

# PatioControl

Pergola-Steuerung / Pergola Control Unit / Commande de pergola /  
Unità di controllo pergola / Mando de pérgola



[TN: 2011781]

- (DE)** Montageanleitung  
Bitte bewahren Sie die Montageanleitung auf!
- (EN)** Operating instructions  
Please take care of the operating instructions!
- (FR)** Instructions de montage  
Veuillez conserver les présentes instructions de montage!
- (IT)** Istruzioni per l'uso  
La preghiamo di conservare le istruzioni per l'uso!
- (ES)** Instrucciones de montaje  
Por favor, conserve estas instrucciones de montaje!

DE

**Originalmontageanleitung**

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EN

**Translation from the original German version**

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FR

**Traduction à partir des instructions de montage d'origine en langue allemande**

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IT

**Traduzione dalla versione originale in lingua tedesca**

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ES

**Traducción del original alemán**

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# 1 General

## 1.1 Notes on the installation instructions

The contents are classified by the service life phases of the PatioControl control unit.

The manufacturer reserves the right to make changes to the technical specifications stated in these installation instructions. In detail these can differ from the respective version of the device without the factual information being fundamentally changed and without losing their validity. The current status of the technical specifications can be requested from the manufacturer at any time. Claims may not be asserted in this respect. Deviations from the text and pictorial statements are possible and are dependent on the technical development, equipment and accessories of the device. The manufacturer shall provide information on any differing details relating to special versions by means of the sales documentation. Other specifications shall remain unaffected by this.

## 1.2 Standards and guidelines

The basic health and safety requirements of the applicable laws, standards and guidelines were applied during the design phase.

The safety of the device is confirmed by the Declaration of Incorporation (see chapter "Declaration of Incorporation"). All information relating to safety in these installation instructions refers to the laws and regulations that are currently valid in Germany. All information in these installation instructions must be complied with at all times and without limitation. In addition to the safety information in these installation instructions, the regulations applicable at the place of installation with regard to accident prevention, environmental protection and occupational safety must be observed and adhered to. The guidelines and standards for safety assessment can be found in the Declaration of Incorporation.

## 1.3 Use in line with intended use

The device is intended for control of actuators for opening and closing pergolas. One or two actuators can be connected to the device.

The operator alone is liable for any damage arising from the non-intended use of the device. The manufacturer

assumes no liability for personal injury or damage to property caused by misuse or procedural errors, improper operator control or improper start of operation.

Safe and fault-free operation and reliability of the devices can be guaranteed only when it is used as intended.

Proper use also includes compliance with and observance of all safety instructions contained in this manual.

## 1.4 Foreseeable misuse

Installation different from the intended purpose approved by the manufacturer is considered foreseeable misuse.

## 1.5 Guarantee and liability

In principle, the General Terms & Conditions of Sale and Delivery of the manufacturer apply. The Terms & Conditions of Sale and Delivery are part of the sales documentation and are given to the operator at the time of delivery. Liability claims for personal injury and damage to property are excluded if they can be attributed to one or more of the following causes:

- Use not in compliance with the intended use of the device.
- Improper installation or operation of the device.
- Structural modifications to the device without the written approval of the manufacturer.
- Operation of the device with improperly installed connections and defective or improperly attached safety and protection devices.
- Non-compliance with the safety regulations and information provided in these instructions.
- Exceeding the limits of the technical specifications.

## 1.6 Customer service of the manufacturer

The device may be repaired only by the manufacturer in the event of a fault. The address for sending the device to the customer service department can be found on the inside of the back cover.

If you have not purchased the device directly from elero, please contact the manufacturer of the machine or the supplier of the device.

## 2 Safety

### 2.1 General safety notices

These instructions contain all safety instructions that must be observed to avoid and prevent dangers in working with the PatioControl control unit. Safe use of the device is guaranteed when all the specified safety notices and directions are complied with.

### 2.2 Formulation of safety information

The safety notices in this document are marked with safety symbols and formulated in accordance with the SAFE principle. They contain specifications relating to the type and source of danger, the possible consequences, as well as the prevention of the danger.



#### **DANGER**

Warns of an accident that will occur if the instructions are not followed. The accident will lead to severe, possibly life-endangering injury or death.



#### **WARNING**

Warns of an accident that may occur if the instructions are not followed. The accident may lead to severe, possibly life-endangering injury or death.



#### **CAUTION**

Warns of an accident that may occur if the instructions are not followed. The accident may lead to moderate injury, for example burns, injury to the skin or crushing.



#### **WARNING**

Warns of the possibility of material damage.



**NOTE**

Important general notice.

**DANGER DUE TO AN ELECTRICAL VOLTAGE, ELECTRIC SHOCK**

This symbol refers to dangers associated with electrical currents.

## 2.3 Safety principles

The device has been built using state-of-the-art technology in accordance with generally accepted rules of safety and is safe to operate. The basic safety and health requirements of the applicable laws, standards, directives and guidelines have been applied in the construction of the device. The safety of the device is confirmed by the Declaration of Incorporation.

All specifications pertaining to safety relate to the currently valid regulations of the European Union. In other countries, the operator must ensure that the relevant laws and national regulations are adhered to.

In addition to the safety instructions in this manual, general accident prevention and environmental protection regulations must also be complied with.

The device must only be used in a technically perfect condition, for its intended use and in a safety and risk-conscious manner. The device is designed for use as described in the "Intended use" section. In the event of use that is not in compliance with the intended use, injury to the life and limb of the user or third parties or impairments to the device and other property can arise. Any accidents or almost accidents during the use of the device that lead to or could have led to personal injuries and/or damage in the working environment must be reported directly and without delay to the manufacturer.

All safety information specified in the instructions and on the device must be observed. In addition to this safety information, the operator must ensure that all national and international regulations applicable in the respective country of use, as well as other binding regulations relating to operational safety, accident prevention and environmental protection, are complied with. All work on the device must be performed only by trained and authorised personnel who have been instructed on safety.

