touch-plate®

LED LIGHTING & CONTROLS

SLR-4D-RT

Phase Cut & 0-10V Dimming Controller

User Manual

March, 2023

- Please read this manual carefully before using products
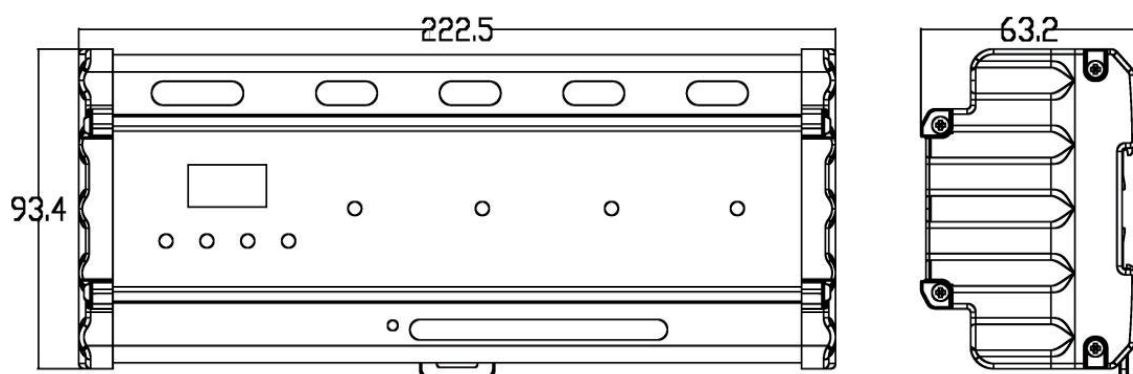- Please keep the product instructions for inspection

Catalog

Product Features

- Meets DMX512(1990)/RDM, DALI IEC62386 protocol and EU-BUS protocol
- Output 4 channels AC MOSFET phase cut signal and their synchronous DC 0-10V control signal
- 4 AC MOSFET can work as leading edge (LPC) mode, trailing edge(TPC) mode or switch mode
- Maximum output current of AC MOSFET is 5A/ch
- Built-in LCD
- Set fade time of each channel separately, range of 0.1-10s
- Each circuit is equipped with emergency switch that controls full brightness (100%) output function
- Can save up to 8 events
- Standard 35 mm din rail, convenient installation

3 Technical Parameters

Item	Parameters
Input voltage	100-240VAC
Input control signal	DMX512(1990)/RDM，DALI IEC62386,EU-BUS
Maximum output current of phase cut	5A*4(AC MOSFET, please take 5A*PF as output current limit for each circuit)
Maximum output signal current	20mA*4(for DC0-10V)
Maximum inrush current limit per channel	100A
Equipment size	222.5*93.4*63.2mm(L*W*H),standard 35mm din rail
Packing size	226*100*68mm(L*W*H)
G.W.	975g
Operational temperature	-20-50℃

