



Table of contents

1	Operating and installation instructions	1
2	General information	1
2.1	Standards and guidelines	2
2.2	Intended use	2
2.3	Foreseeable misuse	2
2.4	Warranty and liability	2
2.5	Customer service of the manufacturer	2
3	Safety	2
3.1	General safety instructions	2
3.2	Layout of safety instructions	2
3.3	General safety principles	3
3.4	General obligations of the operator	3
3.5	General requirements on personnel	3
3.6	Safety instructions on technical condition	4
3.7	Safety instructions on transport, assembly and installation	4
3.8	Safety instructions on operation	4
3.9	Safety instructions on electrical installation	4
4	Product description	4
5	Installation	5
5.1	Mechanical mounting	5
5.2	Electrical connection	6
5.3	Connection example SunTop-915 120 V / 60 Hz	6
5.4	Parallel connection	6
5.5	Commissioning	6
5.5.1	Installation cable connection	6
5.5.2	Wireless connection (transmitter operation)	6
5.6	End position and relief settings	6
5.6.1	Relief function for end position(s)	7
5.6.2	Relief function at the upper stop	7
5.6.3	Relief function at the lower stop	7
5.6.4	Changing / deleting of end positions and deleting the relief function	7
5.6.5	Programming or deleting additional fabric positions	7
5.6.6	Four options for end position settings	7
5.6.7	Option A: Upper and lower end position freely configurable	7
5.6.8	Option B: Fixed upper end position,	

	lower end position freely configurable	8
5.6.9	Option C: Fixed upper and lower end position	8
5.6.10	Option D: Upper end position freely configurable, fixed lower end position	8
5.7	Transmitter programming	8
5.8	Programming additional transmitters(s)	9
5.9	Technical data	9
6	Troubleshooting	9
7	Servicing	9
8	Cleaning	9
9	Repair	9
10	Address	9
11	Disposal / scrapping	10
12	EC Declaration of Conformity	10
13	US: Addendum to the manual UL approval	10
14	CA: Addendum au manuel Homologation UL	10

Roller shutter drive SunTop-915
120V / 60Hz

1 Operating and installation instructions

Please keep these operating instructions for later use and have them available during the complete service life of the product!

The German version of these operating instructions is the original version.

All foreign language documents are translations of the original version.

All rights reserved with regard to patent claim or submission of design or utility patent.

2 General information

The structure of these operating instructions is based on the service life phases of the electrical drive (subsequently referred to as product).

The manufacturer reserves the right to make changes to the technical data included in these operating instructions. These may deviate from the respective model of the product while the factual information are generally not changed and are not losing their validity. The current state-of-the-art can be obtained from the manufacturer at all times. Potential claims cannot be asserted. Deviations from text and pictorial statements are not possible and depending on the technical development, setup and accessories of the product. Deviating information on special models are included by the manufacturer in the sales documentation. Other information shall remain unaffected by this.

2.1 Standards and guidelines

During system design, basic safety and health requirements of applicable laws, standards and guidelines were observed. The safety is confirmed by means of the Declaration of Conformity (refer to „EC Declaration of Conformity“). All safety information in these operating instructions are based on currently applicable laws and regulations in Germany. All information in the operating instructions must be observed at all times. Apart from the safety instructions in these operating instructions, applicable local regulations on prevention of accidents, environmental protection and occupational safety must be observed. Regulations and standards for safety assessment can be found in the EC Declaration of Conformity.

2.2 Intended use

This product is intended for use in facade construction for driving electrical sun protection devices.

Decisive for the determination of the drive system is the **elero** drive computation program (<http://elero.com/en/service/drive-computation-program.htm>).

Other applications must be approved in advance by the manufacturer **elero** GmbH Antriebstechnik (refer to „Address“).

The operator alone is liable for all damage due to improper use of the product. The manufacturer does not assume any liability for personal injuries and property damage due to misuse or procedural violations by improper use or commissioning.

The product may only be operated by trained and authorized personnel under observation of all safety instructions.

Safe and correct operation and operational safety of the product is subject to operation according to its intended use according to the provisions of these operating and installation instructions.

The receiver must only be connected with equipment and systems approved by the manufacturer. The operator is not protected against interference by other wireless systems and terminal equipment (e. g. also by means of wireless systems) that are properly operated within the same frequency range. Wireless systems must not be operated in areas with increased interference factor (e. g. hospitals, airports etc.). Remote control is only allowed for equipment and systems if malfunctions in hand/wall transmitters or receivers do not lead to damage for personnel, animals or property or if this risk is covered by other safety installations.

