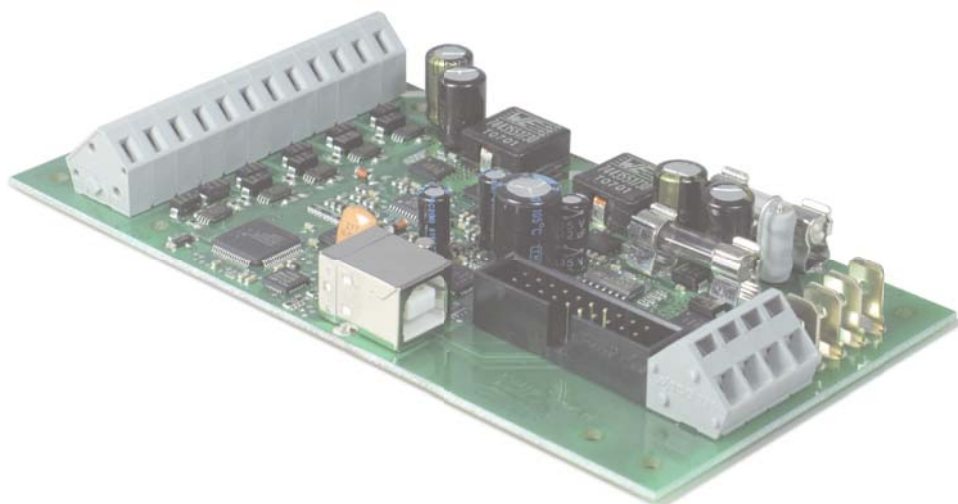




ESoLUX Solar-LED-Controller

Installation Guide



Installation - ESoLUX Controller

○ Necessary components for operating:

Included in delivery:	1 ESoLUX board
	1 Temperature sensor
	1 Software-CD or USB flash drive
Additional:	1 Solarpanel (for 12 V system)
	1 Lead-acid battery
	1-10 LED light source (0,35-1 A current consumption)
	1 PC (Windows 2000, XP, Vista) with USB connectivity
	1 USB cable



Installation - ESoLUX Controller

Keyfacts of the ESoLUX Controller

SOLARPANEL-Controller		
ATTRIBUTE	DATA	SPECIFICATION
Nominal voltage	14...25 V	Useable voltage range
Power	70...120 Wp	Recommended
Energy harvesting scheme	MEC	Maximum Efficiency Control
Fusing	10 A	Maximum current of the solar panel
Panel type	Mono-/polycrystalline, amorphous, thin-film panel	

BATTERY-Management		
ATTRIBUTE	DATA	SPECIFICATION
Nominal voltage	12 V	System voltage of the battery
Voltage range (operating)	9...15 V	
Charging current	10 A	Maximum value
Capacity	≥24 Ah	Recommended capacity of the battery
Charging method	CI/CU	Battery fast charging
Overvoltage & depth discharge protection	Yes	Failure-detection for protection of the battery
Overtemperature protection	Yes	Protection of the battery
Typ	Lead accumulator	

LED-Driver		
ATTRIBUTE	DATA	SPECIFICATION
Channels	1...10	One or more LEDs per channel, 16 channels with the same LED-forward voltage
LED-current	0.35...1 A	Maximum current of each channel
Power	80 W	Maximum power of all channels (depends on the LED configuration)
LED-voltage	2...11 V	Maximum voltage of each channel - use of all channels with the same forward voltage
Operating mode	controlLED	Charge controlled PWM
Efficiency	ca. 94 %	
Interface	USB	Configuration via USB

Mounting ESoLUX Controller

Necessary components for mountings:

Included in delivery:

