

Installation and Operating Instructions RolloTron® Pro comfort DuoFern®

Article no. 9800/9805

VBD 462-3-D (09.08)

Dear Customer,

... in purchasing this **Rollotron® Pro comfort DuoFern®** you have decided on a quality product manufactured by RADEMACHER. We would like to thank you for your confidence.

This roller shutter drive has been developed with such aspects as optimum operability and convenience in mind, as well as those of solidity and durability. With uncompromising quality requirements and after an extensive test series phase, we are now proud to present you with this innovative product.

All the highly qualified staff at RADEMACHER stand behind it.

CE mark and conformity

The roller shutter drive **Rollotron® Pro comfort DuoFern®** (art. no. 9800/9805) fulfils the requirements of the relevant European and national guidelines.

The conformity of the **Rollotron® Pro comfort DuoFern®** has been certified and the corresponding declarations and documentation are on file at the manufacturer's premises.

These instructions...

.. describe the installation, the electrical connection and the operation of your roller shutter drive.

Please read this manual completely and observe all of the safety instructions before commencing with the installation.

Please keep this manual in a safe place and include them with the device in the event it changes owners.

The warranty becomes null and void in the event of any damage or loss caused by failure to observe these operating and safety instructions. We accept no liability for any consequential losses or damage resulting from non-observance of these instructions.

Please turn over

General view (art. no. 9800/9805)

Setting screw to adjust the DCF radio reception

Fastening holes

Deflection roller

Belt inlet

Display

UP button

Menu button

DOWN button

Fastening holes

Plug-in connection for the light sensor

Blind stopper

Reset button

OK button (confirmation)

AUTO/MANU button

Winding wheel

Fixing hook

Strain relief

Cable conduit

Winding wheel cover

Connection terminals

Key to symbols

Danger of electric shock

This symbol advises you of the dangers associated with work performed on electrical connections, parts etc. It requires that safety precautions be taken to protect the health and life of the person concerned.

This concerns your safety.

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

ADVICE

This heading indicates information that is important for the proper functioning of the drive.

Contents

General view/operating elements	3
Key to symbols	4
General safety instructions	6
Proper use	7
Operating conditions	7
Improper use	7
Permissible shutter belt widths/ shutter surface areas.....	8
Functional description	9
Function overview	11
Before installation.....	12
- Take measurements	12
- Tools	13
- Remove old belt winder.....	13
- Prepare belt	14
- Recommendation/deflection roller.	14
Safety instructions for electrical connections	15
Electrical connection	16
Feeding in and fastening the belt	17
Installing the Rollotron® Pro comfort DuoFern®.....	18
Basic principle of menu navigation	19
Basic settings via menu navigation when taking into service for the first time	20
Activating and deactivating automatic operation	24
Changing the standard switching times for UP/DOWN	26
Weekly programme	27
Setting the weekly programme	28
Automatic sunlight protection mode ..	30
Setting automatic sunlight protection mode	34
Automatic dusk mode.....	37
- via light sensor	38
- setting via light sensor	39
- via radio command.....	40
- via astro function.....	40
- Switching astro function on or off ..	41
- Setting the time delay of astro function.....	41
Switching the automatic random operation on or off	43
Setting the time and date	44
Setting the end positions	45
Switching the button lock on/off.....	46
Registering and de-registering in the DuoFern® radio network	47
Expert mode	51
Calling up expert mode/ selecting and setting menu items	52
Overview of all menu items and parameters in expert mode	53
Deleting settings/ software reset/hardware reset	62
Operating the Rollotron® Pro comfort DuoFern® /manual operation	64
Removing the Rollotron® Pro comfort DuoFern®	65
Removing the belt after a total breakdown.....	66
Useful information	67
What do I do if...??	67
Technical data	70
- Factory settings.....	71
- Traction force diagram	72
- Time zone table.....	73
General view of display	74
Accessories.....	75
Warranty conditions.....	76
TIP! For quick user guide see page.....	74

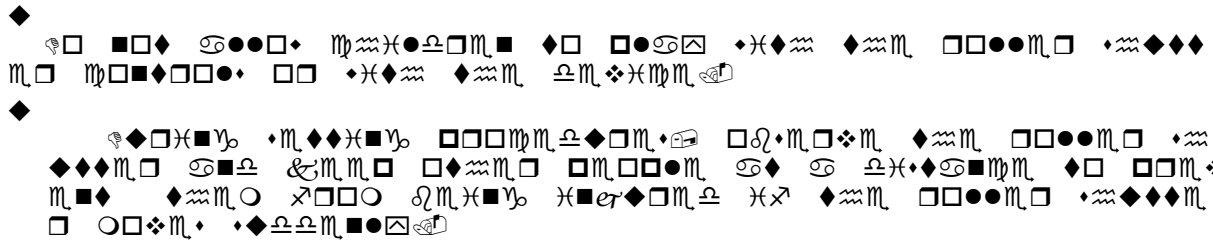
General safety instructions

All work performed on electrical equipment is associated with a risk of electric shock and electrocution.

- u The electric connections and all work on electrical equipment must only be carried out by a qualified electrician in accordance with the connection details provided in these instructions, see page 16.
- u All units must be disconnected from the mains before installing and connecting the device to the mains.

The use of defective devices can put people and property at risk (electric shock, short circuits).

- ◆ Never use faulty or damaged devices.
Please notify our customer service department of any faults/damage (see page 76).



According to the standard DIN EN 13695 it must be ensured that the transmitted forces specified for the hangings according to EN 12045 are complied with.

Particular care must be taken here to ensure that the outward running speed of the hanging is less than 0.2 m/s over the last 0.4 m of travel.

Proper use / operating conditions / improper use

Only use the Rollotron® Pro comfort DuoFern® ...

...to raise and lower roller shutters with an acceptable belt.

Only use original manufacturer's parts

To avoid malfunctions or damage to the Rollotron® Pro comfort DuoFern® only use original spare parts from Rademacher. As the manufacturer, we do not guarantee the equipment if parts made by other manufacturers are used and consequential damage occurs.

All repairs to the Rollotron® Pro comfort DuoFern® must be carried out by authorised customer service personnel.

Operating conditions

- u Use the Rollotron® Pro comfort DuoFern® only in dry rooms.
- u The electrical connection requires a permanent 230 V/50 Hz power supply at the site of installation as well as an on-site isolating device (fuse).



- ◆ The bearing surface for the roller shutter drive must be level.
- u The Rollotron® Pro comfort DuoFern® may only be operated with and installed in systems and devices in which transmitter or receiver faults do not present any danger to persons or property or for which these hazards are removed by the use of other safety equipment.