## 2.4 General duties of the plant operator

- The operator is obligated to use the device only when it is in perfect working order and is safe to operate. The operator must ensure that, in addition to the safety information in the instructions, the generally accepted safety and accident-prevention regulations, the specifications of DIN VDE 0100 and the provisions relating to environmental protection of the respective country of use are observed and complied with.
- The operator is responsible for ensuring that all work with device is carried out only by appropriately trained and authorised personnel who have been instructed on safety.
- Ultimately responsible for accident-free operation is the plant operator of the device or the personnel authorized by the plant operator.
- The operator is responsible for adhering to the technical specifications.

## 2.5 Personnel requirements

- Any person commissioned with performing work on the device must have read through and understood the instructions completely before performing the corresponding work. This also applies if the person concerned has previously worked with such a device or has been trained to do so.
- All work on the device must be performed only by trained and authorized personnel who have received safety instruction. Before starting any operations, personnel must be made aware of the dangers involved in handling the device.
- All persons may only carry out work commensurate with their qualifications. The area of responsibility of the various persons must be clearly defined.
- Any personnel commissioned with working on the device must have no physical limitations that could temporarily or permanently impair their attentiveness or judgement (e.g. due to excessive fatigue).
- Minors or persons under the influence of alcohol, drugs or medication are prohibited from working with the device and performing any installation, dismantling or cleaning work.

## 2.6 Safety information on the technical condition

- The device must be checked for damage and correct operation before installation.
- The operator is obligated to operate the device only when it is in perfect working order and is safe to operate. The technical condition must comply with the legal requirements at all times.
- If dangers to personnel or changes in operating behaviour are identified, the device must be shut down immediately and the incident reported to superiors or the operator.
- Modifications and attachments to or conversions of the device are not permitted without the authorisation of the manufacturer.

## 2.7 Safety information on transport, assembly and installation

The relevant transport company is fundamentally responsible for the transport of the device. The following safety requirements must be complied with during transport, erection and installation of the device:

Assembly and installation work must only be carried out by trained and qualified personnel.

## 2.8 Safety information on operation

The operator of the device is obligated to ensure the safe and proper state of the device before the initial start of operation.

This is also necessary during operation of the device at regular intervals to be determined by the plant operator.

## 2.9 Safety information on the electrical installation

- All work on the electrical system must be performed only by authorized skilled electricians in accordance with the applicable rules and stipulations of the trade association, in particular the stipulations of DIN VDE 0100. Furthermore, the national statutory regulations of the respective country of application must be observed.
- In the event of any defects, such as loose connections or defective or damaged cables, the device must not be put into operation.
- In the event of faults with the electrical equipment, the device must be switched off immediately.
- The device must be de-energised before any inspection, installation or dismantling work.

- The device must not be hosed down with a high-pressure cleaner or steam jet.

The following must be checked before connecting the device to the power supply:

- Are all electrical connections, safety devices, fuses, etc. properly installed, connected and earthed?
- Is the power connection provided in accordance with the information in the electrical wiring diagram (voltage type, voltage level)?
- Has the supply line been de-energised?

### 3 Structure/description

#### 3.1 Technical data

Technical data of control unit and power supply				
		Minimum	Nominal	Maximum
Building power feed		3 x 1.5 mm <sup>2</sup>		
Power supply	Connection voltage	205 V	230/240 V - 1 AC	264 V
	Recommended back-up fuse		2 A	6 A
	Power consumption			2.2 A
Control unit	Rated voltage	22 V DC	24 V DC	26 V DC
	Power consumption			10 A
Cut-off current of actuator for the closing force		0.2 A	in 10 stages	2.0 A
Operating temperature range		-20 °C	20 °C	50 °C
Degree of protection of control unit and power supply		Degree of protection IP 65 - as per VDE 0470/DIN 40050/EN 60529		
Installation position		user-defined		
Housing dimensions		190 x 75 x 75 mm (without screw fastenings)		
Colour		silver-grey		

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Technical data of control unit and power supply				
Radio frequency		868 MHz / 915 MHz		
		Minimum	Nominal	Maximum
Radio system		elero bidirectional		
Number of usable transmitters		16		
Actuators	Number	1		2
	Rated voltage	24 V DC		
	Performance			50 W
	Limit switch	Limit switches or closing force		
	Runtime			3 min
Light module	Type of lighting	LED (common positive pin)		
	Number of light channels	1		4
	Rated voltage	22 V DC	24 V DC	26 V DC
	Power per light channel			50 W
	Total power of light			150 W

Tab. 1: Technical data of control unit and power supply

### 3.2 Items supplied

- PatioControl control unit
- Power supply 230 V/AC / 24 V/DC 150 W or 240 W
- Variotel2, Tempotel2 or Multitel2 hand-held transmitter
- Temperature sensor (optional)
- optional Sensero 868 AC or Sensero 868 AC Plus weather sensor
- Assembly Manual

### 3.3 Connection of the control unit



#### **DANGER DUE TO AN ELECTRICAL VOLTAGE, ELECTRIC SHOCK**

Electrical work must only be performed by an authorised electrician.



#### **WARNING**

Damage to the device through incorrect assembly

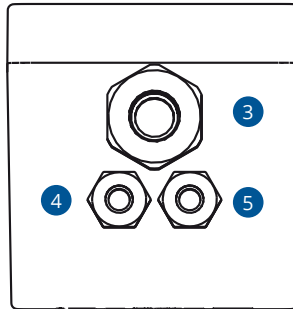
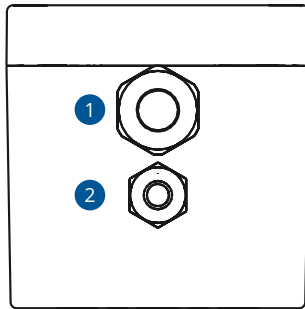
- ▶ Observe the protection class.



