Item No.:

1623 45 x9
1623 60 19 (Comfort Plus)
1615 45 19 (Small belt)

Dear Customer,

EN

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

This roller shutter belt winder 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 carried out thorough testing, we are proud to be able to present you with this innovative product.

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

These instructions...

...describe how to install the equipment, connect the electrical system and operate your roller shutter belt winder.

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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EN

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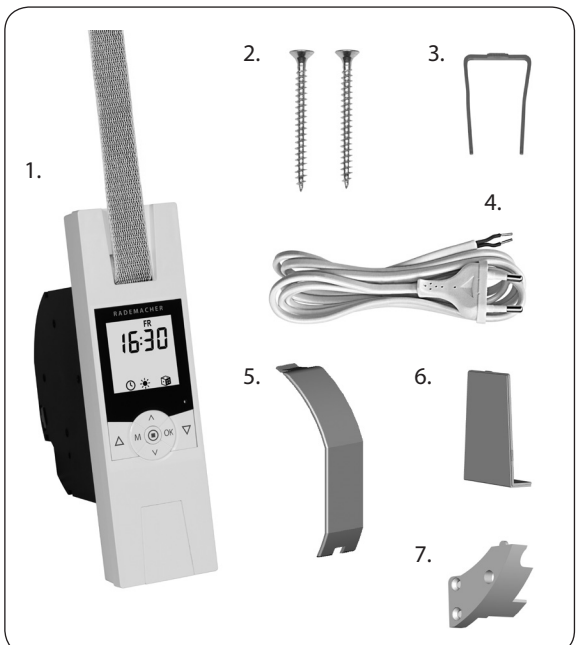
1. Scope of delivery (item no. 1623 45 x9) *

EN

* also applies to item numbers 1623 60 19 / 1615 45 19

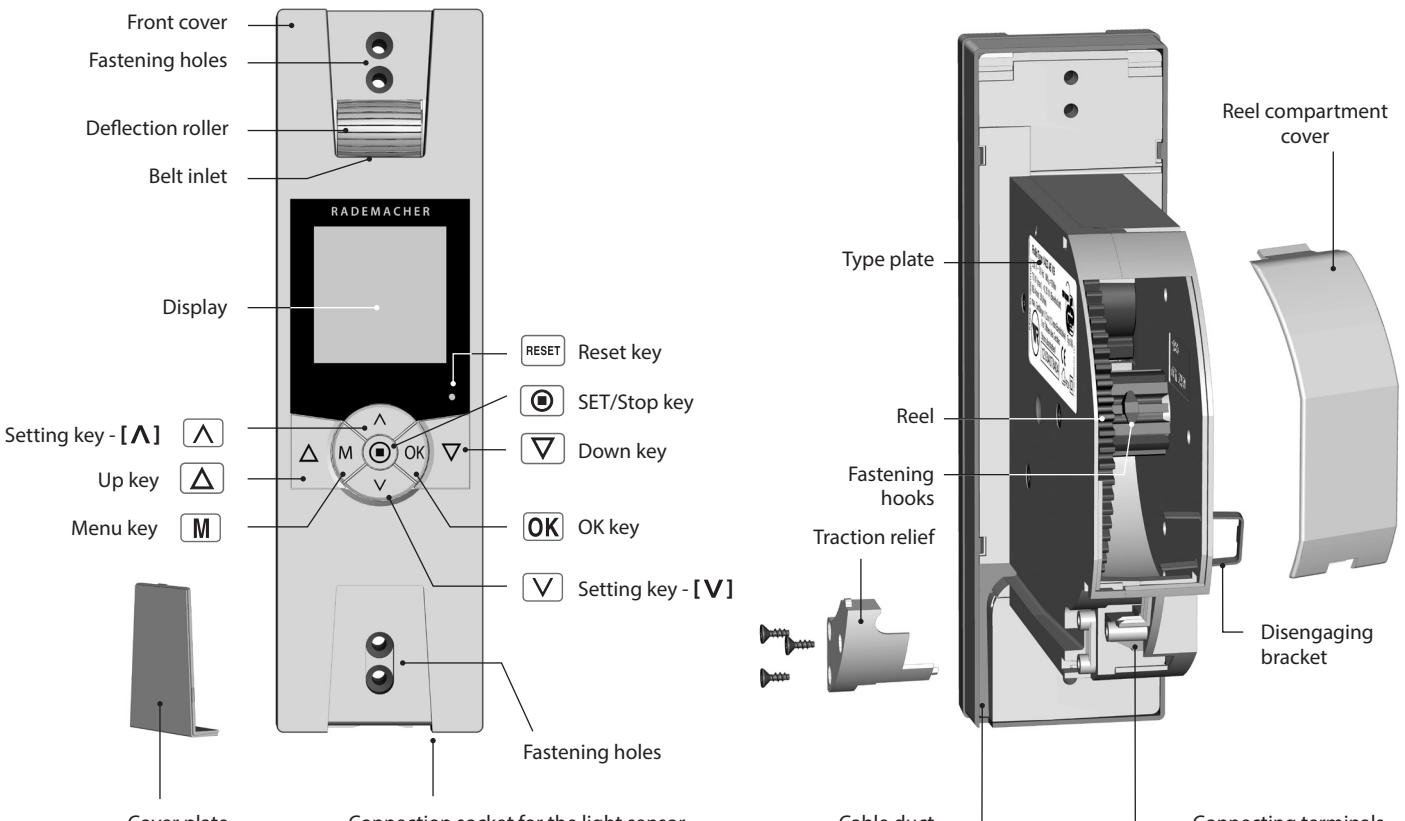


Legend

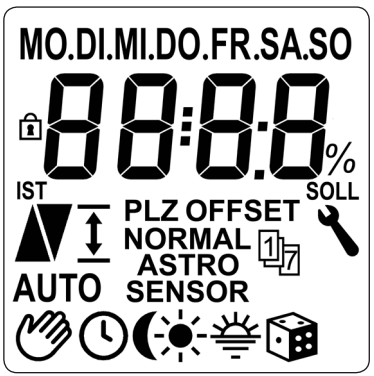
1. Belt winder RolloTron Comfort or Comfort Plus
2. 2 x assembly screws (4 x 55 mm)
3. Disengaging bracket (in housing)
4. Connection cable with Euro-plug
5. Reel compartment cover
6. Cover plate
7. Traction relief mechanism incl. assembly screws

2. General view (item no. 1623 45 x9) *

* also applies to item numbers 1623 60 19 / 1615 45 19



3. Display overall view



Display symbol legend

[MO ... SO]	(MON...SUN) Week days
	Time / setting parameters
	Key lock
[IST]	ACTUAL value
	Direction of travel - up / down
	End point setting
[PLZ]	Postcode
[OFFSET]	OFFSET (for Astro time)
[NORMAL] [ASTRO] [SENSOR]	Switching modes

	Week programme
[AUTO]	AUTO - automatic mode
	Automatic mode off
	Timer periods
	Automatic dusk function
	Automatic solar function
	Automatic dawn function
	Random function
	System settings
[SOLL]	SET - value
[%]	Dimension (percent)

4. Key to symbols

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 life and health.

Important safety information.

This concerns your safety.

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

NOTE / IMPORTANT

In this way, we wish to make you aware of the following content in order to ensure optimal functionality.

5. General safety information

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 16.
- 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.
- Check the device and mains cable beforehand for damage.
- Consult our customer service department (see page 72) in the event that you discover damage to the equipment.

Incorrect use leads to an increased risk of injury.

- Train all personnel to use the RolloTron Comfort safely.
- Avoid allowing persons with limited abilities to operate the equipment and prevent children from playing with fixed controllers.
- Watch the moving roller shutters and keep other people away from the area to avoid injury in the event the shutters suddenly slip.
- Undertake all cleaning work on the roller shutters with the equipment disconnected from the mains power.

The mains socket and plug must be easily accessible at all times.

According to DIN EN 13659, it is necessary to determine that the movement conditions for the shutters are maintained in accordance with EN 12045. The displacement must amount to at least 40 mm on the lower edge in the rolled-out position with a force of 150 N in the upwards direction.

In doing so, it must be ensured that the extending speed of the shutters for the final 0.4 m is less than 0.2 m/s.

Exceeding the maximum permissible running time (KB) may overload and damage the RolloTron Comfort.

- The maximum permissible running time for a cycle may not be exceeded when the equipment is in operation. For this reason, the RolloTron Comfort has an **automatic running time limit (KB)** of four minutes.
- If the running time limit is triggered, then the RolloTron Comfort must be left for at least 12 minutes to cool down. Full operational availability is re-established after approx. one hour.

6. Proper use

Use the RolloTron Comfort exclusively...

... for opening and closing roller shutters with a permissible belt.

Only use original spare parts from RADEMACHER.

- By doing so, you avoid the risk of malfunctions and damage to your RolloTron Comfort.
- As the manufacturer, we provide no guarantee for the use of third-party components and accept no liability for consequential damage resulting from such.
- All repairs to the RolloTron Comfort must be undertaken by authorised customer service personnel.

Operating conditions

- Only operate the RolloTron Comfort in dry rooms.
- A 230 V / 50 Hz power supply, together with a site-provided isolating device (fuse, MCB), must be permanently available at the installation location.
- An easily accessible 230 V / 50 Hz socket must be available at the installation site if the enclosed connecting cable with Euro plug is being used.
- The roller shutters must run up and down smoothly and should not stick.
- The mounting surface for the RolloTron Comfort must be flat.

7. Improper use

Using the RolloTron Comfort for purposes other than previously mentioned is impermissible and is regarded as improper use.

- Do not install the RolloTron Comfort outside.

8. Permissible roller shutter belts

IMPORTANT

Only use belts of the permissible lengths. The RolloTron Comfort can be damaged if it is used to retract excessively long belts.

NOTE

The specifications are intended for guidance only and apply to an ideal installation situation. The actual values may vary due to local conditions.

Table 1: Permissible roller shutter belts

RolloTron: Item No:		**Comfort (Small belt)** 1615 45 19	**Comfort** 1623 45 x9	**Comfort Plus** 1623 60 19
Belt width:	**Belt thickness:**	**Maximum belt length**		
15 mm (Small belt)	1.0 mm	7.6 m	- - -	- - -
23 mm (Standard belt)	1.0 mm	- - -	7.6 m	15 m
	1.3 mm	- - -	6.2 m	12 m
	1.5 mm	- - -	5.2 m	11 m

Table 2: Permissible roller shutter surface area (m^2)

Roller shutter type:	**Weight/m^2**	**Permissible roller shutter surface area (m^2)**		
Plastic roller shutters	(4.5 kg/m^2)	Approx. 6 m^2	Approx. 6 m^2	Approx. 10 m^2
Aluminium and wooden roller shutters	(10.0 kg/m^2)	Approx. 3 m^2	Approx. 3 m^2	Approx. 6 m^2

9. Brief description

The RolloTron Comfort is a roller shutter drive designed for use inside. The unit is installed as a flush-mounted device. The power supply is provided via the enclosed connecting cable with plug or a fixed installed lead.

