



# **MR-A28D Controller Manual**

V1.3

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## Functional Overview

The MR-A28D control system is based on the Art-net protocol of the Ethernet network to achieve communication and transmission, and the host computer softly sends multiple channels.

The data is sent to DMX512 lamps in the form of DMX512 protocol.

The MR-A28D control system uses a high-performance FPGA processor, data processing is efficient and stable, and follows the standard Art-net protocol.

Provide 2 RJ45 network interfaces, cooperate with other conventional network equipment, can realize a variety of network topologies.

MR-A28D provides 8 standard DMX512 data output ports, which can output 8×512 data and support extension Exhibition protocol, compatible with Art-net protocol lighting control software, widely used in LED dot matrix and requires a large number of DMX512 In the stage lighting control system of the data, it is often used in TV stations, stage performances and other places.

### I. System Features

1. Enter the Art-net protocol, an Ethernet-based control protocol to achieve lighting control;
2. The controller output supports the standard USITT DMX512/1990 general protocol and extended protocol;
3. The user can set two different IP addresses;
4. Different network segments can be set to avoid mutual interference of multiple groups of Art net data in the same network
5. Accurate gamma correction algorithm, which is more in line with the human visual sensitivity characteristics, and the display color is fuller and richer;
6. The maximum support for the frame change frequency of 120 to ensure the screen high-definition display and 3D display requirements;
7. The Ethernet interface and UDP network protocol are used for stable transmission, and the maximum transmission distance is 100 meters;
8. The LCD display module displays the controller parameters and status in time;
9. Dual network interfaces, cascading between controllers can be realized;
10. 8-port output, single-port output standard 512 channels, the number of points loaded by the extended protocol is tested by the customer according to the chip characteristics;
11. 1000/100M adaptive or mandatory 100M can be set to ensure more stable projects with large points;



## Controller specifications and basic parameters

### II. Controller appearance

MR-A28D Front view:



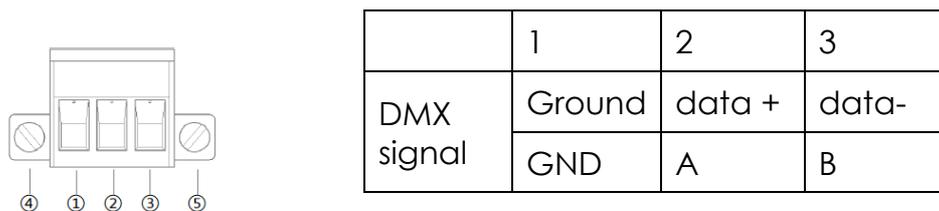
MR-A28D rear view:



- ① Power on
- ③ Power/communication indicator
- ④ Work indicator
- ⑤⑥ Adaptive network interface
- ⑦ Output port
- ⑧ Power interface

### III. Output port definition

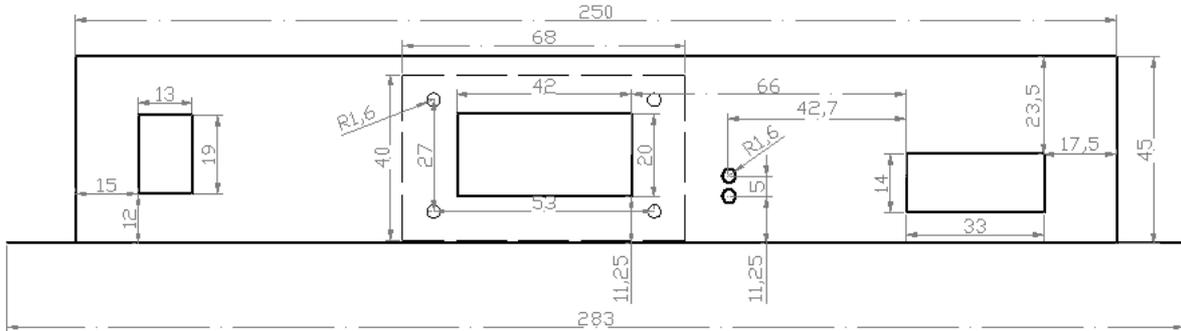
The MR-A28D controller uses 8\*3pin terminal interfaces to output signals. The 3Pin terminals are sorted from left to right, as shown in the figure below:



