Instruction Manual Lightcontrol ML1901

The information of these instructions was put together with the biggest care and corresponds to the actual state!

Company does not take over any responsibility for inaccuracies or missing information!

In case of doubt please contact your dealer.

Technical changes reserved.

Table of Content

1 Introduction

We thank you for your decision to buy this Lightcontrol ML1901.
This instruction manual explains how to use the different functions of the system, it provides information concerning preventive measures and illustrates how to carry out the basic installation and troubleshooting. Please read these instructions carefully before use and make sure you apply the system correctly and efficiently.

Technical changes reserved.

1.1 Scope of delivery

Quantity	Name of the item	Length	Measuring unit	Item number
	Controlunit			
	Touchpanel			
	Controlcable			

2 General Information

2.1 Safety regulations

General:

All the figures in this instruction manual have to be seen in a symbolic way!
Company reserves itself the right to modification.

For questions concerning this instruction manual please contact Company.

Any alteration requires a written consent of Company.

In case of an unauthorized modification or inappropriate operation of the Lightcontrol ML1901, all warranty claims and rights for gestures of goodwill to be claimed to Company immediately expire.

The state was made according to the state of the art and the recognized safety-related regulations. Nevertheless, in case of an operation error or misuse there is danger for:

- life or physical condition for the operator or third parties
- the operator's equipment and other material assets
- the efficient work on the device / equipment

All persons who are concerned with the start-up, operation, maintenance and service of the equipment must:

- have sufficient qualification
- entirely read and fully observe the instruction manual

The instruction manual always has to be kept at the site of operation. In addition to the instruction manual, the general and local health and safety regulations and the rules for the protection of the environment have to be available and followed.

Symbols and identification marks of the equipment and the device

On the equipment you will find adhesive labels and signs containing important security and warning instructions or general information.

All those instructions attached to the equipment:

- have to be kept in a readable state
- must not be damaged
- must not be removed
- must not be covered, pasted over or made unrecognizable

Danger and warning notices

The danger and warning notices of these safety regulations depend on the potential hazards.

Warning symbol and corresponding signal word

Symbol and signal word		Consequences in case of disregarding
	**DANGER**	Marks an immediate danger with a high risk, which leads to death or heavy injury if the danger is not avoided.
	**WARNING**	Marks a possible danger with an average risk, which may lead to death or (heavy) injury if the danger is not avoided.
	**ATTENTION**	Marks a danger with a low risk, which may lead to light or average injury or property damage if the danger is not avoided.
	**DANGER** **through electrical power**	Marks an immediate danger with a high risk, which leads to death or heavy injury caused by high voltage if the danger is not avoided.

Notice symbol and corresponding signal word

Symbol and signal word		Comment
	**NOTICE**	This sign indicates important background information and advice of use.

Duties of the user

The user of the system is responsible for the security of the operating staff! They have to make sure that:

- the instruction manual and the corresponding documents were read by the operating staff! (The producer recommends that the operating staff confirms in writing for having done so)
- the instruction manual is kept available
- the system is operated and maintained by qualified, skilled and trained staff only
- all existing necessary and compulsory safety devices were installed and work properly
- functional tests of the safety devices are executed in the required time intervals – if no time interval is required, these tests must be executed in appropriate regular time intervals

For questions or problems, please contact XXXXXX on telephone number: XXXXXX

2.2 Operating personnel requirements

General:

The operating staff must not work while under the influence of alcohol, drugs or similar agents. The operating staff must not suffer from a reduction of the field of view or other reducing disabilities which might lead to an endangerment. The operating staff must be able to operate the system (please pay attention to medical aids, such as cardiac pacemakers, etc.)

Qualified staff:

All persons who are concerned with the start-up, operation, maintenance and service of the equipment must be familiar with the system and adequately trained. They must have read and understood the instruction manuals. Besides, when they work on the system, they must have been instructed and be able to avert and minimize possible residual risks for themselves and others. Safety-related instructions must be repeated at least once a year to keep the level of qualification.

Authorised electricians:

Work on electrical components of the system must only be done by a certified electrician because of the specific danger. Being a trained, knowledgeable and experienced worker, the authorized electrician is able to see and avert possible risks.

2.3 Specific danger caused by electric current

Work on electrical components of the system

Before work is done on the electrical components, the circuit breaker of the power plug of the system must be switched off or the primary power has to be cut. Afterwards a specific measuring must make sure that the system is de-energized.

The system must be protected against an unintended resetting and a breach of close (e.g. by fixing a padlock at the circuit breaker, putting warning signs or shut-off devices).

