

WALL DIGITAL DIMMER

LLD.WR66 / LLD.WR126 / LLD.WR243 / LLD.WR123

Operation manual

WR66 - WR126 - WR243 - WR123



*Please follow the instructions in this manual to obtain the optimum results from this unit.
We also recommend that you keep this manual handy for future reference.*

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1. BEFORE YOU BEGIN

Immediately upon receiving a fixture, carefully unpack the carton; check the contents to ensure that all parts are present, and the equipment have been received in good condition. Notify the shipper immediately and retain packing material for inspection if any parts appear damaged from shipping or the carton itself shows signs of mishandling. Save the carton and all packing materials. In the event that a fixture must be returned to the factory, it is important that the fixture to be returned in the original factory box and packing.

2. SERVICE

From the day buying the product, you own 1 year for warrant. In case there are technics problems or accessory damage, we offer free change, but except for the damage caused purposely or by mishandling. Contact us if there is any problem.



WARNING

- Please keep this User Guide for future consultation. If you sell the unit to another user, be sure that they also receive this instruction booklet.
- Always make sure that you are connecting to the proper voltage and that the line voltage you are connecting to is not higher than that stated on decal or rear panel of the fixture.
- This product is intended for indoor use only!
- To prevent risk of fire or shock, do not expose fixture to rain or moisture. Make sure there are no flammable materials close to the unit while operating.
- The unit must be installed in a location with adequate ventilation, at least 50 cm from adjacent surfaces. Be sure that no ventilation slots are blocked.
- Because Dimmer packs operate at potentially lethal high voltages, Installation should be carried by professional and experienced personnel
- Do not connect chassis Ground to Neutral, or operate without chassis ground, otherwise the user could be exposed to potentially lethal voltages.

3. PROFILE DESCRIPTION

LINEARLIGHT architecture intelligent dimmer is designed for meeting the increasing demands in the architecture field. It features of hard and soft patch available, neutral-lost warning, Dual DMX signal available, Light weight, excellent shock-proof and easy for maintenance.

The digital LINEARLIGHT absorbs the advanced technology and concept from international lighting controls, optimized inner wiring and structure. The electrostatic powder coating surface prevents the products from scratch, physical shock, abrasion, moisture and high temperature, helping to keep good appearance.

Elegant outlet with simple keypad, digital display and graceful lines, is more user-friendly. Strong and weak electricity are separately controlled, which efficiently lower anti-interference. Intelligent cooling system reduces inner temperature and noise. The unit has variety optional output to meet different needs.

The unit has high-performance microprocessor. It has 10 functions such as presetting dimming curves, pre-heating, etc (see below details). 4096 (16 bit) Fade accuracy, sensitive MCB in each channel for short-circuit and over-load protection. Intelligent channel checking system forces to auto-close when short-circuit occurred, alert for over-load and neutral-lost, guiding for a timely error correction.

4. FEATURES

- Available with 6 x 6 kw, 12 x 3 kw and 24 x 3 kw version
- Wall mount design, easy for installation and maintenance
- Convention cooled, no fans, continually working for 24 hours
- 110V ~ 250V AC, 50 Hz / 60 Hz, single / 3 phase 5 lines input
- MCB protection for each channel
- Dual DMX input
- Soft patch available
- Response time : Quick, normal or slow, helping to prolong lamp's life
- 5 User-selectable curves : Linear, Square, S-curve, Extraction or user defined
- 3 working modes : Normal, fix and switch
- 50 scenes recordable, manual or auto running
- Keep the last level or auto-run the recorded scenes when signal breaks
- Fade in-out time configurable from 0 to 99.9 seconds
- All channels can be dimmed locally (individually or generally)
- LCD display for easy operation
- External control panel optional
- Wireless infrared remote control and PIR switch
- Support interface protocol of central equipments
- Power self-checking warning system, output will be limited once over load or neutral lost to project the equipment
- RS485, MIDI, RS-232 & DMX signal optional
- Light weight and elegant outline

5. TECHNICAL PARAMETER

Voltage	160V AC ~ 240V AC
Frequency	45 Hz ~ 65 Hz
Fade accuracy	4096 (16 bit)
Auto voltage compensation	Effective with a 10% voltage variation input, output variation \leq 1%
Power consumption	60W
Output	6 KW for 6 channel, 3 KW for 12 channel, 3 KW for 24 channel
Signal	DMX-512
Dimming range	0 ~ 100%
Dimming curves	Linear, S-curve, square and extraction or user-defined
Dielectric intensity	\geq 2500 / 1 min
Response time	23 ms
Pre-heating	0 ~ 25 / 255
Operating	24 hours daily
IP rating	IP33
Dimension	824 x 405 x 158 mm

