LDT-RF-1CV-20A-A10

RF, 0/1-10V & Push-Dim LED Controller

Combine an RF remote, an analogue 0/1-10V dimming signal and a wired momentary button in one single-channel LED controller. The control inputs may coexist; output loading must follow the selected PWM setting.

Model specifications

Input / output voltage	12-48 VDC
Output type	1-channel constant-voltage PWM
Maximum output current	20 A at 12/24 V; 15 A at 36/48 V (500 Hz / 2 kHz)
Maximum output power	240/480/540/720 W at 12/24/36/48 V
Control inputs	RF 2.4 GHz + 0/1-10V + momentary Push-Dim
Dimming	0-100%; 4096 levels; logarithmic
PWM frequency	500 Hz / 2 kHz / 8 kHz / 16 kHz; default 2 kHz
PWM / current at 12/24 V	500 Hz / 2 kHz: 20 A; 8 kHz: 15 A; 16 kHz: 10 A
PWM / current at 36/48 V	500 Hz / 2 kHz: 15 A; 8 kHz: 10 A; 16 kHz: 5 A
RF distance	Up to 15 m in unobstructed space
Paired remotes	Up to 10
Operating temperature	-30 to +55 °C
Maximum case temperature	+85 °C
IP rating	IP20
Body dimensions	107 x 75 mm footprint; height not specified in the dimension drawing
Protection	Reverse polarity, overheat, overload and short circuit

Higher PWM frequencies reduce the allowable output current. The 20 A rating applies to 12/24 V at 500 Hz or 2 kHz.

The following technical-reference pages retain the complete diagrams, dimensions, settings and installation instructions. Select the lighting variant stated on this cover; family diagrams may also illustrate other variants.

RF□DIM

Single Color LED Dimmer

Features

- RF remote, 0/1-10V, Push Dim (3-in-1) dimming.
- 4096 levels 0-100% dimming smoothly without any flash.
- Match with RF 2.4G single zone or multiple zone dimming remote cor
- One RF controller accept up to 10 remote control.
- Auto-transmitting function:
  Controller automatically transmit signal
  to another controller with 15m control distance.
- Synchronize on multiple number of controllers.
- Connect with external push switch to achieve on/off and 0-100% dim
- Light on/off fade time 3s selectable.
- PWM frequency 500Hz, 2KHz, 8KHz or 16KHz selectable.
- Over-heat / Over-load / Short circuit protection, recover automatically.

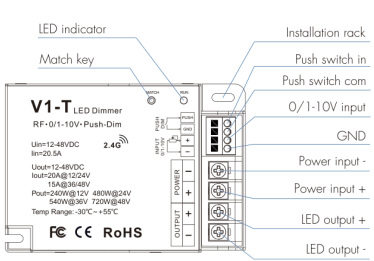


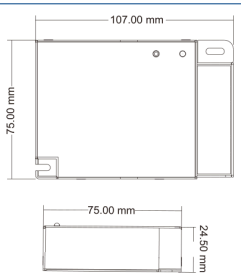
FC CE RoHS

Technical Parameters

Input and Output		Dimming data		Safety and EMC	
Input voltage	12-48VDC	Input signal	RF 2.4GHz+0/1-10V+ Push Dim	EMC standard	EN IEC 55015/ EN IEC 61547 ETSI EN 301 489-1/-3
Input current	20.5A	Control distance	15m(Barrier-free space)		
Output voltage	12-48VDC	Dimming gray scale	4096 (2^12) levels	Safety standard	EN 61347-1/-2
Output current	20A@12/24V 15A@36/48V	Dimming range	0-100%	Radio equipment	ETSI EN 300 440
Output power	240W@12V 480W@24V 540W@36V 720W@48V	Dimming curve	Logarithmic	Certification	CE RoHS FCC
Output type	Constant voltage	PWM frequency	2000Hz(default))	**Environment**	
Warranty and Protection		**Package**		Operation temperature	Ta: -30°C ~ +55°C
Warranty	5 years	Size	L120 x W80 x H34mm	Case temperature(Max.)	Tc: +85°C
Protection	Reverse polarity, Over-heat, Over-load, Short circuit	Gross weight	0.254kg	IP rating	IP20

Mechanical Structures and Installations





Match Remote Control (Two Match Ways)

End user can choose the suitable match/delete ways. Two options are offered for selection:

Use the controller's Match key

Match:
Short press match key,
immediately press on/off key (single zone remote)
or zone key (multiple zone remote) of the remote.
The LED indicator fast flash a few times means match
is successful.
Delete:
Press and hold match key for 5s to delete all match,
The LED indicator fast flash a few times means all matched remotes
were deleted.