Soft-start / Soft-stop

The RolloTron Comfort is equipped with a Soft-start and Soft-stop function. Gentle starting and stopping serves to protect the belt winder mechanics and the belt.

Obstacle detection

The movement of the belt is monitored. If the roller shutters hit an obstacle in the DOWN (▽) direction, the belt will stop moving and the belt winder is switched off.

Once the system has switched off, it is no longer possible to directly operate the drive in the same direction.

Run the belt winder back in the opposite direction and remove any possible obstacle. Subsequently it is possible to operate the drive in the original direction again.

NOTE

Please ensure that the belt winds evenly during its subsequent cycle after the obstacle detection system has triggered.

Overload cut-off

The RolloTron Comfort is equipped with an overload cut-off system.

If the drive jams in the UP (△) cycle (for example, due to ice), the belt winder is also switched off. Once the cause for the overload has been rectified, the drive is fully operational in both directions.

10. Overview of features

- Display background illumination
- Operational demonstrator
- Manual operation
- Direct configuration and movement to a target position
- AUTO/MANU - switchover
- Easy configuration with menu-driven operation
- Weekly programme:
  - Weekly switching times **(2 x)**
    – 1 x **[▲]** and 1 x **[▼]** for (MON...SUN) **[MO...SO]**
  - Weekday and weekend switching times **(4 x)**
    – 1 x **[▲]** and 1 x **[▼]** for (MON...FRI) **[MO...FR]**
    – 1 x **[▲]** and 1 x **[▼]** for (SAT+SUN) **[SA+SO]**
  - Individual day switching times **(14 x)**
    – 1 x **[▲]** and 1 x **[▼]** for (MON / TUES / WED /... SUN) **[MO / DI / MI /... SO]**
  - Activate a second switching time block, (dual switching times, see page 34).
- Automatic dusk function
  - Automatic darkness function with the Astro programme
  - Automatic darkness function with connected light sensor
- Automatic solar function (with light sensor)
- Automatic dawn function with the Astro programme
- Random function
- Ventilating position
- End point setting
- Key lock
- System settings
- Permanent storage of the settings
- Automatic summer / winter changeover
- Obstacle detection
- Overload cut-off
- Soft-start and Soft-stop

Description and configuration of the individual functions

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

11. General assembly instructions

Poor routing of the belt can cause the belt to fail and leads to unnecessary loads on the RolloTron Comfort.

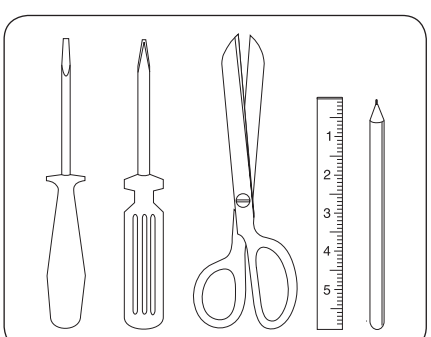
- Install the belt winder so that the belt runs as straight as possible into the device, in order to avoid unnecessary friction and wear.

Incorrect installation can lead to property damage.

- Strong forces are exerted during operation of the system which require secure installation on a firm base.

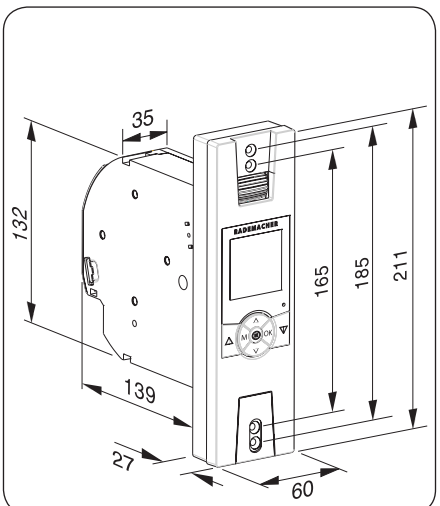
11.1 You will require the following tools

- Screwdriver
- Scissors
- Carpenter's gauge or measuring tape
- Pen



1. Take measurements.

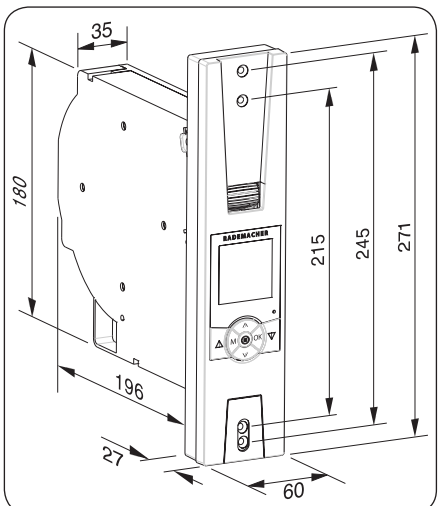
- Check that the belt box has sufficient space to house the RolloTron Comfort.



All dimensions in mm

RolloTron Comfort
Item no.:

1615 45 19 (Small belt)
1623 45 x9 (Standard belt)



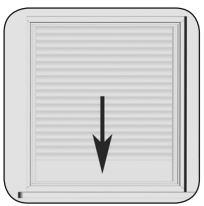
All dimensions in mm

RolloTron Comfort Plus
Item no.:

1623 60 19 (Standard belt)

2. Remove the old belt winder, if you are carrying out a conversion to an existing roller shutter system.

- Let the roller shutter move fully down, until the slats are completely closed.
- Remove the old belt winder and unreel the belt.

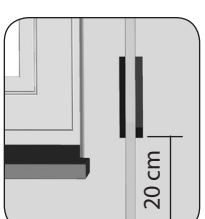


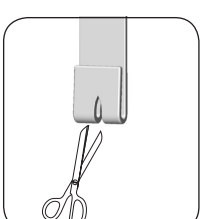
There is a risk of injury from the pre-tensioned springs on the old belt winder.

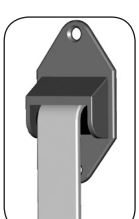
- The spring unit can suddenly recoil when it is removed. Hold the spring unit firmly when loosening the belt and allow it to recoil slowly until the spring unit has completely unwound.

3. Prepare the belt.

- Cut the belt off approx. 20 cm under the belt box.
- Fold the end of the belt over by approx. 2 cm and cut a short slit in the centre. This enables you to subsequently hook the belt onto the reel.







Recommendation

- The belt must run as straight and freely as possible. For stiff roller shutters, mount a deflection roller on the belt box. This helps to prevent unnecessary friction and wear to the belt.

Accessories, see page 71

12. Safety instructions for electrical connection

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 instruc-tions 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.
- Check that the voltage / frequency on the type plate corresponds to local mains conditions prior to installation.

NOTE

The electrical connection for the RolloTron Comfort can be made either with the supplied connecting cable or via a fixed laid cable.

12.1 Electrical connection

1. Connect the supplied connecting cable.

The colour coding is irrelevant for the installation.

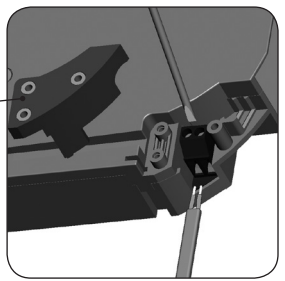
Damaged cables can cause short circuits.

- Pay attention that cables are laid safely.
- The connecting cable may not be pinched when screwing on the belt winder as this could lead to damage.

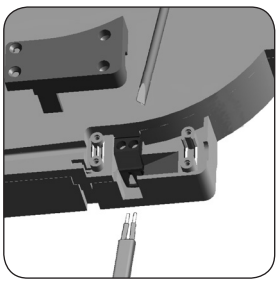
2. Lay the connecting cable safely.

- Lay the connecting cable to the RolloTron Comfort in a cable duct.

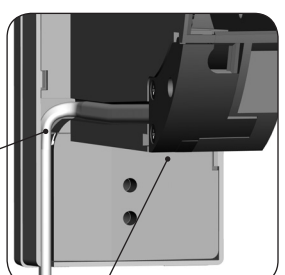
3. Finally, screw on the traction relief mechanism with the screws provided.



RolloTron Comfort



RolloTron Comfort Plus



13. Drawing-in and fastening the belt

1. **Insert the mains plug into the socket.**

2. △ **Press the [Up] key until the fastening hooks are easily accessible in the reel compartment.**

STOP **There is a risk of injury from the reel.**

- Never reach into the reel compartment when the motor is running.

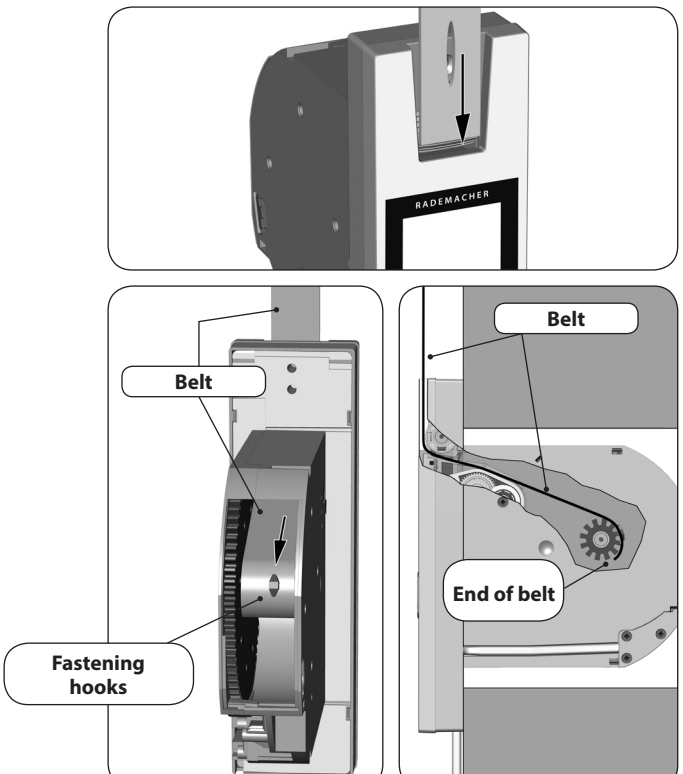
3. **Always remove the mains plug from the socket before feeding the belt into the top of the RolloTron.**

- Continue to feed the belt into the device as shown in the bottom right sectional diagram and subsequently slide the belt over the fastening hooks from above.

4. **Re-insert the mains plug into the socket.**

- Press the **[Up]** key until the belt has wound completely once around the reel.
- Pull the belt tight when winding, so that the deflection roller turns at the same time.

5. **Finally remove the mains plug from the socket again before replacing the reel compartment cover back onto the reel compartment.**



Belt path in the RolloTron Comfort

14. Mounting the RolloTron Comfort

Mount the RolloTron Comfort as straight as possible, so that the belt can wind correctly.