The intended use includes observance and compliance of all safety instructions included in these operating instructions and all applicable regulations by the trade association and applicable laws for environmental protection. The intended use also includes compliance of all company regulations included in these operating and installation instructions.

2.3 Foreseeable misuse

Foreseeable misuse includes operating the product not in accordance with the intended use approved by the manufacturer **elero** GmbH Antriebstechnik (refer to „Address“).

2.4 Warranty and liability

Generally, the general terms and conditions of sale and delivery of the manufacturer **elero** GmbH Antriebstechnik (refer to „Address“) apply. The terms and conditions of sale and delivery are part of the sales documentation and are handed over to the operator on delivery. Liability claims for personal and property damage are excluded if such damage is due to one or several of the following causes:

- Opening the product by the customer

- Improper use of the product
- Incorrect installation, commissioning or operation of the product
- Structural changes to the product without the written approval of the manufacturer
- Operating the product with incorrectly installed connections, defective safety equipment or with not properly installed safety and protective equipment
- Failure to observe the safety regulations and instructions included in these operating instructions
- Non-compliance with the specified technical data

2.5 Customer service of the manufacturer

In case of a defect, the product may only be repaired by the manufacturer. Please refer to section „Address“ for the return address of the customer service. If you did not acquire the product directly from **elero**, please contact your supplier.

3 Safety

3.1 General safety instructions

These operation and installation instructions include all safety instructions for prevention and avoiding of dangers during handling of the product over its entire life cycles. Compliance with all specified safety instructions ensures safe operation of the product.

3.2 Layout of safety instructions

The safety instructions in this document are marked by danger signs and safety symbols and are designed according to the SAFE principle. They include information on type and source of the danger as well as on possible consequences and on prevention of the danger.

The following table defines the design and description of the levels of danger with potential physical injuries as they are used in these operating instructions.




Symbol	Signal word	Description
	DANGER	Warns of a potential accident with if instructions are not complied with leading to life-threatening, irreversible injuries or death.
	WARNING	Warns of a potential accident with if instructions are not complied with leading to severe, potentially life-threatening, irreversible injuries or death.
	CAUTION	Warns of a potential accident with if instructions are not complied with leading to light, reversible injuries.

Fig. 1 Notation of personal injury

The following table describes symbols used in these operating instructions for illustration of dangerous situations in connection with the respective symbol for the level of danger.


Symbol	Description
	Danger due to voltage, electrical shock: This symbol indicates dangers due to electricity.

Fig. 2 Notation of a specific danger

The following table defines the illustration and description of situations in these operating instructions that may lead to damage to the product or indicates facts, conditions, tips and information.



Symbol	Signal word	Description
	NOTE	This symbol warns of potential property damage.
	IMPOR- TANT	This symbol indicates important facts and conditions as well as further information in these operating and installation instructions. Additionally, it refers to certain instructions giving additional information or helping you to perform a task.

Fig. 3 Notation of property damage and additional information

The following example illustrates the general layout of a safety instruction:



Type and source of danger

Description of the type and source of danger

► Measures for prevention of the danger.

3.3 General safety principles

The product was designed according to the state-of-the-art and recognized safety-related rules and is safe for operation. During product design, basic safety and health requirements of applicable laws, standards and guidelines were observed. The safety of the product is confirmed by the EC Declaration of Conformity.

All information on safety refer to currently applicable directives of the European Union. Operators in other countries must ensure that applicable local laws and regulations are observed.

Apart from the safety instructions in these operating instructions, generally applicable regulations on prevention of accidents and environmental protection must be observed.

The product must only be used in technically flawless condition and for proper safety-conscious and risk-conscious use while observing the operating instructions. The product is designed for operation according to section „intended use“. Operation of the product not according to its intended use may lead to danger for life and limb of the user and third parties or cause damage to the machine and other properties. The manufacturer must be immediately and directly informed on accidents or near misses during operation of the product that caused or may have caused personal injuries and or damage to the working environment.

All safety instructions in the operating instructions and on the product must be observed. Additionally to observing these safety instructions, the operator must ensure that

all national and international regulations applicable in the country of operation and other binding regulations on operational safety, prevention of accidents and environmental protection are complied with. All work on the product must only performed by trained, safety-related instructed and authorized personnel.

Appropriately qualified personnel must observe all applicable standards and regulations in the country of installation and inform the customer on the operating and maintenance requirements of the product.

