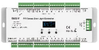
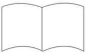
# ES32–V INSTALLATION GUIDE

## Packing List



ES32–V Stair Light Controller
*1



User Manual
*1

Daylight sensor
(30cm)
*1

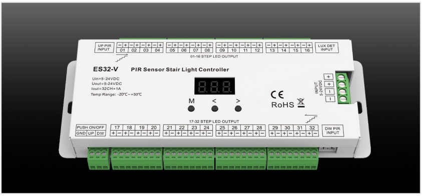
PIR sensor
(1.2m)
*2

PIR sensor extension line
(5m)
*2

Straight screwdriver
*1

## Product Basic Parameters

**Input voltage :** 5–24VDC
**Output voltage :** 32 x (5–24)VDC
**Output current :** 32CH, 1A/CH
**Output power :** 32 x (5–24)W
**Output type :** Constant voltage
**Sensitive field :** ≤3m
**Sensitivity angle :** 30° (±10°)


UP PIR INPUT
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16
01-16 STEP LED OUTPUT
LUX DET INPUT
ES32-V
PIR Sensor Stair Light Controller
Uin=5-24VDC
Uout=5-24VDC
Iout=32CH×1A
Temp Range: -20℃~+50℃
M < >
CE
RoHS
INPUT 5-24VDC
17-32 STEP LED OUTPUT
PUSH ON/OFF
GND UP DW
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
DW PIR INPUT

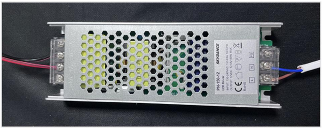
## Prepare installation tools and materials

### 1. LED strip

Select 5–24V light strip according to the demand, determine the length of each step LED strip.
Note each step of the LED strip load current does not exceed 1A.

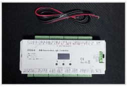
### 2. Power supply

Power supply voltage must be the same as the LED strip voltage.
And the power of the supply power > LED strip total power*1.25.



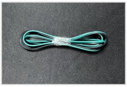
### 3. Lead wire

Connecting controller and power supply.



### 4. LED Strip extension wire

Connecting controller and LED strip.



Wire diameter selection can refer to the following table. Such as connecting 20 steps, it is suggested to select not less than 2.5mm$^2$ wire to connect the power supply. Such as the controller connected light strip distance is within 10M, it is suggested to select not less than 0.5mm$^2$ light strip extension wire. Note that each end of the wiring at the wire stripping length recommended 6–7MM. And mark the corresponding port of the line (step number, plus–minus polarity ).

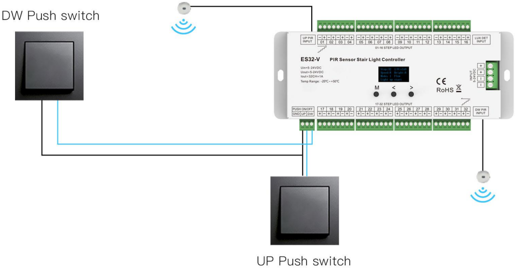
| Copper wire cross-sectional area (mm²) | 0.5 | 0.75 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 |
|---|---|---|---|---|---|---|---|
| Output total current | ≤5A | ≤8A | ≤10A | ≤12A | ≤15A | ≤25A | ≤30A |

### 5. Electric soldering iron and solder

Soldering LED Strip Extension Cords and Light Strips.

### 6. Push switch (optional)

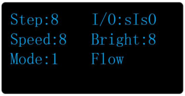
Use as manual switch to realize up/down lighting effects.
Push switch and PIR sensing can be used at same time.


DW Push switch
UP PIR INPUT
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16
01-16 STEP LED OUTPUT
LUX DET INPUT
ES32-V
PIR Sensor Stair Light Controller
Uin=5-24VDC
Uout=5-24VDC
Iout=32CH×1A
Temp Range: -20℃~+50℃
M < >
CE
RoHS
INPUT 5-24VDC
17-32 STEP LED OUTPUT
PUSH ON/OFF
GND UP DW
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
DW PIR INPUT
UP Push switch

