LDT-DMX-1CV-20A

20 A Single-Channel DIN-Rail DMX/RDM LED Decoder

A 1-channel DC-fed DMX/RDM decoder for compatible constant-voltage LED loads. Set the address, channel mapping, bit depth and output parameters on the local display or through supported RDM commissioning.

Supply voltage	12-48 VDC
LED output	1-channel constant-voltage PWM
Maximum output current	20 A
Rated input current	20.1 A
Maximum output power	240 W at 12 V; 480 W at 24 V; 720 W at 36 V; 960 W at 48 V
Control inputs	DMX512 / RDM + local display/buttons; no RF
DMX decode modes	1 DMX channel; 8- or 16-bit
Dimming	0-100%; linear or logarithmic curve
PWM frequency	250 / 500 / 1000 / 2000 / 4000 / 8000 / 16000 / 32000 Hz; default 2000 Hz
Standalone operation	Local dimming and documented dynamic modes
Operating temperature	-20 to +55 °C
Maximum case temperature	+88 °C
IP rating	IP20
Body dimensions	110 x 67 x 48 mm

One high-current output, not multiple separately addressable LED outputs. Follow the PWM-frequency derating and thermal/load instructions in the full guide.

The following reference pages include the complete wiring, dimensions, settings and operating instructions. Use the lighting and hardware variant identified above; shared references may illustrate other separate models.

DMX512

1 Channel Constant Voltage DMX512 & RDM Decoder





CE RoHS

Features

- Comply with the DMX512 standard protocols.
- Digital numeric display, set DMX decode start address by buttons.
- RDM function can realize intercommunication between DMX master and decoder.
  For example, DMX decoder address can be set by DMX master console.
- 16bit (65536 levels) /8bit (256 levels) grey level selectable.
- PWM frequency 250/500/1000/2000/4000/8000/16000/32000Hz selectable.
- Logarithmic or linear dimming curve selectable.
- Stand-alone dynamic mode and dimmer mode selectable, which be controlled by buttons with built-in programs, instead of DMX signal.
- Over-heat / Over-load / Short circuit protection, recover automatically
- Available in white or black.

Technical Parameters

Input and Output	
Input voltage	12-48VDC
Input current	20.1A
Output voltage	12-48VDC
Output current	20A
Output power	240W@12V 480W@24V 720W@36V 960W@48V
Output type	Constant voltage

Dimming data	
PWM frequency	250Hz/500Hz/1KHz/ 2KHz(default)/4KHz/8KHz/ 16KHz/32KHz

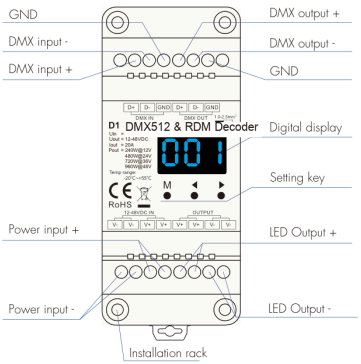
Environment	
Operation temperature	Ta: -20°C ~ +55°C
Case temperature (Max.)	Tc: +88°C
IP rating	IP20

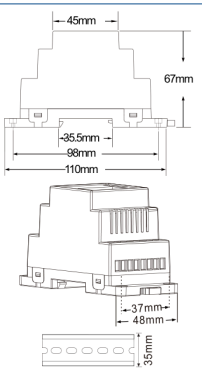
Package	
Size	W 120 x L 78 x H 55mm
Gross weight	0.165kg

Safety and EMC	
EMC standard	EN IEC 55015/ EN IEC 61547
Safety standard	EN 61347-1/-2
Certification	CE RoHS

Warranty and Protection	
Warranty	5 years
Protection	Reverse Polarity, Over-heat Over-load (Startup temperature>105°C) Short circuit

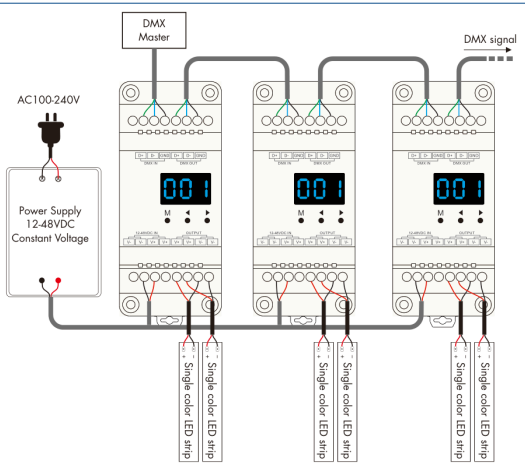
Technical Parameters





DIN Rail Mounting Size:
TS-35/7.5 or TS-35/15

Wiring Diagram



Note:
1. An DMX signal amplifier is needed if more than 32 decoders are connected, or use overlong signal line, signal amplification should not be more than 5 times continuously.
2. If the recoil effect occurs because of longer signal line or bad line quality, please try to connect 0.25W 90-120Ω terminal resistor at the end of each DMX signal line.