3.4 General obligations of the operator

- The operator is obliged to only operate the product in technically flawless and operationally safe condition. The operator must ensure that apart from the safety instructions in the operating instructions, generally applicable regulations on safety and prevention of accidents, the provisions of DIN VDE 0100 as well as the regulations on environmental protection of the respective country of operation are observed and complied with.
- The operator is obliged to ensure that all work on the product is carried out by trained and safety-related instructed and authorized personnel.
- Ultimately responsible for accident-free operation is the operator of the product or the personnel authorized by him.
- The operator is responsible for compliance of the technical specifications particularly the statistic and dynamic load limits.
Non-compliance with static load limits may lead to loss of the supporting or holding function.
- With respect to the intended use, the operator must ensure dry, not too warm ambient conditions (building conditions) under the influence of radial heat. Deviations must be approved by the manufacturer.

3.5 General requirements on personnel

- Each person commissioned to work with the product must have read and understood the entire operating instructions prior to carrying out the respective work. This does also apply if the person has already worked with this kind of product or was trained on it.
- Before start of all work, the personnel has to be made aware of all dangers in connection with working on the product.
- All personnel commissioned to work with the product must have no physical limitations temporarily or permanently influencing their attention or good judgment (e. g. by fatigue).
- Handling the product or any assembly, disassembly and cleaning by minors or under the influence of alcohol, drugs or medication is not permitted.
- Personnel must wear appropriate personal protective equipment according to the work to be carried out and the present work environment.
- Children must not play with fixed control panels. Keep remote controls away from children.
- Observe moving roller shutters and keep persons on a distance until the shutter has properly closed.
- Do not operate the sun blind(s) if work like window cleaning is carried out near by.

3.6 Safety instructions on technical condition

- Prior to installation the product must be checked for damage and proper condition.
- The operator is obliged to only operate the product in technically flawless and operationally safe condition. The technical condition must comply with statutory requirements applicable at the date of manufacturing stated on the name plate.
- If dangers for personnel or changes in the operational behavior are identified, the product must be put out of operation immediately and the operator must be informed on the incident.
- Without approval by the manufacturer, no modification, extensions or alterations must be carried out on the product.
- The system must be regularly checked for imbalance or signs of wear or damaged cables and springs (if applicable).

3.7 Safety instructions on transport, assembly and installation

In general, the respective transport company is responsible for transporting the product. The following safety requirements must be observed during transport, assembly and installation of the product:

- During transport, the product must be secured according to the regulations of the used means of transport.
- For transport, only hoisting equipment and suspension gear must be used that are appropriately dimensioned for safely handling the forces occurring during loading, unloading and assembly of the product.
- Only points defined for hoisting or suspension at the pallet and the product must be used for hoisting or suspension.
- If work must be carried out under suspended parts or working equipment, these must be secured against falling by suitable means. It must be ensured by suitable hoisting equipment that loads drift unintentionally, fall or get unhooked unsupervised.
- Standing under suspended loads is forbidden.
- During loading with hoisting equipment, a safety helmet must be worn.
- Assembly and installation must generally only be carried out by trained and suitably instructed specialists.
- The rated torque and the rated operating time must be suitable for the properties of the driven component („fabric“).
Decisive for the determination of the drive system is the drive computation program of the manufacturer.
- The smallest internal tube diameter for the winding shaft of the SunTop-915 type M is 47 mm.
- Access to the drive system must be ensured by a freely accessible appropriately sized inspection flap that can easily be opened.

3.8 Safety instructions on operation

- Before initial commissioning, the operator is obliged to inspect the product for safe and proper operation.
- Inspections must also be carried out during operation of the product in regular intervals defined by the operator.

3.9 Safety instructions on electrical installation

- Work on the electric system of the used equipment must only be carried out by authorized electricians according to applicable rules and regulations by the trade association, particularly the provisions of DIN VDE 0100. Additionally, the national legal regulations of the respective country of operation must be observed.
- In case of defects like loose connections or defective or damaged cables on the system, the product must not put into operation.
- Prior to any inspection, installation or disassembly work, the system (blinds, shutter) must be disconnected from the voltage.
- All electrical connections, safety equipment, safeguards etc. must be properly installed, connected and grounded.
- The power connection must be designed according to the information in the electrical circuit diagram (type and level of voltage).
- One circuit breaker is sufficient to disconnect the system from the mains supply (if only one phase and neutral is used).
- If one fixed (stationary installed) drive system is not equipped with a mains cable with plug or other means of disconnection from the mains supply with a contact opening width according to the provisions of overvoltage category II (according to IEC 60664-1) for full disconnect, an isolating device of this kind must be installed into the fixed electrical installation according to the installation regulations.
- Mains connection cables for drive systems with rubber hose cables (code 60245 IEC 53) must always be replaced by cables of the same type.
- The following applies for drive systems with access to unprotected, movable parts after installation: Movable parts of the drive system must be installed at least 2.5 m above the ground (or another level providing access to the drive system).