1 ESoLUX board

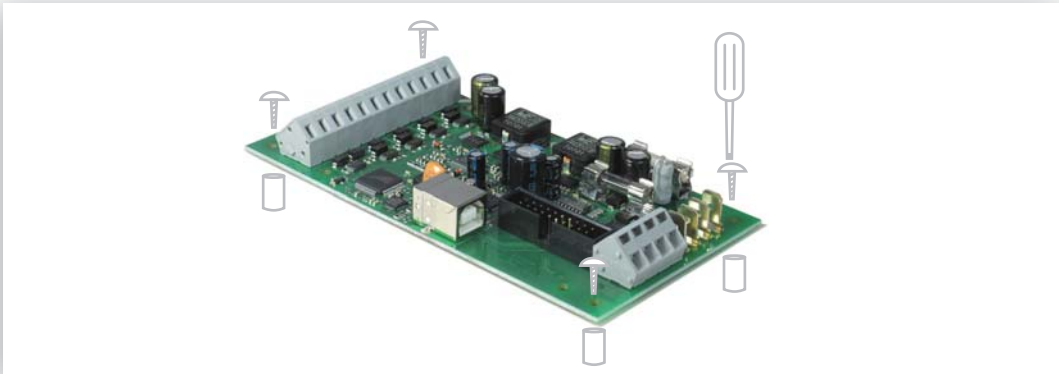
1 Temperature sensor

Additional:

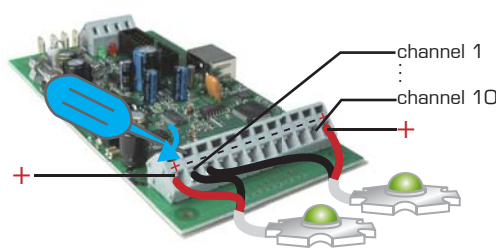
1 Connecting cable for accumulator

1 Connecting cable for solar panel

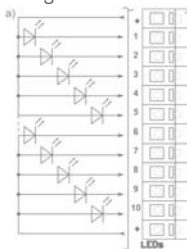
1. Fix ESoLUX board mechanically



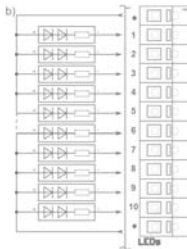
2. Connect LED lamps to the LED terminal



Connecting possibilities
single LEDs



chains or module



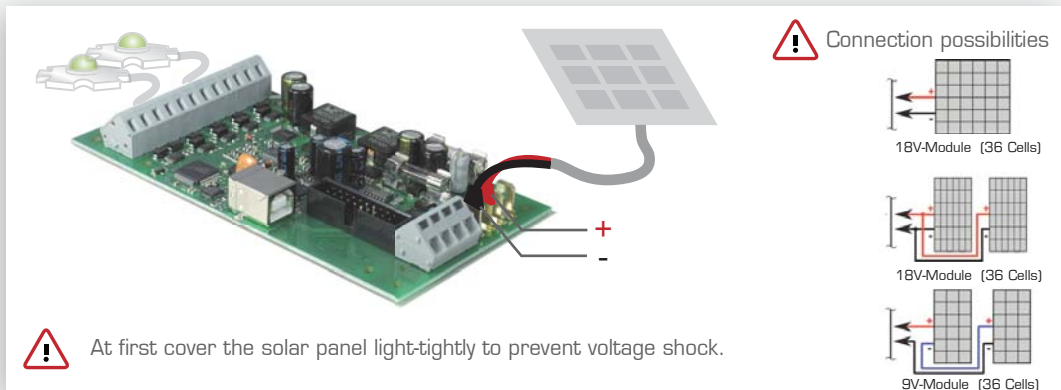
With the help of a screwdriver plug the wires beginning with channel 1 into the terminal block.