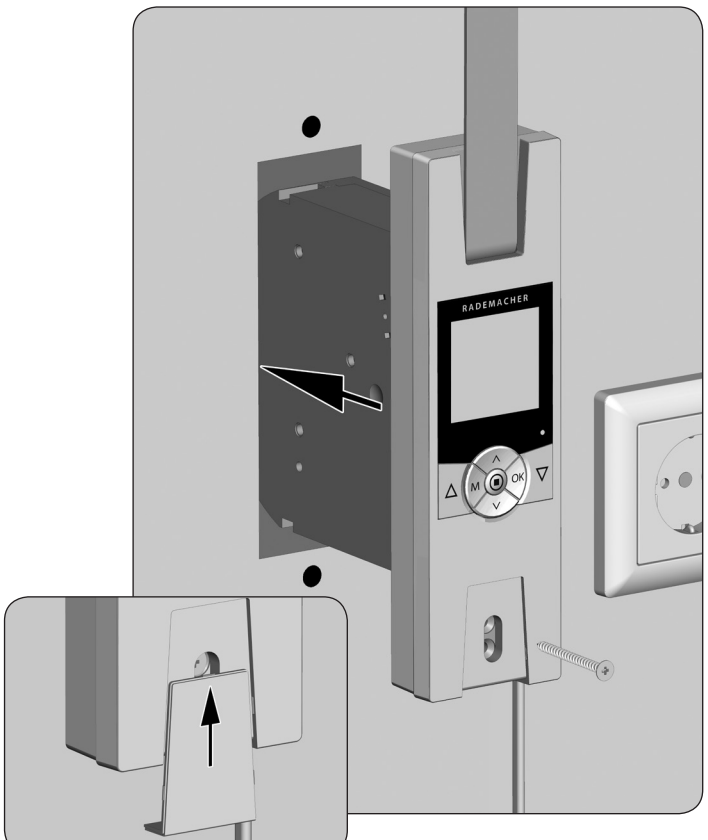
Ensure that the RolloTron Comfort sits freely in the belt box and that it isn't in contact with the masonry, otherwise noise will be generated during operation.

1. Slide the RolloTron Comfort into the belt box and screw it tight using the screws provided.

IMPORTANT

Ensure that the connecting cable is laid correctly inside the cable duct, otherwise it can be crushed and damaged when the cover is screwed in place.

2. Slide the enclosed cover plate over the lower mounting holes.

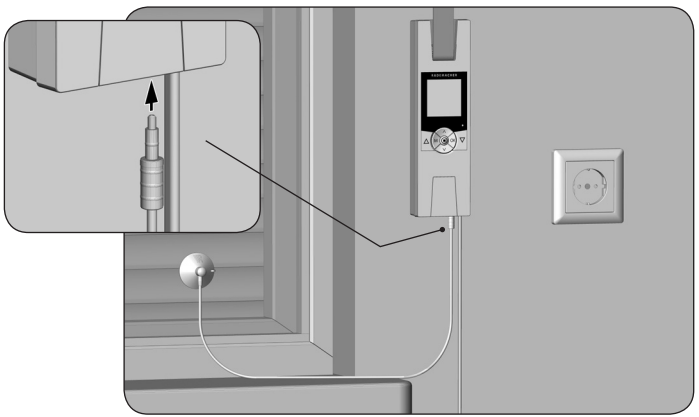


3. Mount the light sensor (not included, see page 71, Accessories).

- Insert the light sensor plug into the designated connection socket at the bottom of the RolloTron Comfort.
- Subsequently secure the light sensor to the window pane using the sucker.

NOTE

The position of the light sensor on the window pane determines the point at which the roller shutters will close to in the event of sunlight.

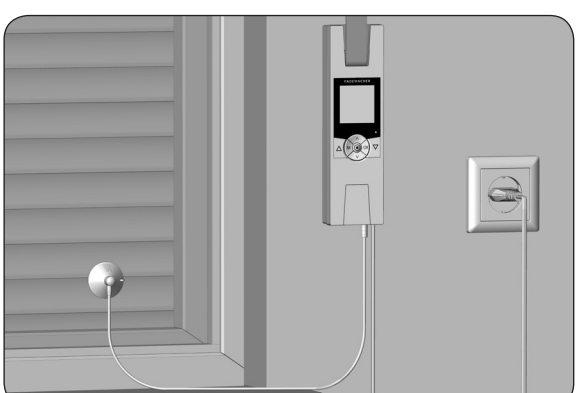


4. Commissioning

- Re-insert the mains plug into the 230 V / 50 Hz socket. This completes the installation process.

IMPORTANT

The mains socket and plug must be easily accessible at all times.



15. Brief description of the key functions

△ ▽ **Operating keys [Up / Down]**

- Manual operation **[Up△/ Down▽]**.

◉ **SET/Stop key, [◉]**

- Configuration (setting) of various functions.
- Manual roller shutter stop.

M **Menu key, [M]**

- Call up the main menu.
- Back to previous menu or standard display.

∧ ∨ **Setting keys, [∧/∨]**

- Setting of parameters (more / less).
- Pressing one of the keys for an extended period causes the numbers to change more quickly in the respective direction.
- Configuration and movement to a target position.

OK **[OK] key**

- Confirms and opens the selected menu.
- Confirm and save entry.
- Continue to next entry.

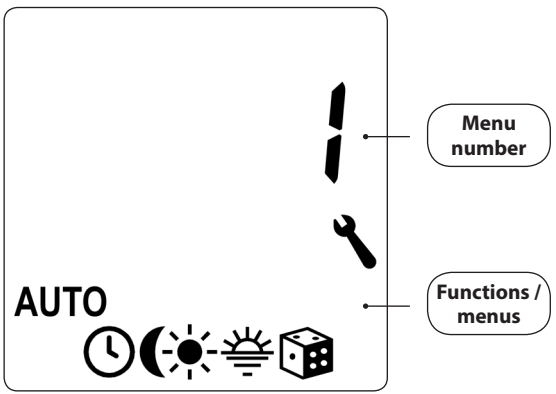
RESET **[Reset] key, see page 5**

- Carry out a hardware reset, see page 59.

The standard display (example)

- Displays the current day of the week and time.
- Displays the activated functions.
- Manual operation of the RolloTron Comfort is only possible from the standard display.

The main menu

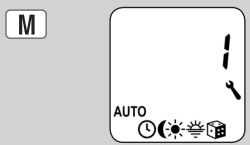


- Enables display and selection of the individual functions and menus.
- Displays the respective menu number.
- Manual operation is not possible from the main menu.
- No automatic switching commands will be executed during the configuration process.
- If no key is pressed within 120 seconds, the display automatically changes back to the standard display.

15.2 Introduction to opening and closing the menus

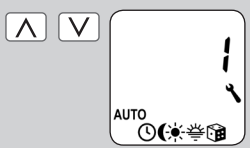
1. Call up the **main menu**.

Pressing the **[M]**-key in the standard display causes the main menu to open.

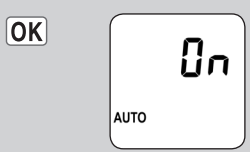


2. Select the desired menu or menu number.

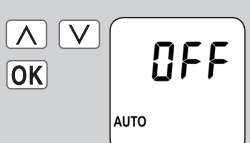
The selected menu is indicated by a number and a **flashing icon**.



3. Open the menu by pressing the **[OK]** button.



4. Select the desired setting and confirm with **[OK]**.

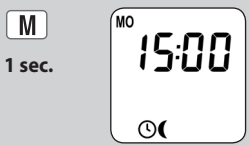


Example

5. Toggle back to the **standard display**.

In order to do so, press and hold the **[M]** button for **one second**.

Pressing the **[M]** key from any of the menus will return you to the **standard display**.



Briefly pressing the **[M]** key causes the display to go back one menu step.

If **no key is pressed** within **approx. 120 seconds**, the display changes back to the **standard display**.

16. Initial commissioning with the help of the installation wizard

An installation wizard is available in order to help you configure the RolloTron Comfort quickly and easily. The wizard automatically guides you through the configuration process for **initial commissioning** or after a **software reset,** see page 59.

Quitting the installation wizard.

Pressing the **[M] key** for 2 seconds causes the installation wizard to be cancelled prematurely.

Readiness for operation

The RolloTron Comfort is ready for use as soon as the installation wizard has finished.

In addition, you can individually customise your settings and make changes at any time from the main menu and the system settings menu.

Additional information about configuring the end points

The end points must be configured in order that the roller shutters stop at the desired upper and lower positions. It is imperative that both end points are configured, otherwise malfunctions may occur.

IMPORTANT

- If the RolloTron Comfort is operated without an end point setting, the drive will continue to run for as long as one of the two control keys is actuated.
- The automatic functions remain blocked until the end point setting is configured.
- Do not set the upper end point right up to the limit stop.
- Please ensure that the belt is not excessively slack when reaching the lower end point.
- Release the key promptly and never allow it to extend beyond the respective end point. Failure to do so can cause overloading and may damage the roller shutters and / or drive.

NOTE

- After a period of time it may be necessary to reconfigure the end points as the belt may elongate during the process of operation due to stretching.

16. Initial commissioning with the help of the installation wizard

1. Set the **upper end point**.

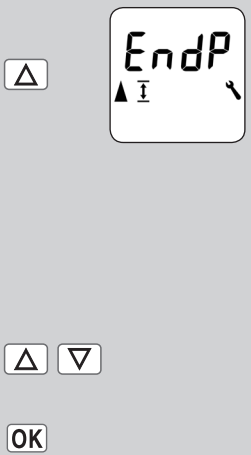
a) In order to do so, press and hold the **[Up]** key.

b) The roller shutters travel up.

c) Release the **[Up]** key as soon as the desired upper end point has been reached.

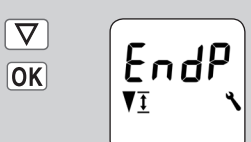
d) Correct the upper end point, if necessary.

e) Store the upper end point.



2. Set and store the **lower end point**.

Repeat points **1.a - 1.e** with the **[Down]** key.



3. Set and confirm the **time**.

NOTE

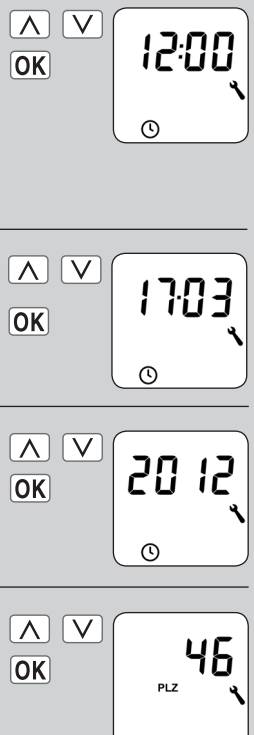
Pressing the setting key for an extended period causes the numbers to progress more quickly.

4. Set and confirm the **date** (day of the week / month).

5. Set and confirm the **year**.

6. Set and confirm the first two digits of your **German postcode or the desired international time zone**.

Additional information is given on page 52.

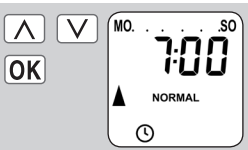


46 = Factory settings

7. Set and confirm the **opening time [▲]**.

This closing time mode applies to the entire week (MON...SUN) **[MO...SO]**.

At this point, the opening time is preconfigured as the weekly switching time (MON...SUN) **[MO...SO]**.