4 Product description

The SunTop-915 is a wireless-controlled electromechanical tubular motor drive. During operation it carries out radial movements.

- Commissioning of the SunTop-915 with **elero** installation cable or transmitter for configuration of various functions.
- Fabric protection system with retraction
- Fabric relief function (fabric protection system)

Relief function and retraction for fabric protection are only active in wireless operation.

- The values for your SunTop-915 model can be found on the name plate.
- Depending on torque and size, the different models of the SunTop-915 are equipped with different types of braking systems. This may lead to different operating properties e. g. when approaching an end position.

5 Installation

CAUTION

Risk of injury due to hot surfaces.

The drive system gets hot during operation, therefore the housing may be hot. Risk of skin burns.

- ▶ Wear personal protective equipment (protective gloves).

Due to potential material defects, a broken gear unit, drive or coupling defect may cause injuries from impacts or shocks.

- ▶ For design of the system, suitable materials were used and a sampling test in form of a double load test according to DIN EN 60335-2-97 was carried out.

Risk of injury from impacts or shocks due to incorrectly installed or not properly engaged motor bearings. Risk due to insufficient stability and stored energy (gravity).

- ▶ Selection of motor bearings according to torque specifications.
- ▶ The drive system must be secured with all provided safety equipment.
- ▶ Inspection for proper engagement on the motor bearing and correct screw tightening torques.

WARNING

Risk of injury due to electricity.



Risk of electric shock.

- ▶ Electrical work must only be carried out by authorized electricians.

Risk of injury due to electricity.



Potential risk from parts that have become live due to a malfunction.

- ▶ The electrical connection including wiring is described in the operating and installation instructions.

CAUTION

Risk of injury due to malfunctions due to incorrect installation.

Excessive winding of the drive system leads to possible destruction of system parts.

- ▶ For safe operation, end positions must be set / programmed.
- ▶ Training courses by the manufacturer for specialized companies.

NOTE



Power supply failure, braking of machine components and other defects.

- ▶ For safe operation, the system must be properly installed and the end positions must be set on commissioning.



Damage to the SunTop-915 by humidity ingress.

- ▶ On protection class IP44 systems, all cables or plugs must be protected against ingress of humidity. This action must be taken immediately after removing the SunTop-915 from its original packaging.
- ▶ The drive system must be installed in a position safe from rain.

Important



On delivery (factory settings), the SunTop-915 is in commissioning mode.

- ▶ It is necessary to set the end positions (refer to section 5.6).

Optimum use of the wireless signal.

- ▶ Position the antenna as freely as possible and reposition it in case of bad reception.
- ▶ Do not bend, shorten or extend the antenna.
- ▶ Observe the minimum distance between two wireless drive systems of 15 cm.

5.1 Mechanical mounting

Important preliminary consideration:

The working space around the installed drive system is often limited. Therefore, get an overview of the implementation of the electrical connection (refer to section 5.2) prior to the mechanical installation and carry out respective changes, if necessary.

CAUTION

Risk of injury by squeezing.

- ▶ Horizontal clearance of at least 0.40 m between the completely unrolled part (bottom rail) and any other stationary component must be observed.

NOTE



Damage to electrical lines by pressure or tensile loads.

- ▶ All electrical lines must be laid safe from pressure or tensile loads.
- ▶ Observe the bending radius of the cables (at least 50 mm).
- ▶ Lay connection cables in a loop downwards to prevent water from running into the system.



Damage to the drive system by impact loads.

- ▶ Always slide the drive system onto the shaft. Never hammer onto the shaft or the drive system!
- ▶ Never drop the drive system!



Damage to or destruction of the drive system by drilling.

- ▶ Never drill into the drive system!

Important



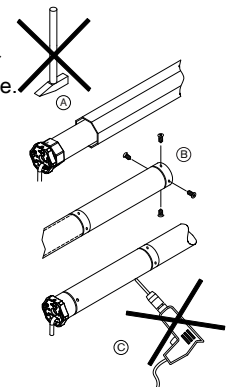
Attach the SunTop-915 only to the provided mounting elements.

Firmly mounted control units must be visible attached.

