EN

Troll Basic 5602

Instruction manual for the electrical connection and for commissioning

Item no. 3650 01 12 (ultra-white)
Type: 5602

VBD 599-2 (06.16)

Dear Customer,

EN

With your purchase of a **Troll Basic 5602**, you have chosen a quality product manufactured by RADEMACHER. Thank you for the trust you have placed in us.

RADEMACHER products have been developed with the greatest possible convenience in mind. 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.

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1. These instructions...

EN

...describe how to install, connect and operate the Troll Basic 5602.

1.1 Application of this manual

- Before you begin, please read this manual through completely and follow all the safety instructions.
- Please also read the instruction manuals of the accessories, if available, as well as the instructions of the respective connected appliance.
- This manual is a component of the product.
  Please store it in an easily accessible place.
- When passing the Troll Basic 5602 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

The following hazard symbols are used in this instruction manual:

Danger 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.	Procedures
2.	
◆	Itemisation
1) or a)	Lists
	further useful information
	Please read the respective manual
	Indicator light flashes red
	Indicator light lights up red
	Indicator light is off

UW

- UW = ultra-white (device colour)

DIN 49075

- German Standard "Cover panels for installations devices for building into device boxes...".

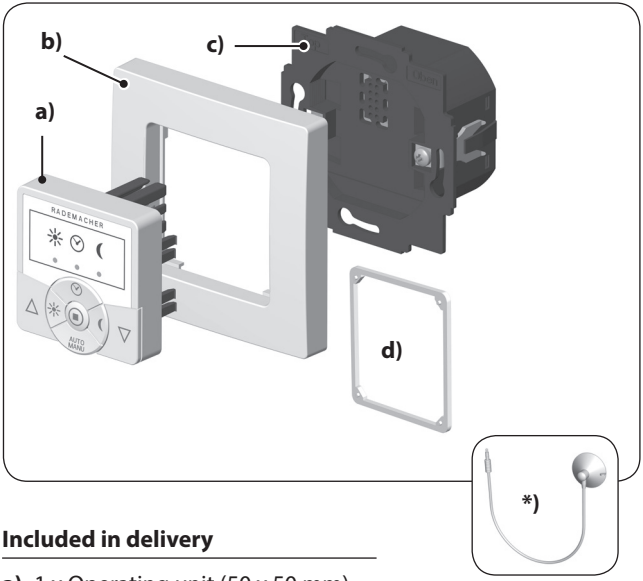
2014/30/EU

- European EMC Directive (EMC=electromagnetic compatibility)

2014/35/EU

- European low-voltage directive

3. Included in delivery



Included in delivery

a) 1 x Operating unit (50 x 50 mm)
b) 1 x Frame
c) 1 x Installation housing
d) 1 x Spacer frame, see page 34
e) 1 x Instruction manual (not illustrated)

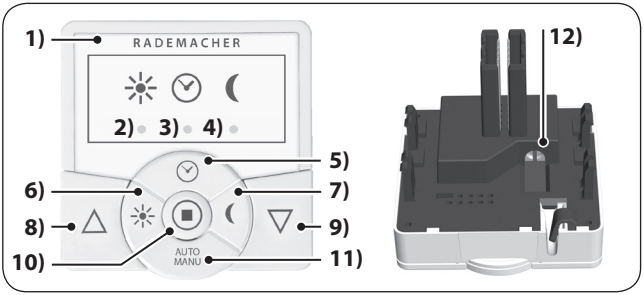
After unpacking please check and compare...

... the contents of the package with the above specified.

