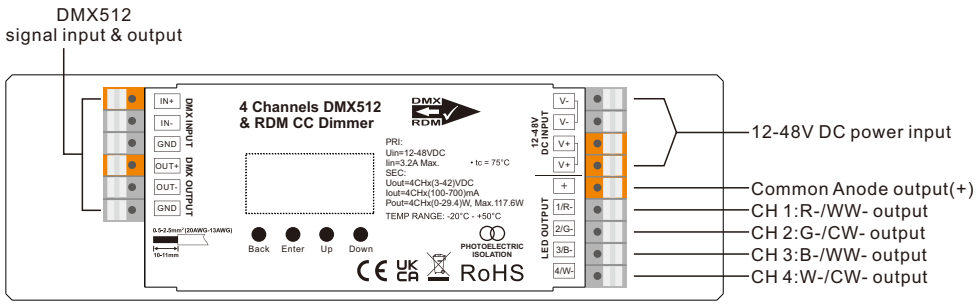
4 Channels DMX512 & RDM CC Dimmer

SELV

Important: *Read All Instructions Prior to Installation*

Function introduction



Product Data

Input Voltage	Output Current	Output Voltage	Output Power	Remarks	Size(LxWxH)
12-48VDC	100-700mA selectable with 10mA increment	3-42V	4CHx(0-29.4)W	Constant Current	170x53.4x28mm

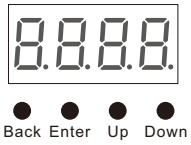
- DMX decoder & master mode, RDM function
- Digital display to show data directly, easily to set and show DMX address
- Total 4 constant current output channels, common anode.
- 100-700mA output current settable of each channel with 10mA increment
- 8/16 bit settable
- Output dimming curve gamma value from 0.1 ~ 9.9 settable
- DMX personality can be set
- Auto-addressing/maunal setting address function
- Startup behavior can be set via RDM
- DMX signal input & output are isolated, anti-surge protection
- Amplitude/CCR dimming, smooth and deep dimming, flicker free

Safety & Warnings

- DO NOT install with power applied to device.
- DO NOT expose the device to moisture.

Operation

Before you do other settings, please set the device to be Master or Decoder mode.
run1 = DMX Decoder mode , run2 = DMX Master mode(stand alone).
Keep on clicking Down button, to get run1 or run2, then click Enter, then click Down button to choose 1 or 2, then click Back button.
After choose run1 or run2, please power off and power on again the device.



I. For run2 DMX Master mode: After power on the device, if keep on clicking Up button, you will find below menu on display:

1.01 Means brightness for each output PWM channel. First 1 means PWM output channel 1 and it is selectable from 1 to 4 by clicking “UP” or “Down” button. Second 01 means brightness level, click “Enter” button, the display flashes, then click “UP” or “Down” button to select from 00-99-FL, which means 0%-99%-100% brightness, then click “Back” button to confirm.

P.XXX Means programs , total 32 programs.

b-.XX Means RGB running effect’s brightness, total 1~8 levels brightness

SP.-X Means effect play speed. total 1~9 levels speed.

II. For run1 DMX decoder mode: After power on the decoder, if keep on clicking Up button, you will find below menu on display:
DMX signal indicator ● :: When DMX signal input is detected, the indicator on the display following after A turns on red A.XXX , if there is no DMX signal input, the indicator will not turn on, and the character A will flash.

A.XXX Means DMX address. factory default setting is 001.

bt.XX Means Bit (8bit or 16bit). factory default setting is 16bit

Sb-X Means the the state of the device after a restart or when it is offline, factory default setting is sb-0

gA.XX Means output dimming curve gamma value, factory default setting is ga 1.5

d.A01 , ..., d.d02 Means DMX personality, factory default setting is 4d.01

C1.XX Means output current of channel 1, factory default setting is C1.10, available setting range is 10-70(100-700mA)

C2.XX Means output current of channel 2, factory default setting is C2.10, available setting range is 10-70(100-700mA)

C3.XX Means output current of channel 3, factory default setting is C3.10, available setting range is 10-70(100-700mA)

C4.XX Means output current of channel 4, factory default setting is C4.10, available setting range is 10-70(100-700mA)

Auto assign DMX address automatically

AU-0 Means stop assign DMX address automatically, the address is assigned by manually

AU-1 Means force the start DMX address to be 001, and then start automatically assigning addresses after re-power

AU-2 Means set the start DMX address manually, and then start automatically assigning addresses after re-power

AE-0 Means stop assign DMX address automatically, the address is assigned by manually

AE-1 Means force the start DMX address to be 001, and then start automatically assigning addresses at once

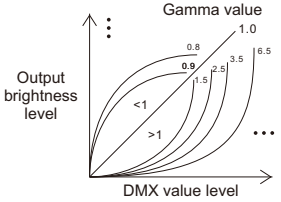
AE-2 Means set the start DMX address manually, and then start automatically assigning addresses at once

1. DMX address setting:
Select menu A XXX , click button “Enter”, display flashes,then click or hold button “Up” / “Down” to set DMX address (click is slow, hold is fast.), then click button“Back” to confirm.