#### **NOTICE**

After connecting the control system, the threaded connections must be tightened to the following torque:

- ▶ [1] to 3,0 Nm
- ▶ [2], [4], [5] to 1,5 Nm
- ▶ [3] to 6,0 Nm
- ▶ Housing cover to 2,5 Nm



1 Power supply

2 Temperature sensor

3 Light cables

4 Motor M2

5 Motor M1



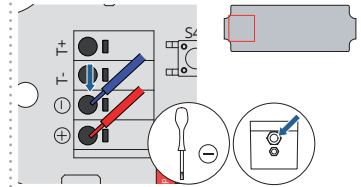
#### **NOTE**

A multiple sealing insert 4 x 4 mm is optionally available for the light cables [3].

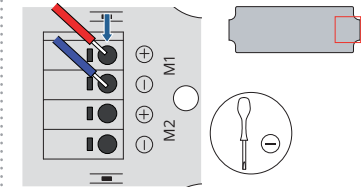
Fig. 1: Casing with screw fastenings



1. Connect the 24 V power supply to the + and - terminals.  
Use the applicable cable gland.



2. Connect the first actuator to the M1+ and M1- terminals.

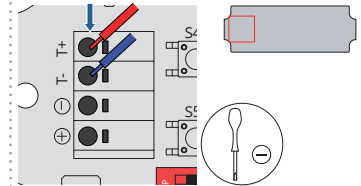


3. Connect an optional temperature sensor to the T+ and T- terminals.



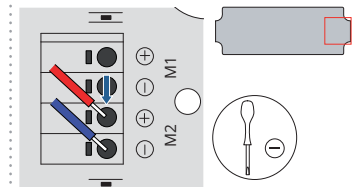
**NOTE**

Install the temperature sensor outside and close to the slats.



Option:

4. If necessary, connect a second actuator to the M2+ and M2- terminals.



## 3.4 Building electrical connection

The operator must connect the included power supply to a suitable 230 V AC power supply.

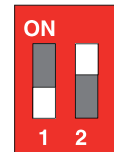


### **WARNING**

The housing of the power supply must be connected to the PE conductor of the feed line at the customer.

## 3.5 Icons and explanation of terms

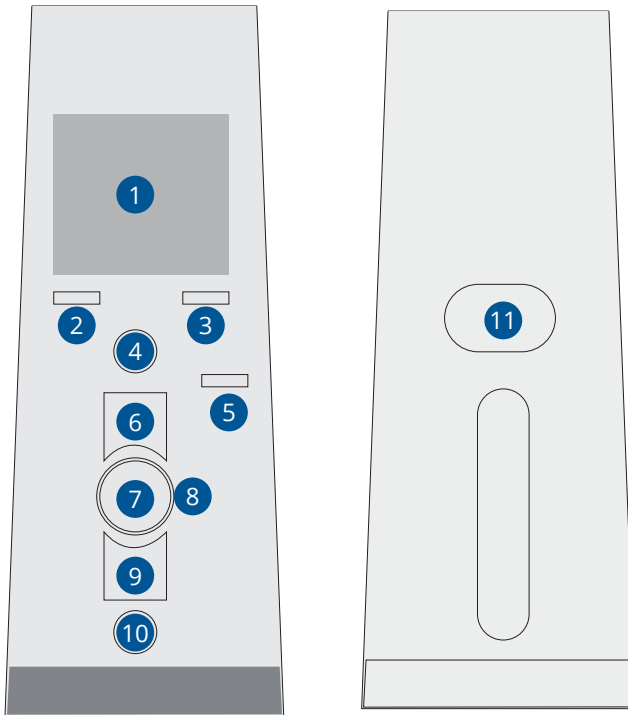
- INT-1: intermediate position 1  
default value = approx. 33% open (may vary depending on customer)
- INT-2: intermediate position 2  
default value = approx. 66% open (may vary depending on customer)
- Protected position  
position for protection of the pergola in a storm (default value = 100% open)
- DIP switch  
The active position is shown in white. In the example DIP-1 is switched to OFF and DIP-2 to ON.



## 4 Teach-in hand-held transmitter

### Controls of the hand-held transmitter

Example: Tempotel2, Multitel2



1	Display
2	Menu key left
3	Menu key right
4	Joystick
5	Display of operating mode
6	DOWN key
7	STOP key
8	Status indicator
9	DOWN key
10	Selector key
11	Teach-in key P

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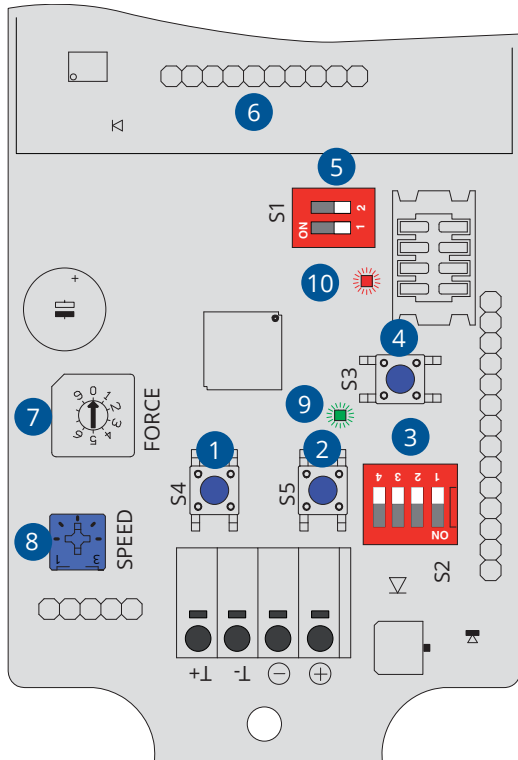
#### NOTE

The layout of the controls may be different on other hand-held transmitters.