Improper use

Never use controls with DuoFern® radio technology (e.g. Rollotron® Pro comfort DuoFern® and DuoFern® hand transmitter) for remote operation of devices and equipment with increased safety requirements or increased risk of accident. Additional safety equipment is required to do so. Please observe the relevant legal regulations for setting up such systems.

Permissible shutter belt widths/ shutter surface areas

Maximum belt width in the case of:	9800	9805
------------------------------------	------	------

Standard belt 23 mm

1.0 mm belt thickness	7.6 m	15 m
1.3 mm belt thickness	6.2 m	13 m
1.5 mm belt thickness	5.2 m	11 m

Permissible roller shutter surface area (m²) *

Roller shutter weight m²

4.5 kg/ m ² (plastic roller shutters),	approx. 6 m ²	approx. 10 m ²
10 kg/m ² (Aluminium/wooden roller shutters)	approx. 3 m ²	approx. 6 m ²

* All values refer to roller shutters that move smoothly and easily.

IMPORTANT

Use only belts with the allowable length. Using longer belts can damage the Rollotron® Pro comfort DuoFern®.

Functional description

SLAVE

Roller shutter in the bedroom

Light in the bedroom

Roller shutter in the office

Roller shutter in child's bedroom

Outside lighting

Light in the cellar

MASTER

DuoFern® radio system

With the DuoFern® radio system a bidirectional data exchange is possible between the various participants of a radio network.

- ◆ All switching commands from a DuoFern® transmitter will be confirmed by the DuoFern® receivers.
- ◆ All signals are relayed between the various participants of the DuoFern® radio network (routing).
Each DuoFern® end device has its own routing function for relaying the radio signal.
- u You can register up to 20 end devices with a Rollotron® Pro comfort DuoFern® radio network.

Group control

With a DuoFern® hand transmitter (article no. 9491) you can control up to 48 DuoFern® end devices in 6 groups.

The following DuoFern® devices are available:

- ◆ Rollotron® Pro comfort DuoFern® (master/slave)
- ◆ Rollotron® Pro standard DuoFern® (slave)
- ◆ DuoFern® hand transmitter
- u DuoFern® actuators for lamps or tubular motors (slave)

Functional description

Master-/slave principle

The Rollotron® Pro comfort DuoFern® (art. no. 9800/9805) can be configured as a master or a slave device.

As a master device it is possible via DuoFern® radio network to control other slave end devices. The master/slave mode can be set in expert mode (see page 57). The slave mode is the factory setting.

Master and slave devices in the DuoFern® radio network:

Master devices:

- ◆ Rollotron® Pro comfort DuoFern® (as master)

Slave devices:

- ◆ Rollotron® Pro comfort DuoFern® (as slave)
- ◆ Rollotron® Pro comfort DuoFern®

- ◆ Further DuoFern® actuators for lamps or tubular motors

As an aid to setting up a DuoFern® radio network we would like to present two examples of use:

Example of use no. 1:

- 1 Rollotron® Pro comfort DuoFern® as master
(e.g. on west-facing side)
- 2 Rollotron® Pro standard DuoFern® on the
west-facing side of the building
- 1 Actuator for a lamp
- 1 DuoFern® hand transmitter
Channels 1 to 4 for individual operation of the roller shutters
Channel 5 to operate all roller shutters together
Channel 6 for the ON/OFF lamp

Example of use no. 2:

- 1 Rollotron® Pro comfort DuoFern® as master
(e.g. south-facing aspect with a sun sensor)
- 3 Actuators for tubular motors on south-facing side
- 1 DuoFern® hand transmitter

Function overview

Function /	Mode:	M	S	Function /	Mode:	M	S
◆ Manual operation		•	•	◆ Contrast setting for		•	-
◆ Switching between AUTO/MANU				-			
◆ Standard switching time for UP (♦) and DOWN (◆)		•	○	the display			
◆ Weekly programme including				◆ Button lock		•	•
- weekday and weekend programme		•	○	◆ Compulsory run after reset or after taking into service		•	•
- Individual day programme				◆ DuoFern® radio remote control		•	•
◆ Automatic random mode		•	○	◆ Receiving control commands via DuoFern®		•	•
u Automatic sunlight mode				◆ Transmitting manual commands		•	-
- with light sensor		•	•	-			
- via radio		•	•	◆ Collective switching off of all automatic functions		•	○
◆ Automatic dusk mode				◆ Transmitting automatic states		•	-
- with light sensor		•	•	-			
- with astro function		•	•	◆ Setting for USA (60 Hz mains)		•	•
- via radio		•	•	◆ Receiving the clock time		•	•
◆ Ventilation position		•	•	◆ Transmitting the clock time		•	•
◆ Setting of end positions		•	•	◆ Time switching function (can be switched off)		•	○
u Permanent saving of settings							
◆ DCF radio clock (can also be switched off)		•	•				
◆ Automatic summer/winter time changeover (can also be switched off)		•	•				

ADVICE

Setting and explanation of the master/slave settings, see expert mode on page 57.

M = Master mode /

S = Slave mode (factory setting) /

○ = Functions are possible in slave mode 2 (with its own switching times)

Before installation

1. Take measurements

- ◆ Check whether the belt box provides sufficient space for the Rollotron® Pro comfort DuoFern®.





All dimensions given in mm

Dimensional drawing for Rollotron® Pro comfort DuoFern® (article no. 9800)


Dimensional drawing for Rollotron® Pro comfort DuoFern® (article no. 9805)

Before installation

1. You need the following tools

- ◆    
- ◆ Phillips screwdriver
- ◆ Scissors
- ◆ Folding rule or tape measure
- ◆ Pencil

2. Remove the old belt winder

- ◆ 

- ◆ Remove the old belt winder and unwind the belt.

There is a risk of injury due to the pre-tensioned spring in the old belt winder.

When the old belt winder is opened, the spring can snap back uncontrolledly. Release the spring carefully by hand in the belt winder to avoid this.

Before installation

3. Prepare the belt

Cut off the belt about 20 cm underneath the belt box.

Fold the end of the belt about 2 cm from the end and cut a small slit in the middle. This way you can hook the belt onto the winding wheel later on.

Recommendation

If the roller shutter moves with difficulty, mount a deflection roller (art. no. 3590/5395, see page 75) to the roller box to deflect the belt..

The belt must run as straight as possible to avoid unnecessary friction and wear.