<table>
<tr><td>  </td><td>DANGER
through electrical power</td></tr>
<tr><td></td><td>A wrong exposure to electrical power presents a danger to life. Therefore you must follow to the following points:
Work on electrical components of the system must only be done by certified workers.
When working on electrical components of the system you must follow to all adequate regulations, directions and technical instructions.
All electrical systems, components and boards must be checked regularly to make sure they are in a faultless state and work properly. If necessary they must be replaced. These tests must follow the legal directions and the producer's specification.
For wiring work you must stick to the rules of the electric circuit schematic made by the producer.
Work or troubleshooting on open components or devices have to be carried out with the necessary caution and care because the power terminal may be charged or there may be an external voltage supply.
Even with the circuit breaker being switched off, certain circuits may be under system voltage!
Persons with cardiac pacemakers or similar medical aids must not work in the vicinity of powerful electric current or voltage, strong magnetic fields or other sources of interference that might have an influence on the aids.</td></tr>
</table>

Electrical start-up

	**DANGER** **through electric power**
	A wrong exposure to electric power presents a danger to life. There you must observe to the following points: • Work on electric components of the system must only be done by certified workers. • Please see point "2.3 Specific danger caused by electric current"

Safety instructions for the mechanical start-up

	**DANGER**
	Faults and inattention involved in transporting or in fixing components of the systems may lead to an exposure to danger. • All fixing, mounting and start-up operations must be carried out by trained and authorized staff. • Mounting must be carried out by observing all adequate regulations, directions and technical instructions. • If necessary or required, you must wear personal protective equipment.
	**NOTICE**
	Unauthorized modifications which are not approved or made by the producer lead to a loss of warranty / guaranty and EC conformity!

Safety instructions for maintenance and service

<table>
<tr><td>  </td><td>WARNING</td></tr>
<tr><td></td><td>Faults and inattention involved in the maintenance and service of the systems may lead to an exposure to danger.

• All maintenance, cleaning and service operation must be carried out by trained and authorized staff.

• Please see especially and follow to the safety instructions of "2.3 Specific danger caused by electric current" and "Electrical start-up".

• If necessary or required, you must wear personal protective equipment.</td></tr>
</table>

Before all maintenance, cleaning and service operation, you must make sure that the system is switched off and protected against an unintended resetting and a breach of close.

Only use original spare parts or replacement parts or operating materials approved by the producer.

For cleaning, you must not use highly unflammable, corrosive, polluting or health damaging cleaning agents.

Environment

Please pay attention to the safety data sheets of the cleaning agents and, if necessary, use the recommended protective equipment. Make sure to remove all cleaning-related waste and the replacement parts of maintenance and service operations in an environmentally-friendly way.

For waste removal follow to the local instructions / ordinance on hazardous substances.

3 Technical data

3.1 Ambient conditions

- Storage temperature -20°C ..... 85°C
- Operating temperature -15°C..... 50°C
- Atmospheric moisture: 20% - 80% rel. air moisture
- No dirt or dust

3.2 Electrical data

Voltage:

V1 10-15 V DC (nominal 12V)
V2 10-15 V DC (nominal 12V)
V3 10-15 V DC (nominal 12V)

Current: 70 mA in standby

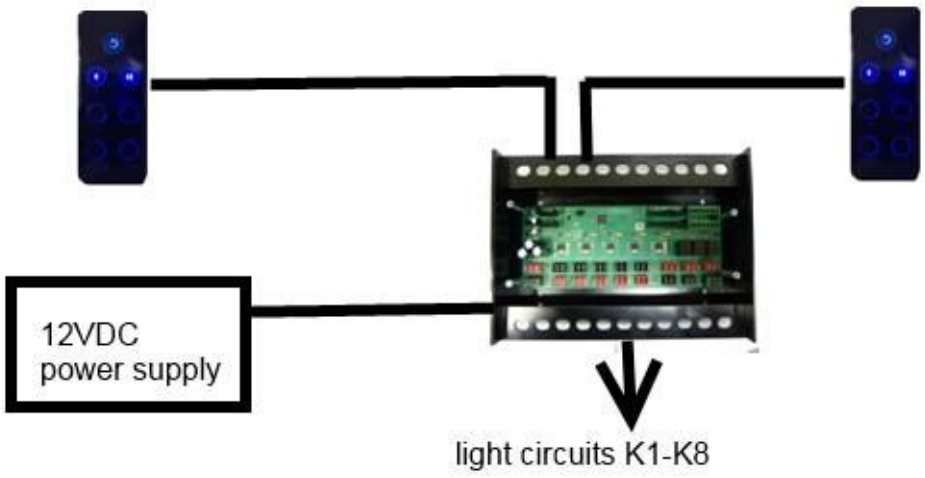
electric current output channels K1-K8:

Max single power/current K1-K5	90W or 7.5A
Max single power/current K5-K8	180W or 15A
Max summary power/current K1-K3	180W or 15A
Max summary power/current K4-K6	180W or 15A
Max summary power/current K7-K8	180W or 15A

4 Short description

The Lightcontrol ML1901 was developed to switch up two eight light circuits from the centralized Controlunit. Channels 1-5 have an additional dimming function. To control the light circuits, up to 2 Touchpanels or directly connected pushbuttons (not part the system) can be used. It is possible to save up to two light scenarios and one coming home scenario.