If necessary, you can subsequently select between three **switching time programmes** from the **weekly programme**, see page 53.

a) Configure the **switching time mode** for the **opening time [▲]**.

NORMAL
The roller shutters open at the configured opening time.

ASTRO
The roller shutters open at the daily calculated dawn time.

The previously configured opening time is interpreted as **"earliest at xx:xx hours"**.

Switching time mode >

See page 35

b) If **[ASTRO]** is selected, then the calculated opening time for the current day is displayed.

c) Continue to set the closing time.

8. Set and confirm the **closing time [▼]**.

The closing time applies to all days of the week (MON... SUN) **[MO... SO]**.

At this point, the closing time is preconfigured as the **weekly switching time** (MON...SUN) **[MO...SO]**.

If necessary, you can subsequently select between three **switching time programmes** from the **weekly programme**, see page 53.

a) Configure the **switching time mode** for the **closing time [▼]**.

NORMAL
The roller shutters close at the configured closing time.

ASTRO
The roller shutters close at the daily calculated dusk time.

SENSOR
The roller shutters close every day at dusk, as measured by the light sensor.

Switching time mode >

The previously configured closing time is interpreted as **"latest at xx:xx hours"**.

The previously configured closing time is interpreted as **"latest at xx:xx hours"**.

See page 35

b) If **[ASTRO]** is selected, then the calculated closing time for the current day is displayed.

c) Confirm the settings and return to the standard display.

OK

9. The **standard display** is shown as soon as the final setting is confirmed.

   The RolloTron Comfort is now ready for operation.

Manual operation is possible in any of the modes and has priority over the programmed automatic functions.

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. ▽

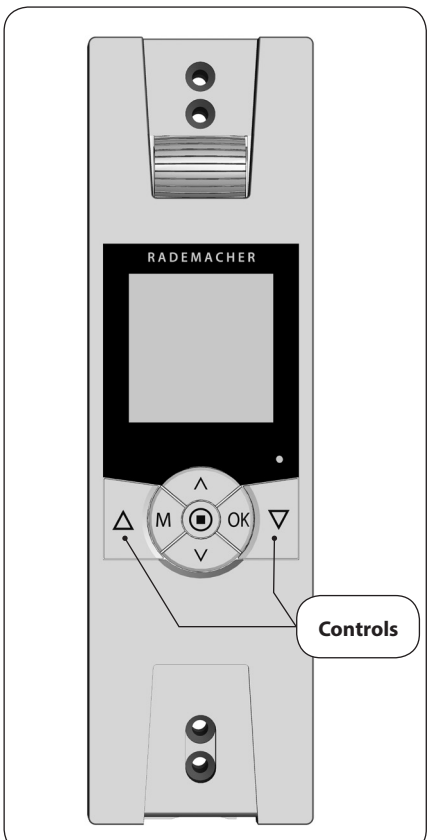
Closing the roller shutters.

Briefly pressing the button causes the roller shutters to move to the **configured ventilation position** or to the lower **end point**.

Ventilation position, see page 51

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 down to the end point.



If necessary, you can enter an arbitrary **target position** for your roller shutters which you can then move to directly.

The RolloTron Comfort is able to move to the target position and stop the roller shutters fully independently and automatically. It is not necessary to give an additional manual movement or stop command.

Target position

The target position is entered as a percentage and can be selected in 10% steps using the setting keys **[Λ/V]**.

0 % = the roller shutters are fully opened.

100 % = the roller shutters are fully closed.

Automatic movement to a target position after approx. two seconds.

The system will initiate movement to the configured target position automatically if no button is pressed for approx. two seconds.

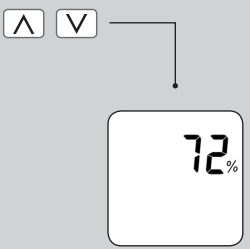
NOTE

The ventilation position is ignored when moving to the target position.

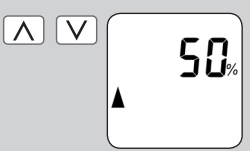
1. Display the current position of the roller shutters.

a) In order to do so, briefly press one of the two setting keys.

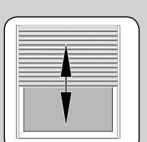
b) The current position of the roller shutters is displayed as a percentage.



2. Enter the desired target position by repeatedly pressing the key (e.g. 50%).



3. The RolloTron Comfort will automatically move to the target position and stop after approx. two seconds.



M

Main menu

Icon	Menu		Page
AUTO	1	Automatic mode	31
	2	Switching times	33
	3	Automatic dusk control	40
	4	Automatic solar function	43
	5	Automatic dawn control	46
	6	Random function	48
	7	System settings	49

18.1 [AUTO] Automatic mode; brief description

Automatic mode on

Icon in standard display

Automatic mode is active, all automatic functions are switched on, e.g.:

	Timer periods
	Week programme
	Automatic dawn function
	Automatic dusk function
	Automatic solar function
	Random function

NOTE

- Manual operation is also possible in automatic mode.

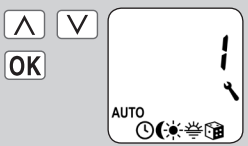
Automatic mode off

Icon in standard display

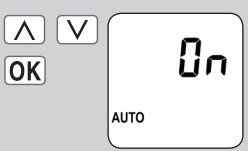
- All automatic functions are deactivated; only manual operation is possible.
- All automatic icons are switched off in the standard display.

1. Call up the main menu.

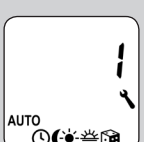
2. Select and open menu **1 [AUTO].**



3. Select and confirm the desired setting.
   On = Automatic mode on
   OFF = Automatic mode off



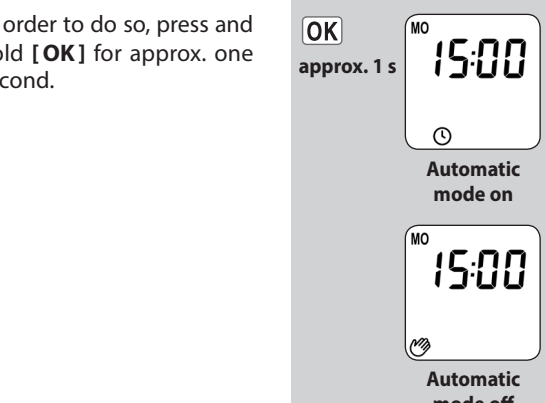
4. The main menu appears again once this is confirmed.



OK Toggling directly to the standard display

You can also directly toggle automatic mode on and off in the standard display.

1. In order to do so, press and hold **[OK]** for approx. one second.



18.2 Switching times (opening and closing times) [▲/▼]; brief description

You can configure various **opening [▲] and closing times [▼]** for the RolloTron Comfort in order to open or close your roller shutters at your preferred times.

Determining the mode of operation and number of opening [▲] and closing times [▼]:

The mode of operation and the number of opening and closing times that can be configured depends on the desired **switching programme**.

You can choose between three switching time programmes in menu 7.5 [ ] weekly programme, see page 53:

[1] Weekly switching times

[2] Working day and weekend switching times

[3] Individual day switching times

[1] Weekly switching times

You can set two different switching times here:

1 x opening time **[▲] and** 1 x closing time **[▼]** valid from Monday to Sunday (MON...SUN) **[** MO...SO**]**.

[2] Working day and weekend switching times

You can set four different switching times here:

1 x opening time **[▲] and** 1 x closing time **[▼]** valid from Monday to Friday (MON...FRI) **[** MO... FR**]**.

1 x opening time **[▲] and** 1 x closing time **[▼]** valid for Saturday and Sunday (SAT...SUN) **[SA..SO]**.

[3] Individual day switching times

You can set 14 different switching times here.

1 x opening time **[▲] and** 1 x closing time **[▼]** for each individual day of the week (MON + TUES, + ...SUN **[** MO + DI + ...SO **]**.

Changing the times

You can change the switching time settings at any time.

Double the amount of switching times by activating a second switching time block:

If necessary you can double the amount of available opening and closing times. In order to do so, a **second switching time block (n = 2)** must be activated in the **weekly programme**, see page 53.

Assigning opening and closing times to a second switching time block.

If a **second switching time block** has been activated, you can select it prior to setting the opening and closing times.

NOTE

The switching times in the second switching time block **[2]** can **not** be linked to a **switching time mode [NORMAL / ASTRO / SENSOR]**.

Application example for a second switching time.

You can use a second switching time, for example, to darken a child's bedroom at midday:

- The **first opening time** has been set to 8:00 a.m.
- The roller shutters will open at 8:00 a.m.
- The roller shutters should close again at 12:00 noon and open again at 14:30 hours.
- In order to do so, a **second switching time block** must be selected and the respective **second opening and closing time** must be set.
- The **first closing time** was set to 20:00 hours.
- The roller shutters close at 20:00 hours.

18.2 Switching times (opening and closing times) [▲/▼]; brief description

Selecting a switching time mode.

A switching time mode can be selected during the settings for **the first** opening and closing times.

The following switching time modes are possible:

- **NORMAL**
- **ASTRO**
- **SENSOR**

Brief description of the switching time modes.

- **NORMAL**

  The roller shutters open at the configured opening time and close at the configured closing time.

- **ASTRO**

  Calculation of the respective switching time by means of an "Astro" programme.

  The opening and closing times are calculated in relation to the date and postcode. Subsequently they are linked to the previously configured switching times.

- **Link to the opening time [▲]**

  The roller shutters open at the daily calculated dawn time. The configured **opening time** is interpreted as **"earliest at xx:xx hours"**.

- **Example a:**
  - Dawn begins at 5:00 a.m.
  - The opening time has been set to 7:00 a.m.
  - Your roller shutters will open at 7:00 a.m.
- **Example b:**
  - Dawn begins at 8:00 a.m.
  - The opening time has been set to 7:00 a.m.
  - Your roller shutters will open at 8:00 a.m.

- **Link to the closing time [▼]**

  The roller shutters close at the daily calculated dusk time. The previously configured **closing time** is interpreted as **"latest at xx:xx hours"**.

- **Example a:**
  - Dusk begins at 17:00 hours.
  - The closing time has been set to 20:00 hours.
  - Your roller shutters will close at 17:00 hours.
- **Example b:**
  - Dusk begins at 22:00 hours.
  - The closing time has been set to 20:00 hours.
  - Your roller shutters will close at 20:00 hours.

18.2 Switching times (opening and closing times) [▲/▼]; brief description

◆ **SENSOR (only for closing times [▼])**

The closing time is controlled by a light sensor in relation to the level of brightness.

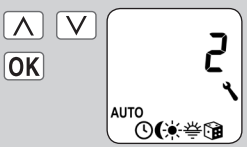
In addition, the measured twilight value is linked to the previously configured closing time. The configured closing time is interpreted as **"latest at xx:xx hours"**.

- **Example a:**
  - In winter dusk begins, for example, at approx. 17:00 hours.
  - The closing time has been set to 20:00 hours.
  - Your roller shutters will close at 17:00 hours.
- **Example b:**
  - In summer dusk begins, for example, at approx. 22:00 hours.
  - The closing time has been set to 20:00 hours.
  - Your roller shutters will close at 20:00 hours.