Safety instructions for electrical connections

All work performed on electrical equipment is associated with a risk of electric shock and electrocution.

u The electric connections and all work on electrical equipment must only be carried out by a qualified electrician in accordance with the connection diagrams provided in these instructions.

- ◆ All installation and connection works must be carried out at zero voltage.
- ◆ Disconnect all the leads of the power supply cable from the mains and ensure that they can not be reconnected.
- ◆ Check to ensure that the system is at zero voltage. The device has only been disconnected electrically from the mains when one of the following conditions is met:
 - The mains cable has been disconnected from the mains.
 - Switch off the automatic circuit breaker in the house installation.
 - The screw-in fuse for the house installation has been completely removed.
- u Please compare the voltage/frequency specifications on the type plate with those of your local power supply network before connection.

The use of defective devices can put people and property at risk (electric shock, short circuits). For this reason, never use faulty or damaged devices.

Please notify our customer service department of any faults/damage (see page 76).

Electrical connection

ADVICE

The electrical connection of the Rollotron® Pro comfort DuoFern® can be via a cable with a mains plug or via a fixed cable connection.

1. Connect the attached cable (with a mains plug).

Article no. 9800 / 9805

2. If you use the enclosed cable with the mains plug, you must then feed it through the Rollotron®Pro comfort DuoFern® cable conduit at the side.

3. Finally, screw the enclosed strain relief in place with the enclosed screws.

Cable conduit

Feeding in and fastening the belt

1. Switch the mains power on.
2. If the fixing hook is difficult to reach, push the UP button until the hook is visible in the mounting opening and can be reached easily. (You may have to carry out a software reset beforehand, see page 62).

There is a danger of being injured by the winding wheel.

Never reach into the mounting opening when the motor is running.

3. It is essential to switch the mains power off again.
4. Only after doing so, feed the belt from the front into the Rollotron® Pro comfort DuoFern®. After this fix the belt to the winding wheel hook.
5. Switch on the mains supply again.
6. (s) Press the UP button until the belt has wrapped itself once around the winding wheel.

IMPORTANT

When winding the belt manually, pull the belt tight so that the deflection roller turns as well.

7. After this place the enclosed belt cover onto the mounting opening.

Fixing hook for the belt

Belt cover

IMPORTANT

Always place the belt over the winding wheel from above.

Installing the Rollotron® Pro comfort Duo Fern®

ADVICE

Instal the Rollotron® Pro comfort DuoFern® so that it is straight and the belt winds up correctly. Ensure that the Rollotron® Pro comfort DuoFern® is mounted freely in the belt box and is not in contact with the wall, otherwise this will result in noise.

- 1. Push the Rollotron® Pro comfort DuoFern® into the belt box and screw it tight with the enclosed screws.**

If using a cable with a mains plug:

Ensure that the mains plug lead lies correctly in the cable conduit. Otherwise it may be damaged when it is screwed on.

- 2. Press the enclosed blind plug into the lower screw opening.**
- 3. Proceed with the basic settings, see the following pages.**

Basic principle of menu navigation

All the functions are listed in the menu

Once the basic settings are complete, you can call up the menu in order to select the individual functions of your Rollotron® Pro comfort DuoFern® and set them to suit your requirements.

This is how you can call up and set the functions:

(M) Call up or exit the menu



(OK) Confirm the function
The setting mode opens and the value to be set flashes.

(+/-) Change values in setting mode

(OK) Confirm input and proceed to next value
or return to menu

ADVICE

If no input is given, the system automatically returns to the normal display after one minute. Any settings made are saved.

Basic settings via menu navigation when taking into service for the first time

Buttons **Indication in the display**

1. **Switch on power supply (indication when installing for the first time)**

The radio clock symbol (DCF) flashes until a radio signal is received. (This can take up to 5 minutes.)

The DCF symbol in the indication continues to flash if no DCF signal is received or if there has been a two-week loss of the DCF signal.

If a DCF signal is received, the following functions are automatically set:

- ◆ Date
- ◆ Clock time
- ◆ Weekday

2.a **Setting radio reception**

Turn the setting screw on top of the Rollotron® Pro comfort DuoFern® (see page 3) carefully with a screwdriver until a maximum of 3 horizontal lines appears in the indication. Only a small angle of rotation is possible.

1-2 lines = no DCF reception/weak DCF reception
3 lines = good DCF reception

ADVICE

Wait after each change! If the setting screw is turned to and fro in quick succession, reception is not possible.

(OK) see 2.b

Basic settings via menu navigation when taking into service for the first time

Buttons Indication in the display

2.b Good DCF reception (3 lines in the display)
Confirm and proceed automatically with:
setting of the upper end position (see 3.a).
 The symbol "EndP" for setting the end position flashes

or

2.c No DCF reception or weak DCF reception
(1 to 2 lines in the display)
Confirm and proceed automatically with:
setting clock time and date, see page 44.

3.a 3. Setting upper end position

(s) K M M □ ♀ ◆◆◆ □ ■ □ □ M ◆◆ M ♀
 * M M □ □ ● ● M □ ◆◆◆ M □ ○ □ ❖ M ◆ ◆ □ ◆ □ □ ◆
 ☎ ◆ ① ⚙ M ● M ☎ M ◆ M M ♀ ◆◆◆ □ ■ ...as soon as the desired
 upper end position is reached. The upper end position is now set.

TIP
 If necessary you can correct the upper end position with the UP (s) and DOWN (t) button.

3.b Save the upper end position and proceed to set the lower end position.

Basic settings via menu navigation when taking into service for the first time

Buttons

Indication in the display

5. Enter the switching time for "UP (s)"

1. Set the hour and proceed by pressing OK
2. Set the minutes and proceed by pressing OK

6. Enter the switching time for "DOWN (t)"

(hours/minutes)

7. The basic settings have been completed

The normal display appears.

ADVICE

The Rollotron[®] Pro comfort DuoFern[®] is now ready for operation. The opening and closing times set apply to all the days of the week..

Automatic operation

- AUTO All automatic functions are activated e.g.
- ◆ Switching times
 - ◆ Automatic sunlight mode
 - ◆ Automatic dusk mode, etc.
- ADVICE Manual operation is still possible in automatic operation mode.
- MANU All automatic functions are switched off; only manual operation is possible.

Activating and deactivating automatic operation

Buttons **Indication in the display**

1. **(AUTO/MANU) Press for 1 s Activate and deactivate automatic operation**

ATTENTION

Switching over occurs even if the button lock is activated.