For information see:

- [www.elero.de/de/produkte/steuerungen](http://www.elero.de/de/produkte/steuerungen)
- [www.elero.com/en/products/control-systems](http://www.elero.com/en/products/control-systems)

## Overview of base module



1	"S4" key: close pergola
2	"S5" key: open pergola
3	"S2" switch: select options 1 ... lock at < -5 °C 2 ... snow function 3 ... only one actuator (M1) 4 ... rain alarm direction of travel
4	"S3" key: reset limit positions (reset)
5	"S1" key: power supply 1 ...actuator radio receiver 2 ...light control radio receiver
6	Light module (optional)
7	"FORCE" regulator: adjustment of cut-out force
8	"SPEED" regulator: adjustment of travel speed
9	LED-1 green
10	LED-2 red

## 4.1 Functions of the switches and LEDs

DIP switch S1		ON	OFF
1	Actuator radio receiver power supply	On*	Off
2	Light module radio receiver power supply	On*	Off

DIP switch S2		ON	OFF
1	Actuator locked at temperatures below -5°	On	Off*
2	Snow function	On	Off*
3	only one actuator (M1)	On*	Off
4	rain alarm direction of travel	Open	Close*

Key	
S3	press and hold >3 s: delete limit positions
S4	close pergola
S5	open pergola

\*) factory setting

LED	Colour	Type of flashing	Meaning
1	Green	permanent	Ready to teach in paths
1	Green	steady	Path limits are teached-in
2	Red	Twice in 6 s	Rain alarm
2	Red	Three times in 6 s	Snow alarm
2	Red	Four times in 6 s	Wind alarm


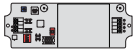


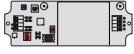










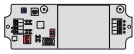

















### NOTE

Temperature sensor




An optional temperature sensor is required in order to be able to use the snow, protection from freezing and actuator lock at temperatures < -5 °C.

## Handling




Module	Handling	Result
	<ol style="list-style-type: none"> <li>1. Connect one or two actuators to the control unit.</li> <li>2. Connect the 24 V side of the power supply to the control unit.</li> </ol>	
	<ol style="list-style-type: none"> <li>3. Connect the 230 V AC supply voltage to the power supply and switch it to ON. </li> </ol>	<ul style="list-style-type: none"> <li>• Green LED flashes or is steady </li> </ul>
	<ol style="list-style-type: none"> <li>4. Check the direction of travel:           <ul style="list-style-type: none"> <li>• Briefly press S4  </li> <li>• Briefly press S5  </li> </ul> </li> </ol> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <b>WARNING</b>        Reverse the connection wires on the motor if the direction is incorrect.     </div>	<ul style="list-style-type: none"> <li>• Pergola opens </li> <li>• Pergola closes </li> </ul>
	<ol style="list-style-type: none"> <li>5. For one actuator on M1 : At S2 set DIP-3 to ON. </li> <li>6. For two actuators: At S2 set DIP-3 to OFF. </li> </ol>	
	<ol style="list-style-type: none"> <li>7. Switch S1:           <ul style="list-style-type: none"> <li>• DIP-1 = OFF (radio actuator)</li> <li>• DIP-2 = OFF (radio light)</li> </ul> </li> </ol> 	<ul style="list-style-type: none"> <li>• Deactivating the radio receiver</li> </ul>

	<p>8. Switch S1 after 3 s:</p> <ul style="list-style-type: none"> <li>• DIP-1 = ON</li> <li>• DIP-2 = OFF</li> </ul>	 <ul style="list-style-type: none"> <li>• The teach-in mode for the actuator is activated for 5 min.</li> </ul>
	<p>9. Select the desired radio channel on the hand-held transmitter.</p>	<ul style="list-style-type: none"> <li>• Display of the channel on the display</li> </ul>
	<p>10. For approx. 1 s press the P-key on the back.</p>	  <ul style="list-style-type: none"> <li>• The status display light orange once.</li> <li>• The pergola opens and closes alternately for 5 min.</li> </ul>
	<p>11. At the start of opening briefly press the UP key on the hand-held transmitter.</p>	  <ul style="list-style-type: none"> <li>• The pergola stops briefly and then opens again.</li> </ul>
	<p>12. At the start of closing briefly press the DOWN key on the hand-held transmitter.</p>	  <ul style="list-style-type: none"> <li>• The pergola stops.</li> <li>• The teach-in process is complete.</li> </ul>
	<p>13. Switch S1:</p> <ul style="list-style-type: none"> <li>• DIP-1 = ON</li> <li>• DIP-2 = ON</li> </ul>	 <ul style="list-style-type: none"> <li>• The teach-in mode is set</li> </ul>
	<p>Teach-in is complete. Check the functions of the hand-held transmitter.</p>	

## 4.2 Delete the current radio channel in the control unit

Module	Handling	Result
	1. Select the desired radio channel for teach-in the hand-held transmitter.	<ul style="list-style-type: none"><li>• Display of the channel on the hand-held transmitter</li></ul>
	2. Switch the control unit power supply off and then on again after 5 s.	<ul style="list-style-type: none"><li>• The teach-in mode is set for 5 min.</li></ul>
	3. Press and hold the STOP and P-keys simultaneously for 6 s.	<ul style="list-style-type: none"><li>• The status display lights orange and then red.</li></ul>

## 4.3 Deleting all radio channels in the control unit

Module	Handling	Result
	1. Select a radio channel that has been teached-in on the hand-held transmitter.	<ul style="list-style-type: none"><li>• Display of the channel on the hand-held transmitter</li></ul>
	2. Switch the control unit power supply off and then on again after 5 s.	<ul style="list-style-type: none"><li>• The teach-in mode is set for 5 min.</li></ul>
	3. Press and hold the STOP, UP, DOWN and P-keys simultaneously for 6 s.	<ul style="list-style-type: none"><li>• The status display lights orange and then red.</li></ul>



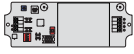




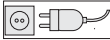











**NOTE**




If, e.g., a TempoTel2 is used as a hand-held transmitter, "Astro times" are activated by default in delivery status, which may result in unwanted switching procedures. Deactivate the switching times on the hand-held transmitter as required (see instructions for hand-held transmitter).