18.2.1 Menu 2 - Configuration of opening and closing times [▲/▼].

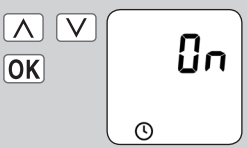
1. Call up the main menu.

2. Menu "2" [⏲] select and open **switching times**.



3. Activate and confirm the switching times.

On = Switching times on
OFF = Switching times off

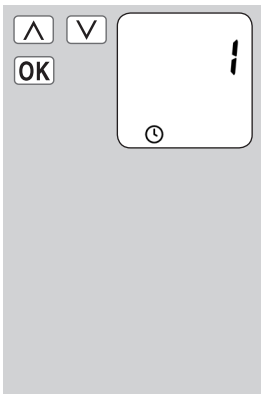


4. Select and confirm a **switching time block**.

If the function is not activated, proceed at point 5.

1 = The switching time setting is realised with a **switching time mode**.

2 = The switching time setting is realised **without** a **switching time mode**.



18.2.1 Menu 2 - Configuration of opening and closing times [▲/▼].

NOTE

The **mode of operation** and the **number** of opening and closing times that can be configured depends on the desired **switching programme**, see page 33.

The header of the display indicates which switching programme is currently active (see example to the right).

This also applies to the **closing times**.

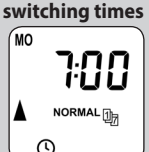
The settings for the **opening** and **closing times [▲/▼]** is identical for all **switching programmes**.

The following serves to describe the procedure for setting an **opening and closing time [▲/▼]** as a **weekly switching time**.

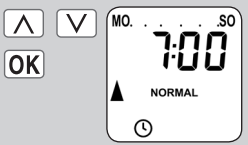
Weekly switching times

Working day / weekend switching times

Individual day switching times



5. Set and confirm an **opening time [▲]**.



a) Configure the **switching time mode** for the **opening time [▲]**.

NORMAL
The roller shutters open at the configured opening time.

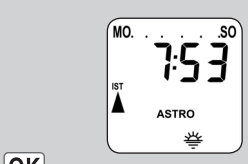
ASTRO
The roller shutters open at the daily calculated dawn time.

Switching time mode >

The previously configured opening time is interpreted as **"earliest at xx:xx hours"**.

See page 35

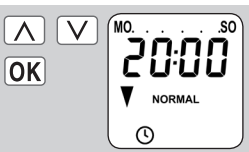
b) If **[ASTRO]** is selected, then the calculated opening time for the current day is displayed.



c) Continue to set the closing time.

6. Set and confirm the **closing time [▼]**.

The closing time applies to all days of the week (MON... SUN) **[** MO. . SO **]**.



a) Configure the **switching time mode** for the **closing time [▼]**.

NORMAL
The roller shutters close at the configured closing time.

The previously configured closing time is interpreted as **"latest at xx:xx hours"**.

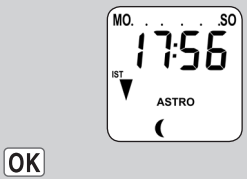
ASTRO
The roller shutters close at the daily calculated dusk time.

The previously configured closing time is interpreted as **"latest at xx:xx hours"**.

SENSOR
The roller shutters close every day at dusk, as measured by the light sensor.

Switching time mode > **See page 35**

b) If **[ASTRO]** is selected, then the calculated closing time for the current day is displayed.



c) Return to main menu.

7. Select the **second switching block**, see page 36.

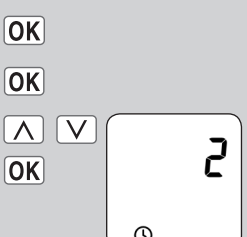
Only if this function has been activated in **weekly programme** with **(n = 2).**

> Otherwise continue at point 10.

a) Open menu **2** again.

b) Confirm **[On]**.

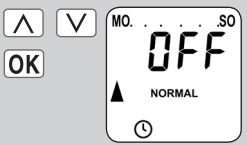
c) Select and confirm the **second switching block [2]**.



18.2.1 Menu 2 - Configuration of opening and closing times [▲/▼]

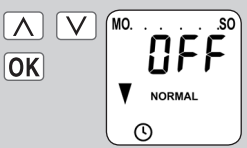
8. Set and confirm the **second opening time [▲]**.

OFF = The opening time is deactivated.



9. Set and confirm the **second closing time [▼]**.

OFF = The closing time is deactivated.



NOTE

The **number** of opening and closing times that can be configured also depends on the selected **switching programme**, see page 33.

10. Return to standard display after making the final setting.

INFORMATION ABOUT THE [ASTRO] SWITCHING TIME MODE

- If **[ASTRO]** is selected as the switching time mode, the calculated darkness time can be individually customised by means of an offset between **–60** and **+60 minutes.** This can be configured in menu 3, see page 41.

INFORMATION ABOUT THE [SENSOR] SWITCHING TIME MODE

- If **[SENSOR]** is selected as the switching time mode, then the desired twilight limit value can be configured in menu 3, see page 42.

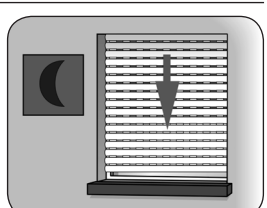
The automatic dusk function causes the roller shutters to close automatically to the lower end point or configured ventilation position.

You can choose between two automatic dusk functions:

- Automatic dusk function with Astro programme = switching time mode **[ASTRO]**
- Automatic dusk function with light sensor = switching time mode **[SENSOR]**

Automatic darkness function with Astro programme

The twilight time is recalculated every day based on the geographical location and the current date (defined by the configured postcode).

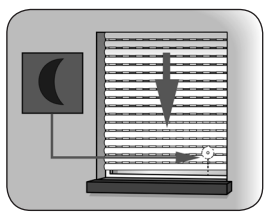


Configure a custom offset period

An offset can be configured between **-60** and **+60 minutes** in order to customise the calculated dusk time to your personal preferences. This means that it is not necessary to continuously readjust the closing time throughout the year.

A light sensor is not used for this function.

Automatic dusk function with connected light sensor



At twilight, the roller shutters will lower to the lower end limit or configured ventilation position after approx. 10 seconds. The roller shutters will open again once the configured opening time is reached or in the event of a manual command.

The required twilight limit is configurable.

NOTE

The automatic dusk function via light sensor is only executed once per day.

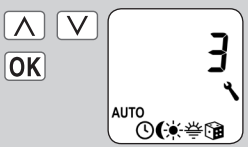
Mounting the light sensor
(see page 43, Automatic solar function)

18.3.1 Menu 3 - Customising the automatic dusk function [ ].

1. Call up the main menu.

M

2. Select and open menu **3 [ ] Automatic dusk function**.



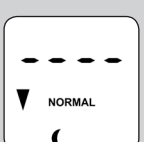
3. Customise the automatic dusk function in accordance with the selected switching time mode.

Select switch time mode, see page 35.

- **NORMAL**
- **ASTRO**
- **SENSOR**

3.1. **[NORMAL]**

No customisation is possible in [NORMAL] switch time mode.



a) Return to main menu.

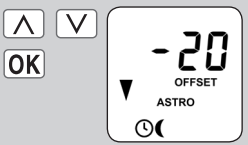
OK

3.2. **[ASTRO]**

Setting an offset.

The offset function can be used to modify the calculated "Astro" time by **+/- 60 minutes**.

Example
With a negative offset e.g. "**- 10**", the calculated Astro time is triggered 10 minutes earlier.



a) Subsequently the resulting closing time is displayed.

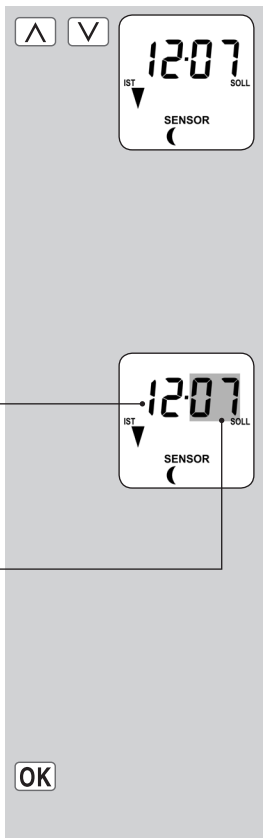
b) Return to main menu.

OK

3.3. [SENSOR]

Customisation of the **twilight limit value** in switch time mode **[SENSOR]**.

If the set limit value is not met due to the onset of twilight, the roller shutters will close.



(ACTUAL) [IST] value
Currently measured brightness (e.g. 12).
"**- -**"= too bright

(SET) [SOLL] value
Configurable set limit
01 = very dark, approx. 2 Lux
15 = less dark, approx. 50 Lux

a) Return to main menu.

18.4 Automated solar function; brief description

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 sucker and then plugged into the RolloTron Comfort.

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.

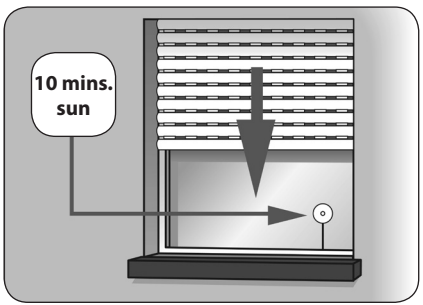
Please note the state of the sun icon on the standard display.

The corresponding icon flashes in the standard display as soon as sunlight is detected.

Example installation

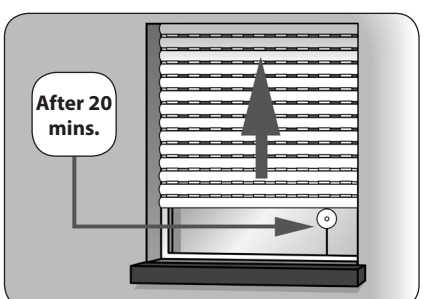
Automatic lowering

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, it returns to the upper end point.



NOTE

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

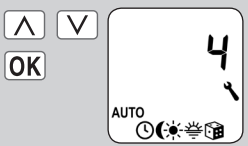
The automatic solar function will be terminated and must be reactivated if required after the following events:

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

18.4.1 Menu 4 - Configuring the automatic solar function [☀].

1. Call up the main menu.

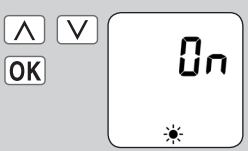
2. Select and open menu **4 [☀] Automatic solar function**.



3. Activate and confirm the automatic solar function.

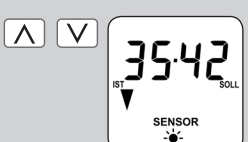
On = automatic solar function on

OFF = automatic solar function off



4. Checking the **solar set limit**.

If the set limit is exceeded, then the roller shutters lower until the light sensor is shaded.



(ACTUAL) [IST] value

Currently measured brightness (e.g. 12).

"- -"= too dark

(SET) [SOLL] value

Configurable set limit

31 = minimal sun, approx. 2000 Lux

45 = bright sunlight approx. 20000 Lux

a) Return to main menu.