Automatic on / Automatic off

Automatic operation

You use the Rollotron® Pro comfort DuoFern® as master

Each switching over (ON or OFF) of the automatic functions at the **master** is automatically transmitted by radio to the registered **slaves** (DuoFern® receivers).

Check all slaves after switching over an automatic function at the master.

You use the Rollotron® Pro comfort DuoFern® as a slave

If, for example, the automatic sunlight mode was deactivated at the master, this can be activated again if necessary at the various slaves.

This also applies for all other automatic functions such as

- u Automatic sunlight mode
- ◆ Automatic dusk mode
- ◆ Automatic switching times

ADVICE

In "point 12" of expert mode you can prevent the automatic functions from being transmitted to the slaves, see page 61.

Standard switching times for UP/DOWN

The same switching times for all days of the week

The opening and closing times set apply to all the days of the week.

Changing the standard switching times for UP/DOWN

Buttons **Indication in the display**

- 1. Open the menu**
- 2. Select and open the standard switching times ()**
- 3. Set the opening time (s)
(hours/minutes)**
- 4. Set the closing time (t)
(hours/minutes)**
- 5. Return to the normal display**

Weekly program

Individual switching times

With the weekly timer you can set individual opening and closing times.

Weekday/weekend timer

Here you can set four switching times:

- 1 x opening time valid for Mon to Fri
- 1 x closing time valid for Mon to Fri
- 1 x opening time valid for Sat and Sun
- 1 x closing time valid for Sat and Sun

Individual day timer

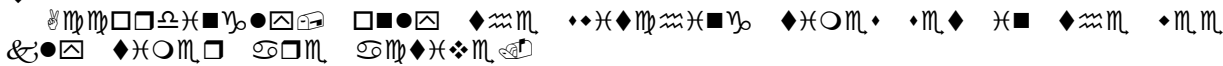
Here you can set different opening and closing times for each day of the week; 14 switching times in total.


Deactivating the switching times

Set the relevant function to OFF.

ADVICE

The standard switching times are switched off (OFF) at first when you activate the weekly timer.

◆  ◆

◆  ◆

As a result you can set 4 switching times per day if required. .

Setting the weekly timer

Buttons **Indication in the display**

1. **Open the menu**
2. **Select and open the weekly timer ()**
3. **Select the operating mode**
 - u Switch off weekly timer
 - or**
 - ◆ Weekday/weekend timer
 - or**
 - ◆ Individual day timer
- 3.a **Confirm the operating mode**

Setting the weekly programme

Buttons **Indication in the display**

4 **Set the weekday/weekend programme:**

1. Opening time for Mon to Fri
2. Closing time for Mon to Fri
3. Opening time for Sat and Sun
4. Closing time for Sat and Sun

or

4.a **Set the individual day timer**

Set the opening and closing times for each day of the week from Monday to Sunday.

Confirm each input with (OK).

5. **Return to the normal display**

Automatic sunlight protection mode

Light-dependent control

In combination with the light sensor (article no. 3710, see page 75), the automatic sunlight protection mode allows you to control your roller shutters according to the sunlight intensity. In this case the light sensor is

attached to the window pane with a suction pad and connected to the Rollotron® Pro comfort DuoFern® with a plug.

Connect the light sensor

The Rollotron® Pro comfort DuoFern® has three sunlight protection programmes which you can select as required in expert mode (see page 60):

(1) Local sunlight protection programme 1

Automatic closing and opening when a set limiting value is exceeded. The final position of the roller shutter can be freely selected by the position of the light sensor on the window.

10 min.

Automatic lowering

If the light sensor detects uninterrupted sunlight for a period of 10 minutes, the roller shutter is lowered until its shadow covers the light sensor.

ADVICE

No control command is transmitted by DuoFern®.

Automatic sunlight protection mode

(1) Local sunlight protection programme 1

Automatic free signal

After about 20 minutes the roller shutter automatically moves up a fraction to expose the sensor. The roller shutter remains in this position if the sunlight continues. If the intensity of the sunlight falls below the set limiting value, the shutter is raised automatically to the final upper limit stop.

(2) Local sunlight protection programme 2

Automatic closing and opening when a set limiting value is exceeded. The control command is transmitted to all slaves by the DuoFern®radio signal.

◆ When moving downwards, the roller shutter moves as far as the sun position, which the device must be previously set to (see page 36).

◆ If no sunlight is detected for a period of 20 minutes, then the roller shutter moves upwards again.

ADVICE:

Factory setting for master operation.

IMPORTANT

The light sensor must not be in the shade of the roller shutter. For this reason locate the light sensor as far down as possible on the window.

Automatic sunlight protection mode

(3) Central sunlight protection programme

The switching commands only come from the master device via DuoFern® radio signal.

- ◆ The roller shutter moves to the sun position when this has been set previously at the slave device (see page 36).
- ◆ If no sunlight is detected for a period of 20 minutes, then the roller shutter moves upwards again.

TIP

A separate sunlight sensor is therefore not necessary.

ADVICE

◆ Sunlight protection programmes 1 to 3

If the roller shutter is already below the light sensor or below the sun position then nothing will happen.

◆ Sunlight protection programmes 2/3

If the master device is below the sun position, the control command will still be relayed by radio to the slave devices so that these will start the sunlight protection programme.

u General

If the weather is changeable, the delay periods of 10 and 20 minutes may be exceeded.

u The sunlight protection programme restarts after:

- ◆ Manual operation
- ◆ If an automatic function is activated

u If the limiting value is exceeded, the sun symbol flashes in the normal display.

Automatic sunlight protection mode

Buttons

Indication in the display

Observe the sun symbol in the normal display:

On

The automatic sunlight mode is activated.

Off

The automatic sunlight mode is deactivated.

Flashing

a) Local sunlight protection programmes 1 and 2

If sunlight is detected by the light sensor.

b) Central sunlight protection programme 3

If the sunlight protection programme is active, the roller shutter is in the sun position.

Setting the automatic sunlight protection mode

Buttons

Indication in the display

1. **Open the menu**
2. **Select and open the automatic sunlight protection mode ()**
3. **Activate the automatic sunlight mode**
On = on
OFF = off (factory setting)
- 3.a **Proceed with 4.** if you have set a local sunlight protection programme 1 or 2.
Proceed with 5. if you have set the central sunlight protection programme 3.

Setting the automatic sunlight protection mode

Buttons Indication in the display

4. **Set the limiting value**

Actual value (31 – 45)

Left-hand number (actual value)

Currently measured light intensity.