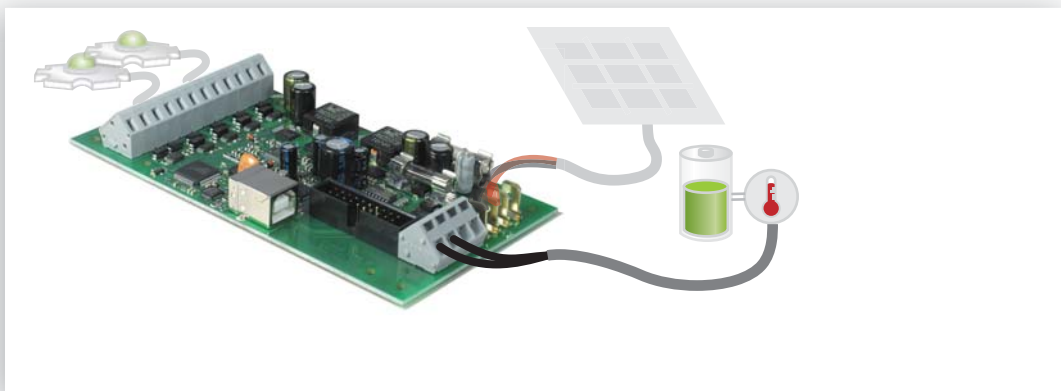
If the total current of plugged LEDs exceeds 6 A, please take note of step 7, page 5.

Mounting of the ESoLUX Controller

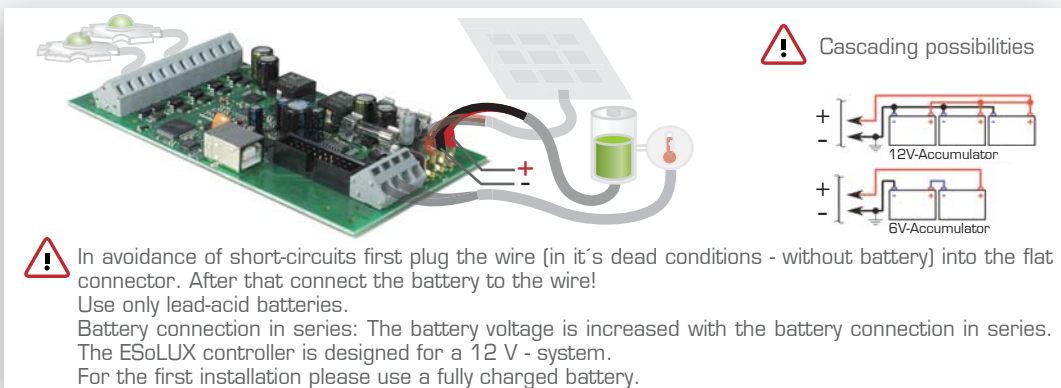
3. Connect the solar panel to the ESoLUX