2. PWM output resolution Bit setting:
Select menu bt XX , click button “Enter”,display flashes, then click button “Up” / “Down” to choose 08 or 16 bit, then click button“Back” to confirm.

3. Startup behavior with no signal input setting:
Select menu Sb -X , click button “Enter”,display flashes, then click button “Up” / “Down” to choose 0-A, then click button“Back” to confirm.
0 (via RDM: 0) - Hold last frame
1 (via RDM: 1) - RGBW = 0%
2 (via RDM: 2) - RGBW = 100%
3 (via RDM: 3) - Channel 4 = 100%, channels 1 and 2 and 3 = 0%
4 (via RDM: 4) - Channel 1 = 100%, channels 2 and 3 and 4 = 0%
5 (via RDM: 5) - Channel 2 = 100%, channels 1 and 3 and 4 = 0%
6 (via RDM: 6) - Channel 3 = 100%, channels 1 and 2 and 4 = 0%
7 (via RDM: 7) - Channels 1 and 2 = 100%, channels 3 and 4 = 0%
8 (via RDM: 8) - Channels 2 and 3 = 100%, channels 1 and 4 = 0%
9 (via RDM: 9) - Channels 1 and 3 = 100%, channels 2 and 4 = 0%
A (via RDM: 10) - Channel 1 = 100%, channel 2 = 45%, channels 3 and 4 = 0%.

4. Output dimming curve gamma value setting:
Select menu gA XX , click button “Enter”, display flashes, then click or hold button “Up” / “Down” to choose 0.1~9.9, then click button“Back” to confirm.



5. DMX personality setting:

The DMX personality setting means to set the DMX channel quantity used for control of corresponding PWM output channel quantity. After power on the decoder, then click or hold button “Up” / “Down”to select, you will get the following DMX personalities, then click button“Back” to confirm the selection:

8A.o1, 2A.o2, 2b.o8, 3b.o3, 3C.o1, 4b.o2, 4C.o3, 4d.o1, 5C.o4, 5d.o3, 6C.o2, 6d.o4, 8d.o2

Please refer to the following tables for detailed information of different DMX personalities:

dP Setting	Describe	Example
8A.o8	Use 1 console slider to control	Slider 1= All output dimming
2A.o2	Use 2 console sliders to control	Slider 1= All output dimming, Slider 2= All output fine dimming
2b.o8	Use 2 console sliders to control	Slider 1= Output 1 & 3 dimming, Slider 2= Output 2 & 4 dimming
3b.o3	Use 3 console sliders to control	Slider 1= Output 1 & 3 dimming, Slider 2= Output 2 & 4 dimming, Slider 3= All output master dimming
3C.o8	Use 3 console sliders to control	Slider 1= Output 1 dimming, Slider 2= Output 2 dimming, Slider 3= Output 3 & 4 dimming
4b.o2	Use 4 console sliders to control	Slider 1= Output 1 & 3 dimming, Slider 2= Output 1 & 3 fine dimming, Slider 3= Output 2 & 4 dimming, Slider 4= Output 2 & 4 fine dimming
4C.o3	Use 4 console sliders to control	Slider 1= Output 1 dimming, Slider 2= Output 2 dimming, Slider 3= Output 3 & 4 dimming, Slider 4= All output master dimming
4d.o1	Use 4 console sliders to control	Slider 1= Output 1 dimming, Slider 2= Output 2 dimming, Slider 3= Output 3 dimming, Slider 4= Output 4 dimming
5C.o4	Use 5 console sliders to control	Slider 1= Output 1 dimming, Slider 2= Output 2 dimming, Slider 3= Output 3 & 4 dimming, Slider 4= All output master dimming, Slider 5= Strobe effects
5d.o3	Use 5 console sliders to control	Slider 1= Output 1 dimming, Slider 2= Output 2 dimming, Slider 3= Output 3 dimming, Slider 4= Output 4 dimming, Slider 5= All output master dimming
6C.o2	Use 6 console sliders to control	Slider 1= Output 1 dimming, Slider 2= Output 1 fine dimming, Slider 3= Output 2 dimming, Slider 4= Output 2 fine dimming, Slider 5= Output 3 & 4 dimming, Slider 6= Output 3 & 4 dimming
6d.o4	Use 6 console sliders to control	Slider 1= Output 1 dimming, Slider 2= Output 2 dimming, Slider 3= Output 3 dimming, Slider 4= Output 4 dimming, Slider 5= All output master dimming, Slider 6= Strobe effects
8d.o2	Use 8 console sliders to control	Slider 1= Output 1 dimming, Slider 2= Output 1 fine dimming, Slider 3= Output 2 dimming, Slider 4= Output 2 fine dimming, Slider 5= Output 3 dimming, Slider 6= Output 3 fine dimming, Slider 7= Output 4 dimming, Slider 8= Output 4 fine dimming

