to the room.

The **slat position** can also be configured by a registered DuoFern controller (e.g. HomePilot® or DuoFern manual central operating unit).

It is not necessary to re-wire the motor if the direction of rotation for the connected motor is wrong [**Up**] key moves the roller shutters downwards and [**Down**] key moves the roller shutters upwards). The direction of the motor can be easily changed using the **reversal of rotation** direction function.

1.  + 



Simultaneously press and hold both buttons for approx. 4 seconds.

The solar LED flashes red by way of confirmation.

2.  + 

Release both buttons.

The direction of rotation is now reversed and stored.

The tubular motor starts up briefly by way of confirmation.

NOTE

The reversal of rotation direction is permanently stored, even in the event of power failure.

IMPORTANT

- ◆ The end points must be configured in order for the roller shutters to stop at the desired upper and lower positions. It is imperative that both end points are configured, otherwise malfunctions may occur.
 - ◆ The end point setting function is only available for RADEMACHER electronic tubular motors from 2000 onwards.
 - ◆ The end point setting can not be adjusted for tubular motors connected in parallel.
-

Set the upper end point.

- 1.
- 
- +
- 

Simultaneously press and hold the buttons.

The roller shutters travel up.

The solar LED flashes red by way of confirmation.



- 2.
- 
- +
- 

Release the buttons...

...as soon as the roller shutter achieve the desired position for the upper end point. The roller shutters stop and the upper end point is stored.

Set the lower end point.

- 3.
- 
- +
- 

Simultaneously press and hold the buttons.

The roller shutters travel down.

The solar LED flashes red by way of confirmation.



- 4.
- 
- +
- 

Release the buttons...

...as soon as the roller shutters achieve the desired position for the lower end point. The roller shutters stop and the lower end point is stored.

Changing or correcting the end points

- 5.
- Move the roller shutters to the centre position and configure the respective end point again.**

The Troll Basic DuoFern features two external inputs **E1 (up)** and **E2 (down)** for connecting an external switch. If all automatic functions are deactivated, the inputs will not be taken into consideration by the system.

Function in normal mode

The mode of operation and order of switching corresponds to manual mode, as described on page 19.





- 1. Press the up key (E1). The roller shutters travel up.**
 - 2. Press the down key (E2). The roller shutters travel down.**
-

Function in jog mode:

- ◆ Jog mode is active only if the Venetian blinds function has been previously activated in the DuoFern controller (e.g. HomePilot®).
- ◆ The mode of operation and order of switching corresponds to manual jog mode, as described on page 20.

27. Software reset (restore factory settings).

If necessary, you can erase all of your settings and return the Troll Basic DuoFern system to its original factory settings.

-  +  +  +  **Simultaneously press and hold all four buttons for 4 seconds.**
 - All of the LEDs flash red by way of confirmation.**
 - Release the buttons...**
-

All settings will be erased and reset to the default factory settings.

NOTE

If the Troll Basic DuoFern fails to react to the software reset, then we recommend briefly disconnecting the device from the mains.



There is also a risk of fatal electric shocks when dismantling the Troll Basic DuoFern.

Follow the safety instructions for electrical connection on page 16.

Procedure for dismantling:

1. Switch off the mains.

2. Secure the connector against reconnection and check that the system is de-energised.

3. Carefully remove the operating unit [1] from the installation housing [3].

4. Remove the frame [2]

5. Release the installation housing [3] from the flush-mounted box and disconnect from the mains lead.

6. Leave the connector so that it is secured against reconnection or fit with a new unit if required.

29. CE Mark and EC Conformity

The **Troll Basic DuoFern** (item no. 3650 01 72 / 3650 01 82) complies with the requirements of the following European and national directives:



**1999/5/EC
R&TTE directive**

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

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

External dimensions control unit [1]:	50 x 50 x 12 mm (according to DIN 49075)
Colour:	ultra-white / aluminium
Nominal voltage:	230 V / 50 Hz; 230 V / 60 Hz
Max. switching capacity:	8 (4) A μ (Type 1B)
Standby consumption:	< 0.4 W
Extension inputs:	2 (E1 and E2)
Connection diameter:	1.5 mm ²
Installation depth:	32 mm
Permissible ambient temperature:	0 to 40°C
Data retention:	permanent
Protection class:	II (only for use in dry areas)

31. Factory settings

Automatic:	On
Automatic time:	On
Automatic dawn function:	Off
Automatic dusk function:	Off
Automated solar function:	Off
Sunshine position:	50 %
Motor running time:	150 seconds
Ventilation position:	Off / 80 %
Blinds mode:	Off, tilting time: = 1.50 seconds
■ Auto tilt to:	
– Sunshine position:	Off
– Ventilation position:	Off
■ Auto tilt after:	
– Moving to a target position:	On
– Manual stop in direction "Down"	On
■ Standard slat position:	0 %
■ Motor dead time:	Off
Jog mode:	Off

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.

RADEMACHER

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* 30 seconds free of charge, subsequently 14 cents / minute from German fixed line networks and max. 42 cents / minute from German cellular networks.