6. INSTALLATION

a. Packing

Save the carton and all packing materials. In the event that a fixture must be returned to the factory, for they are specially designed to protect the fixture during transportation.

b. Equipment list

Unpack the carton, check the contents to ensure that all parts are present. If the packaging equipment does not match with the list, please do not use this equipment and contact the company or distributor immediately.

c. Before installation

- Shut down the power before installation
- Must installed by qualified persons
- Make sure the power supply is consistent with the voltage appeared on the equipment
- This product is intended for indoor use only
- Do not expose fixture to rain or moisture. Make sure there are no flammable materials close to the unit while operating
- At least 50 cm from adjacent surfaces. Be sure that no ventilation slots are blocked
- The equipment must be grounded
- Working temperature : Above 2°C below 45°C
- Working humidity : Between 35% to 85%

Note : The dimmer must be grounded, otherwise the warranty is invalid.

7. KEYPAD DEFINITION



Display the main menu or last directory



Enter the menu or confirm store



Go to upper option



Go to next option



Reduce



Increase

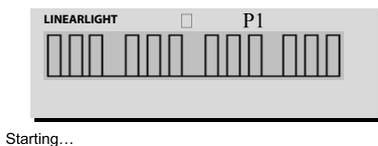
8. MENU DIRECTORY

There are 11 directories in LINEARLIGHT intelligent dimmers.

- | | |
|------------------|---------------|
| 1. Lighting | 7. Pre-heat |
| 2. Patch | 8. Loop Test |
| 3. Channel mode | 9. Cue |
| 4. Curve | 10. Panel key |
| 5. Response | 11. Setup |
| 6. Voltage Limit | |

9. NORMAL OPERATION STATUS

When power on the fixture, red power indicator light on. There are another two indicators for DMX A and DMX B, indicator light of the connected port on. LCD of LINEARLIGHT will display the following starting status, ...



P1 means 12 channel output.

The 4 groups of 12 columns show the related level of 12 channels.

10. LIGHTING

By this function, you can dim single or several channels manually, Level from 0-100% (255 steps)

For example : *To set 1 to 12 channels to be full level, below are the operation steps.*

1. Press MENU
2. Press ENTER
3. Use down arrow to choose the right No, continually press right arrow to modify No. to be 12
4. Use down arrow to choose VALUE, press right arrow to set the lighting value to be 255

1. LIGHTING
2. PATCH
Channel : **01** - 01
Value : 000
Channel : 01 - **12**
Value : 000
Channel : 01 - 12
Value : **255**

11. PATCH

Patch allows dimmers to be allocated to various control channels. They can receive two signals, DMX and RS232; it has four functions as follow.

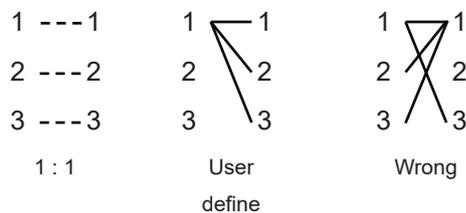
1:1 patch : One can assign channels in blocks of 6 [or 12] by patching 1:1 [enter] and entering a start address [enter]

1: multiple patch : One can soft patch multiple dimmer channels to one dmx channel. [User define]

RS232 : The unit will be controlled by RS232 signal

OFF : Unit will be out of control by signal

PICTURES FOR PATCH (LEFT-DMX SIGNALS, RIGHT-DIMMER CHANNELS)



Example 1 : To patch input A to be 1: 1 and start address is 6.