- The fabric must be mounted on the winding shaft.
- The profile tube must have sufficient clearance to the motor tube.
- Make sure there is sufficient axial play (1 - 2 mm).

Installation in profile tubes

- Ⓐ Push the drive with suitable adapter and driving collar into the profile tube. Protect the motor cable in order to avoid damage from the driven component.
- Ⓑ Secure the counterbearings to prevent axial movement, e. g. screw or rivet on shaft carrier. Axially secure the drive in the bearing!
- Ⓒ Attach the fabric to the shaft!



5.2 Electrical connection

WARNING

Danger to life due to incorrect electrical connection.



Risk of electric shock.

► Before initial commissioning, check the correct connection of the PE conductor.

NOTE



Damage to the SunTop-915 due to incorrect electrical connection.

► Before initial commissioning, check the correct connection of the PE conductor.



Damage to or destruction of the SunTop-915 due to ingress of humidity.

► For devices with protection class IP44, the customer-provided connection of cables or plugs (wiring) must also be compliant with protection class IP44.



Damage to or destruction of the SunTop-915 for models with 230 V 1 AC due to incorrect control.

► Switches that are preset to OFF (dead man) for drive systems must be mounted in viewing range of the SunTop-915 but away from moving parts and at a height above 1.5 m.

Important

For electrical connection, generally no connection and disconnection of the connection cable or plug is necessary.

Only connect when the system is disconnected from the voltage. To do so, disconnect the drive cable.

- 1 Use a suitable screwdriver to push the locking mechanism of the device plug to the cable.
- 2 Disconnect the plug.
- 3 Insert the device plug until the locking mechanism engages.

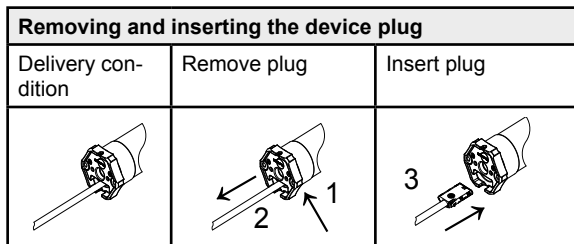


Fig. 4 Removing and inserting the device plug

5.3 Connection example SunTop-915 120 V / 60 Hz

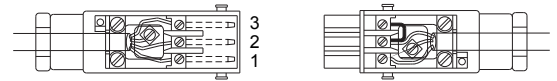
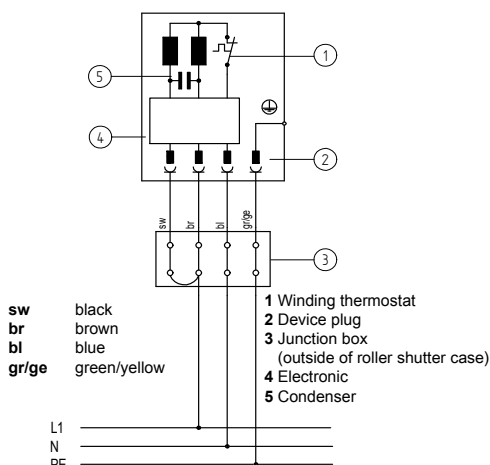


Fig. 5 Circuit diagram SunTop-915 120 V / 60 Hz and Wiring when using a Hirschmann plug connection STAS-3 (with bridge)

5.4 Parallel connection

Important



You can connect several SunTop-915 systems in parallel. To do so, please observe the maximum control capacity.

5.5 Commissioning

Important



On delivery, the drive system is set to commissioning mode.

► It is necessary to set the end positions with the **elero** installation cable (refer to fig. 6) or a **elero** wand/hand transmitter (refer to fig. 7).

► Connecting the installation cable is only for commissioning of the drive system and for configuration.

5.5.1 Installation cable connection

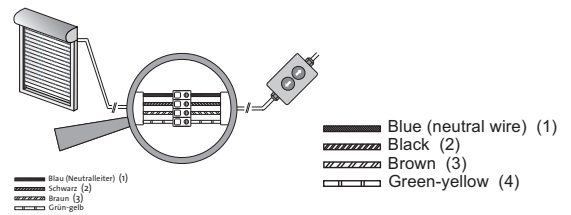


Fig. 6 Installation cable connection

- Switch on power supply.
- Now, you can set the end positions with the **elero** installation cable.