***) Accessories, optionally available, see page 54**

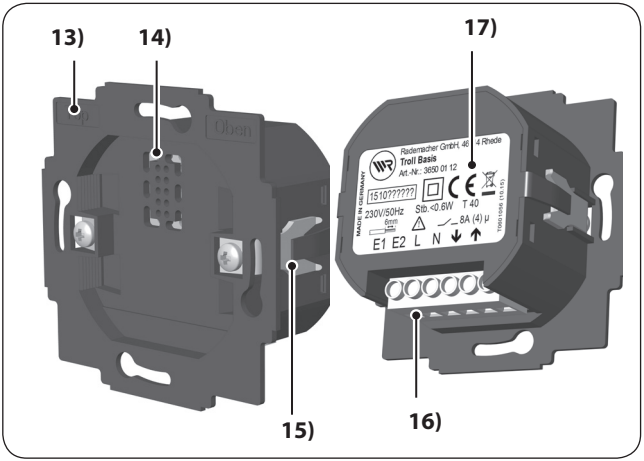
Light sensor

4. General View of the Operating Unit

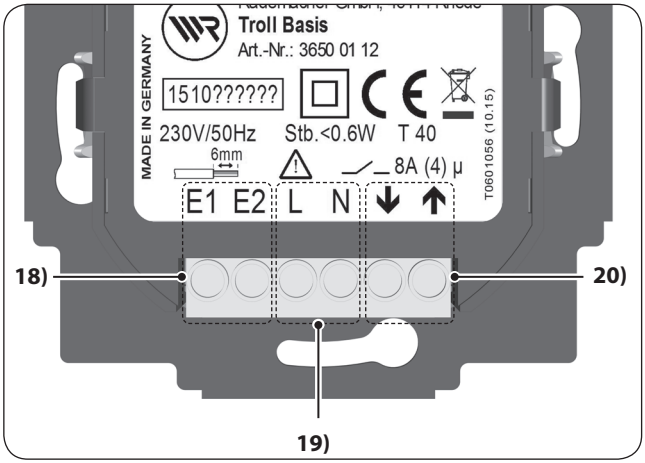


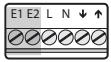
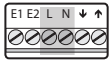
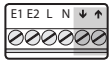
Pos.	Symbol	Description
1)		**Operating unit**
2)	☀	**Sun LED (red)**
3)	◷	**Timer LED (red)**
4)	☾	**Dusk LED (red)**
5)	◷	**Timer button** ◆ *Switch the automatic timer on/off.*
6)	☀	**Sun button** ◆ *Switch the automatic solar function on/off.*
7)	☾	**Dusk button** ◆ *Switch the automatic dusk function on/off.*

Pos.	Symbol	Description
8)		**Up button** ◆ *Open the roller shutter or stop the current drive; see page 37.*
9)		**Down button** ◆ *Close the roller shutter or stop the current drive; see page 37.*
10)		**SET key** ◆ *Configuration (setting) of various functions. ** * *The functions are respectively set in combination with the other buttons, see table on page 14*
11)		**AUTO/MANU key** ◆ *Switch all automatic functions on / off simultaneously.*
12)		**Connection socket for the light sensor** ◆ *Installation, see page 32*



Pos.	Symbol	Description
13)		Installation housing
14)		Plug-in coupling for the operating unit
15)		Claw fasteners and screws
16)		Connecting terminals
17)		Type plate



Pos.	Symbol	Description
18)		**Control inputs [E1 (▲) / E2 (▼)] 230 V / 50 Hz ~** *Connection of external push-buttons or controllers. Parallel connection of several devices is possible on both inputs.*
		*E1 / E2 and the Troll Basic 5602 must be connected to the same phase [**L**], see page 27.*
19)		**Voltage supply [L / N] 230 V / 50 Hz ~** *Connection of the supply voltage.*
20)		**Rotational direction [Down/Up]** *Connecting cables to the tubular motor.*

4.3 Function of the buttons and LEDs

Function	Button	LED (red)
up / stop / down / stop	△ / ▽	
Switch automatic timer on / off	⏲ 1 sec.	⏲ > ● / ○
Switch the automatic solar function on/off	☀ 1 sec.	☀ > ● / ○
Switch automatic dusk function on / off	☾ 1 sec.	☾ > ● / ○
Switch automatic mode on/off	AUTO MANU 1 sec.	⏲ / ☀ / ☾ ● / ○
Settings	**Button combinations**	
Accept the current time as the opening time.	△ + ⏲ 1 sec.	⏲ > ✳
Accept the current time as the closing time.	▽ + ⏲ 1 sec.	⏲ > ✳
Adopting the current brightness as the set limit.	☀ + ◉ 1 sec.	☀ > ✳
Adopt the current brightness (dusk) as the set limit.	☾ + ◉ 1 sec.	☾ > ✳
Set the running time.	◉ + △ 4 sec.	⏲ > ✳
Software reset	☀ + ⏲ + ☾ + AUTO MANU 4 sec.	⏲ + ☀ + ☾ ✳

5. Product Description

The Troll Basic 5602 is designed for controlling roller shutters or awnings by connecting a corresponding tubular motor.

Roller shutter control

The system enables roller shutters to be automated.