1. Press MENU
2. Press down arrow
3. Press ENTER
4. Press ENTER
5. Press right arrow
6. Press left arrow once to reduce
7. Finish modification,press ENTER to save and quit

1. LIGHTING
2. PATCH
1. LIGHTING
2. PATCH
PATCH : 1 : 1
1 : 1 PATCH
Start address : 001
PATCH : 1 : 1
Start address : 007
1 : 1 PATCH
Start adress : 006

Example 2 : To patch input A to 1 to 3 (user define)

1. Enter the PATCH menu, press right arrow to USER DEFINE **PATCH : USER DEFINE**
2. ENTER into USER DEFINE
3. Use right arrow to choose dimmer channel 01 then **Channel : 01**
4. Use down arrow to choose DMX No. and use right arrow to change DMX No. 003 **DMX Address : 001**
5. Press ENTER to save and quit **Channel : 01**
6. Repeat until all channels are allocated **DMX Address : 003**

12. CHANNEL MODE

You can set NORMAL, SWITCH or FIX mode for each channel :

- NORMAL : Controlled by DMX signal. Could be fade in/fade out.
- SWITCH : Controlled by DMX signal,0 or 100% output. The default value is 50%.
- FIX : Not controlled by DMX signal, lights will be always on with set value,0-100%. The default value is 50%.

Example : *To set channel 2 to SWITCH mode, and value to be 51%.*

1. Select CHANNEL MODE
2. Press ENTER
3. Press right arrow to change 01 to 02
4. Press down arrow to 'MODE'
5. Press right arrow to change 'NORMAL' to 'SWITCH'
6. Press down arrow to '50%' position
7. Press right arrow to change 50% to 51%
8. Press ENTER to save and quit

```
PATCH
CHANNEL MODE
Channel : 01
Mode : NORMAL
Channel : 02
Mode : NORMAL
Channel : 02
Mode : NORMAL
Channel : 02      50%
Mode : SWITCH
Channel : 02      50%
Mode : SWITCH
Channel : 02      51%
Mode : SWITCH
```

13. CURVE

There are 5 curves : Linear, S-curve, square and extraction or user-defined.

Settings are available : 1. Set channel curve; 2. User define curve; 3. Reset curve.
Input value is 255 grade (0-255), correspond to 4096 grade (0000-4096) dimming.

Example 1 : *To set channel 1 to be square.*

1. Press down arrow to 'CURVE'
2. Press ENTER
3. Press ENTER
4. Press down arrow and then right arrow
5. Press ENTER to save and quit

```
3. CHANNEL MODE
4. CURVE
CHANNEL MODE
USER CURVE
```

```
Channel : 01
CURVE : SQUARE
Channel : 02
Mode : NORMAL
```

Example 2 : *To set the input value to 001 and output value to 0015.*

1. Enter 'USER CURVE'
2. Press right arrow, when change input to 001, output will be changed to be 0016 automatically
3. Press down arrow and then left arrow
4. ENTER to save and quit

```
INPUT : 000
OUTPUT : 0000
INPUT : 001
OUTPUT : 0016
INPUT : 001
OUTPUT : 0015
```

Example 3 : *To reset user curve.*

1. Enter 'RESET USER CURVE'
2. Press left arrow
3. Save and quit

```
ARE YOU SURE ?
YES NO
ARE YOU SURE ?
YES NO
```

14. RESPONSE

There are three response times configurable : Quick (20 ms), normal (80 ms) and slow (160 ms) For those big tungsten lights, normally we should set it to be 'SLOW'. If there are few loads, you could set 'NORMAL' or 'QUICK'.

Example : *To set channel 2 to 'SLOW'.*

1. Press down arrow
2. Press ENTER
3. Press right arrow to change channel to '02"
4. Press down arrow and then left arrow to set 'SLOW'
5. Press ENTER to save and quit

```
4. CURVE
5. RESPONSE
CHANNEL : 01
RESPONSE : QUICK
CHANNEL : 02
RESPONSE : QUICK
CHANNEL : 02
RESPONSE : SLOW
```

15. VOLTAGE LIMIT

Each dimmer channel could be set with different output voltage, from 110V to 250V.

Example : *To set channel 2 to 119V..*

1. Press down arrow
2. Press ENTER
3. Press right arrow to '02'
4. Press down arrow and then left arrow to change
5. ENTER to save and quit

5. RESPONSE
6. VOLTAGE LIMIT
CHANNEL : **01**
LIMIT : 220V

CHANNEL : **02**
LIMIT : 220V
CHANNEL : 02
LIMIT : **119V**

16. PRE-HEAT

You can set pre-heat value to protect your illuminants, especially in winter.

Example : *To set all channels value to be '002'.*

1. Press down arrow
2. Press ENTER
Press left arrow to change to 'ALL'
3. Press down arrow then right arrow to '002'
4. ENTER to save and quit

6. LIMIT
7. PRE-HEAT
CHANNEL : **01**
PRE-HEAT : 000
CHANNEL : **ALL**
PRE-HEAT : 002

CHANNEL : **ALL**
PRE-HEAT : 000

17. LOOP TEST

By it, you can find the connected lamp more easily.