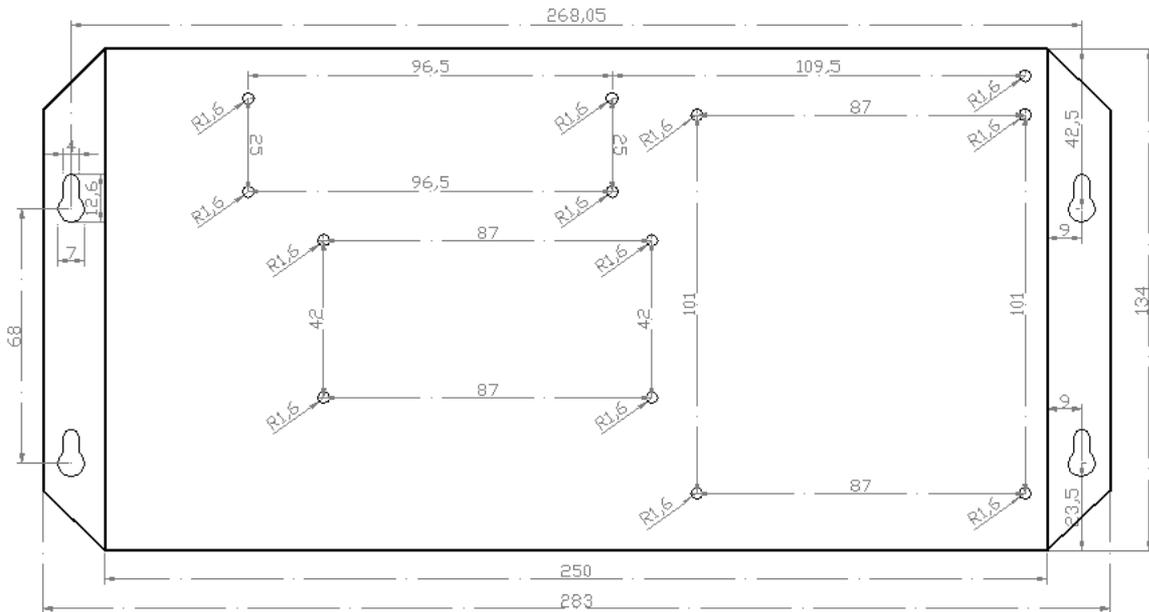
**Note:** ④⑤ is the 3Pin terminal fixing screw hole position, not the signal terminal.

#### IV. Controller three-view size diagram

MR-A28D front view:



MR-A28D top view



MR-A28D rear view



**Note:** The dimensions in the above three views are in millimeters (mm).



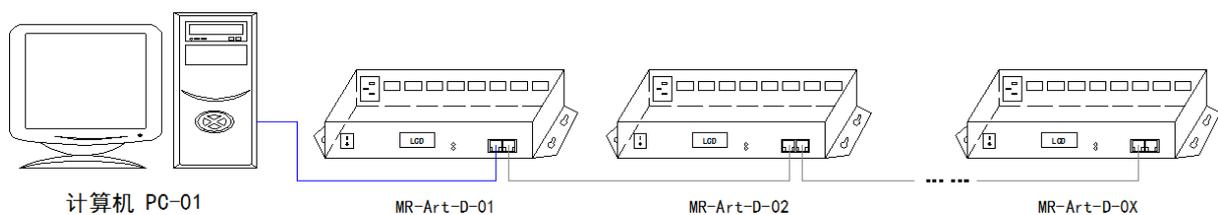
## V. Controller basic parameter table:

<b>Rated voltage</b>	AC 100V ~ 240V
<b>Rated power</b>	15W
<b>Length</b>	283mm
<b>Width</b>	134mm
<b>Height</b>	45mm
<b>Fixing hole spacing</b>	268mm; 68 mm
<b>Standard accessories</b>	AC power cord×1

## Controller installation application

### Online mode (connected to the host computer)

Connect the MR-A28D controller to the Ethernet port of the computer, as shown in the figure below:



## VI. Project case description and schematic diagram

Take the 96-dot×18-dot dot matrix screen composed of DMX512 point light source as an example, using the MR-A28D controller, as shown in the figure: 96 dots wide, 18 dots high, the wiring is arranged in a vertical S-shape, and each controller the output port controls 3 columns of point light sources, and a total of 32 DMX512 interfaces are required.





It is better to use a crossover cable between the controller, the offline main control and the switch, which is 568B at one end and 568A at the other end. The network cable between any of the above devices and the computer uses a straight-through cable, that is, the two ends are both 568B or 568A. Do not define the straight-through cable sequence yourself.

## 2. Wire and connection method from lamp to controller

- 2.1 If the distance between the output port of the controller and the lamp is too far, it is recommended to use a 485 dedicated line or a shielded network cable above Category 5 for connection. The best connection method is: orange-A; orange-white-B; others can be connected to GND (ground).
- 2.2 A 120R terminal resistance should be added to the end of each signal, between A and B.
- 2.3 Do not use the two wires that are twisted together to connect signals at the same time, such as orange and orange and white to A or B at the same time.

## VII. The application points of the controller grounding

The MR-A28D controller adopts a metal shell and the rated power supply voltage is AC100V-240V. Therefore, it must be ensured that the controller device is effectively grounded and the metal outer box of the device is effectively grounded.

Because the controller signal output port has exposed metal contact surface, in accordance with safety regulations, in order to ensure the safe application of operators,

The signal output port GND signal must be effectively grounded.