**NOTE**

If both intermediate positions are at one position, delete all taught-in transmitters. Press and hold the STOP, UP, DOWN and P-keys simultaneously for 6 s to delete the positions. Then teach in all transmitters again.

## 5 Teach-in of the limit positions of the actuators
















Module	Handling	Result
	1. Adjustment of speed: <ul style="list-style-type: none"> <li>• rotate right = faster</li> <li>• rotate left = slower</li> </ul> Optimum value: maximum speed	
	2. Adjustment of cut-out force: <ul style="list-style-type: none"> <li>• step 0 = low force</li> <li>• step 9 = high force</li> </ul> Only select a step as high as necessary!	
	3. Switch the power supply to ON.	 <ul style="list-style-type: none"> <li>• LED-1 flashes green on the control unit. </li> </ul>
	4. Close the pergola completely.	 
	5. Run 3 complete paths all to the limit position. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <b>NOTE</b>              If the green LED is still flashing after three movements, run another one.           </div>	<ul style="list-style-type: none"> <li>• LED-1 lights green on the control unit. </li> <li>• LED-2 does not light red on the control unit </li> </ul>
	6. Check intermediate position 1: Press the DOWN key briefly twice in succession.	  <ul style="list-style-type: none"> <li>• Pergola stops at INT-1 (default 33% open).</li> </ul>

Module	Handling	Result
	<p>7. Check intermediate position 2: Press the UP key briefly twice in succession.</p>  	<ul style="list-style-type: none"> <li>• Pergola stops at INT-2 (default 66% open).</li> </ul>

## 5.1 Current values

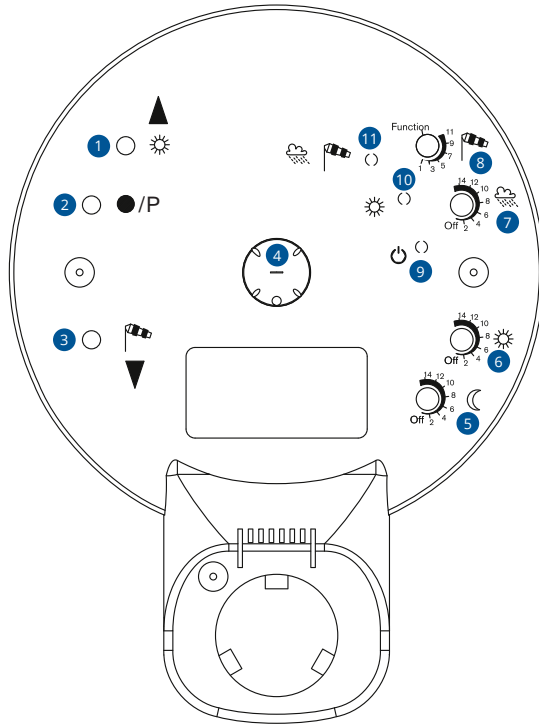
Switch position of rotary switch	Cut-off current
0	• 0.20 A
1	• 0.40 A
2	• 0.60 A
3	• 0.80 A
4	• 1.00 A
5	• 1.20 A
6	• 1.40 A
7	• 1.60 A
8	• 1.80 A
9	• 2.00 A

## 5.2 Operation

Module	Handling	Result
Prerequisites	<ul style="list-style-type: none"><li>• The hand-held transmitter is teached-in.</li><li>• The correct channel on the hand-held transmitter is set.</li><li>• The path limits of the actuators are teached-in.</li></ul>	
	<ul style="list-style-type: none"><li>• Briefly press the UP key  </li></ul>	<ul style="list-style-type: none"><li>• Pergola is opened to the maximum 100%</li></ul>
	<ul style="list-style-type: none"><li>• Briefly press the DOWN key  </li></ul>	<ul style="list-style-type: none"><li>• Pergola is closed to the minimum 0%</li></ul>
	<ul style="list-style-type: none"><li>• Press DOWN key twice  </li></ul>	<ul style="list-style-type: none"><li>• Pergola moves to INT-2 (approx. 66% open).</li></ul>
	<ul style="list-style-type: none"><li>• Press UP key twice  </li></ul>	<ul style="list-style-type: none"><li>• Pergola moves to INT-1 (approx. 33% open)</li></ul>
	<ul style="list-style-type: none"><li>• Press STOP key briefly  </li></ul>	<ul style="list-style-type: none"><li>• Actuator is stopped</li></ul>

# 6 Teach-in Sensero/Sensero plus weather sensor

## Overview



1	CLOSE/sun key	
2	STOP/P key	
3	UP/Wind key	
4	Wind sensor	
5	Twilight potentiometer	
6	Light potentiometer	
7	Rain potentiometer	
8	Wind potentiometer	
9	Operation LED	
10	Light LED	
11	Alarm LED	

Recommended sensors:

- Sensero-868 AC (without rain function)
- Sensero-868 AC-Plus (with rain function)



**NOTE**

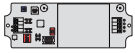
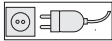



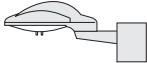
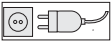

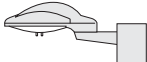





The wind sensor is activated by removing the protective cap.





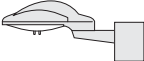


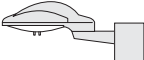

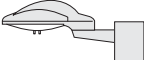







**NOTE**





Install the Sensero/Sensero plus so it can detect all weather conditions.