Operation

System parameter setting

Long press M and ◀ key in the same time for 2s, prepare for setup system parameter: output PWM frequence, output brightness curve, grey level, default output level, automatic blank screen. short press M key to switch five item.

- Output PWM frequency: short press ◀ or ▶ key to switch 250Hz("F02"), 500Hz("F05"), 1000Hz("F10"), 2000Hz("F20"), 4000Hz("F40"), 8000Hz("F80"), 16000Hz("F16") or 32000Hz("F32").
  Higher PWM frequency, will cause lower output current, higher power noise, but more suitable for camera(No flickers for video).
- Output brightness curve: short press ◀ or ▶ key to switch linear curve("C-L") or logarithmic curve("C-E").
- Grey level: short press ◀ or ▶ key to switch 8bit("b08") or 16 bit("b16"). choose 16 bit if the DMX master support 16 bit.
- Default output level: set output level when no DMX input signal. short press ◀ or ▶ key to switch maintain DMX output("d- -") or output default level ("d00" to "dFF", 0-100%), long press ◀ or ▶ key to change output default level.
- Automatic black screen: short press ◀ or ▶ key to switch enable ("bon") or disable("boF") automatic black screen.
- Long press M key for 2s or timeout 10s, quit system parameter setting.

Note: In addition to manual button settings, the above system parameters can also be configured via the RDM function.

PWM frequency and output current mapping:

Iout / Uin \ PWM	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	16KHz	32KHz
12/24V	20A	20A	20A	20A	18A	15A	12A	9A
36/48V	20A	20A	20A	20A	18A	14A	11A	8A

DMX mode

- Short press M key, when display 001~512, enter DMX mode.
- Press ◀ or ▶ key to change DMX decode start address(001~512), long press for fast adjustment.
- If there is a DMX signal input, will enter DMX mode automatically.
- **DMX Dimming: Each CV controller DMX decoder occupy 1 DMX address when connecting the DMX console.**



DMX mode (001~512)

Stand-alone dynamic mode

- Enter stand-alone dynamic mode only when DMX signal is disconnected or lost.
- Short press M key, when display P-1~P-3, enter stand-alone dynamic mode.
- Press ◀ or ▶ key to change dynamic mode number(P-1~P-3).
- Each mode can adjust speed and brightness.
  Long press M key for 2s, prepare for setup mode speed and brightness.
  Short press M key to switch two item.
  Press ◀ or ▶ key to setup value of each item.
  Mode speed: 1-10 level speed(S-1, S-9, S-F).
  Mode brightness: 1-10 level brightness(b-1, b-9, b-F).
  Long press M key for 2s, or timeout 10s, quit setting.



Stand-alone dynamic mode (P-1~P-3)



Speed (8 level)



Brightness (10 level,100%)

Dynamic mode list

No.	Name
P-1	white fade in and fade out
P-2	white jump
P-3	white flash

Stand-alone dimmer mode

- Enter stand-alone dimmer mode only when DMX signal is disconnected or lost.
- Short press M key, when display L-1~L-8, enter stand-alone dimmer mode.
- Press ◀ or ▶ key to change dimmer mode number(L-1~L-8).
- Each dimmer mode can adjust brightness independently.
  Long press M key for 2s, prepare for setup brightness(b00~bFF).
  Press ◀ or ▶ key to adjust brightness value.
  Short press M key, or timeout 10s, quit setting.

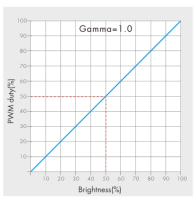


Stand-alone dimmer mode (L-1~L-8)

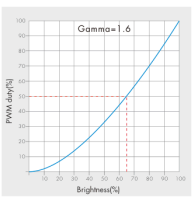
Restore factory default parameter

- Long press ◀ and ▶ key for 2s, restore factory default parameter, display"RES".
- Factory default parameter: DMX decode mode, DMX decode start address is 1, 8 bit grey level, 2000Hz PWM frequence output, logarithmic brightness curve, output 100% level when no DMX input, dimmer mode number is 1, disable automatic black screen.

Dimming Curve Setting



Linear dimming curve

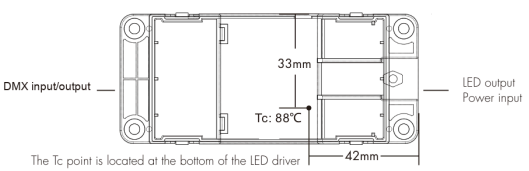


Logarithmic dimming curve

Malfunctions Analysis & Troubleshooting

Malfunctions	Causes	Troubleshooting
No light	1. No power. 2. Wrong connection or insecure.	1. Check the power. 2. Check the connection.
Light strip control fault	1. DMX decode address error.	1. Set correct decode address.
Uneven intensity between front and rear,with voltage drop	1. Output cable is too long. 2. Wire diameter is too small. 3. Overload beyond power supply capability. 4. Overload beyond controller capability.	1. Reduce cable or loop supply. 2. Change wider wire. 3. Replace higher power supply. 4. Add power repeater.

Tc Point Location



The Tc point is located at the bottom of the LED driver