5.5.2 Wireless connection (transmitter operation)

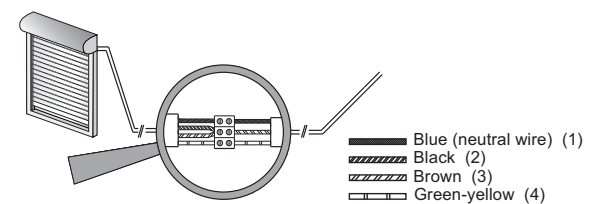


Fig. 7 Wireless connection (transmitter operation)

- Switch on power supply.
 - The drive system moves up and down briefly.
- Now, the drive system is in wireless operation.

Now, you can program the transmitter(s).

5.6 End position and relief settings

Setting of end positions and relief can either be carried out

- by means of **elero** installation cable (ensure proper connection according to section 5.5.1) or
- by means of a programmed transmitter. Programming a transmitter for a drive system is described in section 5.7.

Important preliminary consideration:

Before carrying out the end position settings, decide on a certain relief function (different combinations available according to the following models).

This will save you unnecessary time and effort during configuration!

Press one of the drive buttons until the drive system indicates switchover to setting mode with a short automatic stop. Now, you can set the end positions. After setting both end positions, the setting mode is closed.

5.6.1 Relief function for end position(s)

If one end position was programmed to limit stop, an additional relief function can be activated for the fabric.

Important



The relief function is only active in wireless operation.

Activation of the relief function (for options B to D) is carried out in one step with programming of the end positions (refer to sections 5.6.7 to 5.6.9)!

5.6.2 Relief function at the upper stop

For option B (refer to section 5.6.7) and option C (refer to section 5.6.8):
Activating the relief function at the upper limit stop

- Using the installation cable or a programmed transmitter, keep the **UP** button ▲ pressed from step ① (section 5.6.7 and 5.6.8) and press additionally (simultaneously) the **DOWN** button ▼. Keep both buttons pressed until the fabric stops.

The relief function at the upper limit stop is activated.

5.6.3 Relief function at the lower stop

For option C (refer to section 5.6.8) and option D (refer to section 5.6.9):
Activating the relief function at the lower limit stop

- In a medium fabric position, using the installation cable or a programmed transmitter, keep the **DOWN** button ▼ pressed from step ③ (section 5.6.8 and 5.6.9) and press additionally (simultaneously) the **UP** button ▲. Keep both buttons pressed until the fabric stops.

The relief function at the lower limit stop is activated.

5.6.4 Changing / deleting of end positions and deleting the relief function

It is not possible to change or delete one individual end position. This is always carried out in pairs (upper and lower end position at once).

By deleting the end positions, also the setting of the optional relief function is lost.

Important



Complete, uninterrupted up and down movement is necessary to adapt the fabric protection system to the fabric.

Changing / deleting of end positions

- In a medium fabric position, using the installation cable or a programmed transmitter, simultaneously press both direction buttons (▲ and ▼) and keep them pressed until the drive system briefly moves up and down.

Deleting the end position settings is completed.
The end positions can be reset.

5.6.5 Programming or deleting additional fabric positions

Intermediate position programming:
refer to transmitter instructions.

Ventilation position programming:
refer to transmitter instructions.

Intermediate position deleting:
refer to transmitter instructions.

Ventilation position deleting:
refer to transmitter instructions.

5.6.6 Four options for end position settings

Four different combinations of end position settings are available that can be selected according to the technical requirements of the fabric.

End position settings (4 options)	
A	Upper and lower end position freely configurable
B	Fixed upper end position, lower end position freely configurable
C	Fixed upper and lower end position
D	Upper end position freely configurable, fixed lower end position

Fig. 8 Options of end position settings for SunTop-915

5.6.7 Option A: Upper and lower end position freely configurable

Option A:
Upper and lower end position freely configurable

- In a medium fabric position, using the installation cable or a programmed transmitter, press the **UP** button ▲ until the fabric has reached the desired upper end position.
The drive system starts, stops briefly and starts again (as long as the UP button ▲ is pressed).
Corrections can be made with the buttons ▲ and ▼.
- Keep the **DOWN** button ▼ pressed until the drive system stops automatically.
The upper end position is set.
- Press the **DOWN** button ▼ again, until the fabric has reached the desired lower end position.
The drive system starts, stops briefly and starts again (as long as the DOWN button ▼ is pressed).
Corrections can be made with the buttons ▲ and ▼.
- Keep the **UP** button ▲ pressed until the drive system stops automatically.
The lower end position is set.

End position setting of option A is completed.