Limiting value flashes

Right-hand number

Adjustable limiting value

31 = weak sunlight

45 = strong sunlight

ADVICE

If the limiting value is exceeded, the sun symbol flashes in the normal display.

or

4.a **Press all buttons at the same time**

Adopt the current light intensity as the limiting value at which your roller shutter should be lowered.

4.b **Local sunlight protection programme 1**

Confirm limiting value and
return to normal display

or

4.c **Local sunlight protection programme 2**

Confirm limiting value and
proceed with 5. "Set the sun position"

Setting the automatic sunlight protection mode

Buttons

Indication in the display

5. After pressing the OK button you can set the sun position.

5.a Press the UP/DOWN button and keep it pressed and move the roller shutter to the desired sun position.

TIP

As soon as you let go of a button the roller shutter will stop (deadman operation).

If neither of the two buttons is pressed then the sun position will either not be saved or will not be changed.

5.b Confirm the sun position and return to the normal display.

Automatic dusk mode

The automatic dusk mode closes the roller shutters automatically.

There are three dusk functions

The Rollotron® Pro comfort DuoFern® has three dusk functions:

- ◆ via light sensor (art. no. 3710, see page 75)
- ◆ via astro function (postcode + date)
- ◆ via radio command

ADVICE

In expert mode (see page 54) you can select the desired dusk function.

In addition you can also activate and set a ventilation position in expert mode if you do not wish your roller shutter to close completely.

Automatic dusk mode via light sensor

Automatic lowering

At the onset of dusk, the roller shutter lowers all the way down to the lower final limit stop about 10 seconds after the set limiting value has been passed. The roller shutter will only open once the set opening time has been reached or after a manual UP command.

ADVICE

If you want your roller shutter to close automatically via the automatic dusk mode, you need to either switch off the automatic closing time or set it to a time after dusk.

Example :	1	/	2
Set closing time:	23:00	/	19:30
Onset of dusk:	20:30	/	20:30
The roller shutter closes automatically at:	20:30	/	19:30

Take note of off periods

If your roller shutter was closed via the automatic dusk mode and then opened again with a manual command, the automatic dusk operation only becomes active again:

- u at approx. 12 noon (the light sensor must be inserted)
- u in sunlight
- u when the dusk menu is opened

ADVICE

If the light sensor is not inserted in the device this may result in malfunctions. In this case, you should deactivate the automatic dusk mode.

TIP

Do you wish to not close your roller shutter completely? If so, then activate the ventilation position (see page 56) in expert mode (menu item 7). The roller shutter will then only be lowered to the ventilation position set.

Setting "automatic dusk mode via light sensor"

Buttons Indication in the display

1. **Open the menu (the astro function must be deactivated, see following page).**

2. **Select and open automatic dusk operation ()**

3. **Switch on the automatic dusk operation**

On = on

OFF = off (factory setting)

4. **Set the limiting value**

Limiting value flashes

Actual value (1-15)

Left-hand number (actual value) = Currently measured light intensity

Right-hand number = Adjustable limiting value

1 = very dark

15 = not so dark

or

4.a (**♦ + ♦**) **Press all buttons at the same time** Adopt the current light intensity (dusk) as the limiting value at which your roller shutter should be lowered.

4.b + 5. **Confirm the limiting value/return to the normal display**

Automatic dusk mode via radio command

- u The closing command comes from a master device by radio.
- ◆ You can only switch the function on and off (On/Off), (see page 39, points 1-3)
- ◆ Otherwise no other settings are necessary.

Automatic dusk operation via astro function

- ◆ The astro function also causes the roller shutter to close automatically.
- ◆ The time at which the DOWN command is given is dependent on the time of year and the geographical location.
- ◆ The astro function can only be carried out if you have entered your postcode once beforehand in expert mode (see page 54).

Switching the astro function on or off/setting the time delay

Buttons

Indication in the display

1. **Open the menu**
2. **Select and open the automatic dusk mode ()**
3. **Switch on the automatic dusk mode**

On = on

OFF = off (factory setting)

4. **Set the time delay**

The time delay can be used to change the closing time of the automatic dusk mode by +/- 60 minutes (in increments of 10 min.).

The automatic dusk mode closes (xx) minutes ...

..earlier	or	later
-10		10

Switching the astro function on or off/setting the time delay

Buttons

Indication in the display

5. **Confirm the actual lowering time (incl. delay) for the current day.**

ADVICE

The latest lowering time is 23:59.

6. **Return to normal display**

ADVICE

- ◆ The closing command comes from a master device by radio.
- ◆ You can only switch the function on and off (On/Off), (see page 39, points 1-3)
- ◆ Otherwise no other settings are necessary.

Automatic random operation

This setting results in a delay of the set switching times by 0 to 30 minutes.

ADVICE

- u Automatic random operation is not valid for the dusk times.
- ◆ In slave mode each slave device has its own time delay so that not all devices react at the same time.

Switching the automatic random operation on or off

- | Buttons | Indication in the display |
|---------|---|
| 1. | Open the menu |
| 2. | Select and open automatic random operation () |
| 3. | Switch the automatic random operation on or off |
| | On = on |
| | OFF = off (factory setting) |
| 4. | Return to normal display |

Setting the time / () and date

ADVICE

If no time signal was received when taking the device into operation, then you already set the time and date during the basic settings. You can also set the date and/or time at any time, as shown here, via the menu.

If a time signal is received the data cannot be changed, although it is possible to read the data off.

Buttons	Indication in the display
---------	---------------------------

- | | |
|----|---|
| 1. | Open the menu |
| 2. | Select and open the time () |
| 3. | Set and confirm the current hour
(e.g. 13:00) |

The minutes will then flash.

- | | |
|-----|---|
| 4.a | Set and confirm the current minutes. In the same way as the time, set the date ()
◆ day / month / year |
|-----|---|

Confirm each setting by pressing the OK button.

Setting or correcting the end positions

You set the end positions when taking the Rollotron[®] Pro comfort DuoFern[®] into service, see page 21/22. If necessary, you can call up the end positions in the menu any time and change these.

Buttons	Indication in the display
1.	Open the menu
2.	Select and open the end positions ()
3.	Set or correct upper and lower end positions according to page 21/22
4.	Return to normal display

Switching the button lock on/off

Buttons	Indication in the display
---------	---------------------------

The button lock function protects against the settings being altered unintentionally.

1. Switch on the button lock

Normal display with active button lock

Press the buttons in the correct sequence: 1. (OK) + 2. (M)

Display shown after pressing the (M) button

After that the lock symbol flashes in the display for 3 seconds.

