



MR-228DW Controller Manual

Version:V3.9

MingRui Technology Co., Ltd.

Revised Date:2022/01/21



Overview

I. Features

1. MR-228DW Standard USITT DMX512/1990 General Protocol and Extended Protocol;
2. MR-228DW Support Unlimited Cascade Transmission, Unlimited Number;
3. MR-228DW Support Return to Zero Code、 Manchester Encoding Protocol;
4. Controller Signal OutPut ADRI/PO Terminal Can Achieve DMX512 Channel Automatic Addressing, Support DMX512AP-N / NB, UCS512, MY7221, WS2821 and Other Driver Chips;
5. MR-228DW Support Address Line Differential Signal, Can Be Used for Long Distance;
6. Independent Brightness Control of 3 Primary Colors, Easy to Adjust White Balance;
7. Support R, RB, RGB, RGBW, RGBWY, and Multi-Color Mixing Control;
8. Support 32-65536 Grayscale 16Bit, Support 262144 Grayscale, Restore image Details;
9. Accurate Gamma Correction Algorithm, in Line With Human Visual Sense;
10. Support Opening and Closing the Function of Writing DMX Addresses and Parameters;
11. Support 120Hz Frame Rate to Ensure High-definition Display and 3D Requirements;
12. Using Ethernet Interface and UDP Protocol, The Distance is 100 Meters;
13. LCD Display Module Displays Controller Parameters and Status in Time;
14. Two RJ45 Ports, Support Mixed Cascading; Automatic Software Display Status;
15. 8-Port OutPut, Single Channel 512 Channels, Expansion Needs to Be Tested by Itself;
16. Support Backup, Single Device Failure or Network Cable Disconnection Has no Effect;
17. Support Device Port Anti-interference and Leakage Design;
18. Support Overcurrent and Overvoltage Protection, Can run for a Long Time;



19. Network Adaptive or Mandatory 100M Can be Set to Support More Loading;
20. Equipment Network Port, Port OutPut, Surge Protection: 1.5KV;
21. Support Severe Working Environment -40°C-80°C, Normal Operation Without Failure.

II. Design Concept

1. 1000Mbps/ 100Mbps Optional, Adapt to Different Project Schemes;
2. Two-way Redundancy of The System Signal, Doubled Stability;
3. 4 Color Algorithm: Energy Saving and Environmental Protection, Pure Color;
4. Integrated Control, Online Priority, Automatic Switching Offline Effect Without Signal;
5. Self-developed Playback and Wiring Software, More Adaptable;
6. Use Complex Applications Such as Various Lighting Screens;
7. Use The Switch Parallel Scheme and Improve The Stability of The System;
8. Add Fiber Optic Modules, The System Can Transmit Fiber Optic Signals;
9. Add a Wireless Bridge for Wireless Signal Transmission;
10. With Internet Control Software, Support Internet Remote Control;
11. The System Supports Automatic, Timed and Holiday Preset Playing;
12. Support Mainstream 32Bit and 64Bit Systems: Win 7, Win 8 Win 10 and so on;

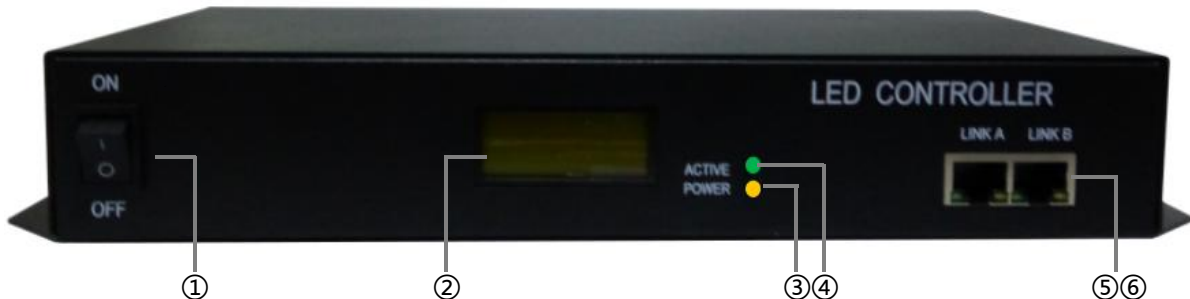
III. Expansibility

1. Can Play Video and Picture File Content in Various Formats;
2. All Current Windows Systems and Multiple Languages Can be Installed;
3. Leave The Interface for Compatibility With International Common Protocols
4. Expandable and Compatible With Third-Party Software and Devices;

Specifications and Parameters

I. Controller Appearance

MR-228DW Front view:



MR-228DW Rear view:

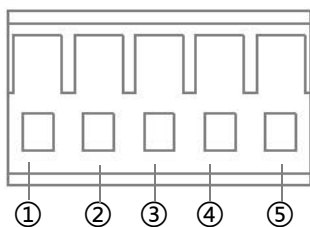


- ① Power Switch ② LCD Display ③ Power Lights ④ Signal Lights
 ⑤⑥ Self-adapting Network Interface ⑦ DMX OutPut Port ⑧ Power Interface

II. OutPut Port Definition

MR-228DW Controller Uses 8-Port 5Pin Terminal Interface OutPut Signals.