Fig. 9 End position setting option A:

5.6.8 Option B: Fixed upper end position, lower end position freely configurable

Option B: Fixed upper end position, lower end position freely configurable

- ① In a medium fabric position, using the installation cable or a programmed transmitter, press the **UP** button ▲ until the fabric has reached the desired upper end position (to upper limit stop).
The drive system starts, stops briefly and starts again (as long as the UP button ▲ is pressed).
The drive system automatically stops when reaching the upper limit stop.
- ② Keep the **DOWN** button ▼ pressed until the drive system stops automatically.
The upper end position is set.
Optional: Activation of the relief function for the upper limit stop: refer to section 5.6.2.
- ③ Press the **DOWN** button ▼ again, until the fabric has reached the desired lower end position.
The drive system starts, stops briefly and starts again (as long as the button is pressed).
Corrections can be made with the buttons ▲ and ▼.
- ④ Keep the **UP** button ▲ pressed until the drive system stops automatically.

End position setting of option B is completed.

Fig. 10 End position setting option B:

5.6.9 Option C: Fixed upper and lower end position

Option C: Fixed upper and lower end position

- ① In a medium fabric position, using the installation cable or a programmed transmitter, press the **UP** button ▲ until the fabric has reached the desired upper end position (to upper limit stop).
The drive system starts, stops briefly and starts again (as long as the UP button ▲ is pressed).
The drive system automatically stops when reaching the upper limit stop.
- ② Keep the **DOWN** button ▼ pressed until the drive system stops automatically.
The upper end position is set.
Optional: Activation of the relief function for the upper limit stop: refer to section 5.6.2.
- ③ Press the **DOWN** button ▼ again, until the fabric has reached the lower end position (to bottom limit stop).
The drive system starts, stops briefly and starts again (as long as the DOWN button ▼ is pressed).
The drive system automatically stops when reaching the lower limit stop.
- ④ Keep the **UP** button ▲ pressed until the drive system stops automatically.
The lower end position is set.
Optional: Activation of the relief function for the lower limit stop: refer to section 5.6.3.

End position setting of option C is completed.

Fig. 11 End position setting option C:

5.6.10 Option D: Upper end position freely configurable, fixed lower end position

Option D: Upper end position freely configurable, fixed lower end position

- ① In a medium fabric position, using the installation cable or a programmed transmitter, press the **UP** button ▲ until the fabric has reached the desired upper end position.
The drive system starts, stops briefly and starts again (as long as the button is pressed).
Corrections can be made with the buttons ▲ and ▼.
- ② Keep the **DOWN** button ▼ pressed until the drive system stops automatically.
The upper end position is set.
- ③ Press the **DOWN** button ▼ again, until the fabric has reached the lower end position (to bottom limit stop).
The drive system starts, stops briefly and starts again (as long as the DOWN button ▼ is pressed).
The drive system automatically stops when reaching the lower limit stop.
- ④ Keep the **UP** button ▲ pressed until the drive system stops automatically.
The lower end position is set.
Optional: Activation of the relief function for the lower limit stop: refer to section 5.6.3.

End position setting of option D is completed.

Fig. 12 End position setting option D:

5.7 Transmitter programming

Important



Requirement: The drive system must be in wireless operation.

► If the end positions are not programmed, the fabric is loosened from the winding shaft.

Programming the (first) transmitter		
	Instruction	Result
1	Disconnecting and reconnecting the power supply	For approx. 5 minutes, the drive system is in programming mode.
2	On the transmitter to be programmed, press the programming button P for approx. 1 second.	The status indicator flashes. Now (for approx. 2 minutes), the drive system is in programming mode (up and down movement).
3	Immediately (max. 1 second) after start of the up movement, press the UP button ▲.	The status indicator flashes briefly. The fabric stops briefly, moves on, stops and moves downwards.
4	Immediately (max. 1 second) after start of the down movement, press the DOWN button ▼.	The status indicator flashes briefly. The drive system stops.
The (first) transmitter is programmed.		

5.8 Programming additional transmitters(s)

A maximum of 16 transmitters can be programmed.

Programming additional transmitters(s)		
	Instruction	Result
1	For three seconds, on a <i>already programmed transmitter</i> press simultaneously for 3 seconds the UP button ▲, the DOWN button ▼ and the programming button P .	The status indicator flashes. The drive system is in programming mode (up and down movement).
	<i>(alternative to above line)</i> Disconnecting and reconnecting the power supply	<i>For approx. 5 minutes, the drive system is in programming mode.</i>
2	On the <i>(additional) transmitter to be programmed</i> , press the programming button P .	The status indicator flashes briefly. The drive system is (for approx. 2 minutes) in programming mode (up and down movement).
4	On the <i>(additional) transmitter to be programmed</i> , immediately (max. 1 second) after start of the up movement, press the UP button ▲.	The status indicator flashes briefly. The fabric stops briefly, moves on, stops and moves downwards.
5	On the <i>(additional) transmitter to be programmed</i> , immediately (max. 1 second) after start of a down movement, press the DOWN button ▼.	The status indicator flashes briefly. The drive system stops.
Programming of the additional transmitter is complete.		