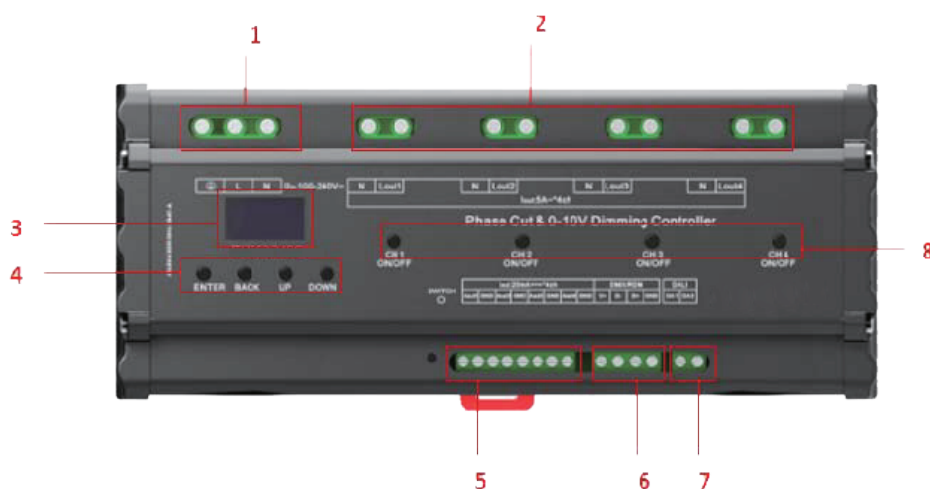## 3.1 Equipment size（mm）

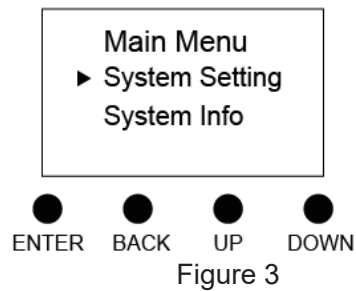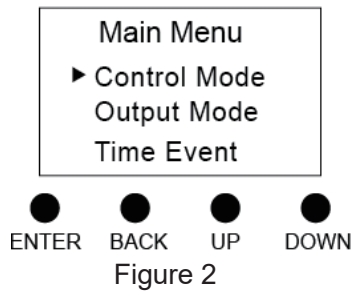# 4 Function diagram of the product

Figure 1

1	AC input port
2	4 AC MOSFET output ports, corresponding with 4 DC 0-10 V ports from left to right in proper order. For each channel, the addresses of both AC MOSFET and the corresponding 0-10V are shared.
3	LCD display
4	Function button
5	4 DC analog voltage output ports(0-10V)
6	DMX 512/RDM,EU-BUS signal port(Don't use DMX 512/RDM and EU-BUS protocol simultaneously, they share the same terminals)
7	DALI signal port
8	Emergency switch

5 LCD function

After a successful connection, the menu will be seen in Figure 2. Press the button "ENTER" to enter the sub menu as shown in Figure 3, press "BACK" to return to the upper menu, press "UP" or "DOWN" button to move the cursor up or down.

Figure 2   Figure 3

Button	Function
ENTER	Confirm key, confirm the selected state, enter the option to set the state
BACK	Return key, return to the upper menu, exit the option to set the state
UP	Move up the cursor; change the status of the option
DOWN	Move down the cursor; change the status of the option

```
                              ┌─────────────┐
                              │  Main  Menu │
                              └──────┬──────┘
                                     │
  ┌──────────────────┐
  │   Control Mode   │──┬──────────┬──────────┬──────────┐
  └──────────────────┘  │          │          │          │
           ┌────────────┴┐  ┌──────┴──────┐  ┌┴──────────┐  ┌┴────────────┐
           │ EU-BUS Mode │  │ DMX/RDM Mode│  │ DALI Mode │  │ Manual Mode │
           └─────────────┘  └─────────────┘  └───────────┘  └─────────────┘

  ┌──────────────────┐
  │   Output Mode    │──┬──────────┬──────────┐
  └──────────────────┘  │          │          │
           ┌────────────┴┐  ┌──────┴──────┐  ┌┴────────────┐
           │ Channel Set │  │Fade Time Set│  │Threshold Set│
           └─────────────┘  └─────────────┘  └─────────────┘

  ┌──────────────────┐
  │   Time Event     │──┬──────────┬──────────┬──────────┐
  └──────────────────┘  │          │          │          │
        ┌───────────────┴┐ ┌───────┴──────┐ ┌─┴───────────┐ ┌┴──────────────┐
        │ All Event: ON  │ │ Create Event │ │Delete Event │ │ Event Manage  │
        └────────────────┘ └───────┬──────┘ └─────────────┘ └───────┬───────┘
                                   │                                 │
                           ┌───────┴──────┐                          │
                           │Event : Enable│◄─────────┐               │
                           └──────────────┘          │               │
                           ┌──────────────┐          │        ┌──────┴──────┐
                           │Event Channel │◄─────────┤        │ Event List  │
                           └──────────────┘          ├────────┘             │
                           ┌──────────────┐          │
                           │  Event Time  │◄─────────┤
                           └──────────────┘          │
                           ┌──────────────┐          │
                           │Event Purpose │◄─────────┘
                           └──────────────┘

  ┌──────────────────┐
  │ System Setting   │──┬──────────┬──────────┐
  └──────────────────┘  │          │          │
          ┌─────────────┴┐ ┌───────┴──────┐ ┌─┴─────────┐
          │ Time Setting │ │Factory Reset │ │ Backlight │
          └──────────────┘ └──────────────┘ └───────────┘

  ┌──────────────────┐
  │   System Info    │──┬──────────┬──────────┬──────────────┐
  └──────────────────┘  │          │          │              │
       ┌────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐
       │ Output │  │Fade Time │  │Threshold │  │Event Info│  │ Product  │
       │  Info  │  │   Info   │  │   Info   │◄─┤          ├─►│  Info    │
       └────────┘  └──────────┘  └──────────┘  └──────────┘  └──────────┘
```

5.1 Control Mode

5.1.1 EU-BUS mode

In the current mode, the output signal is controlled by EU-BUS command, the host computer can scan equipment, assign the box number, read parameters, update the firmware of equipment, achieve group and scene control . The device can operate according to the instruction of the upper computer.