1. Press down arrow
2. Press ENTER and then right arrow to set '51%'
3. Press ENTER then right arrow to set '02'
4. ENTER to save and quit

7. PRE-HEAT
8. LOOP TEST
TEXT VALUE : 51%

CHANNEL : **02**

18. CUE

There are 50 cues in the unit. In this directory there are 3 functions available: 1. Edit cue; 2. Run cue; 3. Clear all cue. The fade time between cues could be set from 0.001 to 999.9s. The last letter 'E' means it is in Editing condition, 'V' means in viewing condition.

Example : *To edit cue 01.*

1. Press down arrow
2. Press ENTER
3. Press ENTER
4. Press ENTER
5. Press right arrow to increase
6. Press down arrow to 'LINK' to set the next cue you like to link
7. Press ENTER twice to save and quit

```
8. LOOP TEST
9. CUE
1. EDIT CUE
2. RUN CUE
CUE :01    LINK : XX
TIME : 010.0S    V
CUE : 01    LINK : XX
TIME : 010.0S    E
CUE : 01    LINK : XX
TIME : 010.0S    E
CUE : 01    LINK : XX
TIME : 010.0S    E
```

Run CUE

1. Press down arrow
2. Press ENTER

```
1. EDIT CUE
2. RUN CUE
CUE : 01
LINK : XX
```

Clear all cues

1. Press down arrow
2. Press ENTER
3. Press left arrow and ENTER

```
2. RUN CUE
3. CLEAR ALL CUE
ARE YOU SURE ?
YES NO
ARE YOU SURE ?
YES NO
```

19. PANEL KEY

Attribute control for the external panel keys.

There are 8 pre-set panel keys; their functions are defaulted to be closed. Function attribute includes: close, CUE, fade in; fade out, lock.

- Close : to close the control function of external panel key
- CUE : to control cue running by Panel key, with delay time from 0 to 99 seconds
- Fade in : to control channel level fade in by panel key
- Fade out : to control channel level fade out by panel key
- Lock : to lock panel key, dimmer out of control of external panel. Hold the related panel key for 2 seconds to lock, hold it again to unlock.

Example 1 : *Set the function of panel key 1 to control CUE 2 delay 1 second.*

1. Press MENU
2. Press down arrow, select panel key
3. Press ENTER
4. Press down arrow, then press right arrow, edit close to CUE
5. Press enter to select Cue, and then press right arrow edit CUE 1 to CUE 2
6. Press down arrow, Move the cursor to delay position, then press right arrow edit to 01
7. Press ENTER to quit

```
1. Lighting
2. Patch
9. Cue
10. Panel key
key : 01
function : close
Key : 01
function : CUE
cue : 02
delay : 00 S
key : 02
function : close
cue : 02
delay : 01 S
key : 02
function : close
```

Example 2 : *Set panel key 2 control channel 2 lighting level fade in.*

1. Enter panel key menu, press right arrow edit 1 to 2
2. Press down arrow, then press right arrow twice, edit close to fade in
3. Press enter to select channel, then press right arrow to edit channel 1 to channel 2
4. Press enter to save and quit

```
Key : 02
function : close
Key : 02
function : fade in
channel : 02
```

20. SYSTEM SETUP

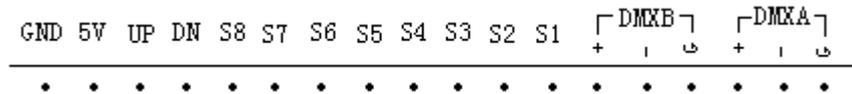
In this directory, there are 10 functions.

1. **Rack number** : Name for the dimmer pack from 001 to 999.
2. **Sys voltage** : Display the current voltage of the three phases.
3. **Sys frequency** : Display the frequency of the system.
4. **Signal break mode** : When there is no DMX signal, you can choose: 1.Keep the last value; 2.Run backup cues.
5. **Over Load and neutral-lost** : You can set a safe range from 250V to 300V, or "OFF" alternatively.
6. **LED contrast** : You can set the LED contrast for display, range from 1 to 10.
7. **Series number** : Unique number to identify each fixture.
8. **Language** : Select the operation language of the dimmer.
9. **Software edition**
10. **Default** : Go back to the factory default.