Manual Operation

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

External manual control via the two inputs E1 and E2

The Troll Basic 5602 features two inputs **E1** and **E2** (230 V / 50 Hz) for connecting an external push-button or external controller, see page 30.

Installation and electrical connection

The Troll Basic 5602 is designed as a flush-mounted device for indoor rooms. The electrical connection is carried out by means of the connecting terminals on the reverse side of the installation housing.

The Troll Basic 5602 can be integrated into most commercially available switch ranges with the help of a corresponding intermediate frame 50 x 50 (according to DIN 49075).
Suitable switch ranges are detailed on the following page.

5.1 Compatible switches

With the provided frame, the Troll Basic 5602 can be integrated into customary switches. Suitable switches can be found in the table below.

Manufacturer	Switch
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 / Standard 55
JUNG	CD 500 / ST 550 / LS 990 / CDplus and CD, however, with coloured rings
MERTEN	M1 / Atelier / Artec / Trancent / Antique New
PEHA	Standard / Dialog / Aura
LEGRAND	Creo / Tenara
VEDDER	Alessa (plus)

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

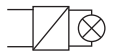
** not included.*

- Manual operation on site
  - up (△) / stop / down (▽) / stop
- AUTO / MANU - switchover
- Switch automatic timer on / off
  - Separate switching time for UP (△) and DOWN (▽)
- Switch automatic solar function (with light sensor) on / off
- Switch automatic dusk function (with light sensor) on / off
- External control via the two inputs **E1 / E2**
- Setting options:
  - Adoption of the current time as the switching time
  - Adoption of the current brightness as a new brightness set limit for the automatic solar function
  - Adoption of the current brightness (dusk) as a new brightness set limit for the automatic darkness function
- Dimming the LEDs
- Delete all data, reset

6. Technical Specifications

Mains supply [L / N]	
Mains supply voltage:	230 V / 50 Hz ~
Consumption:	Standby: < 0.6 W

Connection of the tubular motor [▲ and ▼]		
Switching voltage:	230 V / 50 Hz ~	
Maximum switching capacity:	ohmic load, e.g. bulb	
		8 A µ (type 1B)
	inductive loads such as: fluorescent lamps, drives, iron core transformers, e.g. for extra-low voltage bulbs such as halogen bulbs	
		4 A µ (type 1B)
		
		

Connection of the tubular motor [▲ and ▼]	
Maximum switching capacity:	capacitive loads such as: electronic transformers, AC/DC transformer, e.g. for extra-low voltage lamps such as halogen lamps, LEDs, etc.
	 4 A µ (type 1B)

Improper use can lead to serious injuries or property damage.

- Due to the small contact distance (µ), not suitable for disconnecting.
- The Troll Basic 5602 is not suitable to be used for an electrically safe disconnection of the connected tubular motor.

Inputs [E1 (▲) / E2 (▼)] ... ... For an external manual push-button or an additional external control, see page 27/30.	
Input voltage:	230 V / 50 Hz ~

6. Technical Specifications

General information	
External dimensions (W x H x D) operating unit [**1**]:	50 x 50 x 12 mm according to DIN 49075
Available colours:	Ultra-white (UW)
Built-in depth:	32 mm
Permissible ambient temperature range:	0 °C to + 40 °C
Protection class:	II (*only for use in dry rooms*)
Protection type:	IP 30
Connecting terminals:	Screw terminals for max. 1.5 mm^2 cables cross-section

Setting ranges	
Sensitivity to sunlight: *	4,000 to 40,000 Lux
Dusk sensitivity *:	2 to 50 Lux

* *The current brightness can respectively be adopted as a set limit.*

6.1 Factory Settings

Factory Settings	
Automatic mode:	Off
Automatic solar function:	Off
Automatic dusk function:	Off

6.2 Conduct in the event of power failure

After a power failure, the timer LED flashed and the timer stands still.

Data retention following a power failure

All settings (also the configured switching times) are retained after a power failure.

As soon as the power supply is restored, the opening and closing times will be executed again, however the times will be delayed by the duration of the power failure. If required, set the switching times again if you do not wish to keep the delayed switching times, see page 40.

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

- Never use defective or damaged equipment.
- Check the Troll Basic beforehand for damage.
- Consult our customer service department in the event that you discover damage, see page 56.

Incorrect use leads to an increased risk of injury.

