SIRS-E SR-2108B-M24-5

SIRS-E 24 Channel CV DMX RDM Digital PWM Decoder SR-2108B-M24-5 User Manual

Model: SR-2108B-M24-5

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the SIRS-E 24 Channel CV DMX RDM Digital PWM Decoder, Model SR-2108B-M24-5. This device is designed for controlling RGB, RGBW, and RGBWW LED strips and modules, offering precise 8-bit or 16-bit PWM dimming across 24 channels.

2. Safety Information

- Ensure the input voltage (12-24V DC) matches the device specifications to prevent damage.
- All wiring should be performed by a qualified professional to avoid electrical hazards.
- Do not expose the device to moisture or extreme temperatures.
- Disconnect power before making any connections or performing maintenance.
- This device is designed for indoor use only.

3. Product Overview

The SIRS-E SR-2108B-M24-5 is a versatile DMX512 & RDM decoder capable of controlling up to 24 channels of constant voltage LED lighting. It features a digital display for easy address setting and mode selection, supporting both master and slave configurations.

Figure 3.1: Top-down view of the SIRS-E 24 Channel DMX RDM Decoder. This image shows the overall layout of the device, including the digital display, control buttons, and various input/output terminals.

3.1. Key Features

- Controls 1 to 24 channels of RGB/RGBW/RGBWW LED strips and modules.
- Each channel offers 256 levels of brightness intensity.
- Supports Master & Slave Mode and PWM DMX Decoder functionality.
- Selectable 8-Bit or 16-Bit PWM ratios.
- Easy-to-read digital display for DMX address setting (1-512).
- Meets DMX512/1990 standards.
- Capable of controlling LED lights with 1-5 colors.
- Constant Voltage operation with 12V to 24V DC input.
- Flicker-Free Adjustable Frequency from 500 Hz to 30kHz.

3.2. Component Identification

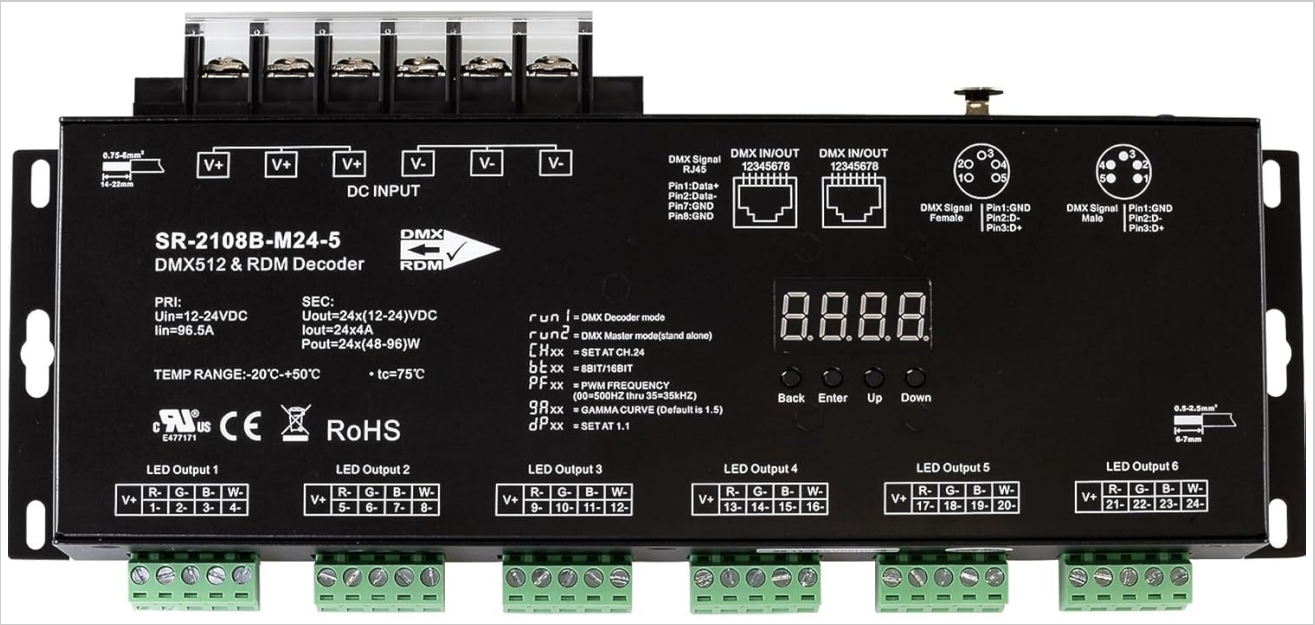

Figure 3.2: Detailed top view of the decoder with labeled components. This image highlights the DC input, DMX IN/OUT ports (RJ45 and XLR), digital display, control buttons (Back, Enter, Up, Down), and 24 LED output terminals.