If system administrator do not edit settings in 5 minutes, the system will automatically lock the keypad, in order to prevent others mis-settings or modify the setting. Hold the ENTER key for two seconds to unlock.

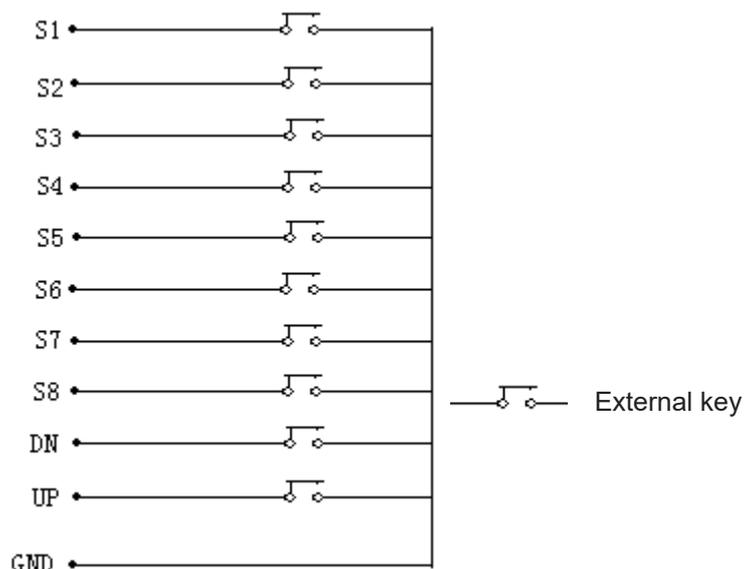
21. EXTERNAL PANEL WIRING

LINEARLIGHT external panel connect port as below.