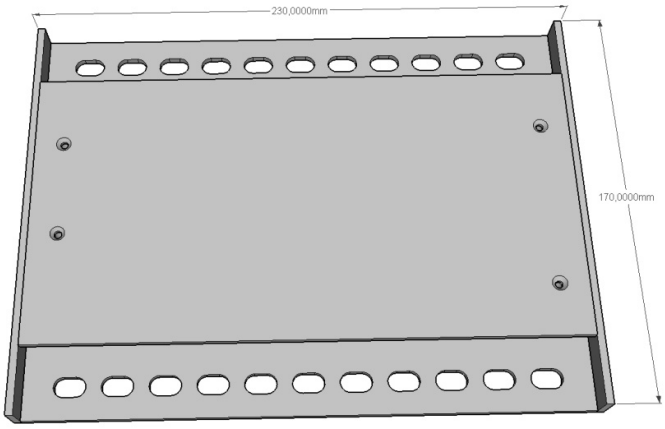
scheme the of system (depends on configuration)



5 Mounting and dimensions

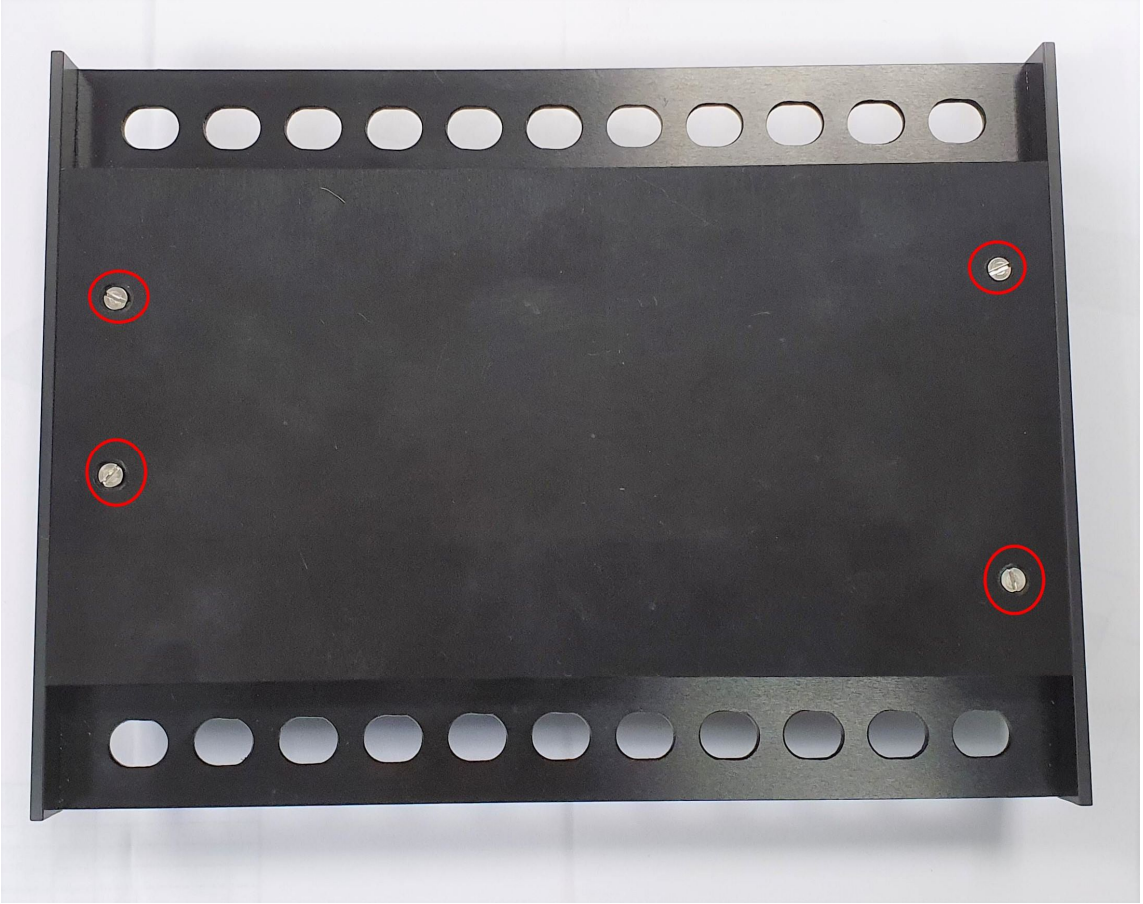
5.1 Controlunit

5.1.1 Dimensions

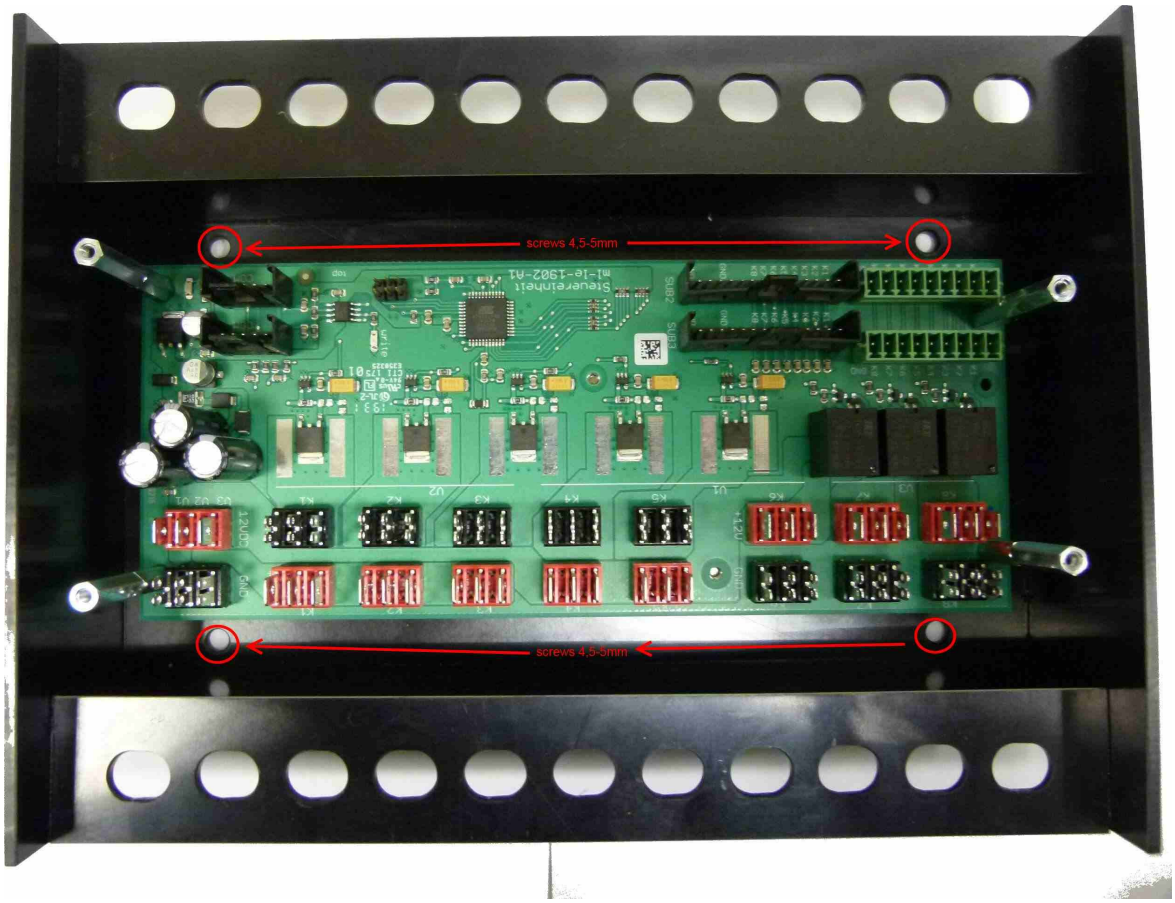


5.1.2 Mounting

1. Open the cover plate on the top of the device with a screwdriver.

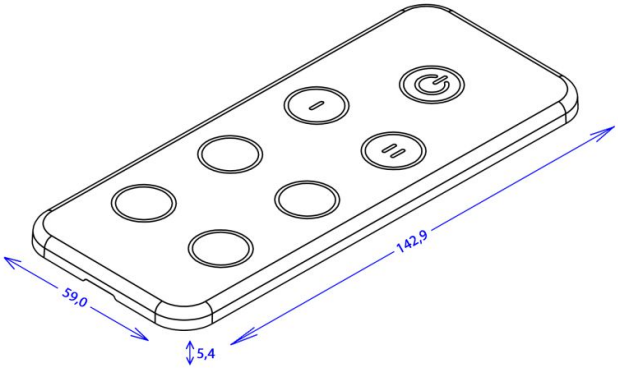


2. Mount the device with four screws (Ø 4.5-5mm)



