

MR-A28A ArtNet Controller instruction

version: V4.2



ArtNet decode controller

Revision date: 2021/12/21

Functional overview

MR-A28A Controller based on Ethernet ArtNet protocol realize communication transmission and send the multiplex channel data to the SPI lamp in the form of TTL protocol .

MR-A28A Controller adopts high-performance FPGA processor ,efficient and stable data processing ; Standard ArtNet protocol provide two RJ45 network interfaces with other conventional network equipment which can achieve a variety of network topologies.

MR-A28A provide 8 standard TTL data output ports which in total 8×512 data output ,it can support expansion protocol and compatible with ArtNet protocol light control software; For example : Madrx3、 Madrx5、 Programmer、 Pharos、 Sunlite、 Luminair、 Arococ、 MA console、 Stende etc; Widely used in LED lattice and stage lighting that requires a large amount of TTL channel data , it often used in TV stations ,stage performance, night tour ,light show ,immersive performance, 3Dmapping show and other places.

I. System characteristics

1. MR-A28A input support ArtNet protocol, enabling light management control based on TCP/IP Ethernet control protocol ;
2. MR-A28A support TTL serial zero code protocol a and multi-chip selection;
3. MR-A28A output is compatible with the TTL level signal and the differential signal dual mode;
4. MR-A28A support 64 domains or each port expands 8 x or 4096 channels (combined with chip performance) ;
5. The user can set up two different IP addresses;

6. 32-65536 Grayscale 16Bit conventional control, depth optimization up to 262,144 grayscale, can truly restore the image color and details;
7. Three base color independent brightness control, make the accurate adjustment of white balance more simple and effective;
8. Support for monochrome, two-color, RGB, RGBW, RGBWY, and multi-color hybrid control;
9. The quasi-adjustable Gamma correction algorithm is more in line with the human visual photosensitive characteristics, and has a richer display color, so that the designer's animation or video effect is perfectly reflected;
10. Maximum 120 frame change frequency is supported to ensure screen HD display and 3D display requirements;
11. Ethernet interface and UDP network protocol were stable with a maximum transmission distance of 100 m;
12. The LCD display module displays the controller parameters and status in time;
13. Dual RJ45 network interface can realize the mixed cascade between controllers; the controller can automatically detect, and the software visually displays the connection state;
14. A variety of chip control is integrated, and we change the control chip type, clock frequency, duty cycle, gray scale level and other parameters through software setting;
15. Support IP grouping function ,use the switch parallel scheme to reduce the system cascade the chain length and improve the stability of the system ;
16. Support dual backup, a controller is broken or a disconnected display is not affected;

17. Support anti-interference and leakage design between device ports, a single port interference or fault does not affect other port work;
18. Equipment port has overflow pressure protection, making the equipment safe and reliable for long-term operation;
19. Equipment network port, port output, surge impact protection: 1.5KV;
20. Support for fault-free normal operation under severe working environment-40°C -80°C.
21. Thousand / 100 megabytes adaptive or forced 100 megabytes can be set, to ensure that more stable large points of projects.
22. Different network segments can be set up to avoid mutual interference with multiple sets of ArtNet data in the same network ;

Controller specifications and basic parameters

I. Controller appearance

MR-A28A front view:



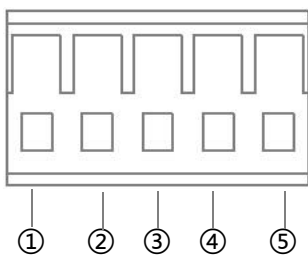


- ① Power Switch ② LCD display screen ③ Power supply / communication indicator lamp
- ④ Work indicator light ⑤⑥ Adaptive network interface ⑦ output port
- ⑧ Power interface

II. Output port definition

MR-A28A controller uses 8/ 5pin terminal interfaces to output signals

5Pin terminals are sorted from left to right ,as below:

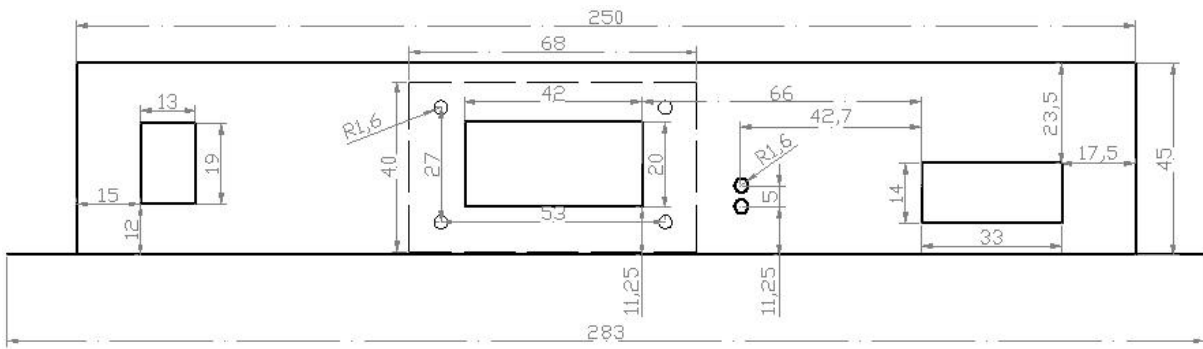


	①	②	③	④	⑤
TTL Signal	ground	data	no	clock	no
	GND	DATA	NC	CLK	NC
Differential signal	ground	data+	data-	no	no
	GND	A1	B1	NC	NC

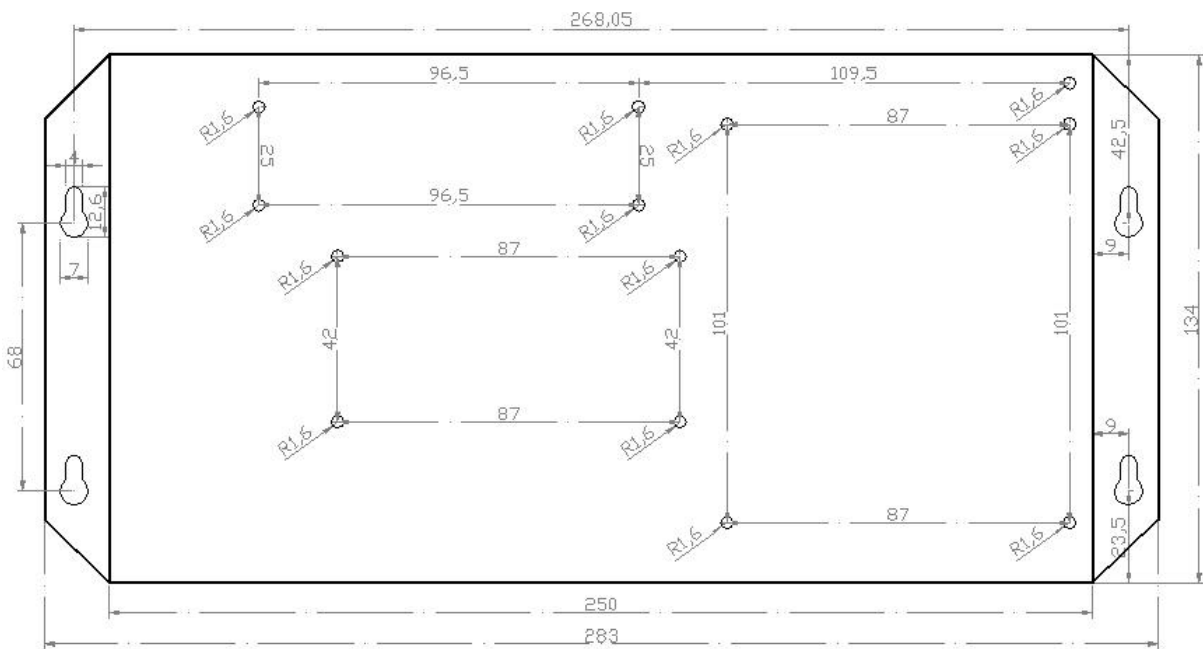
Note : MR-A28A controller is compatible with the TTL signal and the differential signal output.