## Handling

Module	Handling	Result
Prerequisites	<ul style="list-style-type: none"> <li>• The hand-held transmitter is teached-in.</li> <li>• The correct channel on the hand-held transmitter is set.</li> <li>• The path limits of the actuators are teached-in.</li> </ul>	
	1. Switch the power supply to ON. 	<ul style="list-style-type: none"> <li>• LED-1 green lights. </li> </ul>
	2. Open the pergola to about 50%. 	
	3. Switch the power supply to the Sensero to ON. 	<ul style="list-style-type: none"> <li>• Green operation LED [9] on the Sensero lights. </li> </ul>
	4. Set the light potentiometer to a value between 2 and 9. 	
	<div style="border: 1px solid black; padding: 5px;">  <p><b>NOTE</b> Set the Sensero to the privacy mode. (see Sensero/Plus instructions: <a href="http://www.elero.de/de/produkte/steuerungen/sensero-868-ac-plus/">www.elero.de/de/produkte/steuerungen/sensero-868-ac-plus/</a>)</p> </div>	
	6. Switch S1: <ul style="list-style-type: none"> <li>• DIP-1 = OFF</li> <li>• DIP-2 = OFF</li> </ul> 	Deactivating the radio receiver

Module	Handling	Result
	<p>7. Switch S1 after approx. 3 s:</p> <ul style="list-style-type: none"> <li>• DIP-1 = ON</li> <li>• DIP-2 = OFF</li> </ul> 	<ul style="list-style-type: none"> <li>• The teach-in mode is now activated for 5 min.</li> </ul>
	<p>8. Press and hold the UP, DOWN and P keys simultaneously for at least 3 s.</p> 	<ul style="list-style-type: none"> <li>• Status display on hand-held transmitter lights briefly.</li> </ul>
	<p>9. Press and hold the STOP/P key on the Sensero for 3 s.</p> 	<ul style="list-style-type: none"> <li>• Green operation LED flashes.</li> <li>• Pergola opens and closes continuously.</li> </ul> 
	<p>10. At the start of opening briefly press the CLOSE/sun key.</p> 	<ul style="list-style-type: none"> <li>• Pergola stops briefly and then opens again.</li> </ul>
	<p>11. At the start of closing briefly press the UP/wind key.</p> 	<ul style="list-style-type: none"> <li>• Pergola stops.</li> </ul>
	<p>12. Check the functions:</p> <ul style="list-style-type: none"> <li>• WIND/UP key</li> <li>• P/STOP key</li> <li>• SUN/DOWN key</li> </ul> 	<ul style="list-style-type: none"> <li>• Pergola opens.</li> <li>• Pergola stops.</li> <li>• Pergola closes.</li> </ul>
	<p>13. Switch S1:</p> <ul style="list-style-type: none"> <li>• DIP-1 = ON and DIP-2 = ON</li> </ul> <p>The teach-in process is complete.</p> 	<ul style="list-style-type: none"> <li>• The teach-in mode is set.</li> </ul>

## 6.1 Functions of the pergola with the Sensero/Sensero plus weather sensor

	<p>Light</p> <ul style="list-style-type: none"><li>• Exceeding the set light threshold: Pergola opens to INT-1 (approx. 33% open).</li><li>• Below the set light threshold: Pergola opens 100%.</li></ul>
	<p>Twilight</p> <ul style="list-style-type: none"><li>• automatic close of pergola in the evening</li><li>• automatic opening in the morning when the set light threshold is exceeded</li></ul>
	<p>Rain</p> <ul style="list-style-type: none"><li>• rain above the set threshold: pergola closes completely.</li><li>• Rain alarm: red LED flashes twice in 6 s</li></ul> <p>Snow (with temperature sensor only)</p> <ul style="list-style-type: none"><li>• snow above the set threshold and temperature below 2 °C: pergola opens to INT-2 (approx. 66% open).</li><li>• Snow alarm: red LED flashes three times in 6 s</li></ul>
	<p>Wind</p> <ul style="list-style-type: none"><li>• Wind above the set threshold: pergola opens completely (100%).</li><li>• Below the threshold value: actuator locked for 15 min.</li><li>• Wind alarm: red LED flashes four times in 6 s</li></ul>
	<p>Freezing protection (with temperature sensor only)</p> <ul style="list-style-type: none"><li>• At a temperature below 2 °C: the pergola opens briefly after closing completely to prevent freezing.</li></ul> <p>Rain drainage function</p> <ul style="list-style-type: none"><li>• When opened first after rain alarm the pergola opens approx. 20 %. The rain water can drain off.</li></ul>



## 6.2 Threshold values of the sensors

### Wind

Wind threshold	Wind speed m/s	Wind speed km/h
1	2	7
2	4	14
3	6	22
4	8	29
5	10	36
6	12	43
7	14	50
8	16	58
9	18	65
10	20	72
11	22	79

### Light

Light threshold	Value in kilolux
1	2
2	7
3	13
4	18
5	23
6	28
7	34
8	39
9	45
10	50
11	60
12	70
13	80
14	90
15	100

## 6.3 Delay times

- Rain detection mode:  
2 min after switching on the Sensero
- Rain lock until new reaction  
to rain: 15 rpm
- Rain lock until new reaction  
to sun: 15 rpm
- Wind lock (manual operation not possible): 15 min
- Light above threshold value:  
approx. 5 min to movement to INT-1 (approx. 33%  
open)
- Light below threshold value:  
approx. 16 min to movement to 100%

## 6.4 Faults

### Sensero lost

Cause:

- 15 min no signal received from teached-in Sensero
- Sensero without power or defective

Consequences:

- Actuator moves to safety position after 15 min.
- Pergola is 100% open.

### Wind lock

Cause:

- wind too strong

Consequences:

- Actuator moves to safety position and is locked for  
15 min after wind dies now.
- Pergola is 100% open.