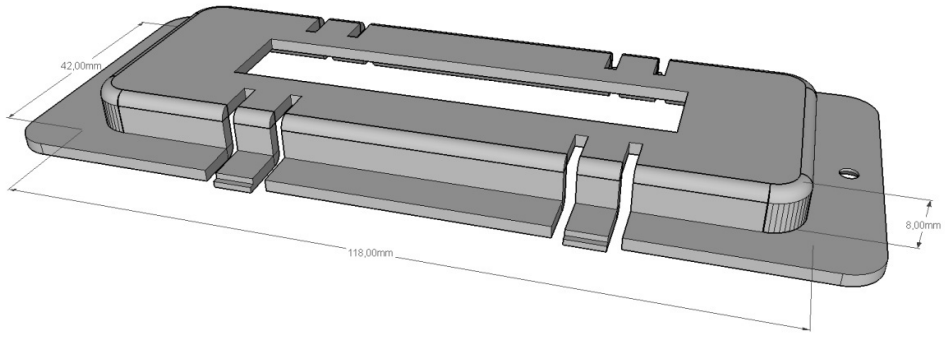
5.2 Touchpanel

5.2.1 Dimensions



5.2.1.1 Cutout

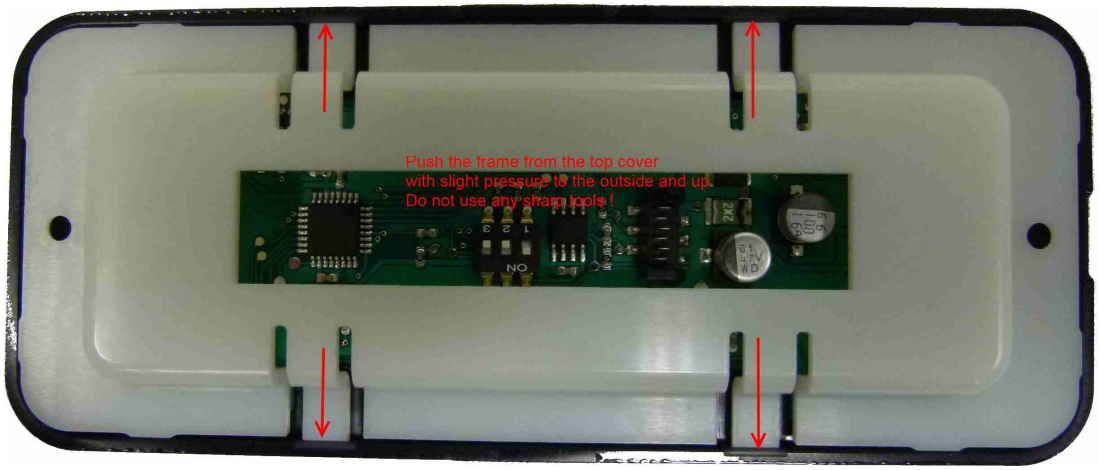
120 x 44 x 20 mm



5.2.2 Mounting

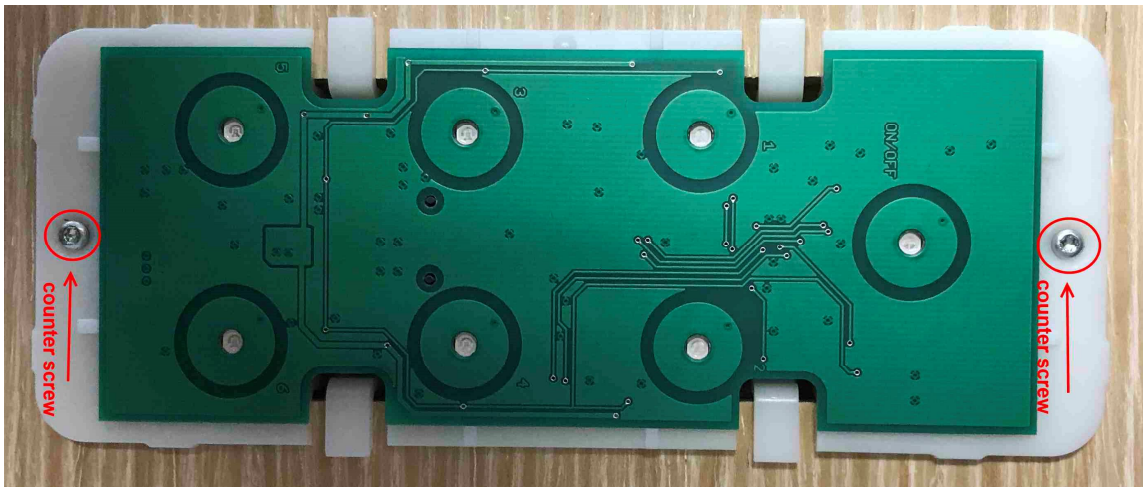
1. Cut out the cavity on your installation place of the panel (see chapter 5.2.1.1) .

2. Remove the top cover from the Touchpanel.



Do not use any sharp tools. This can damage the housing!