TIP

Manual operation and switching between AUTO/MANU is still possible at any time despite the button lock.

1.a Automatic button lock

After approx. 2 minutes without input, the buttons are automatically locked, provided this function has been activated in expert mode, see page 55.

2. Switch on/off button lock ()

Normal display without button lock

Press the buttons in the correct sequence: 1. (OK) + 2. (M)

Registering and de-registering in the DuoFern® radio network

You can register up to 20 DuoFern® end devices with a Rollotron® Pro comfort DuoFern®.

Buttons

Indication in the display

1. **Open the menu**

2. **Select and open the DuoFern® function ()**

The number of currently registered DuoFern® end devices is displayed.

3. **Register a new DuoFern end device®**

The register mode is active as long as the **On** flashes (max. 60 seconds).

3.a **Activate the register mode of the desired DuoFern® end device according to the operating instructions.**

After successful registering, the number of registered partners is displayed.

3.b **It is possible to register further end devices.**

Registering and de-registering in the DuoFern® radio network

Buttons

Indication in the display

4. De-register a DuoFern® end device

The de-register mode is active as long as the **Off** flashes (max. 60 seconds).

4.a **Activate the de-register mode of the desired DuoFern® end device according to the operating instructions.**

After successful de-registering, the number of registered partners is displayed.

4.b **It is possible to de-register further end devices.**

Fault message:

Possible causes of faults when registering and de-registering:

- ◆ The attempt was made to register two slave devices with each other.
- ◆ The maximum number of DuoFern® end devices was exceeded
- ◆ A DuoFern® end device reports a fault
- ◆ The attempt was made to de-register a DuoFern® end device which had not been registered in the first place.

Registering and de-registering in the DuoFern® radio network

Buttons **Indication in the display**

5. Abort registering or de-registering

After an abort, the current number of devices appears.

1. Call up the menu, see page 47 points 1 and 2

AUTO/MANU for 4 seconds

2. Purging

- u This function deletes all DuoFern® end devices that are registered but that no longer react. This could be necessary, for example, in the case of a faulty device which can no longer be deleted as described in point 4.
- u During the de-registering procedure a black line goes round in a circle in the right half of the display.
- u On the left the current number of DuoFern® end devices which are registered appears.

ADVICE

Battery powered DuoFern devices (e.g. the DuoFern® hand transmitter 9491) should not be/cannot be de-registered in this way.

Registering and de-registering in the DuoFern® radio network

Buttons	Information in the display
1.	Call up the menu, see page 47 points 1 and 2
2.	Delete all DuoFern® end devices which are registered
(♦ + ♦)	for 5 seconds

Delete

u This function deletes all DuoFern® end devices that are registered.

♦ The number is set to 0.

ADVICE

The DuoFern® end devices remain registered even after a software reset (see page 62).

Expert mode

The expert mode provides various functions (menu items) which allow you to adapt the Rollotron® Pro comfort DuoFern® programme procedure to your wishes.

The settings are not compulsory and only require to be carried out once for the basic setting procedure.

Functions in expert mode

Menu-item	Function
1	= Set the contrast for the display
2	= Deactivate summer/winter time changeover
3	= Set clock mode
4	= Indication of quality of DCF reception
5	= Automatic dusk mode, switch between light/astro/radio control
6	= Switch automatic button lock on/off
7	= Set the ventilation position
8	= Set master/slave function
9	= Transmit and receive the time
10	= Activate/deactivate the function (only in master mode) "transmit manual command"
11	= Select sunlight protection function
12	= Activate/deactivate the function (only in master mode) "transmit automatic states"

Example: calling up expert mode/selecting and setting menu items

Buttons	Indication in the display
1. Open the menu	
2. Select expert mode ()	
3. (OK)+(M) Keep pressed for 2 seconds	open expert mode The menu item flashes. Press buttons in correct order: 1st (OK) + 2nd (M)
4. Parameter Menu item (1-12)	Select and confirm menu item (1- 12) The parameters will then flash
5. Set and confirm the parameters The menu items flash again.	
6. Select and open the next menu item (1 - 12)	
or	
6.a Exist expert mode and return to normal display	

Overview of all menu items and parameters in expert mode

Menu item	Function / Display	Parameter/Brief explanation
1	Set the contrast	0 to 20 0 = less contrast 20 = strong contrast 10 = factory setting
2	Automatic summer/ winter time changeover	0 and 1 0 = deactivated 1 = activated (factory setting) The Rollotron® Pro has an automatic summer/winter time changeover, which can be switched off.
3	Clock modes	1 to 5 1 = EU (50 Hz mains) with DCF radio clock (factory setting) 2 = EU (50 Hz mains) without DCF radio clock 3 = Quarz clock with DCF radio clock 4 = Quarz clock without DCF radio clock 5 = USA (60 Hz mains) without DCF radio clock

Overview of all menu items and parameters in expert mode

Menu item	Function / Display	Parameter/Brief explanation
4	Indication of the quality of DCF reception	0 to 5 (no setting options) 0 = no reception 5 = good reception ADVICE It takes a few seconds (5-10 seconds) until the indication is displayed.
5	Switching over between radio / light and astro function	- - up to 255 - - = Automatic dusk mode via radio Factory setting - slave 00 = Light sensor function activated Factory setting - master 01 to 255 = Astro function activated 01 to 99 = Postcode in Germany (the first two figures) 101 to 255 = Different European cities, see table on page 73.

Overview of all menu items and parameters in expert mode

Menu item	Function / Display	Parameter/Brief explanation
6	Automatic button lock	0 and 1 0 = Off (factory setting) 1 = On

To protect the Rollotron® Pro comfort DuoFern®. from unintentional input, you can activate the automatic button lock function.

2 minutes without input

If the automatic button lock is switched on and no input is entered for a period of 2 minutes, the buttons are locked automatically.

TIP

- ◆ Manual operation and switching over between AUTO/MANU is possible at any time despite the button lock.
- ◆ Temporary release of button lock: (OK) + (M)

Overview of all menu items and parameters in expert mode

Menu item	Function / Display	Parameter/Brief explanation
7	Ventilation position	0 and 1 0 = Off (factory setting) 1 = On
		1 = Activate ventilation position
		Set or alter ventilation position To do this, move the roller shutter into the desired position and then confirm with OK . u In the case of automatic lowering the roller shutter always stops at the set ventilation position, but it can be closed completely by hand after this.