Select the EU-BUS mode, press the "ENTER" can view the device model, the box number, serial number (GUID), press "BACK" to return to the upper menu.
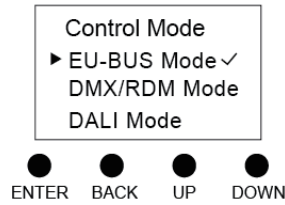
```
        Control Mode
      ▶ EU-BUS Mode ✓
        DMX/RDM Mode
        DALI Mode
```
ENTER   BACK   UP   DOWN

Figure 4

5.1.2 DMX /RDM mode

In the current mode, the output signal is controlled by DMX. Press" ENTER"，then set DMX address for each channel . The X value can be set from 1 to 511. The addresses of 4 channels can be continuous or discontinuous, such as 1, 2, 3, 4, or 1, 5, 8, 9. That is to say, the addresses of the 4 channels are independent, but for any channel，the addresses of AC MOSFET phase cut channel and the corresponding 0-10V DC channel are the same. In addition, the addresses of 4 channels can be the same, so that they can be controlled simultaneously.

When using RDM(2009), the upper computer can scan the device, and assign the address, read the parameters.

```
     Control Mode
     EU-BUS Mode
   ▶ DMX/RDM Mode ✓
     DALI Mode
```
ENTER   BACK   UP   DOWN

Figure 5

```
     DMX/RDM Mode
        DMX Addr
   ▶ 1 : 1   2 : 7
     3 : 2   4 : 4
```
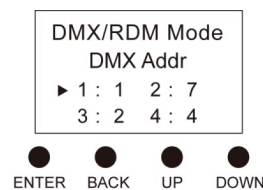ENTER   BACK   UP   DOWN

Figure 6

5.1.3 DALI mode

The output signal is controlled by the DALI command in this mode. The address of the DALI mode is defined by the system itself and can be modified by the host computer. The addresses of 4 circuits are independent of each other, but the address of AC MOSFET for each circuit is the same as the corresponding 0-10V DC channel.
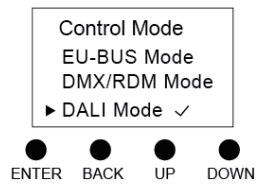
```
     Control Mode
     EU-BUS Mode
     DMX/RDM Mode
   ▶ DALI Mode ✓
```
ENTER   BACK   UP   DOWN

Figure 7

```
      DALI Mode
     Short Address
      1 : 0   2 : 1
      3 : 2   4 : 3
```
ENTER   BACK   UP   DOWN

Figure 8

5.1.4 Manual mode

In the current mode, the output brightness level of 4 channels can be manually set via the button and LCD. The X is brightness of each channel, range of 0-100%.
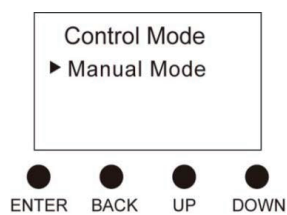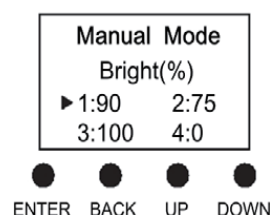
```
     Control Mode
   ▶ Manual Mode
```
ENTER   BACK   UP   DOWN

Figure 9

```
     Manual  Mode
       Bright(%)
   ▶ 1:90    2:75
     3:100   4:0
```
ENTER   BACK   UP   DOWN

Figure 10

5.2 Output mode

5.2.1 Channel Set

In the current mode, each channel supports three functions:

```
Output Mode                    Channel   Set
→ Channel Set                   Output Type
  FadeTime Set                 ▶1:SW      2:TPC
  Threshold Set                  3:LPC    4:SW

ENTER  BACK  UP  DOWN          ENTER  BACK  UP  DOWN
```
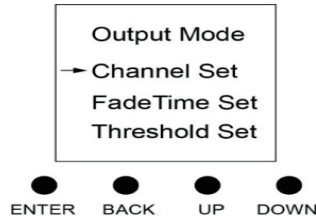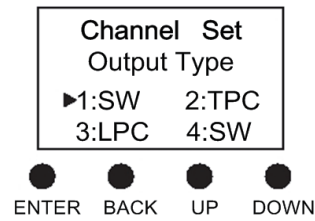
Figure 11   Figure 12

a）Switch : Switch mode, as the power switch, but is invalid for 0-10V signal

b）LPC: To dim leading edge drivers or devices

c）TPC: To dim trailing edge drivers or devices

5.2.2 FadeTime Set

In the current mode, you set fade time for each channel. The range is 0-100 (unit:0.1s).

```
Output Mode                    Fade Time Set
  Channel Set                    Uint: 0.1s
→ FadeTime Set                 ▶1:10      2:60
  Threshold Set                  3:100    4:0

ENTER  BACK  UP  DOWN          ENTER  BACK  UP  DOWN
```