3. Mount the housing-base with 2 countersunk screws (Ø 3mm).



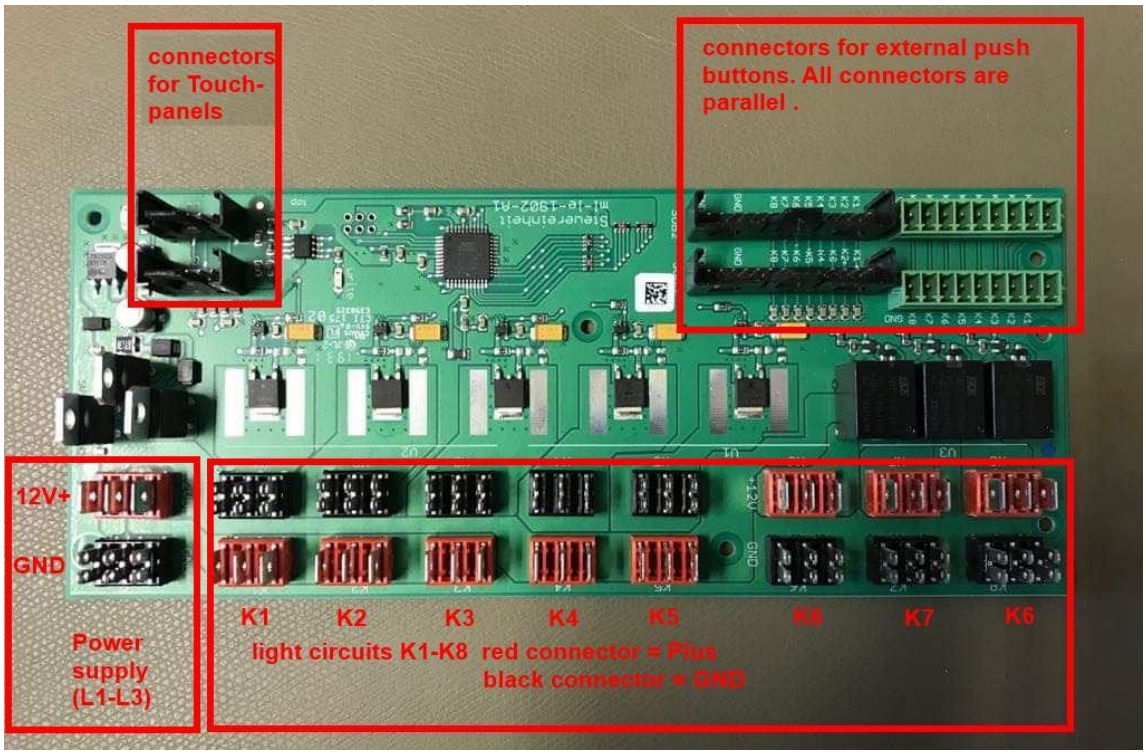
Make sure that the size of the countersunk head fitts the counter bore and the head of the screw does not overlap it. This can damage the functionality of the Touchpanel. We recommend using a hand screwdriver for better control and to avoid any damage of the PCB.