Figure 3.3: Front view of the decoder, showing the six groups of LED output terminals. Each group consists of four channels (V+, R, G, B, W for RGBW configurations).

Figure 3.4: Rear view of the decoder, illustrating the DMX input/output ports (XLR3, XLR5, and 2xRJ45) and the main DC power input terminal block.

3.3. Product Overview Video

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Video 3.1: An official product overview of the SIRS-E 24 Channel DMX Decoder. This video provides a visual guide to the device's features and basic functionality.

4. Setup

Proper setup is crucial for optimal performance and safety. Follow these steps carefully.

4.1. Wiring Diagrams

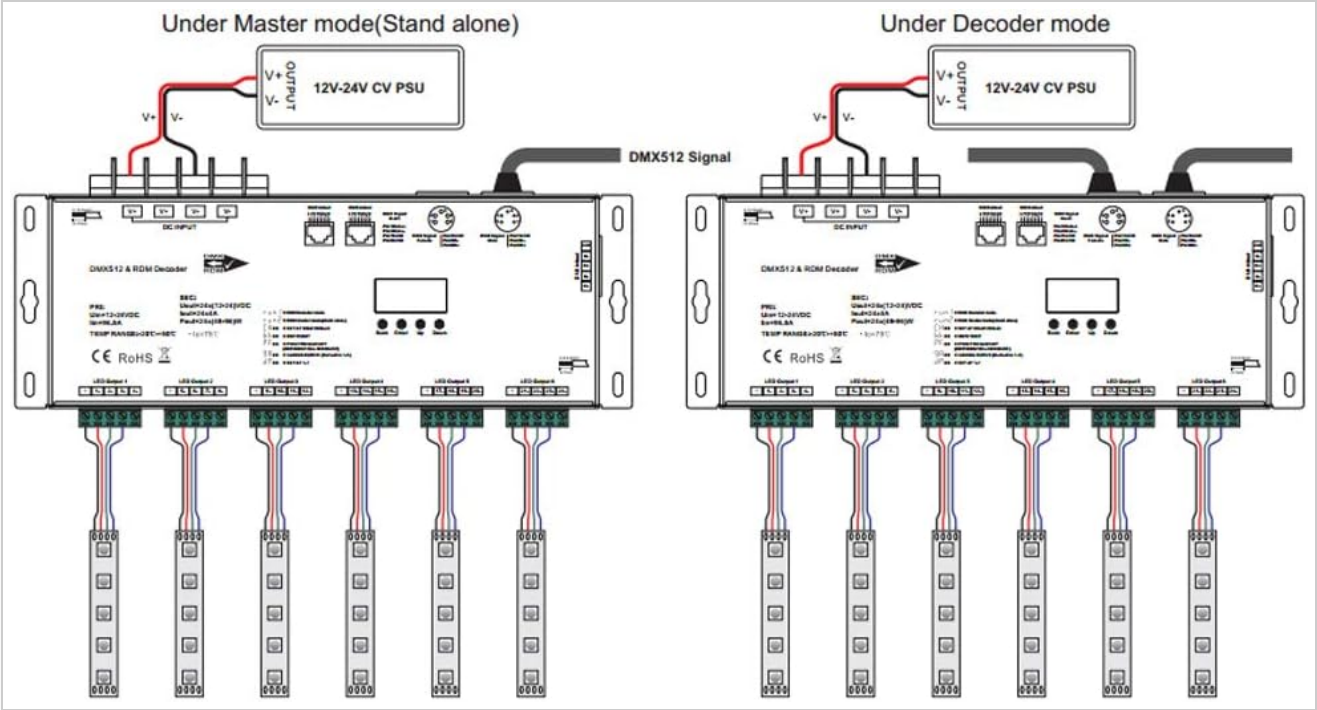


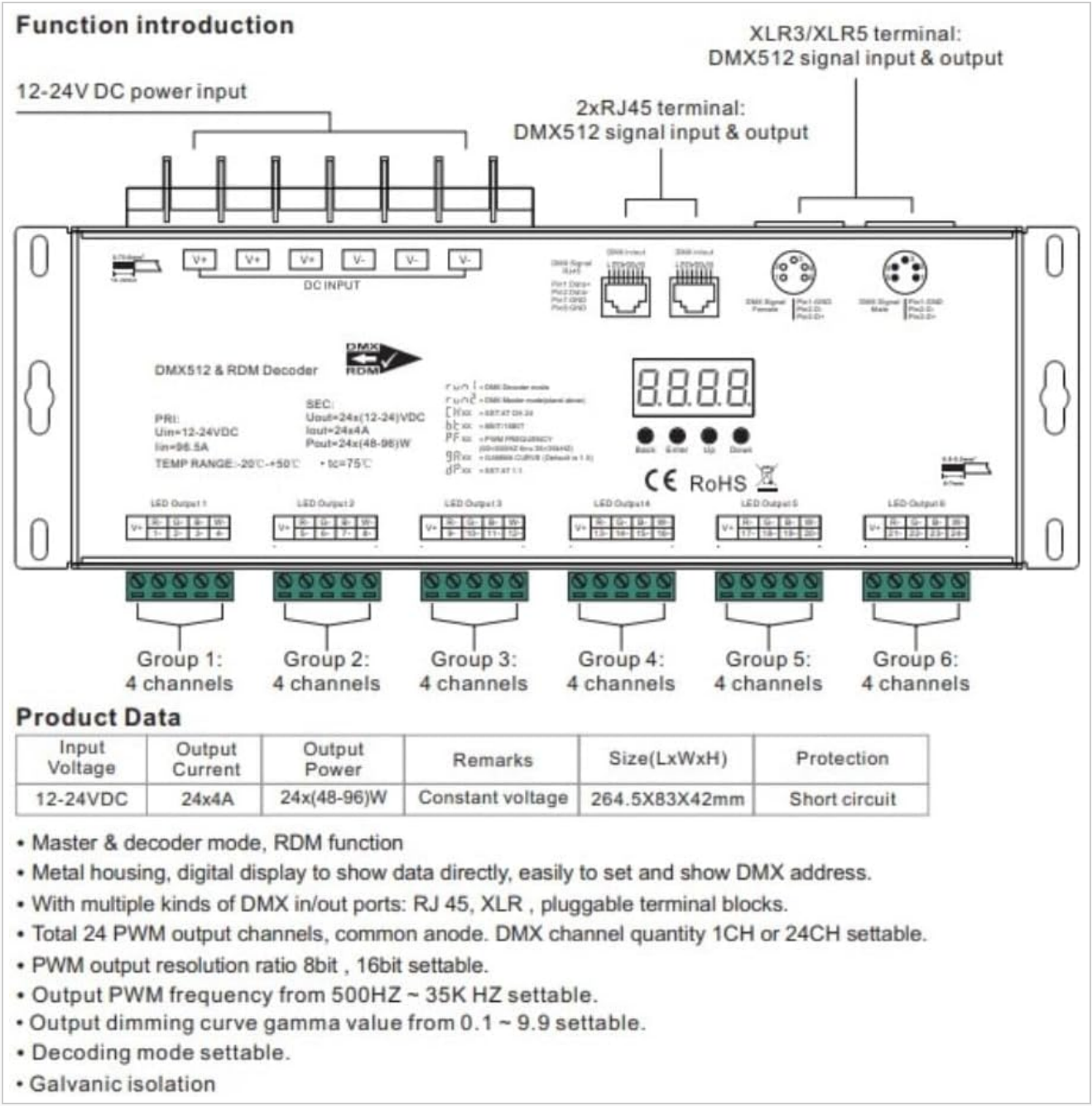
Figure 4.1: Wiring diagrams illustrating connections for both Master mode (standalone) and Decoder mode (DMX signal input). Ensure correct polarity for DC power and LED outputs.

4.2. Connection Steps

1. **Power Supply Connection:** Connect a 12-24V DC power supply to the 'DC INPUT' terminals. Ensure correct polarity (V+ and V-).
2. **LED Output Connection:** Connect your LED strips or modules to the 'LED Output' terminals. Each output group supports up to 4 channels (e.g., V+, R, G, B, W). Match the polarity and color channels correctly.
3. **DMX Signal Connection (Decoder Mode):** If using the decoder with a DMX controller, connect the DMX signal cable from your controller to the 'DMX IN' port (either XLR or RJ45). For daisy-chaining multiple decoders, connect 'DMX OUT' to the next device's 'DMX IN'.
4. **Master Mode (Standalone):** If operating in Master mode, no DMX signal input is required. The device will run pre-programmed effects or manual settings.

5. Operating Instructions

The decoder features a digital display and four buttons (Back, Enter, Up, Down) for configuration.