Restore to Factory Default Setting

Press and hold down both “Back” and “Enter” keys until the digital display turns off, then release the keys, system will reset and the digital display will turn on again, all settings will be restored to factory default.
Default settings are as follows:
DMX Address Code: a001
PWM Resolution Mode: bt16
Gamma: ga1.5
Decoding Mode: 4d.01

Set Current of Each Channel Using RDM Command

CURRENT_CH1 Command is used to set current of channel 1,
SET Command: data length is 1BYTE, value range is 10-70
GET Command: data length is 0BYTE, returns current values of 4 channels, text display: ch1=xx ch2=xx ch3=xx ch4=xx

CURRENT_CH2 Command is used to set current of channel 2,
SET Command: data length is 1BYTE, value range is 10-70
GET Command: data length is 0BYTE, returns current values of 4 channels, text display: ch1=xx ch2=xx ch3=xx ch4=xx

CURRENT_CH3 Command is used to set current of channel 3,
SET Command: data length is 1BYTE, value range is 10-70
GET Command: data length is 0BYTE, returns current values of 4 channels, text display: ch1=xx ch2=xx ch3=xx ch4=xx

CURRENT_CH4 Command is used to set current of channel 4,
SET Command: data length is 1BYTE, value range is 10-70
GET Command: data length is 0BYTE, returns current values of 4 channels, text display: ch1=xx ch2=xx ch3=xx ch4=xx

Step 1: discover the fixtures and select a fixture, then go to “RDM Interface” menu of the fixture.
Step 2: go to “Manufacturer-Specific Parameters” menu of the fixture.
Step 3: select parameter “CURRENT_CH1”, which is to set channel 1 output current, then write the parameter value for instance “10”, setting range is 10-70 (100-700mA).
Note: current setting operation of channel 2, channel 3 and channel 4 are the same as channel 1.

Auto Addressing Operation Through RDM:

AUTO_PATCH_SWITCH Command

AUTO_PATCH_SWITCH Command is used to turn on or turn off device auto addressing function (serial connection or parallel connection mode)
SET Command: data length is 1BYTE, value 0 is to turn off auto addressing and go to parallel connection mode, value 1 is to turn on auto addressing and go to serial connection mode.
GET Command: not supported

AUTO_PATCH_ADDR Command

AUTO_PATCH_ADDR Command is used to set the start address of the 1st device, if the devices are in the serial connection mode, the devices after the 1st device will auto address with the start address.
SET Command: data length is 2BYTE, value range is 1-512.
GET Command: not supported

Note: the factory default connection mode of the devices is parallel connection, if devices enter auto addressing mode successfully (go to serial connection mode), lamps will turn of automatically, if devices are auto addressed successfully, the lamps will turn off automatically, if auto addressing fails, the lamps will stay solid on, we can evaluate whether auto addressing mode is turned on successfully and auto addressing is successful through lamp status.

Step 1: discover the fixtures and select a fixture, then go to “RDM Interface” menu of the fixture.
Step 2: go to “Manufacturer-Specific Parameters” menu of the fixture.
Step 3: select parameter “AUTO_PATCH_SWITCH”, then write the parameter value “1” to turn on auto addressing mode.
Step 4: select parameter “AUTO_PATCH_ADDR”, then write the parameter value start address for instance “1” to start auto addressing.
Step 5: once auto addressing is successful, the devices will quit serial connection mode, go to parallel connection mode.

RDM Discovery Indication:

When using RDM to discover the device, the digital display will flash and the connected lights will also flash at the same frequency to indicate. Once the display stops flashing, the connected light also stops flashing.