Note: Connect the Controlcable before you mount the housing base. (see chapter 6.2.). Configure the DIP switch on the bottom for the correct channel assignment for the touch buttons (see table on page 16).

6 Connecting devices

6.1 Connect the Controlunit

Overview Controlunit:

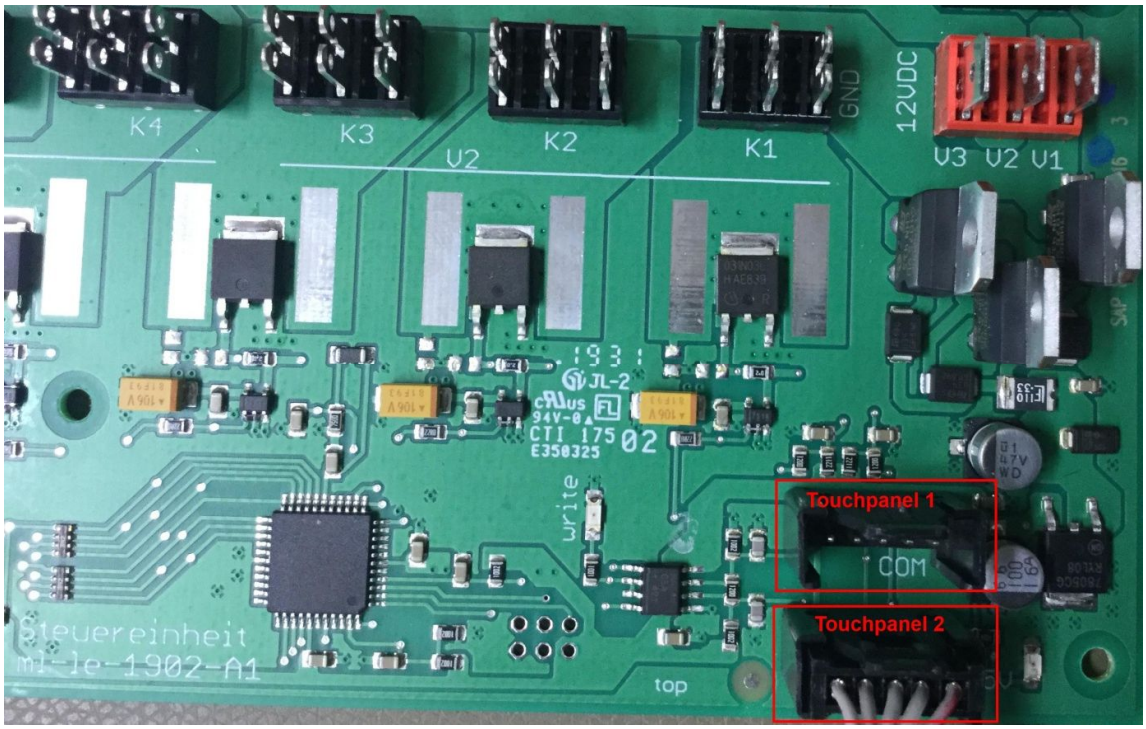


1. Connect your light circuits to channels K1-K8. Black connectors are GND and red ones are positive voltage.

Make sure that you use a cable with enough wire cross section. If you are not sure contact your dealer or qualified service company.

Make sure that the power supply is able to deliver enough power for your light circuits.

2. Connect the delivered Controlcable from the Touchpanel.



Optional:

Connect external pushbuttons to the baseboard.

See the description of the connectors in the Annex A.