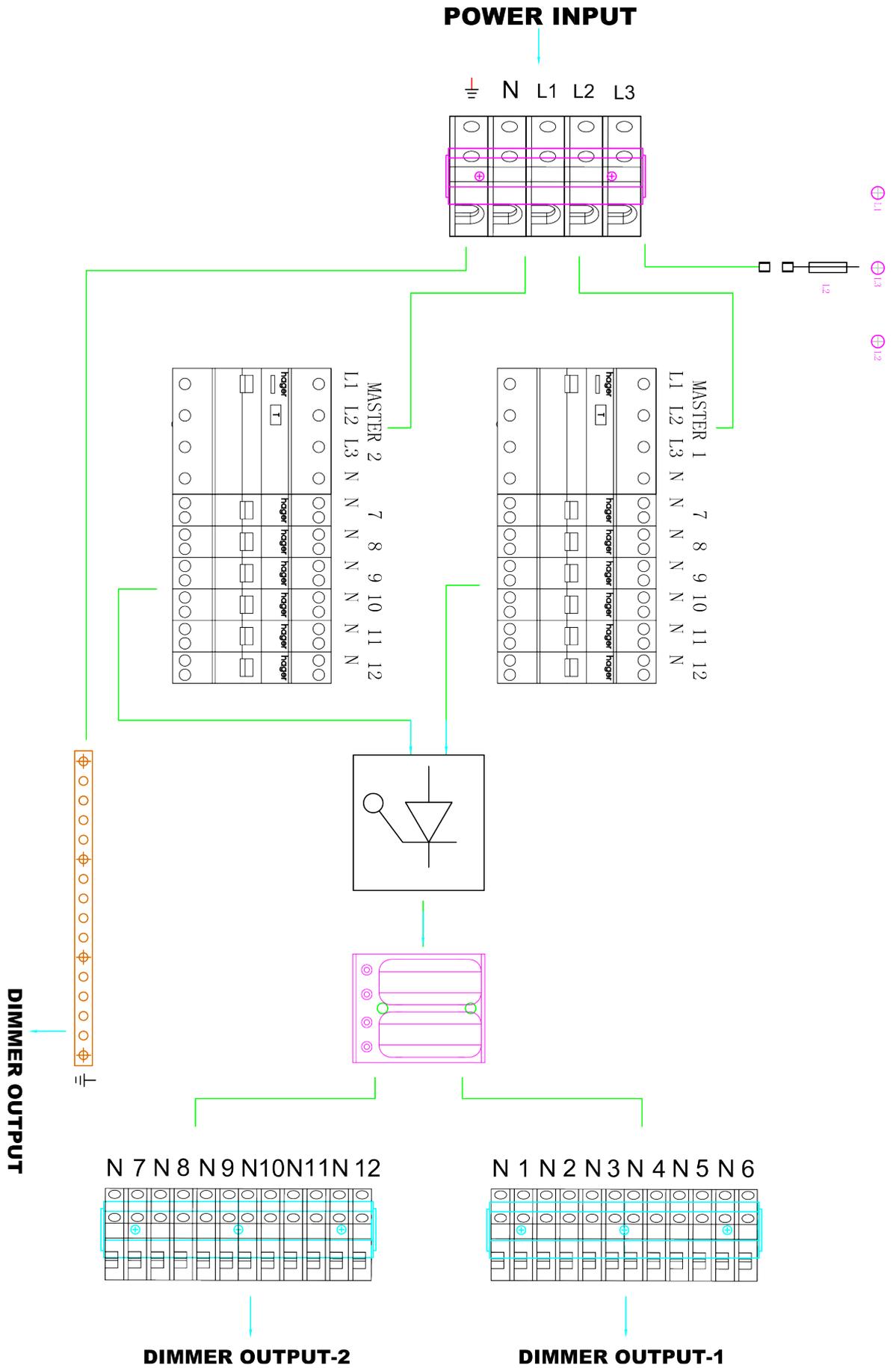


- GND : Ground
- 5V : +5V power supply of external panel
- UP : All lighting level up
- DN : All lighting level down
- S8 : The 8th external panel key
- S7 : The 7th external panel key
- S6 : The 6th external panel key
- S5 : The 5th external panel key
- S4 : The 4th external panel key
- S3 : The 3rd external panel key
- S2 : The 2nd external panel key
- S1 : The 1st external panel key
- DMXB: DMX signal port B
- DMXA : DMX signal port A
- + : DMX signal anode port
- : DMX signal cathode port
- G : DMX signal ground port

Connection method : Each end of external key connect with GND port, the other end connect with any port of (S1.....S8, DN, UP) see below.



22. POWER INPUT CONNECTION



23. COMMUNICATION PROTOCOL

a. Physical layer format

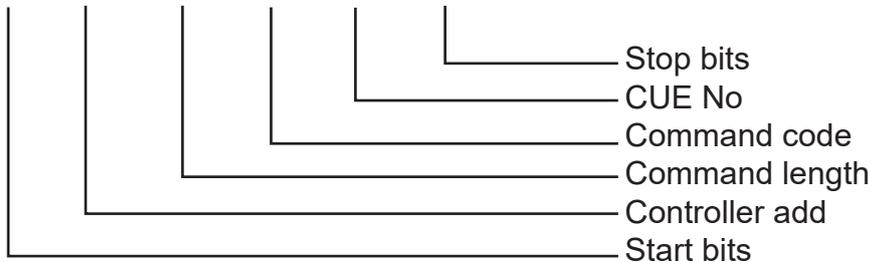
Communication : Simplex (SCENE6 & flygeko only receive data)

Baud rate : 9600, 8 data bits, no parity bit, 2 stop bit, no flow control

Interface : Need to install RS232-RS485 converter to link to a PC.

If the set the rack no to be 1 (it is reviewable in system setup and can be modified), means the controller address to be 1, see below to run CUE1 to CUE 6 :

0xC0, 0x01, 0x02, 0x01, 0x01, 0xC0
0xC0, 0x01, 0x02, 0x01, 0x02, 0xC0
0xC0, 0x01, 0x02, 0x01, 0x03, 0xC0
0xC0, 0x01, 0x02, 0x01, 0x04, 0xC0
0xC0, 0x01, 0x02, 0x01, 0x05, 0xC0
0xC0, 0x01, 0x02, 0x01, 0x06, 0xC0



If the Rack no is 2, then the controller address will be 2 as well :
See below to setup and run CUE 1 to CUE 6.

0xC0, 0x02, 0x02, 0x01, 0x01, 0xC0
0xC0, 0x02, 0x02, 0x01, 0x02, 0xC0
0xC0, 0x02, 0x02, 0x01, 0x03, 0xC0
0xC0, 0x02, 0x02, 0x01, 0x04, 0xC0
0xC0, 0x02, 0x02, 0x01, 0x05, 0xC0
0xC0, 0x02, 0x02, 0x01, 0x06, 0xC0

b. Connection

When wiring RS232, you will need to connect TX to DMX -, and connect RX to DM+, no need to connect Ground.

LINEARLIGHT



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