- Train all personnel to use the Troll Basic safely.
- This device may be used by children from 8 years of age upwards as well as by persons with reduced physical, sensory or mental capacities or with lack of experience and knowledge if they are supervised or have been instructed on how to use the device safely and if they understand what dangers may resulted from this.
- Children must not play with the device.
- Never remove the operating unit from the installation housing during operation.

7.1 Intended Use

Only use the Troll Basic 5602 for connecting and controlling a tubular motor for:

- Roller Shutters
- Awnings

Operating conditions

- Only operate the Troll Basic 5602 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 tubular motor must be fitted with a mechanical or electronic end position switch.

7.2 Incorrect Use

Using the Troll Basic 5602 for any other purpose than previously mentioned is not permissible.

Improper use can lead to serious injuries or property damage.

- The Troll Basic 5602 is not suitable to be used for an electrically safe disconnection of the connected appliances.

There is a risk to life caused through short circuiting and electric shocks if the troll Basic 5602 is used outside or in damp rooms.

- Do not install and use the Troll Basic 5602 outdoors or in damp rooms.

7.3 Required Expert Knowledge of the Installer

The electrical connection, installation and commissioning of the Troll Basic 5602 must only be carried out by a qualified electrician in accordance with the instructions in this manual.

8. Important information prior to electrical installation and mounting

Without set end points on the tubular motors, the roller shutter poses a risk of injury.

- If no end points are configured, then it is vital that both end points are configured for the tubular motor, as failure to do so can lead to malfunctions.
-  Please refer to the operating manual for the corresponding tubular motor.

Parallel connection of electronic tubular motors

A maximum of 3 tubular motors can be connected in parallel to the Troll Basic 5602 (e.g. RADEMACHER electronic tubular motors).

Parallel connection of mechanical tubular motors

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

Installation materials

The Troll Basic 5602 is designed for flush-mounted installation. We recommend installation in a deep 58 mm flush-mounted box or in an electronic socket.

9. 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.

Please read the specifications relating to the electrical connection detailed in the operating instructions for the tubular motor.

⚠ DANGER!

There is a risk of fatal electric shocks 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 supply cable and secure it to prevent any reconnection.
- Check that the system is de-energised.

⚠ WARNING!

Short-circuiting, caused when the Troll Basic 5602 is overloaded, poses a danger to life.

The maximum switching capacity must not be exceeded, for this, please observe the details in the Technical Specifications, see page 18.

⚠ WARNING!

Using incorrect installation housing can lead to personal injury and damage to property (electric shocks / short circuiting).

- Only use the provided installation housing to connect and mount the Troll Basic 5602.
- Installation housings of other RADEMACHER products are not compatible.

⚠ WARNING!

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

Follow the pin assignment detailed in the wiring diagram.

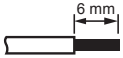
Connection of a second phase to E1 or E2 will cause the Troll Basic DuoFern to be damaged.

- When the inputs [E1 / E2] are used, the external push-button / controller and the Troll Basic 5602 must be connected to the same phase [**L**].
- If another phase **[L']** is connected, the incorrect mains voltage (380 V / 50 Hz) will be applied to the inputs and damage the Troll Basic 5602.

Maximum cable length for the connection of external push-buttons

- The maximum length of lead to connect an external switch/ push button must not exceed 10 m.

Length of insulation stripped:



All leads must be stripped to 6 mm.

9.1 Connecting a tubular motor

1. Ensure the mains are current-free and check whether the inlet leads are current-free.

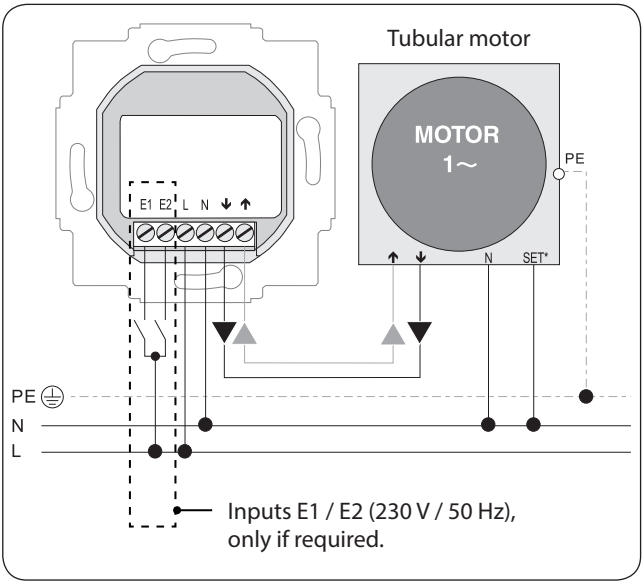
2. Securely lay the connecting cables right into the flush-mounted box.