18.5 Automatic dawn function; brief description

When configuring opening times **[▲]** it is possible to link them to a switch time mode, see page 36.

The calculated dawn time can be customised by linking the opening times with the **[ASTRO]** switch time mode.

Link to the opening time [▲]

The previously configured **opening time** is interpreted as **"earliest at xx:xx hours"**.

Configure a custom offset period

The calculated dawn time can be customised to personal preferences by means of an offset between **-60 and +60 minutes**. This means that it is not necessary to continuously readjust the closing time throughout the year.

Application example for the [ASTRO] switch time mode, see page 35.

18.5.1 Menu 5 - Customising the automatic dawn time [☼].

1. Call up the main menu.

M

2. Select and open menu **5 [☼] Automatic dawn function**.

∧ ∨ OK

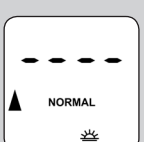
3. Customise the automatic dawn function in accordance with the selected switching time mode.

Select switch time mode, see page 35.

- **NORMAL**
- **ASTRO**

3.1. **[NORMAL]**

No customisation is possible in **[NORMAL]** switch time mode.



a) Return to main menu.

OK

3.2. **[ASTRO]**

Setting an offset.

The offset function can be used to modify the calculated "Astro" time by **+/- 60 minutes**.

∧ ∨ OK

a) Subsequently the resulting closing time is displayed.

b) Return to main menu.

OK

18.6 Random function; brief description

The random function enables a random delay of the set timer periods ranging between 0 and 30 minutes.

The random function is executed for:

- all automatic opening and closing times.
- All switch times realised by the automatic darkness function via the Astro programme.

The random function is not executed for:

- manual movement commands
- Automatic movement commands triggered by sunlight and the automatic dusk control, if triggered by light control.

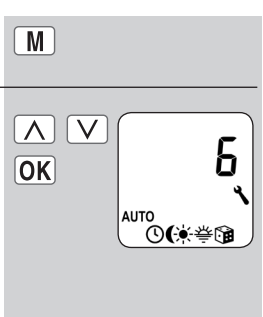
NOTE

The corresponding icon flashes in the standard display when the random function is activated, during the period that the movement command is being delayed.

18.6.1 Menu 6 - Configuring the random function [⚄]

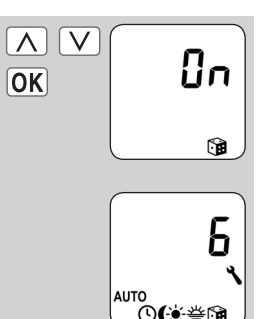
1. Call up the main menu.

2. Select and open menu **6 [⚄] Random function**.



3. Select and confirm the desired setting.
   On = random function on
   OFF = random function off

a) Subsequently the main menu will be displayed again.



18.7 Menu 7 - System settings [ ]; brief description

This menu enables you to configure additional device and system settings in order to customise your RolloTron Comfort to your individual preferences and local conditions.

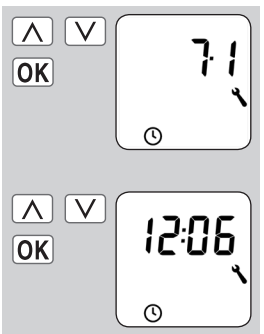
The procedure for opening and configuring a menu has previously been described on page 23. For this reason, the following section serves to describe the individual system menus and their respective parameters.

Menu 7 - System settings

Icon	Menu		Page
	7.1	Time and date	50
	7.2	End points	50
	7.3	Ventilation position	51
PLZ	7.4	Postcode	52
	7.5	Weekly programme	53
–	7.6	Motor speed	54
	7.7	Device settings	54
–	7.7.1	Automatic summer / winter time change	55
–	7.7.2	Display contrast	55
–	7.7.3	Display backlighting	56
–	7.7.4	Clock mode	56
–	7.7.5	Key lock	57
–	7.7.6	Software version	58

18.7.1 Menu 7.1 - Set time and date [ ]

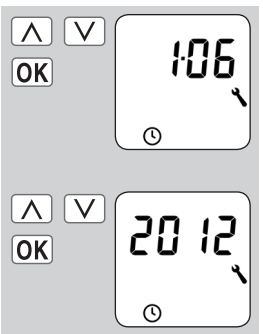
1. Select and open menu **7.1 [ ] Time and date**.



Setting order

a) Time

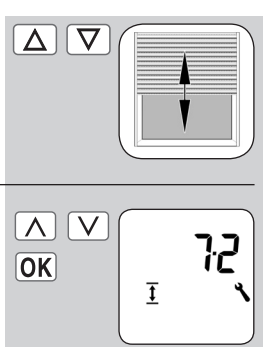
b) Date **[Day.Month]**



c) Year

18.7.2 Menu 7.2 - End point configuration [ ]

1. First move the blinds manually to the centre position.

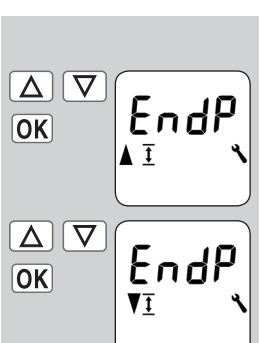


2. Select and open menu **7.2 [ ] End points**.

Setting order

a) Set the upper end point, see page 24.

b) Set the lower end point, see page 24.



If you want your roller shutters to close at a different position to the lower end point, you can use this function to determine an arbitrary position (**e.g. as a ventilation position**).

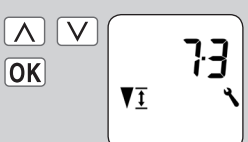
When closing auto-matically, the roller shutters will stop at the ventilation position. However, they can subsequently be closed manually.

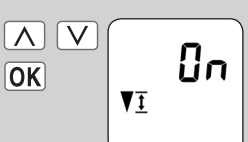
1. Select and open menu **7.3 [▼ ⊼] Ventilation position**

Setting order

a) Activate or deactivate the ventilation position.

On = Ventilation position on
OFF = Ventilation position off



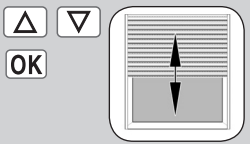


> continue at b)

> Return to menu System settings

b) Move the roller shutters to the desired position.

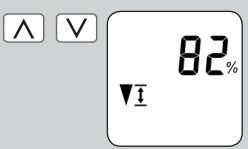
or



c) Enter the desired ventilation position by modifying the percentage value.

0 % = the roller shutters are fully opened.

100 % = the roller shutters are fully closed.

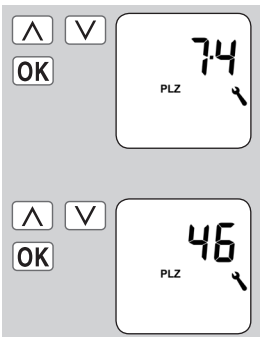


d) Confirm the ventilation position and return to the system settings menu.

18.7.4 Menu 7.4 - Set postcode

1. Select and open menu **7.4 Postcode.**

a) Set and confirm the **postcode**.



NOTE:

- Only the first two digits of the code are entered for German cities.
- Please refer to the time zone table on page 70 for various European cities.
- If the RolloTron Comfort is not being used in Germany, it may be necessary to switch off the auto-matic summer / winter clock change function.
  In order to do so, please refer to page 55 "Activate / deactivate automatic summer / winter time change".

18.7.5 Menu 7.5 - Weekly programme [7] configuration

The subsequent mode of operation and the number of opening and closing times that can be configured depends on the desired **switching programme**.

You can choose from three different switch time pro-grammes in the weekly programme.

[1] Weekly switching times
[2] Working day and weekend switching times
[3] Individual day switching times

Modes of operation for the switch time programmes

The modes of operation for the switch time programmes is explained on page 33. The procedure for configuring the switching times is described starting on page 36.

Double the amount of switching times by activating a second switching time block:

If you want to double the number of configurable opening and closing times, then you must activate a second **switch time block (n=2)** here.

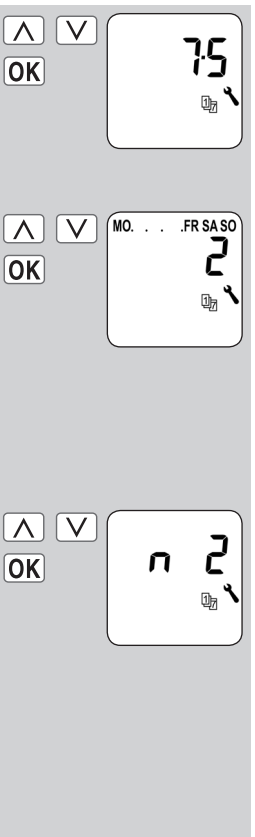
After this has been activated, you can configure opening and closing times for both switch time blocks, see page 34.

1. Select and open menu **7.5 [7] Weekly programme**.

Setting order

a) Select the desired switch time programme.
- **1** = Weekly switching times
- **2** = Working day / weekend switching times
- **3** = Individual day switching times

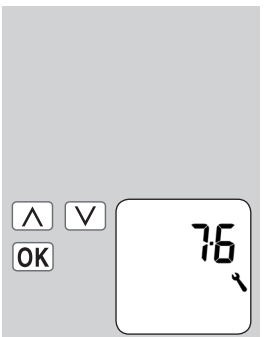
b) Configure and confirm the number of **switching time blocks**.
- **n 1** = On, one switching time block is active.
- **n 2** = Two switching time blocks are active.



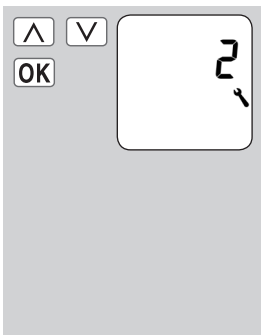
18.7.6 Menu 7.6 - Configure motor speed

The maximum running speed of the motor can be configured if necessary (e.g. to reduce noise).

1. Select and open menu **7.6 Motor speed**.



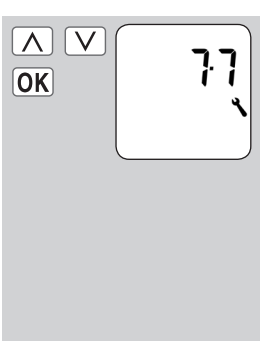
a) Set and confirm the desired speed.
   - **1** = low
   - **2** = medium
   - **3** = high



18.7.7 Menu 7.7 - Device settings, brief description

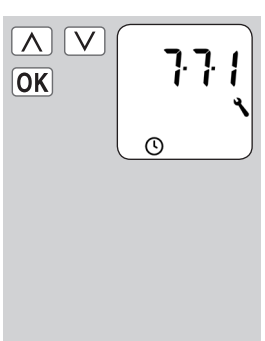
This menu enables additional basic settings to be made for individually configuring your RolloTron Comfort.

The settings are performed in various sub-menus.