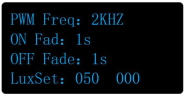
## Installation Steps

**Take the installation of 8 steps of flow effect as an example, the parameter settings are:**

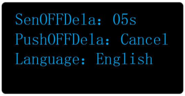
Speed and brightness is 8, turn on and turn off light fade time is 1s, switch mode is sequence turn on light, sequential turn off light, light sensing value is 50, that is, the controller does not turn on light when the environment light is higher than 50 lumens.



```
Step:8     I/O:sIsO
Speed:8    Bright:8
Mode:1     Flow
```

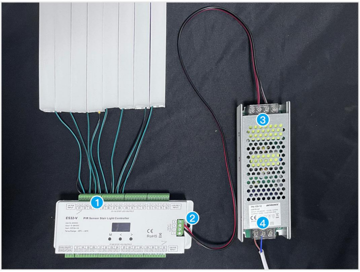


```
PWM Freq: 2KHZ
ON Fad: 1s
OFF Fade: 1s
LuxSet: 050  000
```

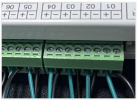


```
SenOFFDela: 05s
PushOFFDela: Cancel
Language: English
```

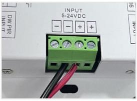
**Wiring:** Use LED strip extension wire to connect controller and LEDt strip; Use wire that meets the wire diameter requirements to connect the power supply and controller; The power supply is connected 220V mains; attention needs for differentiate plus and minus polarity.


①
②
③
④
ES32-V
PIR Sensor Stair Light Controller

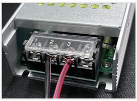
① Controller Output Connection LED Strip


06 05 04 03 02 01

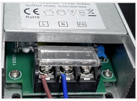
② Controller Connection Power Input


INPUT
5-24VDC
DW PIR INPUT

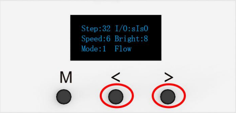
③ Power Output Connection Controller



④ Power input connection mains

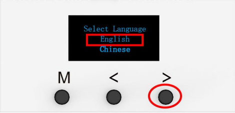


## Set language:



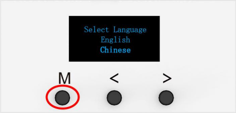
Step:32 I/O:sIs0
Speed:6 Bright:8
Mode:1 Flow

Long press the <> key at same time for 2s,
Restore factory settings,
jump to the language interface.



Select Language
English
Chinese

Press > key select to English.

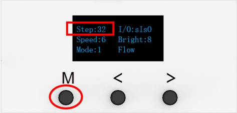


Select Language
English
Chinese

Long press the M key for 2s,
Save and exit the language setting
or wait 15s to automatically save and exit the setting.

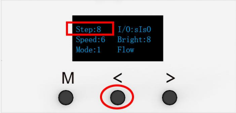
**Lighting effect setting:** Following the previous example, set step is 8, speed and brightness is 8, light on/off mode is sequential light on, sequential light off.

### **1.** Step set



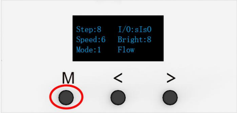
Step:32 I/O:sIs0
Speed:6 Bright:8
Mode:1 Flow

Short press M key set step number.



Step:8 I/O:sIs0
Speed:6 Bright:8
Mode:1 Flow

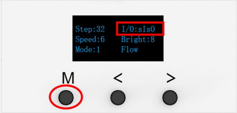
Short press < key,
set step number to 8.



Step:8 I/O:sIs0
Speed:6 Bright:8
Mode:1 Flow

Short press M key,
switch next parameter setting.

### **2.** Light on/off mode setting



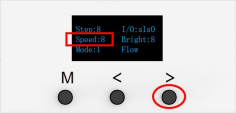
Step:32 I/O:sIs0
Speed:6 Bright:8
Mode:1 Flow

Light on/off mode already is slso,
so short press M key,
switch next parameter setting
(change other modes according right list,
press < or > key to set).

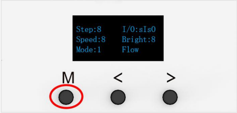
Light on/off mode list:

| Display | Name |
|---|---|
| sIs0 | Sequential light on, sequential light off |
| sIc0 | Sequential light on, synchronized light off |
| cIs0 | Synchronized light on, sequential light off |
| cIc0 | Synchronized light on, synchronized light off |

### **3.** Speed Setting



Step:8 I/O:sIs0
Speed:8 Bright:8
Mode:1 Flow

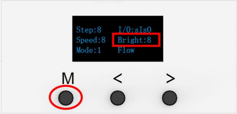


Step:8 I/O:sIs0
Speed:8 Bright:8
Mode:1 Flow

Short press > key, set speed to 8.