III. Three-view dimensions of the controller

MR-A28A front view



MR-A28A vertical view



MR-A28A rear view



Note: Size in the above three views is in mm (mm)

IV. Basic parameter table of the controller:

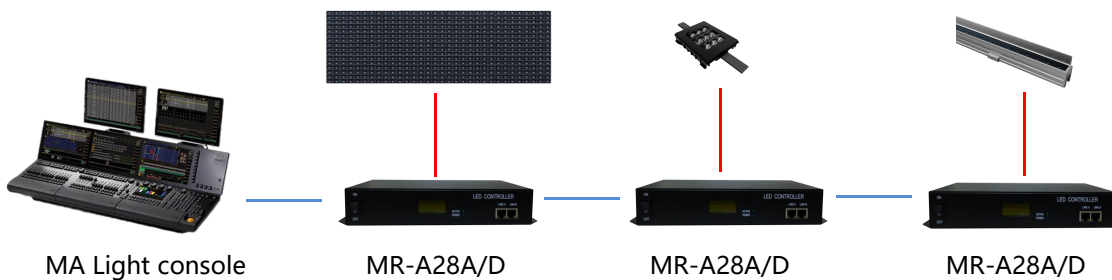
product name	Standard ArtNet sub-controller
Product model	MR-A28A
rated voltage	AC 100V ~ 240V±15%Vac50/60Hz
power rating	≤15W
Communication interface and protocol	RJ45x2CH, Standard TCP/IP Ethernet communication protocol
Enter the protocol	Standard ArtNet protocol
Network communication rate	100MB/1000MB self-adaption
output port	8Port output (Standard DMX512 and Expansion Agreement)
relative humidity	≤95% (Not condensation)
working temperature	-40°C ~ 80°C;
length	283mm
width	134mm
height	45mm
Fixed hole spacing	268mm; 68 mm

Protection levels	IP20
Installation	Installation method of fixed hole position (as above)
weight	1.48kg
Shell material	Iron quality (powder spraying process)
Standard accessories	AC power ×1/ warranty cardx1/Bubble cotton paper box x1

Controller installation application

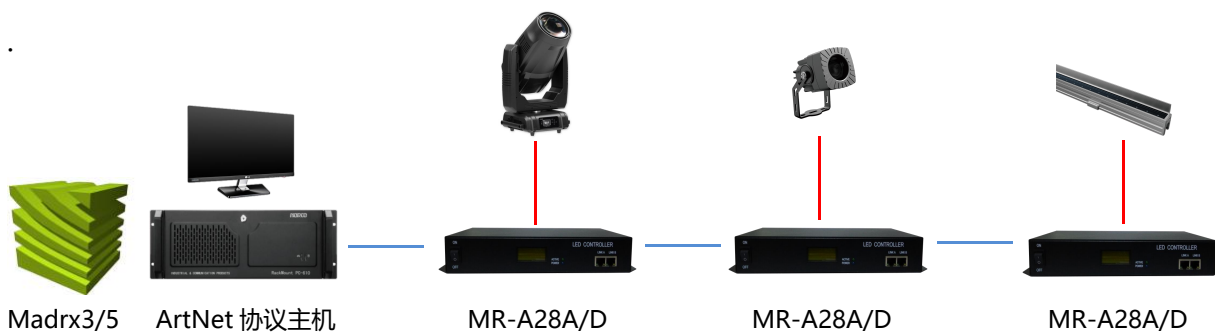
I. Console mode (connected to the MA light console)

MR-A28A ArtNet device is connect to MA light console network port, as below :



II. Computer mode (connected to the computer)

MR-A28A ArtNet device connects to the computer network port (pre-install supporting ArtNet protocol software) , as below :

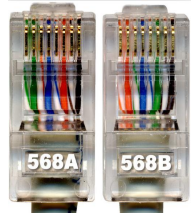


Attention matters

I. Application key points of super five twisted pairs

568B Line sequence: orange-white orange green-white blue blue-white green brown-white brown

568A Line sequence: green-white green orange-white blue blue-white orange brown-white brown



The controller and offline master control and switch, which is 568B at one end and 568A at the other end. For any of the above devices and computers, it is either 568B or 568A. Do not define your own direct line order.

II. The material and connection method of the lamps with the controller

1. If the distance between the controller output port and the lamp is too far, it is recommended to use 485 special wire or over five or above screen wire connection. The best connection is: orange-A; orange-white-B; other GND (ground).
2. A terminal resistance of 120R shall be added between A and B at the end of each channel signal.
3. Do not use two wires wrapped together at the same time, such as orange and orange white, to A or B at the same time.

III. The key application point of the controller grounding

MR-A28A controller use a metal shell , the rated power supply voltage is AC100V-240V, so the controller equipment and the metal outer box must be effectively grounded .

Because the controller signal output port has the exposed metal surface, the GND signal output port must be effectively grounded in order to ensure the safe application of the operator under the safety regulations.