Sub-menus:

7.7.1 - 7.7.6 (see page 49)



18.7.8 Menu 7.7.1 - Automatic summer/winter changeover on/off

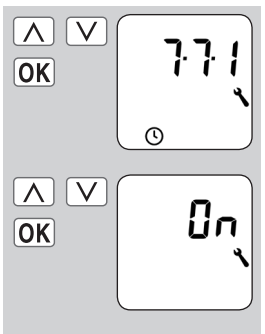
The RolloTron Comfort features an automatic summer/ winter changeover function.

Recommendation for operating the RolloTron Comfort outside Germany.

If the controller is not being used in Germany, it may be necessary to switch off the automatic summer / winter clock change function.

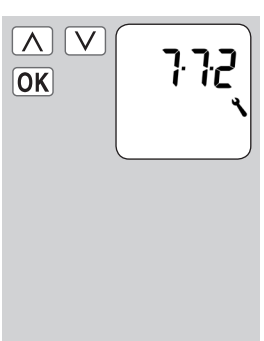
1. Select and open menu **7.7.1 Automatic summer/ winter changeover.**

a) Set automatic summer/ winter changeover to on / off.
   On = Function on
   OFF = Function off

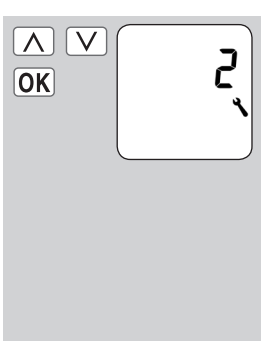


18.7.9 Menu 7.7.2 - Set display contrast

1. Select and open menu **7.7.2 Display contrast**.



a) Set and confirm the desired display contrast.
   1 = low contrast
   5 = high contrast

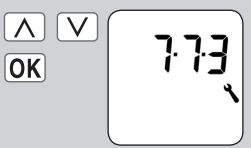


18.7.10 Menu 7.7.3 - Configure continuous display backlighting

Pressing one of the operating keys causes the back-lighting in the standard display to switch on at full intensity.

1. Select and open menu **7.7.3 Display backlighting**.

Subsequently the brightness gradually fades down to the configured value.



a) Configure and confirm the desired brightness.

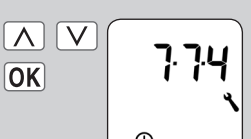
- **0** = Display back-lighting for the continuous display is switched off.
- **1-3** = Brightness levels
- **3** = Maximum brightness

> **The display backlight remains permanently switched on at the configured setting.**

18.7.11 Menu 7.7.4 - Set clock mode

This menu enables you to configure the time base for the internal clock (depending on the local power supply).

1. Select and open menu **7.7.4 Clock mode**



a) Set and confirm the desired clock mode.

- **1** = 50 Hz mode
- **2** = 60 Hz mode
- **3** = Quartz mode

> **e.g. in Europe**

> **e.g. in the USA**

> **for other mains frequencies**

18.7.12 Menu 7.7.5 - Switch key lock on/off

You can activate the key lock in order to protect the RolloTron Comfort against unintentional input.

Automatic activation after approx. two minutes.

If the key lock is activated and no keys are pressed within a period of two minutes, the key lock is activated automatically.

Direct activation in normal mode

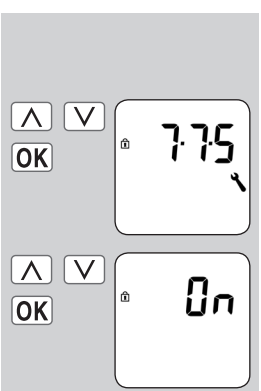
You can also activate and deactivate the key lock directly from the standard display.

NOTE

The roller shutters can be moved manually, even with the key lock activated.

Activate / deactivate the key lock in the menu.

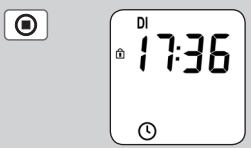
1. Select and open menu **7.7.5 Key lock**.



a) Activate or deactivate the key lock.
On = on
OFF = off

Activate / deactivate the key lock directly from the standard display.

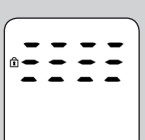
Press and hold the **[SET/ Stop]** key for four seconds.



Display for active key lock:

Standard display

When pressing the menu key.

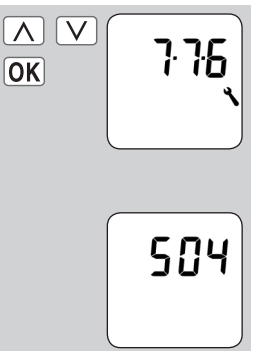


18.7.13 Menu 7.7.6 - Display software version

This menu enables the current software version for the RolloTron Comfort to be displayed.

1. Select and open menu **7.7.6 Software version.**

a) Subsequently the version number will be displayed.

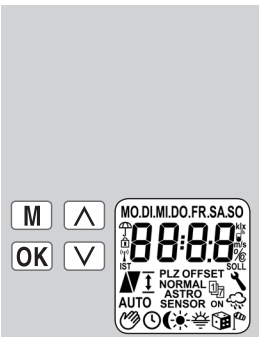


RESET

19. Erase all settings, software reset

If necessary, you can erase all of your settings and return the RolloTron Comfort system to its original factory settings.

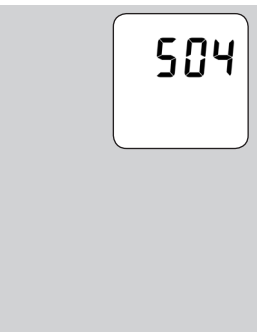
1. Simultaneously press and hold all four keys for 5 seconds, until all of the icons are shown on the display.



2. Next, the device's software version will be displayed for a few seconds.

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

   Carry out the settings again as specified from page 24 onwards (installation wizard).



RESET

20. Carry out hardware reset

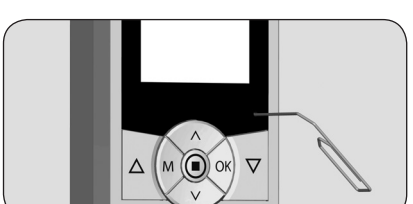
A hardware reset can be carried out in the event that the RolloTron Comfort fails to react to commands.

- A hardware reset causes the internal power supply to the RolloTron Comfort to be briefly interrupted.
- All of the previously configured settings will be saved apart from the time and date.

IMPORTANT

Never press the reset button when the motor is running, as otherwise the end points will be modified.

1. RESET **Press the Reset button using a sharp object (e.g. a paper clip).**



21. Removing the RolloTron Comfort (e.g. in the event of a move)

1. M + OK + ∧ + ∨ **Delete all settings.**

Simultaneously press and hold the buttons for 5 seconds.

2. ∨ **Fully close the roller shutters.**

Keep the button held down.

3. **In doing so, pull out the belt as far as possible from the top of the RolloTron Comfort.**

4. **Remove the cover plate from the lower mounting holes.**

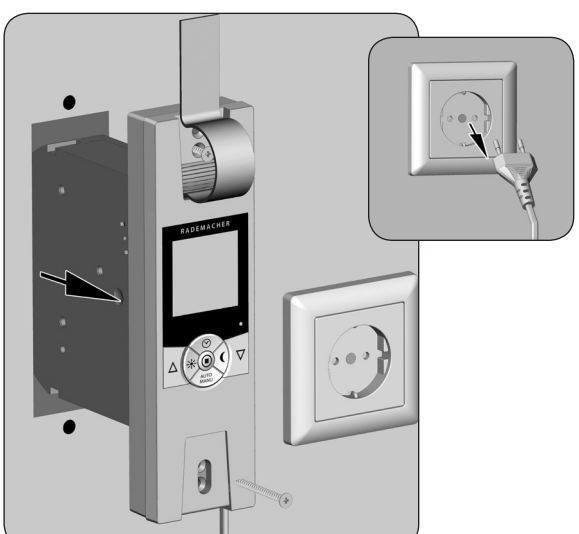
- You can remove the front panel by gripping the small notch in the lower side of the device.

5. **Subsequently release the fastening screws and pull the RolloTron Comfort completely out of the belt box.**

6. **Remove the belt compartment cover.**

STOP **There is a risk of injury from the reel.**

- Never reach into the reel compartment when the motor is running. Always remove the mains plug before touching the reel compartment.

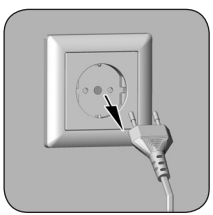


21. Removing the RolloTron Comfort (e.g. in the event of a move)

7. **Check the position of the fastening hook and move the hook into an easily accessible position if necessary.**

8. **Subsequently remove the mains plug permanently from the socket.**

9. **Release the belt from the fastening hook and pull it out completely from the front of the RolloTron Comfort.**



22. Removing the belt in the event of unit failure

In the event that the RolloTron Comfort unit fails and the motor no longer runs, you can use the disengaging bracket provided in order to fully remove the belt from the belt winder unit, without the need for cutting it.

1. Remove the mains plug from the socket.

2. Dismantle the RolloTron Comfort as previously demonstrated on page 60.

3. Release the drive with the help of the supplied disengaging bracket.

ATTENTION

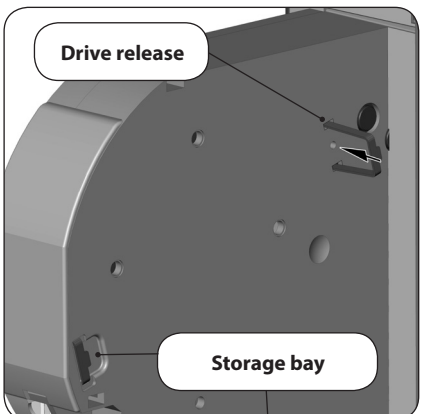
- Hold on to the belt tightly, as otherwise the roller shutters may slam shut.
- A small amount of resistance must be overcome when pressing.

4. Maintain pressure on the disengaging bracket and pull the belt out of the RolloTron Comfort as far as possible.

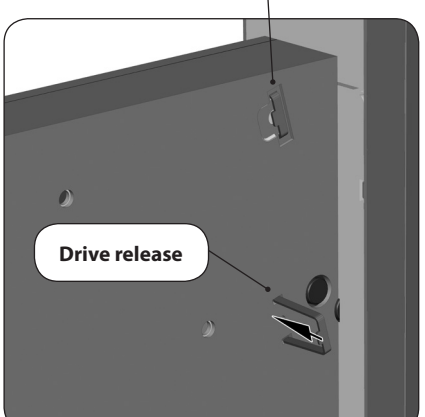
5. Release the belt from the fastening hook and pull it out completely from the RolloTron Comfort.