## 7 Light module

### 7.1 Installation

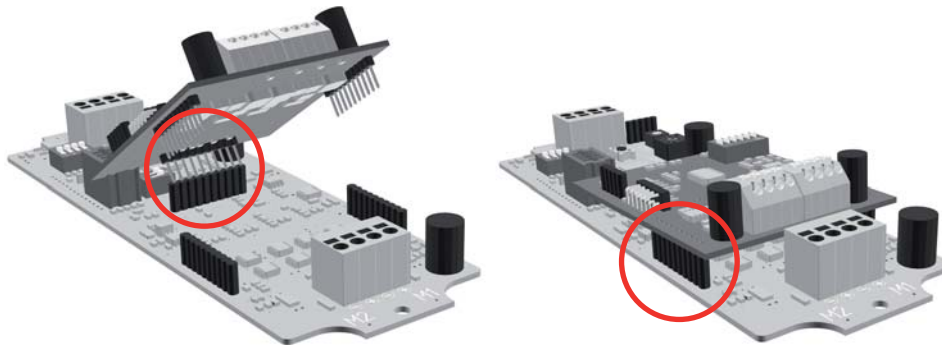
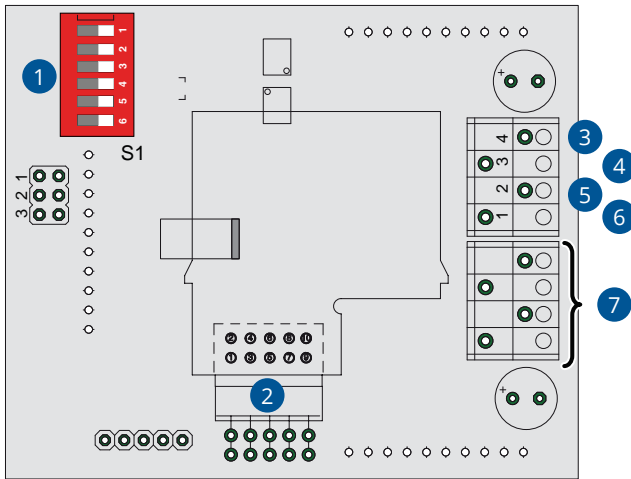


Fig. 2: Installation of the light module
















1. Switch off the power supply to the control unit.
2. First place the light module on the rear connector on the PC board.
3. Slowly lower the light module until all pins are in the sockets.
4. Press the light module firmly on the PC board.

## 7.2 Overview

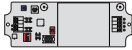

















1	DIP switch S1: <ul style="list-style-type: none"><li>• DIP-1 = light channel 1 (e.g. red)</li><li>• DIP-2 = light channel 2 (e.g. green)</li><li>• DIP-3 = light channel 3 (e.g. blue)</li><li>• DIP-4 = light channel 4 (e.g. white)</li><li>• DIP-5 = test mode</li><li>• DIP-6 = reserve</li></ul> * factory setting: All OFF
2	Port for radio stick
3	light channel 1: e.g. red
4	light channel 2: e.g. green
5	light channel 3: e.g. blue
6	light channel 4: e.g. white
7	Connections +24 V

### 7.3 Teach-in hand-held transmitter for the light module

Module	Handling	Result
	1. Switch the power supply ON.	<ul style="list-style-type: none"> <li>LED-1 green on control unit lights or flashes.</li> </ul> 
	2. Test function of light channels: Switch the light module to test mode (DIP-5 = ON). 	
	3. Switching on DIP-1 tests light channel 1. 	<ul style="list-style-type: none"> <li>The LEDs connected to light channel 1 light.</li> </ul>
	4. You can test light channel 2 and other channels. 	<ul style="list-style-type: none"> <li>The LEDs connected to light channel 2 light.</li> </ul>
	5. Finish the test by first switching off DIP-1 to DIP-4 and then DIP-5. 	
	6. Select the desired radio channel for teach-in the hand-held transmitter.	<ul style="list-style-type: none"> <li>Display of the channel on the display or on the channel display.</li> </ul>
	7. On the light module select the desired light channel (for example light 1 (red)). 	
	8. Switch on control S1: <ul style="list-style-type: none"> <li>DIP-1 = OFF</li> <li>DIP-2 = OFF</li> </ul> 	The radio receivers are disabled.

EN

Module	Handling	Result
	<p>9. After approx. 5 s switch on control S1:</p> <ul style="list-style-type: none"> <li>• DIP-1 = OFF</li> <li>• DIP-2 = ON</li> </ul> 	<p>The teach-in mode is now activated for 5 min.</p>
	<p>10. For approx. 1 s press and hold the P-key on the back.</p>  	<ul style="list-style-type: none"> <li>• Status LED light 1x orange</li> <li>• The connected and activated LEDs are bright and dark alternately.</li> </ul> 
	<p>11. At the start of the bright light of the LED briefly press the UP key on the hand-held transmitter.</p>  	<ul style="list-style-type: none"> <li>• The LEDs go off.</li> <li>• The teach-in for this channel is complete.</li> </ul>
	<p>12. Repeat steps 6 to 11 for the other 3 light channels.</p> 	
	<p>13. You can also teach in multiple light channels on one channel of the hand-held transmitter.</p> <ul style="list-style-type: none"> <li>• e.g. red and green = yellow To do this in step 7 switch on two colours.</li> <li>• e.g. red and green and blue = white To do this in step 7 switch on three colours.</li> </ul>  	
	<p>14. On completion of the teach-in switch S1:</p> <ul style="list-style-type: none"> <li>• DIP-1 = ON</li> <li>• DIP-2 = ON</li> </ul> 	<p>The teach-in mode is set.</p>

## 8 Fault rectification

Error/fault	Possible cause	Inspection	Solution
The actuator does not start. Green LED-1 on the PC board is OFF.	The power supply is not connected or the terminals are reversed.	Check whether the green LED is flashing or steady.	Connect power supply, reverse brown and blue if applicable.
	The actuator is connected to the wrong terminal.	With one actuator is must be connected to M1.	Connect the actuator to M1 and check the direction of travel with S4 and S5 (S4 = close, S5 = open).
The actuator does not start Green LED-1 on the PC board is ON or flashing.	A programmed Sensero/ Sensero plus is not sending signals (after 15 min the pergola moves to wind protection position and is blocked).	Check the power supply of the Sensero.	<ol style="list-style-type: none"> <li>1. Repair or replace Sensero.</li> <li>2. If a Sensero is not required, delete it from the control unit.</li> </ol>
	A wind alarm has tripped.	Check the display on the PC board (LED-2 flashing red on the PC board).	Wait for the lock-out time of 15 minutes after the wind dies down.
	There is a short-circuit in the motor wiring.	Disconnect and check PC board wiring.	Eliminate the short-circuit.
The actuator moves briefly and then stops.	The load is too high.		Set the FORCE regulator on the PC board to a higher level. Check whether the pergola may be stiff.