5Pin Terminals Sort Sequentially From Left to Right, As Shown Below:

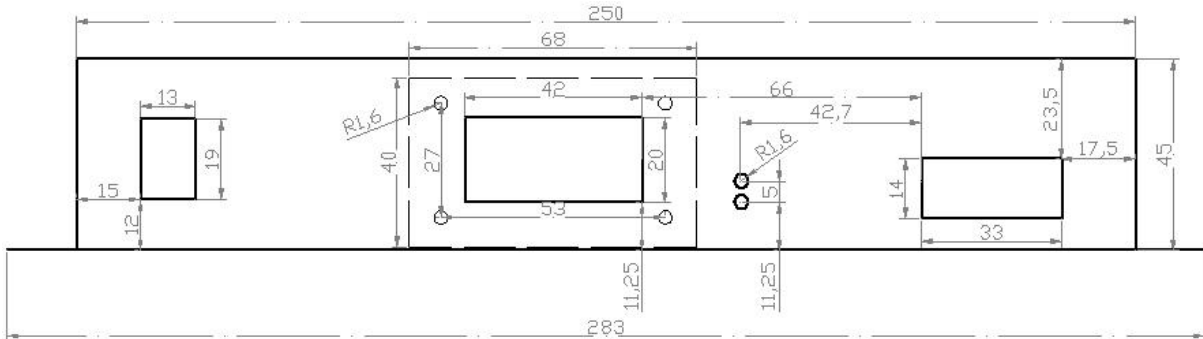


	①	②	③	④	⑤
DMX Signal	GND	Data+	Data-	Addressing-	Addressing+
	GND	A	B	ADRI/PO-	ADRI/PO+

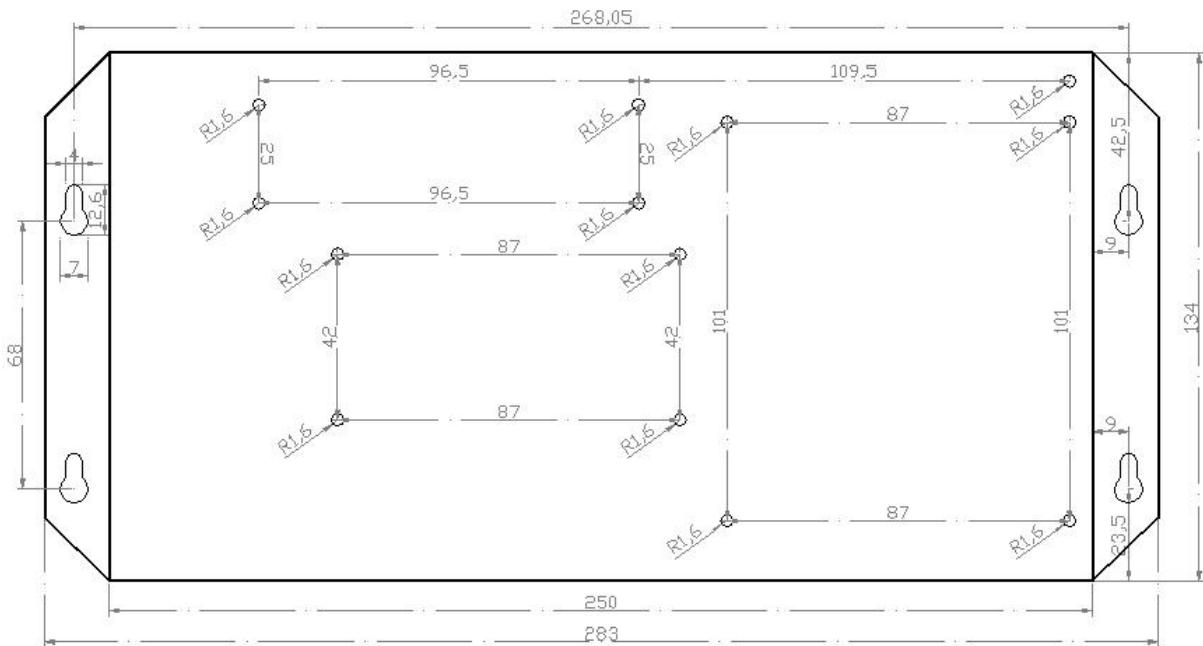
Note: The Signal Terminal ④⑤ is a Differential Signal. When The Differential OutPut of The Addressing Line is Not Used, Only Connect ⑤ (Addressing +).