Overview of all menu items and parameters in expert mode

Menu item	Function / Display	Parameter/Brief explanation
8	Set master/slave function	1 to 3 1 = Slave mode 1 (factory setting) <ul style="list-style-type: none">◆ Reacts to switching commands from the master device◆ No input and performance of your own local switching commands 2 = Master mode <ul style="list-style-type: none">◆ Transmits all settings and switching commands to the registered radio partners 3 = Slave mode 2 <ul style="list-style-type: none">◆ Reacts to switching commands from the master device◆ Additional input and performance of your own local switching commands and automatic commands possible.

Overview of all menu items and parameters in expert mode

Menu item	Function / Display	Parameter/Brief explanation
9	Transmit/receive time	1 to 3 1 = The time is not transmitted by radio to other DuoFern® end devices and is not received or ignored by other DuoFern® end devices (factory setting) 2 = The time is relayed to other DuoFern® end devices periodically by radio. 3 = The time can be received by other DuoFern® end devices by radio.

ADVICE

Depending upon local conditions (good or poor DCF reception) you can relay the DCF time to all the devices in the DuoFern® radio network by adjusting the parameters.

Example:

A Rollotron® Pro comfort DuoFern® as a slave device has DCF reception, but the master device does not. In order to operate the master as well according to the current DCF function, set the slave to parameter 2 and the master to parameter 3. After exiting the menu, the time will be automatically relayed.

Overview of all menu items and parameters in expert mode

Menu item	Function / Display	Parameter/Brief explanation
10	Activate/deactivate the function "transmit manual command"	0 and 1 0 = In normal operation no manual switching command is transmitted to other DuoFern® end devices (factory setting) 1 = In normal operation every manual command is transmitted to other DuoFern® end devices. ‡ This means that all devices registered in the DuoFern® radio network perform the same actions (UP/stop/DOWN).

Overview of all menu items and parameters in expert mode

Menu item	Function / Display	Parameter/Brief explanation
11	Select sunlight protection function	1 to 3 1 = Local sunlight protection programme ◆ The roller shutter moves as far as the light sensor ◆ No switching commands are transmitted. 2 = Local sunlight protection programme (factory setting - master) ◆ The roller shutter moves to the sun position ◆ Switching commands are transmitted to other DuoFern® end devices. 3 = Central sunlight protection programme (factory setting - slave) ◆ The roller shutter moves to the sun position u The switching commands are received via radio. ADVICE For sunlight protection programmes 2 and 3, the sun position must be set beforehand in each case.








































Overview of all menu items and parameters in expert mode

Menu item	Function / Display	Parameter/Brief explanation
12	Activate/deactivate the function "transmit automatic states"	<p>0 and 1</p> <p>0 = The automatic states are not transmitted</p> <ul style="list-style-type: none">◆ Slave devices are not influenced in this case.◆ Local activation possible in the Rollotron® comfort DuoFern® (slave). <p>1 = Each change to the automatic states is transmitted to the registered slave devices and is adopted by these. (factory setting - master)</p> <ul style="list-style-type: none">◆ Local changes to the automatic states in the slave devices are possible at any time. <p>ADVICE The local automatic state is overwritten by a change at the master.</p>

Deleting settings/software reset

Buttons

Indication in the display

- 1. For 8 seconds** **Software reset**
Hold all four buttons pressed at the same time for 8 seconds
ADVICE
The DuoFern® end devices which are registered will not be deleted.
- 2. The following messages then appear in quick succession:**
 - ◆ Version number
 - ◆                                       
 - ◆ Display off
- 3. Let go of button** **All settings are deleted.**
The factory settings apply again, see page 71.
The basic settings from page 20 onwards must be repeated.

Deleting settings/hardware reset

Buttons	Indication in the display
1. (R) For 2 s	<p>Press reset button (see page 3) carefully with a thin (but not too sharp) object.</p> <p>Hardware reset After a hardware reset all settings are retained except the time and the date.</p> <p>IMPORTANT Never press the reset button when the motor is running, as this alters the end positions.</p>

Operating the Rollotron[®] Pro comfort Duo Fern[®] / manual operation

ADVICE

Manual operation is possible in all operating modes and takes precedence over the automatic functions.

Buttons	Description
1.	Open the roller shutter The roller shutter moves to the upper final limit stop.
2.	Stop the roller shutter (◊) or (◆) or (AUTO/MANU)
3.	Close the roller shutter The roller shutter is lowered to the lower end position.

TIP

If a ventilation position is set then the roller shutter stops at this position.
By pressing the DOWN button again the roller shutter will close completely.

UP button

AUTO/MANU button

DOWN button

Removing the Rollotron[®] Pro comfort Duo Fern[®]

1. **Close the roller shutter completely**
2. **Delete end positions**
Press for approx. 8 seconds
3. **Press and keep pressed (if necessary several times).**
4. **From the front, pull the belt as far as possible by hand out of the Rollotron[®] Pro comfort DuoFern[®] over the deflection roller**
5. **Loosen the fixing screws and take the Rollotron[®] Pro comfort DuoFern[®] out of the belt box**
6. **Remove the belt cover**
7. **Check the position of the fixing hook and if necessary move the hook into the correct position in order to remove the belt.**
There is a danger of being injured by the winding wheel.
Never reach into the mounting opening when the motor is running. Always disconnect the plug from the mains before reaching into the mounting opening.
8. **Switch off the electric current and unplug the mains connection**
The risk of electric shock here represents a life-threatening danger.
Check that the cable is dead before disconnecting the Rollotron[®] Pro.
9. **Pull the belt from the fixing hook and pull it completely out of the Rollotron[®] Pro at the front.**

Removing the belt after a total breakdown

If the Rollotron® Pro comfort DuoFern® breaks down completely and the motor no longer works, you can pull the belt completely out of the roller shutter drive with the help of the attached transmission release clip without having to cut the belt.

ADVICE

After a total breakdown have the Rademacher Service Department check the device over.

- 1. Remove the Rollotron® Pro, see page 65.**
- 2. Disconnect the power supply and unplug the mains connection.**
- 3. Insert the release clip into the transmission with a light pressure and hold it tight.**
- 4. Pull the belt out of the Rollotron® Pro at the front and detach it from the fixing hook.**
- 5. Re-insert the release clip.**

Gear release

Storage compartment for the release clip

**Rollotron® Pro comfort DuoFern®
(article no. 9800 / 9805)**

Useful information

Care

You can clean the Rollotron® Pro comfort DuoFern® with a damp cloth. Please do not use any aggressive or abrasive detergents.

Maintenance

Check your Rollotron® Pro comfort DuoFern® and all its components for damage at regular intervals: Have any damaged parts replaced by your dealer.

