General

- Application: Drive system for roller shutters and textile sun protection independent of the mains current, operation with solar energy, pre-charged ready for operation
- Power supply: Direct current (12 V) from battery pack
- No wiring to the mains or to a control unit necessary
- Limit switch: electronic with soft brake
- Noiseless soft brake
- Special feature: Cut-out when obstacles are detected, frost protection function, 2 intermediate positions freely definable
- End positions adjustable via elero hand-held transmitter (see “Accessories”)
- Wave frequency: from 50 mm Ø

Standard scope of delivery

- MiniPlug Solar DC 0.27 m connection cable (233956301) for Solar Bundle DC plug-in, assembly instructions (138250001)

Accessories

- Adapter sets, motor bearings, solar bundle DC
- elero radio transmitter:
  - MonoTec-868 (28 655.0002)
  - MonoCom (28 405.0002)
  - VarioCom (28 445.0002)

Safety instructions

General safety instructions for use including installation of motors for roller shutters, awnings, textile sun protection and Venetian blinds can be found in the „Safety instructions“ leaflet supplied with each motor. Please read the general safety instructions and this installation manual carefully as the procedure in this manual is a prerequisite for correct use of the product. Any intervention by unqualified personnel or failure to comply with warnings may lead to personal injuries or material damage.

All work on the device may only be carried out by a qualified and approved technician. Relevant national regulations must be observed.

Figures included are for illustration purposes only. The illustrations may differ from your product with in minor details and are provided for general information only.

elero GmbH continuously strives to improve all products. As a result, the specifications, features and technology of this product may be changed at any time. The information provided is based on current information at the time of publication.

No claims can be derived from the technical data, images and information provided in this manual.

Assembly

- Only connect the drive with the power turned off.
- Only operate the drive in a horizontal position for its intended use.
- The length of the winding shaft is determined for each specific installation depending on the drive head and motor bearing used at the installation site.

Installation in profile tube / round tube

- Push the drive with mechanical seal ring on the motor head and the appropriate adapter set (drive adapter and crown adaptor, accessories) in the profile tube.
- Secure the counterpart support to prevent axial movement (screw or rivet on the idler).
- Secure the drive axially in the support.
- Attach the blind to the shaft. Do not drill holes near the drive area.

MiniPlug Solar DC

Connection from the drive to the power supply (battery pack and solar panel or mains/charger device) with cable flag and DC note. Additional adapters Y-cable Type A or Type B available to expand the system (see Solar-Bundle DC).

Commissioning in 5 steps

Commissioning takes place in this order:
1. Installation of the drive in the system (profile or round tube).
2. Wiring with solar panel and battery pack.
3. Programming a suitable elero radio transmitter (see Accessories) on the drive (radio receiver) and assigning the running directions. Step 3.a) or 3.b).
4. Deleting the end positions (not necessary for initial commissioning) and setting the end positions up and down.
5. Optional: Define additional blind positions.

Step 3: Program radio transmitter

3.a) Asynchronous programming mode (standard)

Asynchronous programming mode is suitable for programming
- Of the first radio transmitter
- Of an additional radio transmitter
- Of individual radio receivers if several radio receivers are ready to be programmed

Operating procedure

1. Activate asynchronous programming standby:
   Connect battery pack to RolSolar M-868 DC or on an already programmed radio transmitter, press buttons [UP ▲] + [DOWN/CLOSE ▼] simultaneously for 3 seconds.

Result

- The radio receiver changes to asynchronous programming standby for 5 minutes. Ready to receive the programming button [P].

2. Start programming mode:
   On the radio transmitter to be programmed (in the required channel), press and hold the programming button for approx. 1 second [ P ] (prerequisite: voltage interruption within the last 5 minutes).

Result

- The radio receiver changes to asynchronous programming mode and starts cyclical up and down travel (a 2-second time delay is possible).

3. Setting the first hit:
   Immediately after motion commences, press the [OPEN ▲] or [DOWN/CLOSE ▼] button.
   • In case of upward motion, press the [UP ▲] button.
   • In case of downward motion, press the [DOWN/CLOSE ▼] button.

Result

- Hit successful:
  Radio receiver briefly interrupts ongoing travel.
- Hit failed:
  Radio receiver does not interrupt ongoing travel.
  → Repeat „Set first hit“ action!

4. Set second hit:
   Prerequisite: First hit has been set. Immediately after motion in the opposite direction commences, press the [OPEN ▲] or [DOWN/CLOSE ▼] button.
   • In case of upward motion, press the [UP ▲] button.
   • In case of downward motion, press the [DOWN/CLOSE ▼] button.

Result

- Hit successful:
  Radio receiver stops ongoing travel and signals completion of programming.
- Hit failed:
  Radio receiver does not stop ongoing travel.
  → Repeat „Set second hit“ action!
### 3.b) Synchronous programming mode

Synchronous programming mode is suitable for:
- Programming an additional radio transmitter.
- Simultaneously programming several radio receivers to one radio transmitter or channel.