3. Configure your Touchpanel and assign touch buttons 1-4 to the light circuit channels via the DIP switch

Touch button assignment:

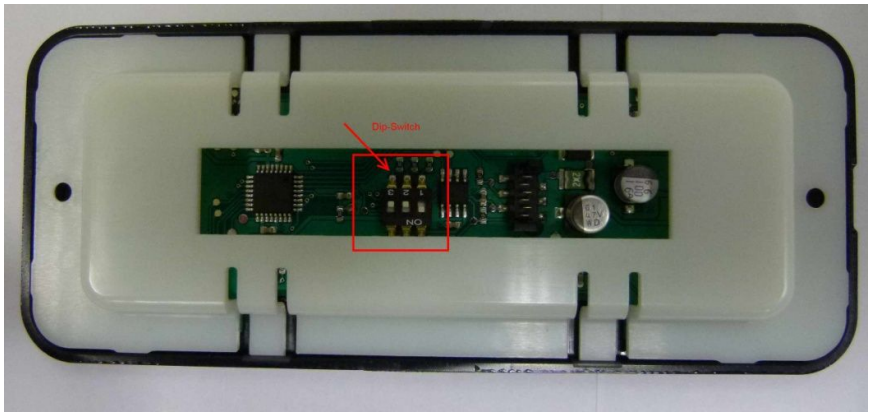
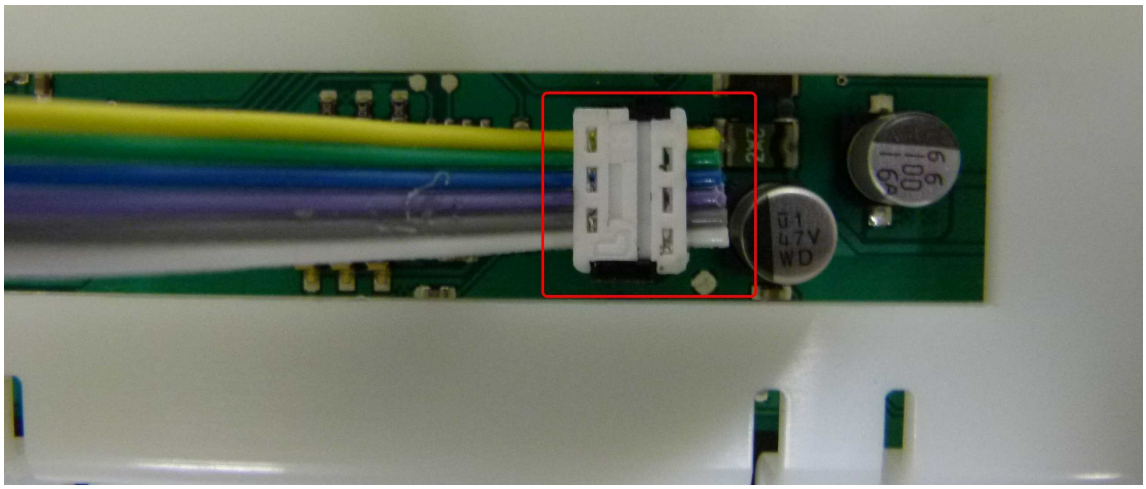


Table DIP switch assignment:

DIP 1	DIP 2	DIP 3	Button1	Button 2	Button 3	Button 4
0	0	0	K2	K5	K7	K4
1	0	0	K1	K2	K3	K4
0	1	0	K5	K6	K7	K8
1	1	0	K1	K5	K6	K7
0	0	1	K3	K4	K7	K8
1	0	1	K4	K5	K6	K7
0	1	1	K1	K2	K3	K8
1	1	1	K4	K5	K6	K7

4. Connect the Controlcable with the Touchpanel(s) on the back side.



Note: Connect the Controlcable before you mount the housing base (see chapter 6.2). Configure the DIP switch on the reverse side for the correct channel assignment of the touch buttons.

5. Connect your 12V DC power supply with power circuits L1-L3 of the Controlunit.

Note: the electronic of the system can be powered from every power supply circuit (L1-L3).

The light circuits are powered as follows:

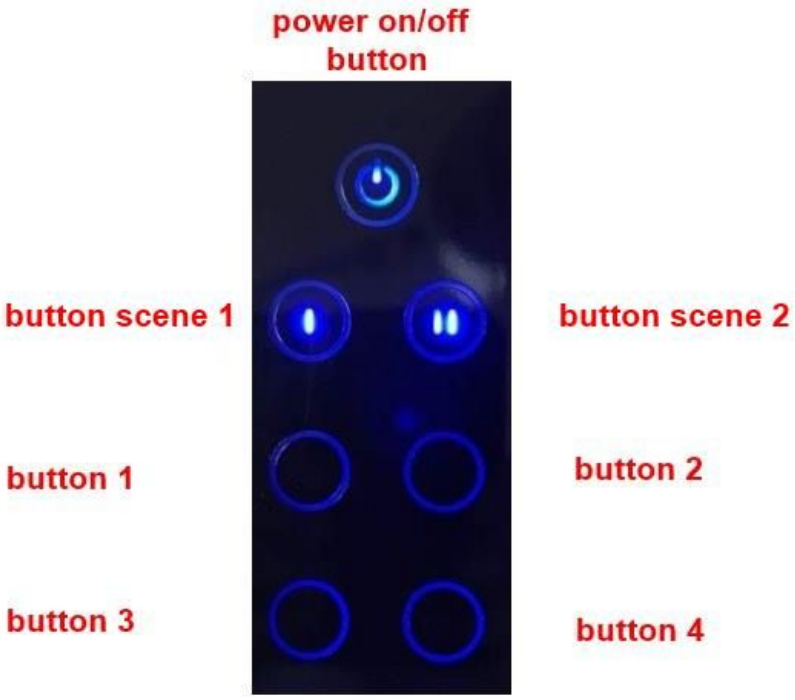
Power supply circuit	Light circuit
L1	K1-K3
L2	K4-K6
L3	K7-K8

Attention! Every power supply circuit (L1-L3) must be secured with its own fuse. The fuse must not be higher than 15A!