III. Controller Three View Size Chart

MR-228DW Front View:



MR-228DW Top View:



MR-228DW Rear View



Remark: Above Three Views The Size Unit is mm.

IV. Basic Parameter Table

Product Name	Standard DMX Sub-Controller
Product Model	MR-228DW
Rated Voltage	AC 100V ~ 240V \pm 15%Vac50/60Hz
Rated Power	About 15W
Protocol	RJ45X2PCS, Standard UDP/TCP Protocol
Network Rate	100MB/1000MB Adaptive
OutPut	8-Port OutPut (DMX512 and Extended Protocol, TTL Protocol)
Relative Humidity	About 95% (Non-Condensing)
Temperature	-40°C ~ 80°C;
Length	283mm
Width	134mm
Height	45mm
Hole Spacing	268mm; 68 mm
Protection Class	IP20
Installation Method	Fixed Hole Installation Method (See Above Drawing)
Weight	1.48kg
Shell Material	Iron (dusting process)
Accessories	Power Cord x1/Warranty Card x1/Foam Paper Box x1/ Screwdriver x1

Install and Use

I、 Online mode (Connected With The Computer)

MR-228DW Controllerd Connect With The Computer Ethernet Port,as Shown Below :



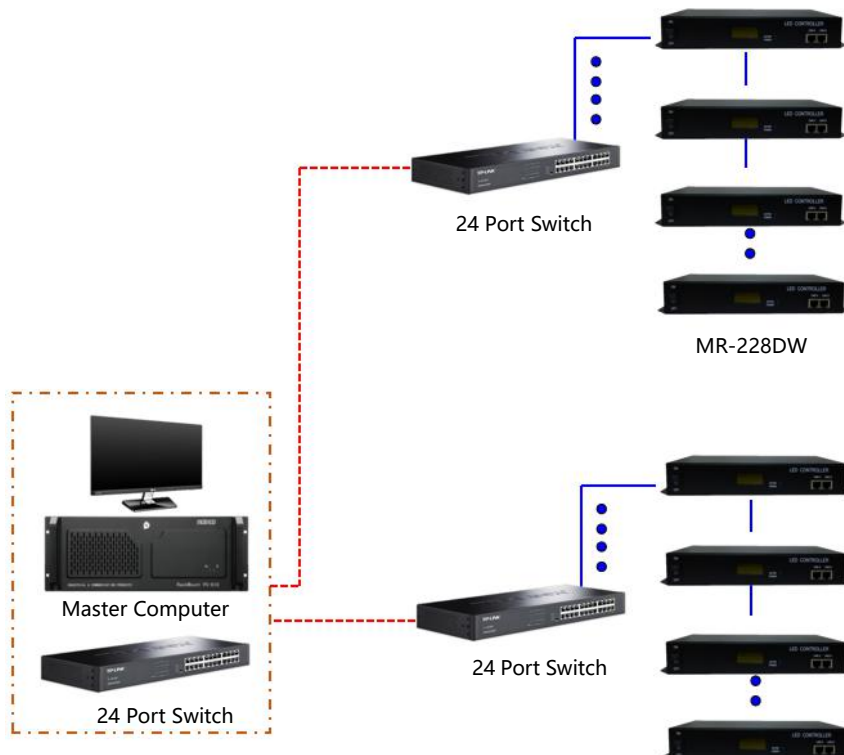
II、 Offline Mode

MR-228DW Connect With the Offline Master Controller, as Shown Below :