Figure 13   Figure 14

5.2.3 Threshold Set

In the current mode, you can set the switch threshold for each   AC MOSFET channel. The corresponding channel of phase cut will switch on output, if received the brightness value $\geqslant$ threshold set value. The X value range is 0-100%.

Note　For 0-10V channel，this function is invalid.

```
Output Mode                    Threshold(%)
  Channel Set                    SW:ON/OFF limit
  FadeTime Set                   LPC: Min Vout
→ Threshold Set                ▶1:55      2:99
                                 3:100    4:0

ENTER  BACK  UP  DOWN          ENTER  BACK  UP  DOWN
```
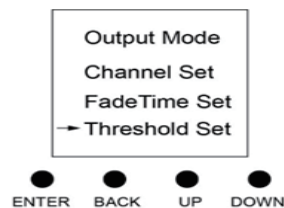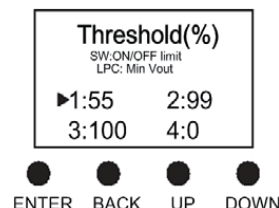
Figure 15   Figure 16

5.3 System Setting

After entering the system settings, you can set the current time, turn on or off the backlight and restore the factory settings.

5.3.1 Factory Reset

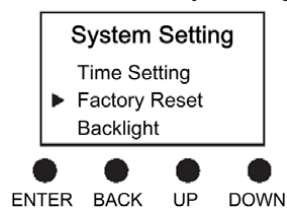Press ENTER to choose whether to reset factory settings.

```
System Setting                 Factory Reset
  Time Setting
▶ Factory Reset                ▶Yes       No
  Backlight

ENTER  BACK  UP  DOWN          ENTER  BACK  UP  DOWN
```
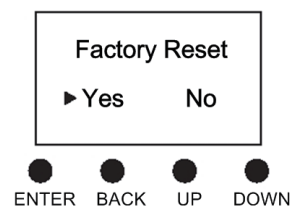
Figure 34   Figure 35

5.3.2 Backlight

When the backlight is set to "ON", the display unattended operation over 60s, LCD will enter clock mode，show the current time and date. After 60s, LCD will automatically enter the sleep mode, press any key to end the sleep mode, enter the setting state.

When the backlight is set to "OFF", the display will remain the current setting state.
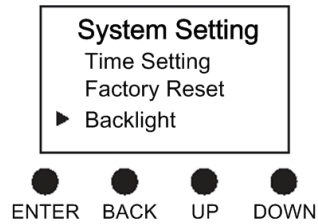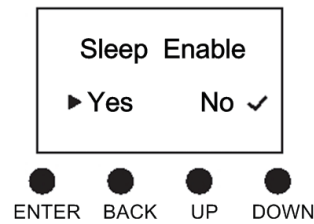

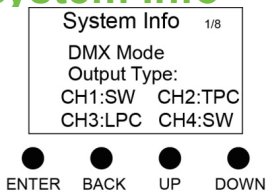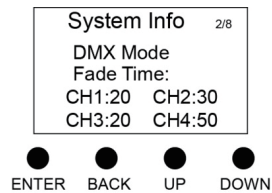Figure 36   Figure37
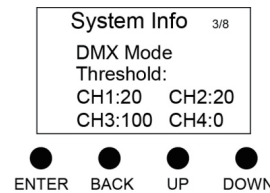
5.4 System Info

Figure 38   Figure 39   Figure 40

In this menu, the current system information can be displayed, which is shown as follows:

Page 1:   control mode and output type

Page 2:   control mode and fade time

Page 3:   control mode and threshold

Others except the last page: event status and event content

Last page: product model and the current time

6 Emergency Switch Function

4 channel output, each channel corresponds to a button. If the channel has output, press the button to switch off the 0-10V channel and the corresponding phase cut channel output. If the channel doesn't have output, press the button to switch on the 0-10V and the phase cut channel output.

7 Wiring Diagram