7 Operation

7.1 Touchpanel function

Overview and naming of the buttons:



The system has two modes:

Standby mode: all channels are off, the power on/off button is illuminated red, all other buttons are off

Operating mode: all buttons are illuminated blue

Functional description of the buttons:

Touch button	Short touch (<3 s)	Long touch(>3 s)
Power on/off button	1. in standby mode: system goes into operating mode and if configured "coming home",it is switched on. 2. in operating mode: all channels are switched off and the system goes into standby mode.	1. in standby mode: system goes into operating mode and if configured "coming home" is switched on. 2. in operating mode: the status (on/off) and the dimming value of all channels will be saved in "coming home" mode If the state is saved the buttons blink shortly.
button scene 1	In operating mode: The saved status of the channels (on/off) and dimming values from scene 1 will be restored.	The status (on/off) and the dimming values of all channels will be saved in "scene 1". If the state is saved the buttons are blink shortly.
button scene 2	In operating mode: The saved status of the channels (on/off) and dimming values from scene 2 will be restored.	The status (on/off) and the dimming values of all channels will be saved in "scene 2". If the state is saved the buttons are blink shortly.
button 1 - button 4	In operating mode: The assigned channel (see chapter 6.1 DIP-switch matrix) is switched on or off, related to the status. If the channel is switched off and the channel is dimmable (K1-K5) The dimming value will be saved and restored by the next "switch-on" state.	In operating mode: If it is a dimmable channel (K1-K5) The channel goes into dimming mode and steps up or down the dimming value for the time the button is pressed. When the dimming value reaches the minimum or maximum the buttons are blink 3 s and revert the dimming. After releasing the button, the status is saved for the next switch on.

Note: the external pushbuttons have the same functionality as the touch buttons!

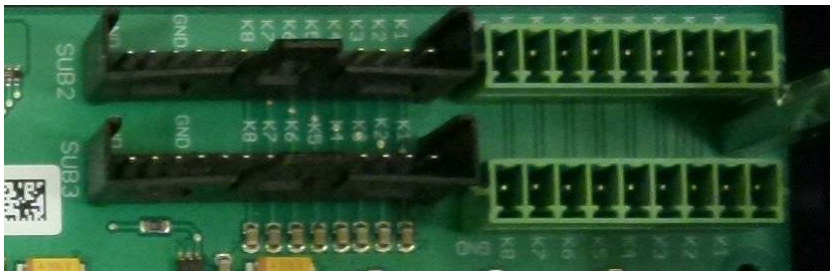
8 Malfunctions

Error	Possible cause	Solution
No light circuit can be switched on	No power supply Lightcontrol damaged	-Check power supply and fuses -Check the cable (wire broken?) -Check the connectors -Contact your dealer
Touchpanel is blinking, the on/off button changes between red and blue	The Touchpanel has no or a damaged connection to the Controlunit	-Switch power off and on (restart system) -check the connection cable and connectors between Controlunit and Touchpanel -If two Touchpanels are connected: disable one and restart the system.

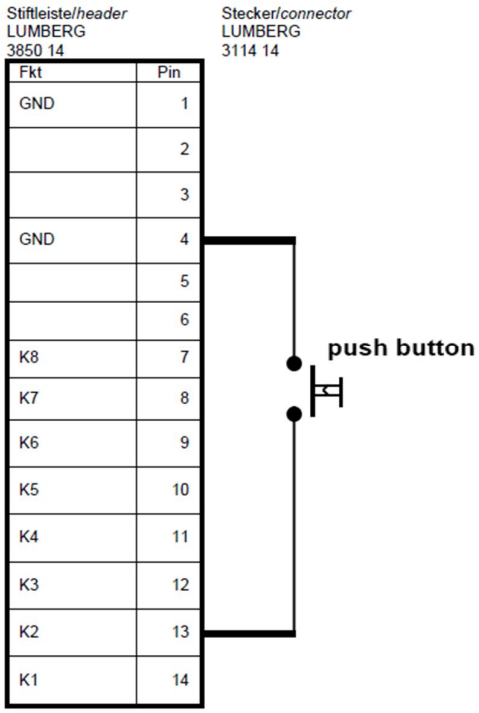
9 Annex A

9.1 Connector descriptions

9.1.1 Connectors for external pushbuttons



Connector (14 pole black) for external push buttons:



The plug connector is type LUMBERG 311414.

Crimp contacts are LUMBERG 3111 01 (0.3-0.6mm).

Connector (9-pole green) for external push buttons:

GND	9
K8	8
K7	7
K6	6
K5	5
K4	4
K3	3
K2	2
K1	1

The plug connector (phoenix) is part of the delivery.