#### Operating procedure | Result
---|---
1 | **Activate synchronous programming standby:**
   - Press the buttons [DOWN/CLOSE ▼]+[P] simultaneously on a radio transmitter that is already programmed and hold them down for at least 3 seconds.
   - The radio receiver changes to synchronous programming standby for 5 minutes. Ready to receive the programming button [P].
2 | **Start programming mode:**
   - On the radio transmitter to be programmed (in the required channel), press and hold the [P] programming button for approx. 1 second.
   - The radio receiver changes to synchronous programming mode and starts cyclical up and down travel.
3 | **Setting the first hit:**
   - Immediately after motion commences, press the [OPEN ▲] or [DOWN/CLOSE ▼] button.
   - In case of upward motion, press the [UP ▲] button.
   - In case of downward motion, press the [DOWN/CLOSE ▼] button.
   - Hit successful:
     - Radio receiver briefly interrupts ongoing travel.
     - Hit failed:
       - Radio receiver does not interrupt ongoing travel.
       - \[\rightarrow\] Repeat „Set first hit“ action!
4 | **Set second hit:**
   - **Prerequisite:** First hit has been set.
   - Immediately after motion in the opposite direction commences, press the [OPEN ▲] or [DOWN/CLOSE ▼] button.
   - In case of upward motion, press the [UP ▲] button.
   - In case of downward motion, press the [DOWN/CLOSE ▼] button.
   - Hit successful:
     - Radio receiver stops ongoing travel and signals completion of programming.
     - Hit failed:
       - Radio receiver does not stop ongoing travel.
       - \[\rightarrow\] Repeat „Set second hit“ action!

The following applies to both programming modes:
- Programming can only ever be performed in one selected channel.
- When programming is complete or after 5 minutes have passed, the radio receiver will revert to normal operation.
- Programming mode can be stopped by pressing the [STOP ▼] button for at least 6 seconds.
- Several radio receivers can be programmed to one channel.
- If the blind moves in the wrong direction, delete the radio transmitter and program it again.

### Delete the radio transmitter

To delete the radio connection between the radio transmitter and radio receiver, there are 2 operating procedures available, each of which trigger a specific action in the radio transmitter and radio receiver.

#### Operating procedure | Result
---|---
Simultaneously press the [STOP ▼]+[P] buttons for at least 6 seconds until the status LED lights up red and goes out. | In the radio transmitter:
   - The selected channels are deleted entirely.
   - In the radio receiver:
     - The individual radio transmitter only is deleted from the radio receiver.
Simultaneously press the [UP ▲]+[DOWN/CLOSE ▼]+[STOP ▼]+[P] buttons for at least 6 seconds until the status LED lights up red and goes out. | In the radio transmitter:
   - The selected channels are deleted entirely.
   - In the radio receiver:
     - All radio transmitters are deleted from the radio receiver.

For details, see also the elero operating instructions for the radio transmitter used.

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**Step 4: Deleting and setting the end positions**

**Requirements for setting the end positions:**
1. Radio transmitter has been taught into the radio receiver.
2. The blind is in a middle position.
3. Establish readiness for end position setting: Simultaneously press buttons [UP ▲]+[DOWN/CLOSE ▼]+[P] for at least 6 seconds.
   - The drive remains in programming mode for 5 minutes.
   - The end positions can only be set if the previous end position settings have been deleted (not applicable for initial commissioning the radio receiver/drive).
   - It is not possible to correct a single end position as both end positions must always be set up.

**Types of end position settings**
Different combinations of end position settings are possible. These can be clearly selected according to the technical requirements of the blind.

<table>
<thead>
<tr>
<th>End position settings</th>
<th>Possible with</th>
</tr>
</thead>
<tbody>
<tr>
<td>End position freely adjustable</td>
<td>T-strap, belts, tape</td>
</tr>
<tr>
<td>Fixed upper stop (can be switched off to torque or with release)</td>
<td>End stopper, angle bar</td>
</tr>
<tr>
<td>Fixed lower stop (can be switched off to torque or with release)</td>
<td>Anti push-up device, rigid shaft connectors</td>
</tr>
</tbody>
</table>

**Deletion of end positions**

<table>
<thead>
<tr>
<th>Operating procedure</th>
<th>Result</th>
</tr>
</thead>
</table>
| Starting from a central position of the blind, simultaneously press the [UP ▲]+[DOWN/CLOSE ▼] buttons with a programmed radio transmitter until the drive briefly travels up and down. | The adjusted end positions have been deleted.
| The end positions may be re adjusted. |

It is not possible to delete a single end position as both end positions are always deleted.

**Setting the end positions**

**Operating procedure | Result**
---|---
**Set upper end position:**
   - Press the [ON ▲] button until the blind has reached the required upper end position * or stops at the upper stop.
   - * You can make corrections using the [UP ▲] and [DOWN/CLOSE ▼] buttons.
   - Press the [DOWN/CLOSE ▼] button until the drive stops automatically.
   - The drive begins to travel, briefly stops and travels further (for as long as the [UP ▲] button remains pressed).
   - The upper end position has been set.