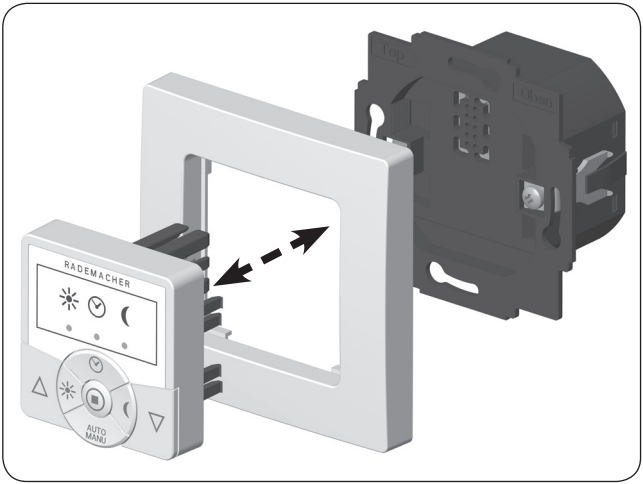
3. Remove the insulation on all leads down to 6 mm in length and connect them according to the following connection diagram.

4. After the electrical connection, the installation of the Troll Basic 5602 into the flush-mounted box is carried out, see page 31.

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.


Tubular motor
MOTOR
1~
PE
E1 E2 L N
N
SET*
PE
N
L
Inputs E1 / E2 (230 V / 50 Hz),
only if required.

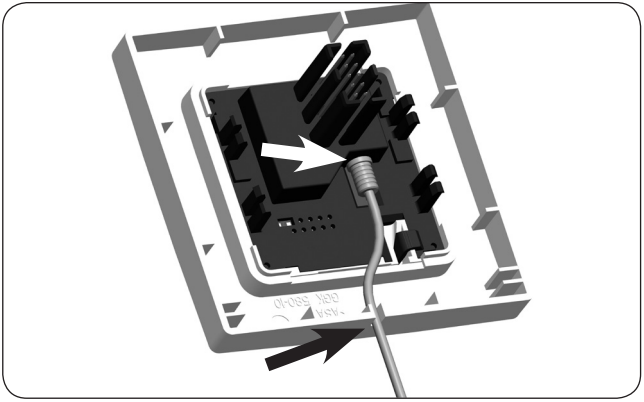


1. Insert the installation housing into the flush-mounted box and fasten it with the screws of the claw fasteners.
2. Place the frame onto the installation housing.
3. Subsequently, carefully insert the operating unit into the installation housing .
4. Switch on the mains power supply again.

11. Connecting a light sensor*

If you intend to operate your Troll Basic 5602 and the connected tubular motor according to brightness levels, then you must connect the optionally available RADEMACHER light sensor to the Troll Basic 5602.

11.1 Light sensor connection when using the supplied frame



1. Carefully pull the operating unit off the installation housing.
2. Insert the light sensor plug into the socket on the rear of the operating unit.

* *Accessories, see page 54*

11.1 Light sensor connection when using the supplied frame

⚠ ATTENTION!

Excessive bending can damage the sensor cable.

The sensor cable is a fibre optic cable. Avoid excessive bending or crushing of the sensor cable.

3. Feed the sensor cable into the cable bushing in the frame and guide it out.

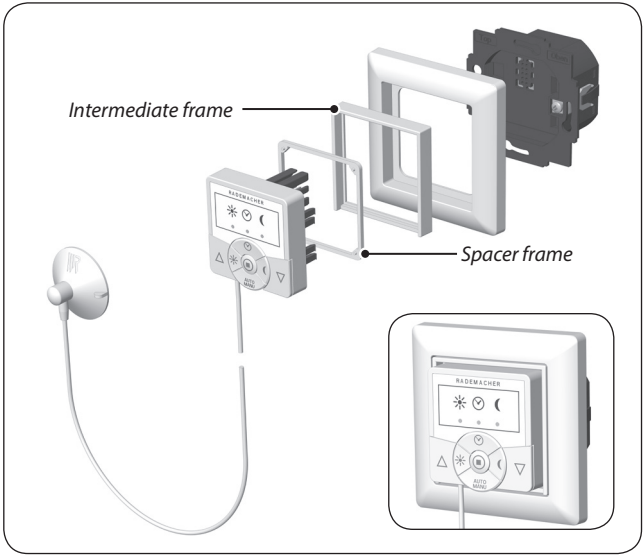
4. Carefully replace the operating unit with frame back onto the installation housing.