Short press M key, switch next parameter setting.

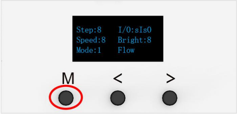
**4.** Brightness setting



```
Step:8    I/O:sIs0
Speed:8   Bright:8
Mode:1    Flow
```

Brightness already is 8,
short press M key,
switch next parameter setting
(change other brightness can
short press < > setting).

**5.** Light Mode Setting and Exit Setting

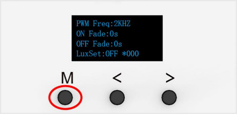


```
Step:8    I/O:sIs0
Speed:8   Bright:8
Mode:1    Flow
```

Already is flow mode, no need change,
so long press M key for 2s or wait for 15s
to exit lighting effects setting.

**System Parameter Setting:** Following the previous example, set light on and light off fade to 1s, and the controller does not turn on light when the environment light is higher than 50 lumens.

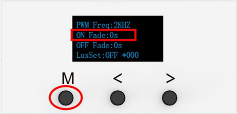
**1.** Enter system parameter Settings



```
PWM Freq:2KHZ
ON Fade:0s
OFF Fade:0s
LuxSet:OFF *000
```

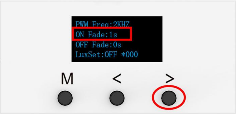
Long press M key for 2s, enter system parameter setting.

**2.** Lights On fade setting



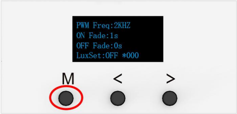
```
PWM Freq:2KHZ
ON Fade:0s
OFF Fade:0s
LuxSet:OFF *000
```

Short press M key,
switch to light on fade.



```
PWM Freq:2KHZ
ON Fade:1s
OFF Fade:0s
LuxSet:OFF *000
```

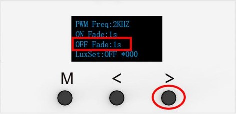
Short press > key, set to 1s.



```
PWM Freq:2KHZ
ON Fade:1s
OFF Fade:0s
LuxSet:OFF *000
```

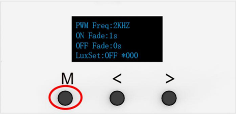
Short press M key,
switch the next parameter setting.

**3.** Lights Off fade setting



```
PWM Freq:2KHZ
ON Fade:1s
OFF Fade:1s
LuxSet:OFF *000
```

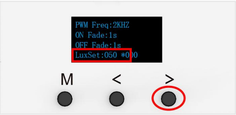
Short press > key, set to 1s.



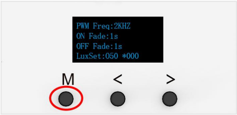
```
PWM Freq:2KHZ
ON Fade:1s
OFF Fade:0s
LuxSet:OFF *000
```

Short press M key,
switch the next parameter setting.

**4.** Light Sensitivity Setting



```
PWM Freq:2KHZ
ON Fade:1s
OFF Fade:1s
LuxSet:050 *000
```

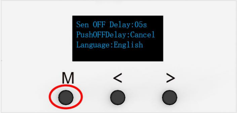


```
PWM Freq:2KHZ
ON Fade:1s
OFF Fade:1s
LuxSet:050 *000
```

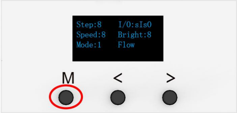
Short press > key,
adjust the value to 050.

Short press M key,
switch the next parameter setting.

**5.** System parameter setting is complete, exit the system parameter setting interface


Sen OFF Delay:05s
PushOFFDelay:Cancel
Language:English

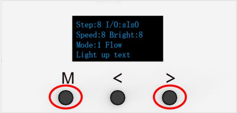
Short press M key,
this page is not set.
Adjustments can be made on
demand if required


Step:8 I/O:sIs0
Speed:8 Bright:8
Mode:1 Flow

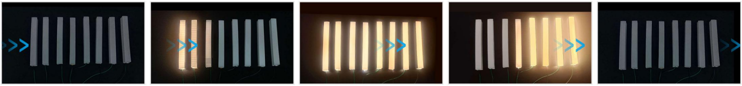
Long press M key for 2s,
exit the system parameter setting interface.