Error/fault	Possible cause	Inspection	Solution
The actuator moves in the wrong direction.	The connection lines are reversed.	Check the direction of rotation with S4 and S5 (S4 = closes the pergola).	Reverse the two connection wires on the terminal on the PC board.
	The actuator was teached-in incorrectly.	Test the direction of travel with the hand-held transmitter.	Delete the radio channel, then teach-in again.
Actuator moves only with the S4 and S5 keys on the PC board, not with the hand-held transmitter.	After teach-in DIP switch S1 was not switched on again.		After teach-in DIP set both switches at S1 to ON.
	The incorrect channel was selected on the hand-held transmitter.		Set the correct radio channel.
The actuator starts for no obvious reason and without manual control.	Light, wind or rain has triggered a movement.	Check flash sequence of the red LED on the control board.	
	An Astro scheduler has triggered.	An Astro time is activated.	Deactivate the Astro time on the hand-held transmitter.
	A teached-in Sensero cannot be reached by radio.	The power supply to the Sensero is off.	Restore the power supply.
		There is no Sensero present, but one was teached-in.	Delete all transmitters from the radio module for the actuator and teach in the hand-held transmitter again.



Error/fault	Possible cause	Inspection	Solution
The actuator and the light respond to the same key-press on the hand-held transmitter.	During teach-in both DIP at S1 were set to ON.		Delete the applicable channel from both sticks and teach it in again individually.
	The central channel (all) was used on the hand-held transmitter.		Do not use the central channel (all).
Both intermediate positions are at one position.	An attempt was made to teach in a shade or turning position.		Delete all transmitters from the radio module for the actuator and teach in the correct transmitter again.



**NOTE**

If the Sensero and the control unit are switched off completely and then on again after a few seconds, all wait times are reset.

## 9 Declaration of Incorporation



### **NOTE**

The complete installation declaration can be found in the download section of our web site: [www.elero-linear.de/downloads](http://www.elero-linear.de/downloads).

## 10 Waste disposal

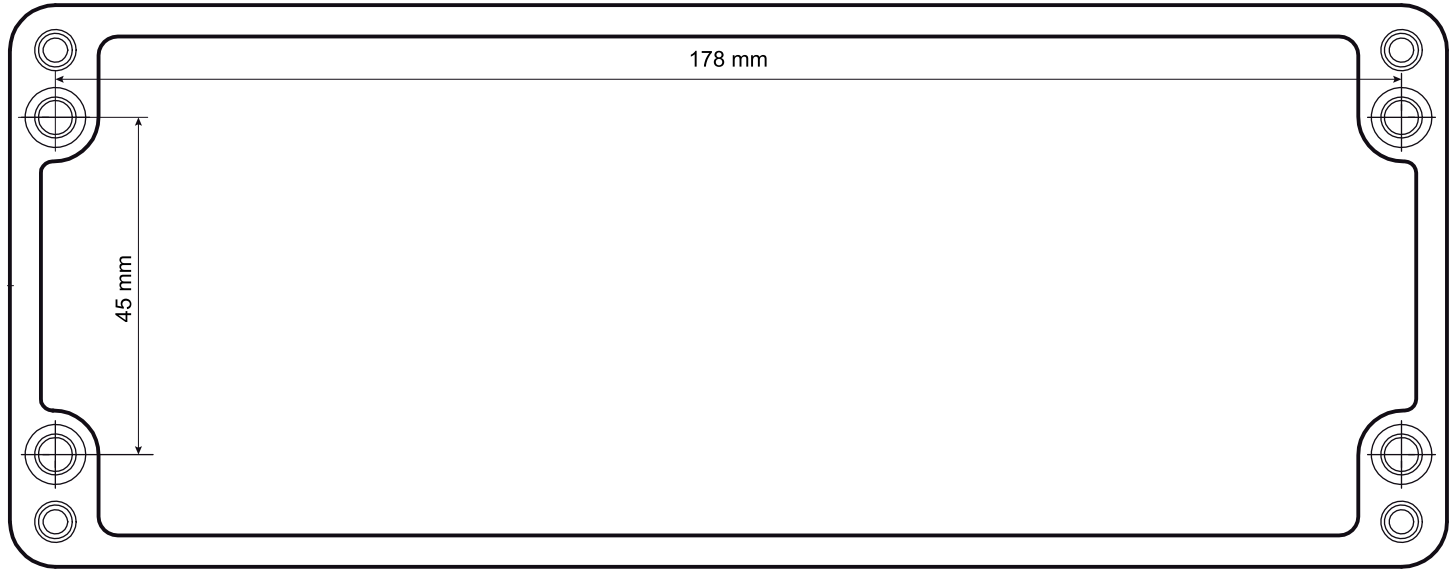
When scrapping the control unit, the currently applicable international, national and regional laws and regulations must be observed.

**NOTE**

Ensure that the recycling, dismantling and separation capabilities of the materials and assemblies, as well as the environmental and health dangers, are taken into consideration during recycling and waste disposal.

# 11 Annex

## Drill hole sizes



Scale 1:1

e l e r o

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