Stopping the bidirectional wireless programming mode: Press the STOP button for at least 6 seconds until the status indicator is blinking (transmitter-dependent).

Important



Complete, uninterrupted up and down movement is necessary to adapt the fabric protection system to the fabric.

5.9 Technical data

The separately available „technical data sheet“ will provide you with an overview of the most important technical parameters.

6 Troubleshooting

Problem / malfunction	Possible cause	Remedy, correction
• Drive system stops during movement	• End positions not correctly set • Drive system is in setting mode	• Set end positions
• Drive system stops after a short period of time	• End positions have been saved • Stiff fabric	• Set second end position • Check smooth running of the fabric

Problem / malfunction	Possible cause	Remedy, correction
• Drive system only runs in one direction	• Connection error	• Check connection
• Drive system does not react	• No power supply • Temperature limiter has triggered	• Check power supply • Have the drive system cool down
• Programming of end positions not possible	• Random drive movements • The distance to the end position or to the limit stop is too short	• Delete end positions Reset end positions • The drive system must run, stop briefly and start again (as long as a button on the elero installation cable or a programmed transmitter is pressed).

Fig. 13 SunTop-915 troubleshooting

7 Servicing

The SunTop-915 is maintenance-free.

8 Cleaning



WARNING

Risk of injury due to electricity.



Risk of electric shock.

- ▶ Risk due to potential live parts.
- ▶ Only carry out cleaning when the system is disconnected from the voltage. To do so, disconnect the drive cable.
- ▶ Clean the product surface only with a soft, clean and dry cloth.

9 Repair

In case of questions, please contact your local specialist. Please always provide the following information:

- Article number and designation on name plate
- Type of defect
- Previous and unusual occurrences
- Circumstances
- Own assumption

10 Address

elero GmbH Antriebstechnik Linsenhofer Str. 65 72660 Beuren Germany	Phone: +49 7025 13-01 Fax: +49 7025 13-212 info@elero.de www.elero.com
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If you require a contact outside of Germany, please visit our website.

11 Disposal / scrapping

After unpacking the system, dispose of the packaging material according to applicable regulations.

After the last use, dispose of the product according to applicable regulations.

Scrapping

When scrapping the product, applicable international, national and local rules and regulations must be complied with.



Please observe the recycling and dismantling properties of materials and components as well as environmental and health risks during recycling and disposal.

Material groups like different plastics and metals must be sorted and put into the recycling system or disposed of.

Disposal of electrotechnical and electrical components

Disposal and recycling of electrotechnical and electrical components must be carried out according to the applicable laws or national regulations.

12 EC Declaration of Conformity

EG-KONFORMITÄTSERKLÄRUNG

Wir erklären hiermit, dass das/die nachfolgend genannte/n Produkte der **Maschinenrichtlinie 2006/42/EG** entspricht/entsprechen.

Produktbezeichnung: **Rohrmotor**

- SunTop M-867 / -868 / -915 alle Varianten
- SunTop L-868 / -915 alle Varianten

Beschreibung: Einsteckantrieb für Markisen mit 867 / 868 / 915 MHz Funkempfänger

Die Übereinstimmung der/s bezeichneten Produkte/s mit den wesentlichen Schutzanforderungen wird durch Einhaltung folgender Richtlinien und Normen berücksichtigt:

- R&TTE-Richtlinie 1999/5/EG
- Niederspannungsrichtlinie 2006/95/EG
DIN EN 60335-2-97 (VDE 0700-97):2010
- DIN EN 14202:2004

Beuren, 30.05.2012

Ralph Trost
-CE-Beauftragter-, -Doku-Bevollmächtigter-

Fig. 14 EC Declaration of Conformity SunTop-915, type M and L

13 US: Addendum to the manual UL approval

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation. Any changes or modifications made to this device without the express permission of the manufacturer may void the user's authority to operate this device.

14 CA: Addendum au manuel Homologation UL

Le présent appareil est conforme aux CNR-210 (et FCC part 15) d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.