## Controller light test run

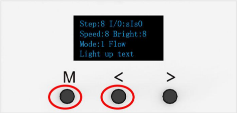
### Up light test


Step:8 I/O:sIs0
Speed:8 Bright:8
Mode:1 Flow
Light up text

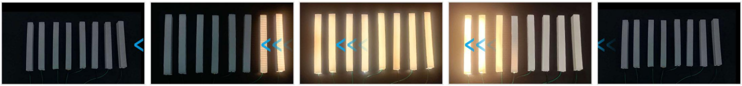
Long press the M and > key for 2s
at the same time for Light up test.



### Down light test

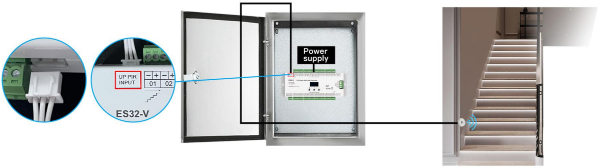

Step:8 I/O:sIs0
Speed:8 Bright:8
Mode:1 Flow
Light up text

Long press the M and < key for 2s
at the same time for Light down test.

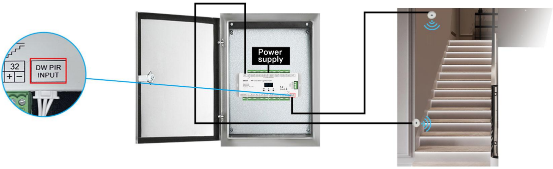


## Installation of Up and Down Sensor Heads

Confirm the LED strip running effect is no error, the upward sensor head is installed at the location where the sensor trigger needs to be triggered before going up the stairs, connect the up senspr head to the UP PIR INPUT port of the controller;

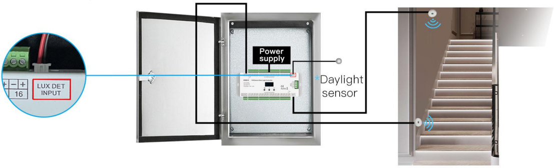

UP PIR INPUT
01
02
ES32-V
Power supply

Downward sensing head is installed at the location where the sensing trigger needs to be triggered before descending the stairs, connect the down sensor head to the DW PIR INPUT port of the controller;

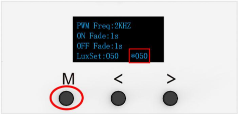

32
DW PIR INPUT
Power supply

## Installation daylight sensor head

Daylight sensing head is installed in a position where it can sense ambient light, connected to the LUXDET INPUT port of the controller.

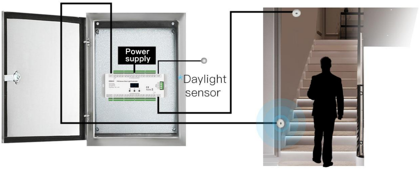

16
LUX DET INPUT
Power supply
Daylight sensor

Long press the M key for 2s to enter the system parameter setting interface, check the light sense value: * Displayed after the value indicates that the lumen value of the detected ambient light, that is, daylight sensing head is working properly.



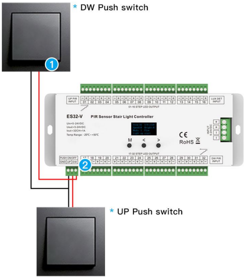
```
PWM Freq:2KHZ
ON Fade:1s
OFF Fade:1s
LuxSet:050  *050
```

Finally test for up and down sensing headers to trigger properly.


Power supply
Daylight sensor

# Connecting Push switch (optional)

The controller supports connecting the Push switch to trigger up and down lighting effects:
Connect the Push switch that triggers the up effect to the PUSH ON/OFF of the controller's GND and UP terminals, and the Push switch for triggering the down effect to the GND and DW terminals.