What to do if...??

... the roller shutter does not stop at the set end positions?

Possible cause: The belt has stretched and the end positions have changed as a result.

Solution: You need to set the end positions again (see page 45).

... no DCF reception is possible and the DCF symbol flashes?

Possible cause: You are operating the Rollotron® Pro comfort DuoFern® in a cellar or in a location directly affected by metals?

Solution: Try to improve reception by carefully turning the setting screw, see page 20.

TIP! Other electrical appliances (e.g. television sets, vacuum cleaners, cordless headphones, battery rechargers etc.) in the proximity of the Rollotron® Pro comfort DuoFern® can also interfere with the DCF reception.

... after mounting the roller shutter does not move all the way up.

Possible cause: The setting of the upper end position is incorrect.

Solution: Repeat the setting for the upper end position (see page 45)

What to do if...??

... the roller shutter gets stuck while lowering it?

Possible causes: roller shutter box:

- ◆ The slats have moved out of place.
- ◆ The shutter rubs against the window frame in the shutter box due to missing pressure rollers.
- ◆ Insulation material has come loose and is obstructing the roller shutter.
- ◆ The roller shutter is too light.

Solution: If possible, move the roller shutter in the opposite direction.

- ◆ Open the roller shutter box and remedy the problem.
- ◆ If necessary grease areas moving with difficulty with a friction-reducing wax.
- ◆ If the shutter is too light, make it heavier. For example, slide a suitable flat iron bar into the lowest slat.

...the Rollotron® Pro comfort DuoFern® no longer reacts properly manually or automatically?

Solution: Carry out a hardware reset according to page 63 and test the Rollotron® Pro comfort DuoFern® with the factory settings.

If the Rollotron® Pro comfort DuoFern® still does not react after a hardware reset, please carry out a software reset (see page 62).

What to do if...??

... the roller shutters do not go up in the morning at the set time?

Possible The electronics have deactivated the drive

causes: after closing the roller shutter
since the deflection roller did not move.
This is the case if:

- ◆ during the setting of the end position the DOWN (◆) button is pressed for too long. The slats of the shutters are closed but the belt winds itself further so that it isn't pulled taut over the deflection roller.
- ◆ The belt has stretched so that the actual lower end position has been changed. In this case the belt does not lie taut on the deflection roller.

Solution: The belt should never be slack.

- ◆ Set the lower end point again.
Take care that the belt is taut across the deflection roller and that the deflection roller turns evenly as the shutter closes as long as you keep the DOWN (t) button pressed.

Technical data

Article number:	9800 / 9805
Supply voltage:	230 V / 50 Hz
Nominal output:	approx. 70 W
Standby rating:	≤1.4 W
Nominal torque:	approx. 10 Nm (for art. no. 9805 approx. 14 Nm)
Short term operation:	5 minutes
Overrun:	< 0.4 revolutions
Protection category:	II (only for dry rooms)
Number of switching times:	max. 16
Power reserves:	approx. 8 hours (in the event of a power cut)
Random generator:	(+) 0 - 30 min.
Permissible ambient temperature:	0°C to 40°C
Housing material:	recyclable plastic
Transmission frequency:	434.5 MHz
Transmitting power:	10 mW
Range:	
- Free field:	approx. 100 m
- Indoors:	approx. 20 m, depending upon the building fabric

TIP

The range can be optimised due to the routing function through additional DuoFern® end devices (e.g. by using a 2-channel actuator, art. no. 9470).

Technical data

Adjustment range

Sunlight sensitivity: 2000 - 20 000 lux
Dusk sensitivity: 2 - 50 lux

Data loss

In the event of a power cut, the clock continues running for approximately 8 hours (power reserve). All other data remains permanently saved.

Power reserve

The Rollotron® Pro comfort DuoFern® has a power reserve of approximately 8 hours.

Factory settings

Time / date: 12:00 / 01.04.2007
Standard programme switching times: UP = 07:00 / DOWN = 20:00
Automatic: On
Weekly programme switching times: UP = 07:00 / DOWN = 20:00
Automatic sunlight mode: Off
Automatic sunlight mode limiting value: 43
Automatic dusk mode: Off
Automatic dusk mode limiting value: 7
Random function: Off
Weekly programme: Off
Master/slave operation: Slave

Technical data/Traction force diagram

Traction weight (kg)

Belt length (m)

Belt thickness 1.0 mm / 1.3 mm / 1.5 mm

*** = Belt lengths for article no. 9800**

**** = Belt lengths for article no. 9805**

Time zone table

Belgium

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

Denmark

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

UK

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 Montepellier
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 Torino
151 Venice

Ireland

152 Cork
153 Dublin
154 Belfast

Latvia

155 Riga

Liechtenstein

156 Vaduz

Lithuania

157 Vilnius

Luxembourg

158 Luxembourg

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 Bromburg
186 Gdansk
187 Katowice
188 Krakow
189 Lodz
190 Lublin
191 Poznan
192 Szczecin
193 Warsaw

Portugal

194 Faro
195 Lisbon
196 Porto

Switzerland

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

Sweden

204 Boras
205 Gävle
206 Gothenburg
207 Helisingborg
208 Joenkoeping
209 Östersund
210 Malmo
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 Zaragoza
239 La Palma
240 Tenerife
241 Grand Canary
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

General view of display and quick user guide, please unfold page

Accessories

Deflection roller
(article no. 3590/3595)

Light sensor
(article no. 3710)

Standard = 0.75 m

optionally available in the following lengths

1.5 m / 3 m

5 m / 10 m

Mini cable conduit 2 m
(article no. 3730)
not pictured

Universal double plug
(article no. 3742 = white)
(article no. 3745 = brown)

**Mains cable with
flat two-pinned plug**
(article no. 3880)

Supply package = 1.5 m

optionally available in the following lengths

2 m

3 m

5 m

Quick user guide and general view of display

Weekdays

Numeric display

Current light intensity value

Switching between automatic/manual operation

From left to right:

UP/DOWN switching times

Weekly programme

Sunlight protection programme

Dusk programme

Random operation programme

Clock and date setting

End position setting

DuoFern[®] radio network

Expert mode

Button lock function

DCF reception

Quick user guide

Call up and set functions:

(M) Call up or exit menu

(s/t) Select function

(OK) Confirm function

(s/t) Change values in setting mode

(OK) Confirm input/next value/
return to menu

Activate/deactivate the button lock

1. (OK) + 2. (M)

Set contrast

M > E > OK + M (3s) > 1 >
OK > 0 to 20 s > OK > M