4. Connect the battery temperature sensor to the ESoLUX

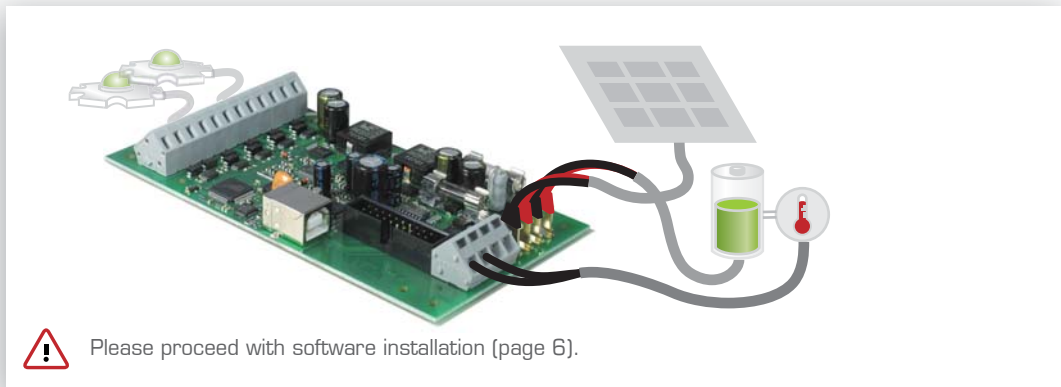


5. Connect the battery to the ESoLUX

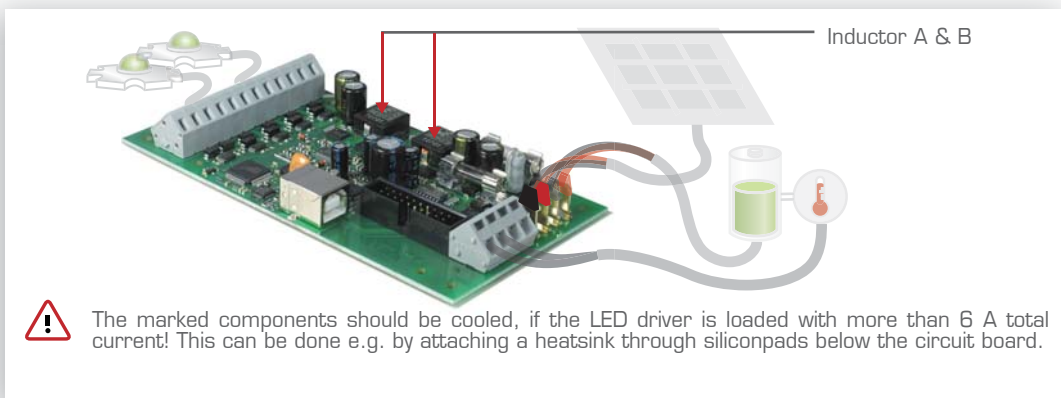


Mounting of the ESoLUX Controller

6. ESoLUX Controller - final state

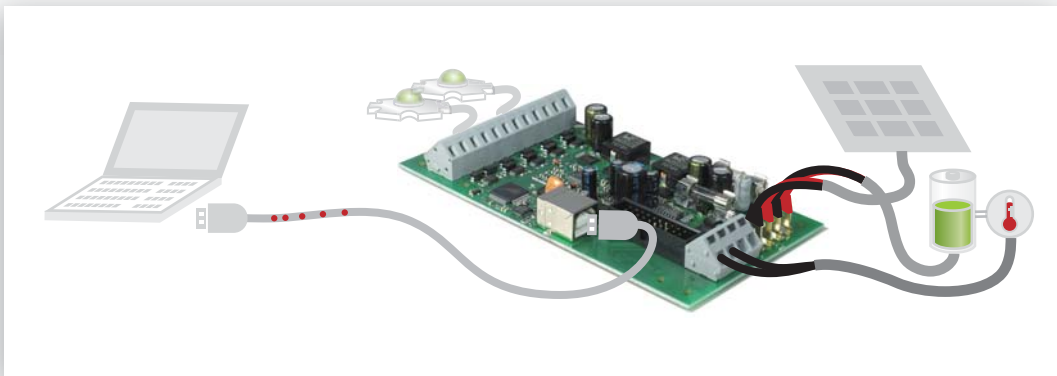


7. Cooling



Installation software

1. Connect the ESoLUX and the PC via USB



2. Installation of the USB driver



! The installation of the software requires administration rights.

The assistant of hardware installation is starting.

Please click to the question "Windows Update" on "No, not yet" and after that "Continue".

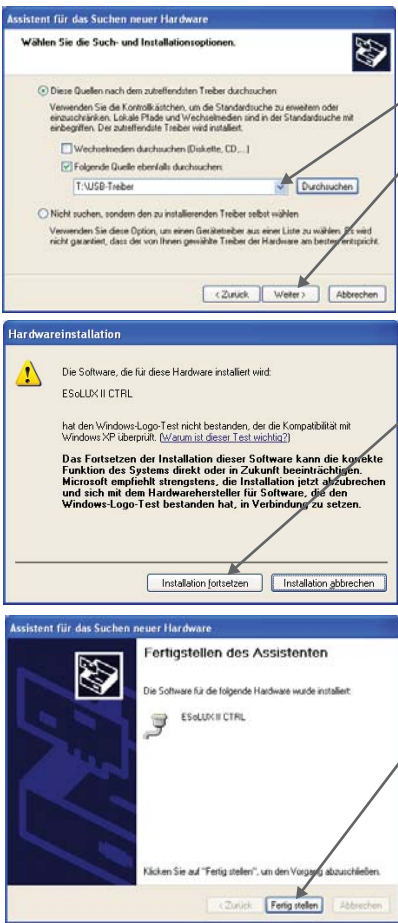


Put in the provided software CD into the CD-drive or plug the USB flash drive in the PC.