11.2 Light sensor connection when using a frame supplied by a third-party manufacturer

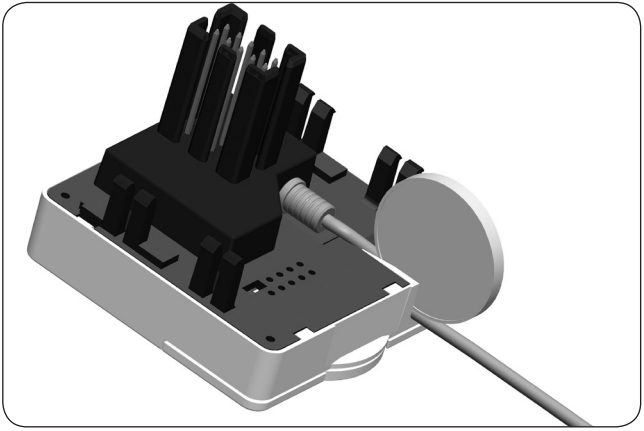
If the cable bushing of the operating unit is covered by the frame, then it will be necessary to fit the additionally provided spacer frame onto the rear of the operating unit.

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

** not included*



11.3 Dismantling the light sensor



1. Carefully pull the operating unit off the installation housing.
2. If the sensor cable has been fixed in place by means of the operating unit's engagement hooks, then it must first be released, for example, with the help of a 50 cent coin.
3. Pull the light sensor plug out of the socket.
4. Replace the operating unit back onto the installation housing.

12. Important Information regarding the Commissioning

Without set end points on the tubular motors, the roller shutter poses a risk of injury.

- Prior to initial commissioning of the Troll Basic 5602, it must be ensured that the end points are configured for the connected tubular motor.
- If no end points are configured, then it is vital that both end points are configured for the tubular motor, as failure to do so can lead to malfunctions.
-  Please refer to the operating manual for the corresponding tubular motor.

The manual operation of the Troll Basic 5602 can be carried out with the up (△) and down (▽) buttons or via a push-button that is connected to one of the inputs [**E1 (△) / E2 (▽)**].

Manual operation is always possible and has priority over the 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 ▽	Stop the shutters in the interim.
3.	▽	Close the roller shutters. The roller shutters move to the lower end point.

14. Automatic mode

The Troll Basic 5602 features three automatic functions:

- Automatic timer
- Automatic solar function
- Automatic dusk function

All of the automatic functions can be combined or individually enabled or disabled. The status of each automatic function is indicated by the respective LED.

The automatic timer can only be switched on if a switching time has been previously set.

AUTO MANU 14.1 Switch all automatic functions on / off simultaneously; Auto/Manu switchover

1.	AUTO MANU 1 sec.	Press and hold the [AUTO/MANU] button for approx. 1 second.
2.	All previously activated automatic functions will be simultaneously switched on or off.	
3.	Observe the respective LEDs indicating the status of the automatic functions, see page 14.	
4.	Once automatic mode is deactivated, it is only possible to operate the system manually.	

The same switching times every day of the week

You can set an opening and closing time for your Troll Basic 5602 which will apply to all days of the week. Once this time is reached, the roller shutters will open or close automatically.

Changing the switching times

You can change the switching time settings at any time. Please note that each new switching time deletes the previous setting.

In order to set the switching times, you must carry out this step once at the time that the roller shutters are to open or close.

For example, carry out the step at 8:00 o' clock in the morning if you want the roller shutters to open at 8:00 AM every day.

- You must set at least one switching time, in order to activate the automatic timer.
- Your changes will not be executed until the next day when you configure opening and / or closing times.

15.1 Configuring an opening and closing time

Configure an opening time (△)
(e.g. at 8:00 hours)

1.	△ + ⏲ 1 sec.	Simultaneously briefly press the buttons.
2.		The timer LED flashes and the roller shutter travels upwards. The automatic timer is now activated. Your roller shutters will open automatically every day at 8:00 AM.

Configure a closing time (▽)
(e.g. at 20:30 hours)

1.	▽ + ⏲ 1 sec.	Simultaneously briefly press the buttons.
2.		The timer LED flashes and the roller shutter travels downwards. The automatic timer is now activated. Your roller shutters will close automatically every day at 20:30.