6. Replace the disengaging bracket in its holder.

RolloTron Comfort



RolloTron Comfort Plus



23. What to do if... ?

Fault	Possible cause / solution
... the RolloTron Comfort indicates no functions?	Check the power supply incl. connecting cable and plug.
... the RolloTron Comfort no longer reacts in the morning at the configured switching time?	The electronic system switched off the drive after closing the roller shutters because the deflection roller stopped turning. This is the case if:
	a) The **[Down]** button was pressed for an excessive period of time during the configuration process for the lower end point. The roller shutter slats are closed, but the belt continued to wind and is no longer tight on the deflection roller.
	b) The lower end point is displaced due to elongation of the belt. The belt may never be slack. Reconfigure the lower end point (see page 50) and ensure that the belt remains tight to the deflection roller. In doing so, the deflection roller must turn evenly.
... the roller shutters no longer stop at the configured end points?	The end points may be displaced due to elongation of the belt. Re-adjust the end points, see page 50.
... the roller shutters stop as soon as the control key is released?	The end points are not configured. Configure the end points, see page 50.
... the RolloTron rotates in the wrong direction?	Possibly the belt is wrapped around the reel incorrectly, see page 18.

Fault	Possible cause / solution
... the roller shutters stop during downward travel?	a) The roller shutters may have hit an obstacle. Move the roller shutters back up and remove the obstacle.
	b) Slats have shifted out of alignment. If possible, move the roller shutters back up and realign the slats.
	c) The roller shutters scrape against the window frame inside the roller shutter box due to the lack of a pinch roller or insulation material may have come free and is jamming the roller shutters. Open the roller shutter box and rectify the fault. Lubricate any stiff areas with gliding wax if necessary.
	d) The roller shutters are too light. Increase the weight of the roller shutters by, for example, adding a piece of flat steel to the bottom slat.
... the roller shutters stop suddenly during upward travel?	a) The drive may be jammed, for example, due to the roller shutters freezing up or other obstacles.
	b) The roller shutters may not be running sufficiently smoothly. Check the roller shutters and roller shutter guides.
	d) The roller shutters may be too heavy. The maximum tractive force of the belt winder has been exceeded, see page 68.

23. What to do if... ?

Fault	Possible cause / solution
... the RolloTron Comfort no longer reacts to manual commands and a temperature icon is shown on the display?	The maximum running time of the drive has been exceeded, see page 8. The motor is too hot. The RolloTron Comfort will be operational again in approx. 1 hour.
... the RolloTron Comfort no longer reacts to automatic commands and an error message **[Er02]** is shown on the display?	a) The RolloTron Comfort is no longer ready for operation. Carry out a hardware reset in accordance with page 59.
	b) If the error persists after carrying out a hardware reset, dismantle the RolloTron Comfort and have the device repaired by a specialist dealer.

24. Information about maintenance and care of your equipment

Maintenance

IMORTANT

Inadequate maintenance may lead to personal injury through damage to your RolloTron Comfort and to the roller shutter system.

- Please check the RolloTron Comfort and all of your roller shutter components regularly for damage.
  - Regularly check the RolloTron Comfort for its correct functionality.
  - The shutters must not be damaged.
  - The belt must not be frayed.
  - The deflection roller on the roller shutter box must move freely.
  - The winding reel in the roller shutter box must be attached and stable. After a longer period of use, this may lose its stability.
- Have damages components exchanged by a specialist firm.

Care

You can clean the RolloTron Comfort using a lightly dampened cloth. Please do not use aggressive or abrasive cleaning agents.

25. Technical Specifications

Supply voltage:	230 V / 50 Hz; 230 V / 60 Hz
Nominal power:	70 W
Standby power:	< 0.35 W
Nominal torque: - RolloTron Comfort - RolloTron Comfort Plus	 10 Nm 14 Nm
Maximum speed: - RolloTron Comfort - RolloTron Comfort Plus	 30 RPM. 24 RPM.
Maximum tractive force:	see page 68 (tractive force diagrams)
Transient operation:	4 minutes (maximum running time)
Protection class:	II
Protection type:	IP20 (only for use in dry rooms)
Number of switching times:	max. 28
Automated solar function configurable range:	2,000 to 20,000 Lux
Automatic darkness control configurable range:	2 to 50 Lux
Permissible ambient temperature:	0 - 40 °C
Mains connecting cable:	2 x 0.75 mm^2 (H03VVH2-F)
Dimensions:	See page 14

Power reserve

The RolloTron Comfort has a power reserve of approx. 8 hours.

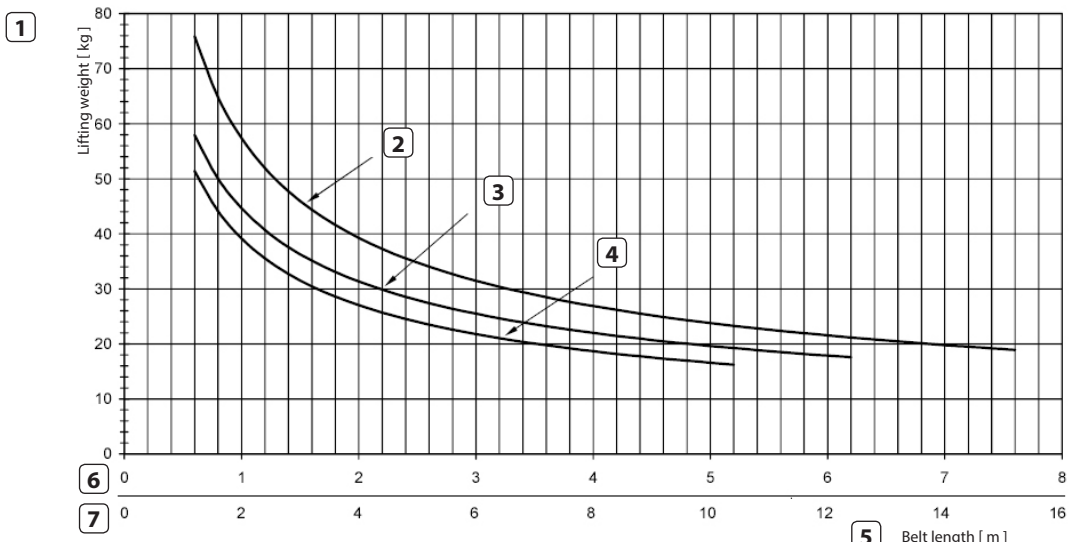
Data retention subsequently to power failure

All of the previously configured settings will be retained subsequent to a power outage, with the exception of the time and date. As soon as the power supply is restored, the opening and closing times will be executed again.

Example:

- Power failure from 22:30 - 6:30 hours.
- The opening time has been set to 6:00 a.m.
- Shortly after power is returned, the switching command will be executed and the roller shutters will open.

26. Tractive force diagrams



1 =	Lifting weight [Kg]
2 =	Belt thickness 1.0 mm
3 =	Belt thickness 1.3 mm
4 =	Belt thickness 1.5 mm
5 =	Belt length [m]
6 =	Belt lengths for RolloTron Comfort
7 =	Belt lengths for RolloTron Comfort Plus

27. Works Settings

Automatic:	On
Timer periods:	On
Up time:	7:00 hours
Down time:	20:00 hours, switch time mode **[NORMAL]**
Automatic solar function:	OFF (off)
random function:	OFF (off)
Time / date:	12:00 hours / 01.05.2012
Postcode:	46
Weekly programme:	1 (weekly switching times)
Maximum speed:	3
Display backlighting:	0
Automatic summer / winter time change:	On (on)
Key lock:	OFF (off)
Ventilating position:	OFF (off)

28. Time zone table

EN

Belgium
101 Antwerp
102 Bruges
103 Brussels
104 Liege
105 Mechelen
106 Mons
107 Ostend

Denmark
108 Aalborg
109 Ringsted
110 Esbjerg
111 Horsens
112 Kolding
113 Copenhagen
114 Svendborg
115 Randers

England
116 Aberdeen
117 Birmingham
118 Bristol
119 Glasgow
120 London
121 Manchester
122 Newcastle

Estonia
123 Tallinn

Finland
124 Helsinki
125 Jyväskylä
126 Oulu
127 Tampere
128 Turku
129 Vasa

France
130 Bordeaux
131 Brest
132 Dijon
133 Le Havre
134 Lyon
135 Montpellier
136 Nantes
137 Nice
138 Paris
139 Reims
140 Strasbourg
141 Toulon

Italy
142 Bologna
143 Bolzano
144 Florence
145 Genoa
146 Milan
147 Naples
148 Palermo
149 Rome
150 Turin
151 Venice

Ireland
152 Cork
153 Dublin
154 Belfast

Latvia
155 Riga

Liechtenstein
156 Vaduz

Lithuania
157 Vilnius

Luxembourg
158 Luxembourg

The Netherlands
159 Amsterdam
160 Eindhoven
161 Enschede
162 Groningen
163 Maastricht
164 Rotterdam
165 Utrecht

Norway
166 Oslo
167 Stavanger
168 Bergen
169 Trondheim

Austria
170 Amstetten
171 Baden
172 Braunau
173 Brixen
174 Bruck/Mur
175 Eisenstadt
176 Graz
177 Innsbruck
178 Klagenfurt
179 Landeck
180 Linz
181 Nenzing
182 Salzburg
183 Vienna

Poland
184 Wroclaw
185 Bromberg
186 Danzig
187 Kattowitz
188 Krakow
189 Lodz
190 Lublin
191 Posen
192 Stettin
193 Warsaw

Portugal
194 Faro
195 Lisbon
196 Porto

Switzerland
197 Basel
198 Bern
199 Andermatt
200 Chur
201 Lausanne
202 Lucerne
203 Zurich

Sweden
204 Boras
205 Gavle
206 Göteborg
207 Helsingborg
208 Jönköping
209 Östersund
210 Malmö
211 Stockholm
212 Sundsvall
213 Umea

Spain
214 Almería
215 Alicante
216 Barcelona
217 Bilbao
218 Badajoz
219 Burgos
220 Cáceres
221 Castellón
222 Granada
223 Guadalajara
224 La Coruña
225 Lérida
226 León
227 Madrid
228 Murcia
229 Oviedo
230 Palma
231 Pamplona
232 San Sebastián
233 Seville
234 Santander
235 Valencia
236 Valladolid
237 Vitoria
238 Saragossa
239 La Palma
240 Tenerife
241 Grand Canaria
242 Fuerteventura

South-east Europe
243 Athens
244 Belgrade
245 Bratislava
246 Bucharest
247 Budapest
248 Istanbul
249 Maribor
250 Prague
251 Sarajevo
252 Sofia
253 Skopje
254 Thessaloniki
255 Zagreb

29. CE Mark and EC Declaration of Conformity

The electronic roller shutter belt winder **RolloTron Comfort** (item no.: 1623 45 x9 / 1623 60 19 /1615 45 19) complies with the requirements of the following directives and standards:

CE

2006/42/EC
Machinery directive

2014/30/ EU
EMC 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)

30. Accessories

A comprehensive range of accessories is available for customising your RolloTron Comfort to local conditions. 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
7009 00 90	3 m
7009 00 91	5 m
7009 00 92	10 m

31. Warranty conditions

RADEMACHER Geräte-Elektronik GmbH provides a 36-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.

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 party, unauthorised persons
- Use of unsuitable accessories
- Damage caused by unacceptable excess voltages (e.g. lightning)
- Operational malfunctions caused by radio frequency overlapping and other such radio interference

For the warranty to be applicable, the new device must have been purchased through one of our approved specialist retailers. Proof of this can be provided by pre-senting a copy of the bill.

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.

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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.

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