Please click "Install from a list" and after that "Continue".

Installation software

2. Installation of the USB driver



Assistent für das Suchen neuer Hardware
Wählen Sie die Such- und Installationsoptionen.

Diese Quellen nach dem zutreffendsten Treiber durchsuchen
Verwenden Sie die Kontrollkästchen, um die Standarduche zu erweitern oder einzuschränken. Lokale Platte und Wechsell Medien sind in der Standarduche mit einbezogen. Die zutreffendste Treiber wird installiert.

Wechsellmedien durchsuchen (Diskette, CD, ...)


Folgende Quelle ebenfalls durchsuchen:
T:USB-Treiber Durchsuchen

Nicht suchen, sondern den zu installierenden Treiber selbst wählen
Verwenden Sie diese Option, um einen Gerätetreiber aus einer Liste zu wählen. Es wird nicht garantiert, dass der von Ihnen gewählte Treiber der Hardware am besten entspricht.

< Zurück Weiter > Abbrechen

Select the driver with the provided CD or the USB flash drive.
Please click on "Continue".
The driver will be installed.

Hardwareinstallation

 Die Software, die für diese Hardware installiert wird
ESoLUX II CTRL

hat den Windows-Logo-Test nicht bestanden, der die Kompatibilität mit Windows XP überprüft. (Warum ist dieser Test wichtig?)

Das Fortsetzen der Installation dieser Software kann die korrekte Funktion des Systems direkt oder in Zukunft beeinträchtigen. Microsoft empfiehlt strengstens, die Installation jetzt abzubrechen und sich mit dem Hardwarehersteller für Software, die den Windows-Logo-Test bestanden hat, in Verbindung zu setzen.

Installation fortsetzen Installation abbrechen

Ignore the lead to hardware installation and continue the installation.

Assistent für das Suchen neuer Hardware
Fertigstellen des Assistenten

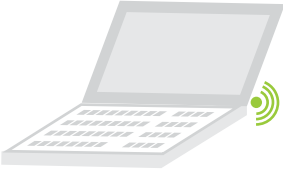
Die Software für die folgende Hardware wurde installiert:
ESoLUX II CTRL

Klicken Sie auf "Fertig stellen", um den Vorgang abzuschließen.

< Zurück Fertig stellen Abbrechen

The USB driver is installed.
Click on "Done" to close the process.

3. Installation of the software ESoLUX-Manager

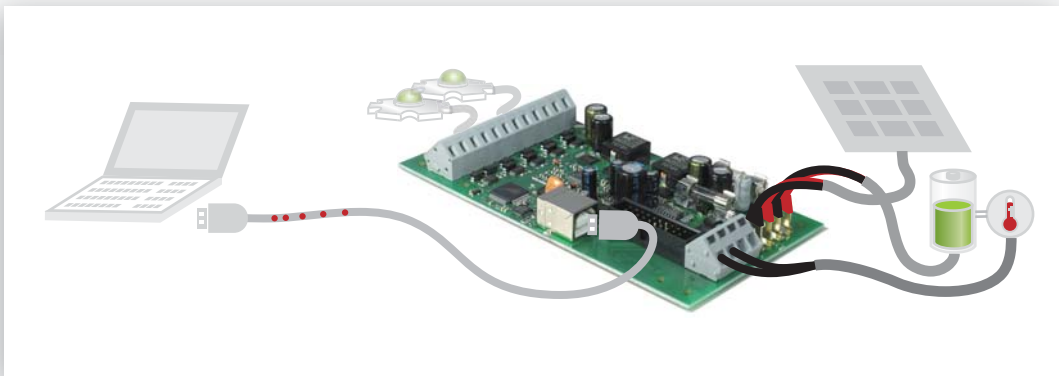


Open the folder "Software ESoLUX 2.0 Manager" from the provided CD/USB flash drive or download it via customer login from the website <http://www.dilitronics.com/Service.7.0.html>