15.2 Switching the automatic timer on / off

EN

If required, the automatic timer can be switched on or off at any time.

1.	1 sec.	Press and hold the timer button for approx. 1 second.
2.		Pay attention to the timer LED.
		OFF Automatic timer OFF The previously configured switching times are stored.
		ON Automatic timer ON
		Flashing After previous power failure, if at least one switching time has previously been configured.

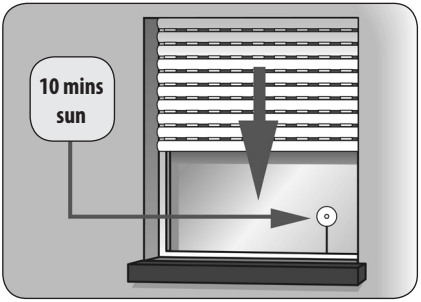
In the event of power failure, the switching times will be extended by the duration of the power failure, and therefore may require reconfiguration.

The automatic solar function enables brightness-dependent control of the roller shutters in combination with the light sensor. To do this, the light sensor is secured to the window pane with a suction cup and then plugged into the Troll Basic 5602.

Automatic solar function

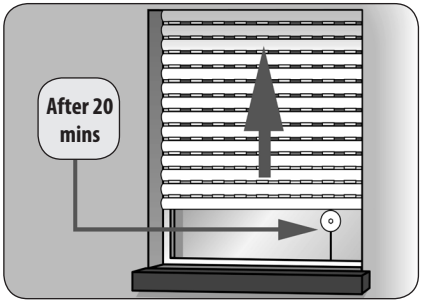
Automatic moving up and down of the roller shutter once a set limit is exceeded. The roller shutter end position can be freely selected by changing the light sensor position.

Automatic lowering



If the sensor detects uninterrupted sunlight for 10 minutes, the shutter will descend until its shadow covers the light sensor.

Automatic clearing



After approx. 20 minutes, the roller shutter is automatically raised a small amount to uncover the sensor. If the sun continues to shine, then the roller shutter remains in this position. If the brightness decreases below the set limit, it returns to the upper end point.

The above-mentioned delay times can be exceeded in the event of changing weather conditions.

The automatic solar function will be terminated and must be reactivated if required after the following events:

- After manual actuation.
- After execution of an automatic function.
- After the upper end point is reached.

16.1 Automatic solar function; configuring sensitivity

EN

The automatic solar function is switched on by setting or changing the sensitivity.

Configure the brightness at the level which the blinds should be closed.

Set the current brightness as set limit and switch on the automatic solar function.

1. [✳] + [◉] 1 sec. Simultaneously briefly press the buttons.

2. The current brightness is now set as the set limit and the automatic solar function is activated.

If this value is exceeded, the roller shutters will roll down to the light sensor.

3.  Observe the solar LED:

 OFF

Automatic solar function OFF

 ON

Automatic solar function ON

 Flashing ...

- ...if the set limit is exceeded.
- ...if the current brightness value is within the measured range while configuring the set limit.

		Rapid flashing If the current brightness value is outside the measuring range, the set limit is set to the measured range limit.

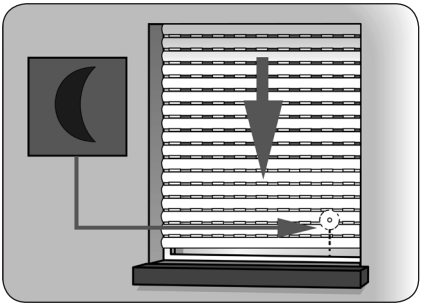
4. You can switch the automatic solar function on and off as required.

5. ☀ 1 sec. In order to do so, press and hold the sun key for approx. 1 second.

The automatic dusk function causes the roller shutters to close automatically under the following conditions:

- The automatic dusk function is activated.
- When dusk is detected for a minimum of 15 seconds.
- The light sensor has been mounted and plugged into the Troll Basic 5602.

Automatic lowering



At dusk, the roller shutters will lower to the lower end point after approx. 15 seconds. The roller shutters will open again once the configured opening time is reached or in the event of a manual UP command.

The required darkness limit is configurable.

If the roller shutters are to be lowered as a result of the automatic dusk function, then you must set the closing time to a time after dusk (see example).

- If an automatic closing command is given before dusk triggers, then the automatic dusk function will not be executed.