* DW Push switch
①
ES32-V
PIR Sensor Stair Light Controller
M
<
>
②
* UP Push switch

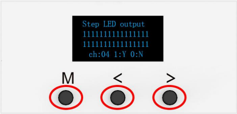
① Push switch back wiring diagram

② Controller connected to up and down Push switch wiring diagram

* Push switch and PIR sensor can be used at same time. For example, up stairs are triggered with the PIR sensor and down stairs are triggered with the Push switch. During 5s after pressing the Push switch to trigger the effect, the PIR sensor does not detect and the Push switch operation ignores the threshold of the daylight sensor.

# Skip damaged output channel

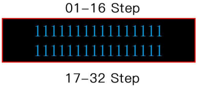
Such as this example to install 8 steps (01–08), 04 steps are damaged, you can long press the M, < and > key at same time for 2s, to enter the 32-step output setting.



```
Step LED output
1111111111111111
1111111111111111
ch:04 1:Y 0:N
```

Long press the M, < and > key at same time for 2s, to enter the 32-step output setting.

At this time, the controller screen displays two lines of numbers, from left to right corresponds to the status of 01–16 and 17–32 step output channel, the number 1 means use, 0 means skip.

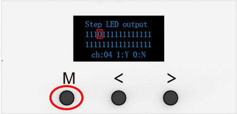


01–16 Step

```
1111111111111111
1111111111111111
```

17–32 Step

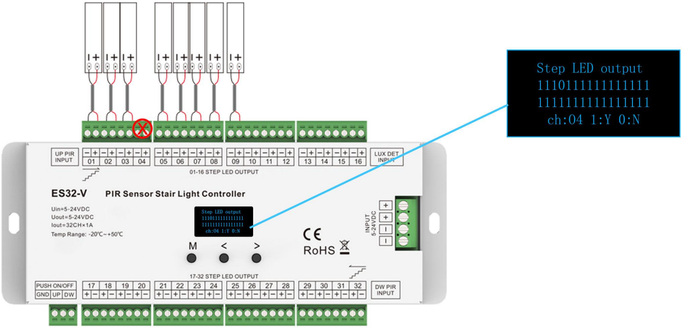
Short press M to switch to the 4th digit 1, press > to set 1 to 0, then long press M key for 2s or wait for 15s, save and exit setting.



```
Step LED output
1110111111111111
1111111111111111
ch:04 1:Y 0:N
```

Short press M to switch to the fourth digit "1", press > to set 1 to 0.

Connect the output LED strips of channels 4–8 to the outputs of channels 5–9, skipping channel 4, so that channels 5–9 replaces the previous channels 4–8.



```
Step LED output
1110111111111111
1111111111111111
ch:04 1:Y 0:N
```

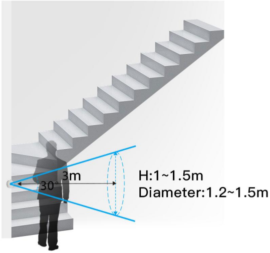
UP PIR INPUT
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16
01-16 STEP LED OUTPUT
LUX DET INPUT
ES32-V
PIR Sensor Stair Light Controller
Uin=5-24VDC
Uout=5-24VDC
Iout=32CH×1A
Temp Range: -20℃~+50℃
M < >
INPUT 5-24VDC
CE
RoHS
17-32 STEP LED OUTPUT
PUSH ON/OFF
GND UP DW
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
DW PIR INPUT

## Notice for installation of PIR sensor

1. The sensor head should be installed in dry environment as possible, avoiding wind and rain.
2. Make sure to avoid heat source interference, such as heaters, stoves, refrigerators, and other places that are sensitive to temperature changes.
3. We recommended that wall–mounted installation height is1–1.5 meters and that ceilling mounting heightis no more than 3 meters.

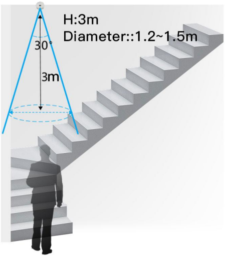
**PIR sensor detection scope (±10° Error):**

Wall mounting



3m
30°
H:1~1.5m
Diameter:1.2~1.5m

Ceilling mounting



H:3m
Diameter::1.2~1.5m
30°
3m

* For wall mounting and ceiling mounting, note that the sensing holes are perpendicular to the direction of human movement.

4. When wiring the terminal and copper wire head should be tightened. If loose contact is poor, the contact resistance will increase, and the terminals will be hot when working with high power loads, which may cause damage and the corresponding channel will not work properly.