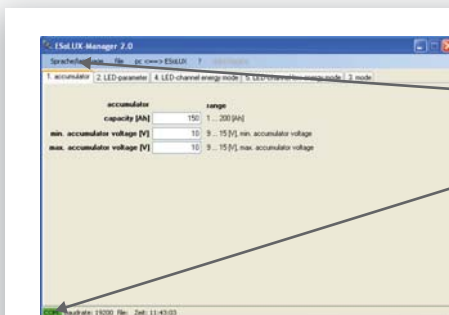
Start the setup file.

Configuration ESoLUX-Manager

1. Connect the ESoLUX and the PC via USB



2. Starting software ESoLUX 2.0 Manager



Start the software "ESoLUX 2.0 Manager".

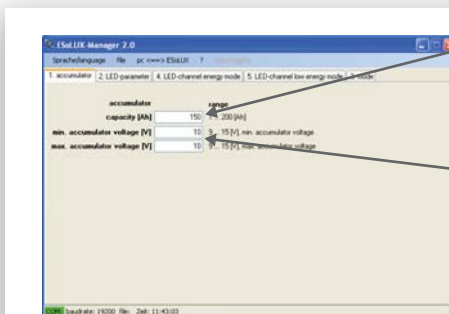
Please select your language.

The ESoLUX hardware is identified automatically. "COM" is green.

If "COM" is red, please check the USB connection between the ESoLUX hardware and the PC.

⚠ In case of interferences, please disconnect other USB devices.

3. Properties of the accumulator



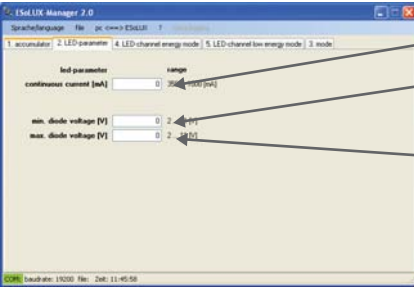
⚠ Capacity (consult the manufactures data sheet)
Parallel connection: The capacity of the battery pack is the sum of the capacities of the individual.
Example.: 4 Lead-acid battery - every 12 V / 12 Ah
= 48 Ah capacity

⚠ Battery voltage (consult the manufactures data sheet)
Series connection: The battery voltage add together to determine the battery pack voltage. The ESoLUX controller is designed for a 12 V system.

⚠ At first fill in all parameters in the ESoLUX Manager. Secondly save your configuration by clicking on "send parameters" in the menu item "PC <-> ESoLUX".

Configuration ESoLUX-Manager

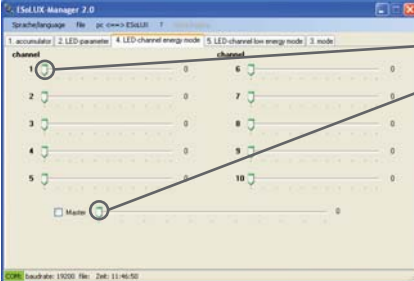
4. Operating characteristics of the LEDs



The screenshot shows the 'LED-parameters' tab in the ESoLUX-Manager software. It features several input fields for configuring LED characteristics:

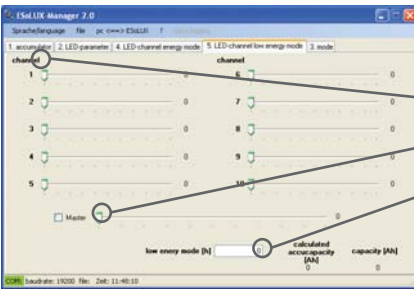
- continuous current [mA]:** Set to 0. A callout points to this field with the text: "Continuous current of the LEDs or LED modules".
- min. diode voltage [V]:** Set to 2. A callout points to this field with the text: "Min. voltage that results from minimum current of 150 mA per channel (consult the manufacturer datasheet)".
- max. diode voltage [V]:** Set to 7. A callout points to this field with the text: "Maximum permissible forward voltage of LEDs or of LED modules (consult the manufacturer datasheet)".