**Set lower end position:**
   - Press the [DOWN/CLOSE ▼] button until the blind has reached the required lower end position * or stops at the lower stop.
   - * You can make corrections using the [UP ▲] and [DOWN/CLOSE ▼] buttons.
   - Press the [UP ▲] button until the drive stops automatically.
   - The drive begins to travel, briefly stops and travels further (for as long as the [DOWN/CLOSE ▼] button remains pressed).
   - The lower end position has been set.

**Adjustment of the end positions is complete.**
### Step 5: Further blind positions

#### Intermediate position:
Place blind in any position between the upper and lower end positions.

<table>
<thead>
<tr>
<th>Define in the receiver</th>
<th>Approach</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisite: The blind is in the upper end position. 1. Press the [DOWN/ CLOSE ▼] button until the required intermediate position is reached. 2. Then press the [STOP ■] button for 1 second. The blind will stop. The status LED lights up briefly. The intermediate position is now stored.</td>
<td>Double click the [DOWN/ CLOSE ▼] button (in quick succession): Blind moves to the saved intermediate position. If no intermediate position has been defined, the blind moves to the lower end position.</td>
<td>Simultaneously press and hold the [DOWN/ CLOSE ▼] + [STOP ■] buttons for approx. 3 seconds. The intermediate position is now deleted. The status LED lights up briefly.</td>
</tr>
</tbody>
</table>

#### Ventilation position:
E.g. the ventilation gaps on the roller shutter open.

<table>
<thead>
<tr>
<th>Define in the receiver</th>
<th>Approach</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirement: Blind is in the lower end position. 1. Press the [UP ▲] button until the ventilation gaps open. 2. Then press and hold the [STOP ■] button for 1 second. The blind will stop. The position of the ventilation is now saved.</td>
<td>Double click the [UP ▲] button: The blind travels to the saved position. If no ventilation position is defined, the blind moves to the upper end position.</td>
<td>Simultaneously press and hold the [UP ▲] + [STOP ■] buttons for approx. 3 seconds. The position of the ventilation is now deleted.</td>
</tr>
</tbody>
</table>

### Problem | Possible cause | Remedial action
--- | --- | ---
Radio programming mode does not start | Faulty connection / Time frame already expired (5 min.) | Check connection / Activate programming standby or briefly interrupt the power supply for programming via a radio transmitter that has already been programmed / Check the radio transmitter (LED must be illuminated) |
Radio transmitter not in programming mode | Battery in radio transmitter is used up | Start radio programming mode again and observe the time window (1 second) |
Drive stops after a short travel time and/or no longer responds | Battery pack capacity is too low / battery low | Charge the battery pack with the mains/charger device (accessory) or replace with a new one / Check the smooth running of the blind / Reset the end position |
End positions cannot be taught in to the drive | Travel to end position / limit stop too short | Bring the blind to the middle position, delete the end positions and reset them |

### Manufacturer’s Service address

elero GmbH 73278 Schlierbach GERMANY www.elero.com

### EU Conformity

elero hereby declares that this product is in compliance with the essential requirements and other relevant provisions of European directives that are applicable in Europe. A declaration of conformity is available at the website www.elero.com/downloads-service.

### Disposal / Notes on environmental protection

Electrical and electronic devices may not be disposed of with household waste. The consumer is legally obligated to return electrical and electronic equipment as well as batteries/battery packs to the designated public collection points or to the retailer at the end of their service life. The applicable regulations are governed by the relevant local laws. The symbol on the product, the instruction manual or the package indicates the applicable regulations. After using the unit for the final time, protect the battery pack against short circuits. By recycling or reusing old units/batteries, you are making an important contribution to protecting our environment.
## Technical data and dimensions

The technical data specified is subject to tolerance factors (according to applicable standards) and refer to an ambient temperature of 20 °C.

<table>
<thead>
<tr>
<th>RolSolar</th>
<th>M10 -868 DC</th>
<th>M20 -868 DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage [V]</td>
<td>12 (DC)</td>
<td>12 (DC)</td>
</tr>
<tr>
<td>Rated torque [Nm]</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Rated speed (rpm)</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Rated current [A]</td>
<td>4.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Rated power consumption [W]</td>
<td>48</td>
<td>72</td>
</tr>
<tr>
<td>Radio frequency band [MHz]</td>
<td>868,0 to 868,6</td>
<td>869,4 to 869,65</td>
</tr>
<tr>
<td>Radio transmission power [dBm]</td>
<td>max10</td>
<td>max10</td>
</tr>
<tr>
<td>Shaft diameter</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Protection class (IP)</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>Limit switch range (revolutions)</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Operating time (min S2)</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Length C [mm]</td>
<td>466</td>
<td>491</td>
</tr>
<tr>
<td>Length D [mm]</td>
<td>449</td>
<td>474</td>
</tr>
<tr>
<td>Length E [mm]</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>1.70</td>
<td>2.20</td>
</tr>
<tr>
<td>Ambient operating temperature [°C]</td>
<td>-20 to 60</td>
<td>-20 to 60</td>
</tr>
<tr>
<td>Protection class III</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item number (elero head, RH round head, SH star head)</td>
<td>342200001</td>
<td>382200001</td>
</tr>
</tbody>
</table>

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We reserve the right to make technical changes.