The data definitions for strobe channel are as follows:

{0, 7},//undefined
{8, 65},//slow strobe-->fast strobe
{66, 71},//undefined
{72, 127},//slow push fast close
{128, 133},//undefined
{134, 189},//slow close fast push
{190, 195},//undefined
{196, 250},//random strobe
{251, 255},//undefined

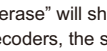
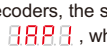
The supported RDM PIDs are as follows:

DISC_UNIQUE_BRANCH
DISC_MUTE
DISC_UN_MUTE
DEVICE_INFO
DMX_START_ADDRESS
DMX_FOOTPRINT
IDENTIFY_DEVICE
SOFTWARE_VERSION_LABEL
DMX_PERSONALITY
DMX_PERSONALITY_DESCRIPTION
SLOT_INFO
SLOT_DESCRIPTION
OUT_RESPONSE_TIME
OUT_RESPONSE_TIME_DESCRIPTION
HOLD_LAST_FRAME
MANUFACTURER_LABEL
MODULATION_FREQUENCY
MODULATION_FREQUENCY_DESCRIPTION
PWM_RESOLUTION
CURVE
CURVE_DESCRIPTION
SUPPORTED_PARAMETERS
STARTUP_BEHAVIOR
CURRENT_CH1
CURRENT_CH2
CURRENT_CH3
CURRENT_CH4
AUTO_PATCH_SWITCH
AUTO_PATCH_ADDR

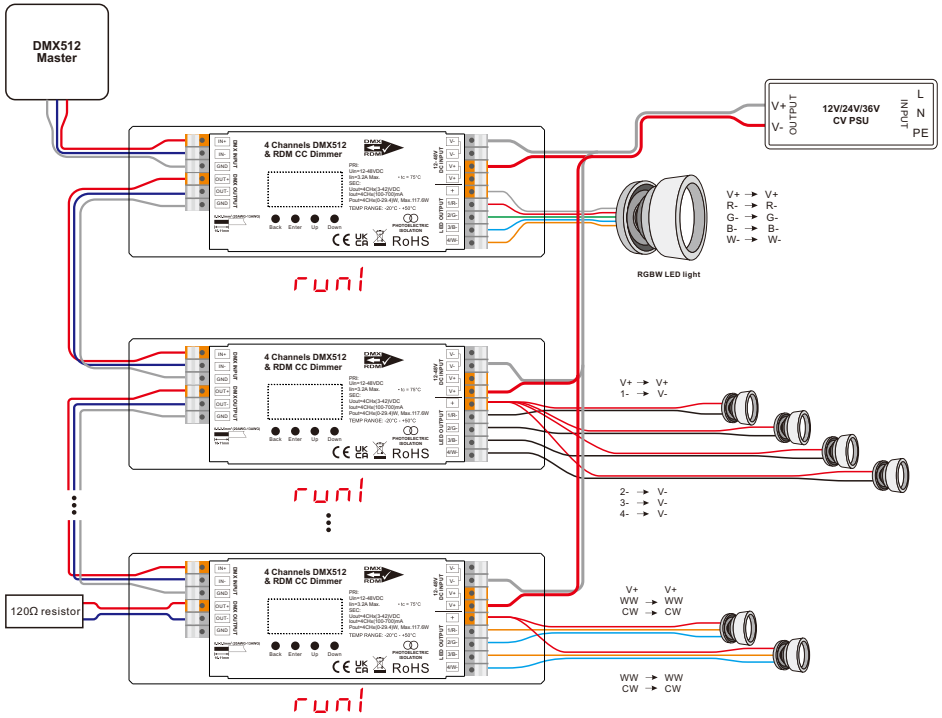
Firmware OTA update:

This function can be used when there is a firmware update from the manufacturer, the update can be executed through a Windows computer and an USB to serial port converter, the converter will connect the computer and the decoder's hard wire DMX port. A software RS485-OTW on the computer will be used to push the firmware to the decoder.

Connect the computer and the decoder through the USB to serial port converter, if you need to update multiple decoders' firmware, connect the converter to first decoder's DMX port, then connect other decoders to the first decoder in daisy chain through the DMX port. Please do not power on the decoders.

Run the OTA tool RS485-OTW on the computer, select the correct communication port "USB-SERIAL" , baudrate "250000", and data bit "9", use default settings for other configurations. Then click "file" button to select the new firmware from the computer, then click "Open Port", the firmware will be loaded. Then click "Download Firmware", the right side state column of the OTA tool will show "send link". Then power on the decoders before "wait erase" displaying on the state column, the digital display of the decoders will show . Then "wait erase" will show on the state column, which means the updating starts. Then the OTA tool starts writing data to the decoders, the state column will show the progress, once writing data finishes, the digital display of the decoders will flash  , which means firmware updated successfully.

Wiring Diagram



Note: Please attach a 120ohm, 0.5W resistor between DMX OUT+ and DMX OUT- wires on the last device in the data run.

RDM Discovery Indication:

When using RDM to discover the device, the digital display will flash and the connected lights will also flash at the same frequency to indicate. Once the display stops flashing, the connected light also stops flashing.

Product Dimension