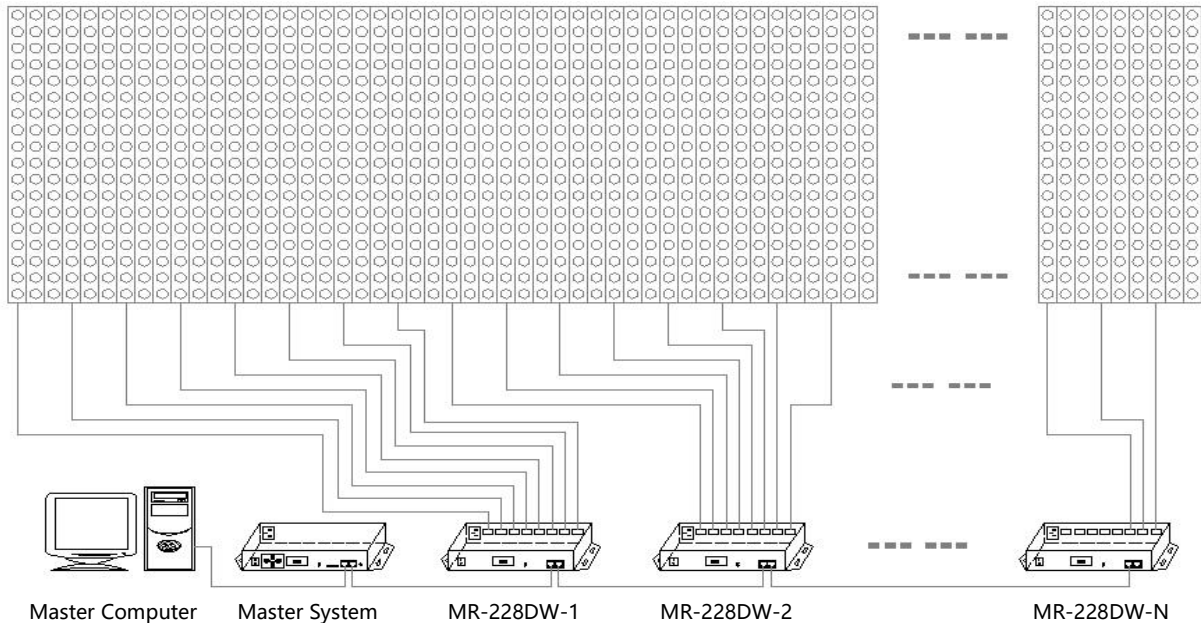
III、 Integrated synchronous and Asynchronous Mode

Connect With the Computer and The Main Control (Online Priority. No Signal Switch Offline), as Shown in The Following Figure:



IV、 Engineering Case Description and Sketch Map

For Example in DMX512 Point Light Source Composed of 96 Points × 18 Dots Matrix Screen , Use MR-228DW Controller , The Wiring is Arranged in The Vertical S Type , Controller for Each OutPut Port to Control 3 lines Point Light Source, Totally Need of 32 DMX512 interfaces. The Following Diagram for Example :

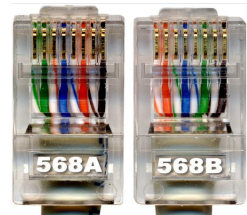


Precautions

I、Cat.5e Twisted Pair Application Notes

568B: orange-white/orange/green-white/ blue/blue-white/green/brown-white/brown

568A: green-white/green/orange-white/blue/blue-white/orange/brown-white/brown



Equipment and Equipment Cable, [Cross]: One end is 568B, and One end is 568A.

Device and Switch Cable, [Crossover]: One end is 568B, and One end is 568A.

Equipment and Computer Cable, [Straight]: One end is 568B, and One end is 568A.

Note: Follow The Requirements, Do Not Define The Network Cable Sequence by Yourself.

II、Wire and connecting method from lights to controller

1. If The Distance Between The OutPut Port of The Device and The Lamp is Too Far, it Can be



Connected With a 485 Dedicated Line or a Shielded Network Cable of More Than Five Categories. The Network Cable Connection Method is:

Network Cable Orange Line: Connect to A+ (Signal Positive);

Network Cable Orange and White Line: Connect B- (Signal Negative);

Network Cable Green Line: Connect to W (Write Dddress)

Note: All Other Unused Network Cables Must be Connected to GND (Ground)

2. At The end of Each Road Signal That is Between A and B to Add a 120R Terminal Resistance.

3. Do Not Connect The Two Wires That are Intertwined to Receive The Signal, Such as Orange and Orange White Connect to A+or B- at Same Time.

III、 Controller Connect to Ground Application Notes

MR-228DW Controller Using Metal case, Rated Supply Voltage is AC100V-240V, Therefore, it is Necessary to Ensure The Effective Grounding of The Controller Equipment and The Effective Grounding of The Metal Outer Box.

And the OutPut Port of The Controller is Exposed to The Metal Contact Surface, Therefore, According to The Requirements of Safety Regulations, to Ensure Safe Use of The Operator, Signal OutPut Port GND Signal Must be Effectively Grounded.