5. Adjust LED brightness



The screenshot shows the 'LED-channel low energy mode' tab. It displays a grid of sliders for adjusting the brightness of five individual channels (1-5) and a master slider. A callout points to the sliders with the text: "Adjust the desired brightness of each individual channel by dragging the slider or master slider."

6. Adjust LED brightness for low energy mode



The screenshot shows the 'LED-channel low energy mode' tab with additional configuration options:

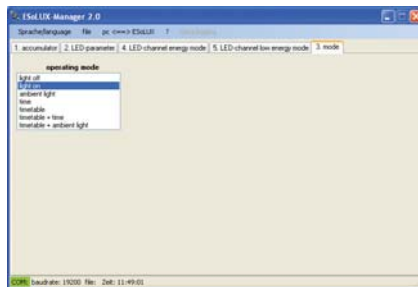
- low energy mode [h]:** A slider for setting the duration of low energy mode. A callout points to it with the text: "Adjust the duration of low energy mode."
- calculated occupancy [h]:** A field for calculated occupancy.
- capacity [Ah]:** A field for accumulator capacity.

A warning icon (exclamation mark in a triangle) is placed next to the 'calculated occupancy' and 'capacity' fields. A callout points to this area with the text: "The 'low energy mode' guarantees the operation of the LEDs for the predetermined time. Adjust the LED brightness of particular channels with the slider or with the help of the master slider. The residual amount of energy of the accumulator determines the switch of selected operating mode to saver mode. The system requires a full loading and unloading cycle in order to determine the energy of the accumulator. After this cycle is completed the low energy mode works flawlessly."

Configuration ESoLUX-Manager

7. Selection of the operating characteristics of the LEDs

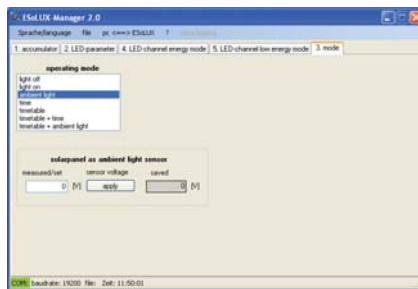
Select the suitable operation mode for your application.



Continuous light

Light on: The default profile (LED-channel energy mode) is always active.

Light off: Continuous light is off.



Brightness

The ESoLUX will use the solar module output as a measure of ambient light intensity.

Setup the threshold:

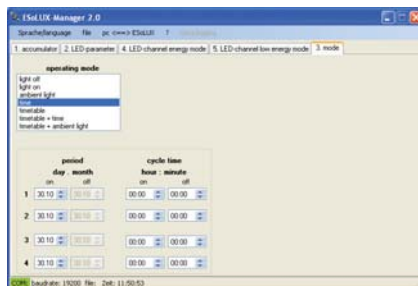
Option A

1. Cover the solar module or setup the system when ambient light is already at the desired level
2. Click menu "PC<==>ESoLUX" "receive parameters"

3. Click "Apply" sensor voltage

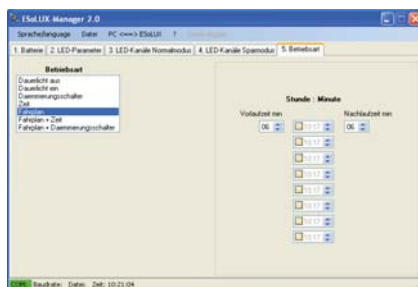
Option B

1. Enter a voltage-value
2. Click "Apply" sensor voltage



Time

The default profile will be activated on a daily basis at fixed times.



Timetable

The LED channels will be defined switched on & off according to the periods in menu item "timetable".


Timetable & Time

The LED channels will be activated at the defined periods during the appointed switching times!