Product Data

Input Voltage	Output Current	Output Power	Remarks	Size(LxWxH)	Protection
12-24VDC	24x4A	24x(48-96)W	Constant voltage	264.5X83X42mm	Short circuit

- Master & decoder mode, RDM function
- Metal housing, digital display to show data directly, easily to set and show DMX address.
- With multiple kinds of DMX in/out ports: RJ 45, XLR , pluggable terminal blocks.
- Total 24 PWM output channels, common anode. DMX channel quantity 1CH or 24CH settable.
- PWM output resolution ratio 8bit , 16bit settable.
- Output PWM frequency from 500HZ ~ 35K HZ settable.
- Output dimming curve gamma value from 0.1 ~ 9.9 settable.
- Decoding mode settable.
- Galvanic isolation

Figure 5.1: Diagram detailing the function introduction and product data. This image provides an overview of the menu structure and available settings.

5.1. Menu Navigation

- Use the 'Up' and 'Down' buttons to navigate through menu options or adjust values.
- Press 'Enter' to select an option or confirm a setting.
- Press 'Back' to return to the previous menu or exit a setting without saving.

5.2. Setting DMX Address

1. Power on the device. The display will show the current DMX address or mode.
2. Navigate to the DMX address setting menu (usually indicated by 'Axxx' or similar).
3. Use 'Up' and 'Down' to adjust the DMX start address (1-512).
4. Press 'Enter' to save the address.

5.3. Mode Selection

The decoder supports various operating modes, including DMX Decoder mode and Master mode (standalone).

- **DMX Decoder Mode:** The device receives DMX512 signals from an external controller.
- **Master Mode (Standalone):** The device operates independently, running built-in programs or manual settings without an external DMX signal.

Refer to the device's display and menu options to select the desired operating mode.

5.4. PWM Frequency and Gamma Curve Adjustment

The device allows adjustment of PWM frequency and gamma curve for fine-tuning LED output.

- **PWM Frequency:** Adjustable from 500 Hz to 30 kHz to eliminate flicker.
- **Gamma Curve:** Adjustable from 0.1 to 9.9 to optimize dimming linearity.

Access these settings through the digital display menu and use the 'Up' and 'Down' buttons to modify values, then 'Enter' to save.

6. Maintenance

Regular maintenance ensures the longevity and reliable operation of your decoder.

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the device. Do not use liquid cleaners or solvents.
- **Inspection:** Periodically check all connections for tightness and signs of wear or damage.
- **Ventilation:** Ensure the device has adequate ventilation to prevent overheating. Do not block ventilation openings.
- **Storage:** Store the device in a cool, dry place when not in use for extended periods.

7. Troubleshooting

If you encounter issues with your decoder, refer to the following common problems and solutions.

- **No Power:**
  - Check the power supply connection and ensure it is providing the correct voltage (12-24V DC).
  - Verify the power outlet is functional.
- **LEDs Not Responding:**
  - Confirm LED output wiring polarity is correct.
  - Check the DMX address setting on the decoder matches your DMX controller.
  - Ensure the DMX signal cable is properly connected and functional.
  - Verify the decoder is in DMX Decoder mode if using an external controller.
- **Flickering LEDs:**
  - Adjust the PWM frequency setting to a higher value (e.g., 30kHz) to reduce visible flicker.
  - Ensure the power supply is stable and sufficient for the connected LED load.
- **Incorrect Color Output:**
  - Verify the color channel wiring (R, G, B, W) from the decoder to the LED strips.
  - Check the DMX channel assignment on your controller to ensure it corresponds to the decoder's output channels.

If problems persist, contact SIRS-E customer support for further assistance.

8. Specifications

The following table outlines the technical specifications of the SIRS-E 24 Channel CV DMX RDM Digital PWM Decoder.

Figure 8.1: Technical specifications table for the decoder, detailing electrical parameters and certifications.

Parameter	Value
Model Number	SR-2108B-M24-5
Protocol	DMX512 LED Decoder
Type	Constant Voltage
Output Channels	Selectable 1 to 24
Input Voltage	12-24V DC
Output Current	24 x 4A
Output Power	1152-2304W (depending on voltage)
Flicker-Free	Adjustable Frequency: 500 Hz - 30kHz
Dimensions	10.41"L x 3.26"W x 1.64"H (264.5 x 83 x 42mm)
Item Weight	2 Pounds
Material	Metal
Certifications	UL Recognized, RoHS, CE

9. Warranty and Support

For warranty information and technical support, please refer to the official SIRS-E website or contact their customer service department. Keep your purchase receipt for warranty claims.

SIRS-E Contact Information:

- Visit the SIRS-E Store on Amazon for product information and support resources.