Example	1	2
Automatic closing time:	23:00	19:30
Onset of dusk:	20:30	20:30
The roller shutters automatically close at:	20:30	19:30

17.1 Automatic dusk function; configuration of sensitivity

The automatic dusk function is switched on by setting or changing the sensitivity.

Configure the brightness at the level (dusk) which the blinds should be closed.

Set current brightness (dusk) as set limit and switch on the automatic dusk function.

1. [☾] + [◉] 1 sec. Simultaneously briefly press the buttons.

2. The current brightness is now set as the set limit and the automatic dusk function is activated.

If this value is exceeded, the roller shutters will roll down to the lower end point.

3. ☾ Observe the dusk LED:

○ OFF
Automatic dusk function OFF

● ON
Automatic dusk function ON

✳ Flashing...

- ...if the set limit is exceeded.
- ...if the current brightness value is within the measured range while configuring the set limit.

	Rapid flashing If the current brightness value is outside the measuring range, the set limit is set to the measured range limit.

4. You can switch the automatic dusk function on and off as required.

5. [☾] 1 sec. In order to do so, press and hold the dusk key for approx. 1 second.

18. Dimming the LEDs

The Troll Basic 5602 is equipped with automatic dimming LEDs to reduce the light intensity (e.g. bedrooms). The LEDs dim as the roller shutters are lowered. To use this function, the overall running time of the roller shutter must be set.

Maximum LED brightness

As soon as you press any random button, the maximum brightness of the LEDs will be switched on for at least 10 seconds.

Set the overall running time of the roller shutter

1.	▽	First fully close the roller shutters.
2.	◉ + △	Then, first press and hold the SET button and then also the UP (△) button together.
3.	>	After approx. 4 seconds the timer LED will flash to confirm, and the roller shutters move to the upper end point.

4. Release both buttons immediately as soon as the roller shutter reaches the upper end point and stops.

The overall running time is now stored.

If the overall running time is not set, the automatic dimming will be incorrect.

19. Hardware Reset in the event of Unit Failure

We recommend resetting the hardware if a unit fails.

All settings remain unaltered when the hardware is reset. The internal clock will stop, the same as when there is power failure.

1. Carefully pull the operating unit off the installation housing.
2. Wait approx. 5 seconds and then carefully reinsert the operating unit into the installation housing.
3. Subsequently check that the Troll Basic 5602 is functioning correctly.
4. If the Troll Basic 5602 is still not reacting, carry out a software reset (see page 52) and test the Troll Basic 5602 with the factory settings.

20. Erase all Settings, Software Reset

If necessary, you can erase all of your settings and return the Troll Basic 5602 system to its original factory settings.

1.	☀ + ⏲ + ☾ + AUTO MANU	Simultaneously press and hold the buttons for 4 seconds.

2. Release the buttons,...

... subsequently all of the settings will be deleted.
(end points/switching times/automatic solar function/ automatic dusk function).

3. All of the LEDs flash red by way of confirmation.

21. Dismounting

⚠ DANGER!

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

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

1. Switch off the mains power, secure it from restarting, and check that the system is de-energised.
2. Carefully pull the operating unit off the installation housing.
3. Remove the frame.
4. Release the claw fasteners of the installation housing and pull it out of the flush-mounted box.
5. Disconnect the connecting cable from the installation housing.
6. Secure the connection point against restarting and the connecting cable from unintentional contact.

22. Simplified EU Declaration of Conformity

RADEMACHER Geräte-Elektronik GmbH hereby declares that the Troll Basic 5602 complies with the Directives 2014/30/EU(EMC directive) and 2014/35/EU (Low-voltage directive).

The full text of the declarations of conformity is available at the following website:

www.rademacher.de/ce

23. Accessories

Further information about our accessories is available at the following website:

www.rademacher.de/zubehoer

Light sensor

Item No.	Cable length
7000 00 88	0.75 m
7000 00 89	1.5 m
7000 00 90	3 m
7000 00 91	5 m
7000 00 92	10 m

24. 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 shall be covered by the warranty.

Your statutory warranty claims shall remain unaffected by this 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 parties, 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

A prerequisite for the warrant is that the new device must have been purchased from one of our approved specialist retailers. Proof of this must be provided by presenting a copy of the bill.

RADEMACHER will remedy any defects that occur within the warranty period free of charge either by repair or by replacement of the affected parts or by supplying 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.

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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 mobile networks.

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