Timetable & Brightness

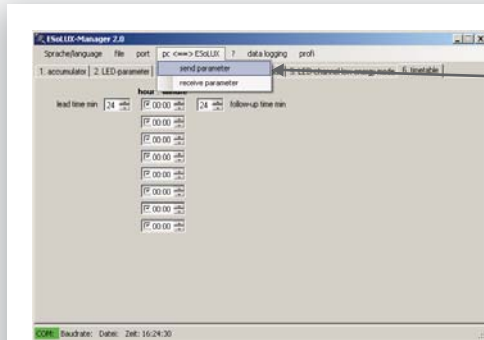
The LED channels will be activated at the defined periods during the appointed switching times!

The LED channels will also be activated at the defined ambient light.

 As soon as the operating mode is changed, the LED channels have to be recalibrate. The process lasts 30 seconds. Please do not change anything else at this time.

Configuration ESoLUX Manager

8. Save configuration



In order to save the configuration on the ESoLUX, click on the menu item "PC <-> ESoLUX" "send parameter".

If the configuration is saved you get the message "Sending successfully".

9. Disconnect ESoLUX and PC

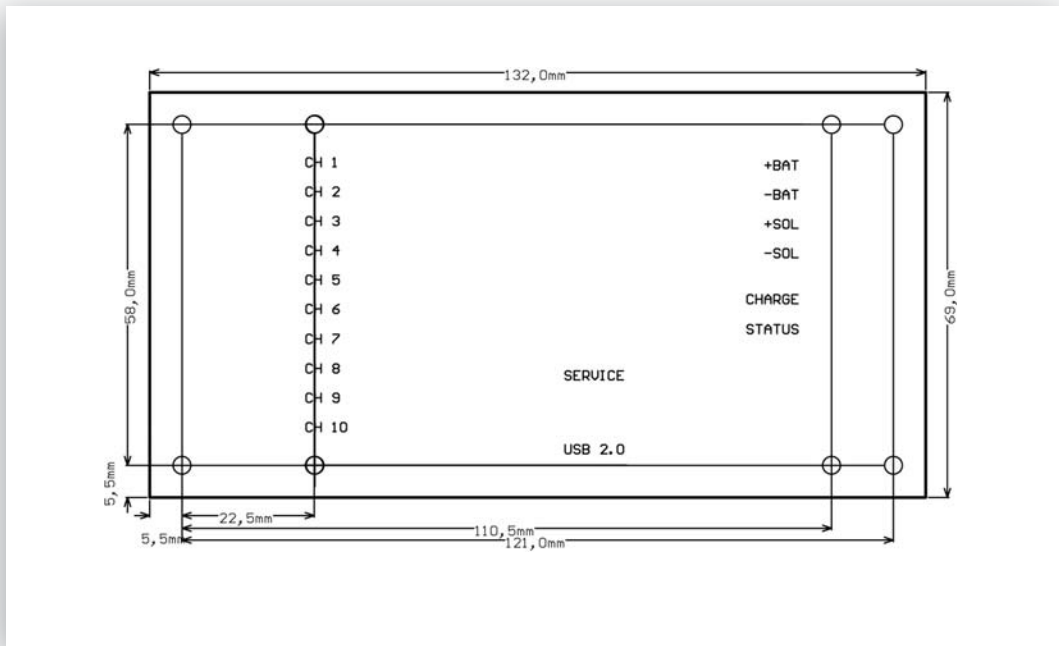


! The ESoLUX will work independently. In case of an operating mode based on time, consider that power supply (no connection to USB-flash driver, accumulator or solarpanel) should not be disconnected for more than 30 seconds. If the power supply is disconnected for a long time, the device would switch automatically to a mode which is driven by the brightness. The threshold voltage is equivalent to battery voltage.

For questions concerning the configuration, please contact the Technical Support via e-mail techsupport@dilitronics.com or via telephone +49 (0) 3641 8757571.

Information

ESoLUX: dimension



ESoLUX: electronic devices