Use Power Restart

Match:
Switch off the power, then switch on power, repeat again.
Immediately short press on/off key (single zone remote)
or zone key (multiple zone remote) 3 times quickly.
The light blinks 3 times means match is successful.

Delete:
Switch off the power, then switch on power, repeat again.
Immediately short press on/off key (single zone remote)
or zone key (multiple zone remote) 5 times quickly.
The light blinks 5 times means all matched remotes
were deleted.

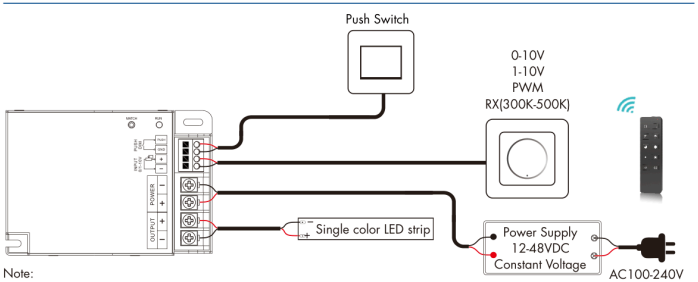
Light on/off Fade Time

Long press match key 5s, then short press match key 3 times, the light on/off time will be set to 3s, the indicator light blink 3 times.
Long press match key 10s, restore factory default parameter, the light on/off time also restore to 0.5s.

0/1-10V Dimming

- The 0/1-10V input is operable via commercially available simple rotary wall switchs designed for 0/1-10V dimming equipment or from decicated system central dimming controllers.
- Compliant with 0-10V, 1-10V, 10V PWM, RX(4 in 1).
- In order to ensure dimming consistency,
  when the connected 0/1-10V dimmer output signal current is 20mA,
  the number of LED dimmer controller connections does not exceed 50 pcs,
  when the 0/1-10V dimmer output signal current is 50mA,
  the number of LED dimmer controller connections does not exceed 100 pcs.
  The maximum length of the wires from dimmer to LED driver should be no more than 50 meters
  (use copper wire with a cross-sectional area of 0.75 m^2 for wiring).
- If the controller be used with the RF remote or Push-Dim interface prior to using the 0/1-10V interface,
  the 0/1-10 V signal should change over 10% to return 0/1-10 V control.

Wiring Diagram



Note:
The RF remote, 0/1-10V dimmer or Push switch can be connected at the same time,
which makes the product more user-friendly and more options to fit for some extra-ordinary demands.

Push Dim Function

The provided Push-Dim interface allows for a simple dimming method using commercially available non-latching(momentary) wall switchs.

- **Short press:** Turn on or off light.
- **Long press (1-6s):** Press and hold to step-less dimming, With every other long press, the light level goes to the opposite direction.
- **Dimming memory:** Light returns to the previous dimming level when switched off and on again, even at power failure.
- **Synchronization:** If more than one controller are connected to the same push switch, do a long press for more than 10s, then the system is synchronized and all lights in the group dim up to 100%.
  This means there is no need for any additional synchrony wire in larger installations.
  We recommend the number of controllers connected to a push switch does not exceed 25 pieces,
  The maximum length of the wires from push to controller should be no more than 20 meters.

PWM Frequency Setting

At the moment of power-up:
Long press the match key for 2s, set the output PWM frequency to 500Hz, the LED indicator flash 1 time.
Long press the match Key for 5s, set the output PWM frequency to 2KHz, the LED indicator flash 2 times.
Long press the match Key for 10s, set the output PWM frequency to 8KHz, the LED indicator flash 3 times.
Long press the match Key for 15s, set the output PWM frequency to 16KHz, the LED indicator flash 4 times.
The factory default PWM frequency is 2KHz.

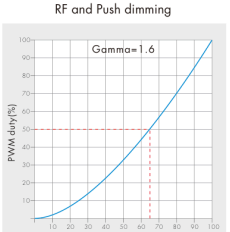
Note:
Higher PWM frequency, will cause lower output current, higher power noise, but more suitable for camera(No flickers for video).

PWM frequency and output current mapping:

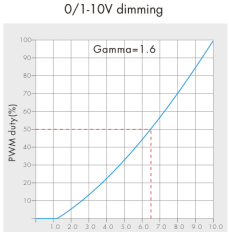
Iout / PWM / Vin	500Hz	2KHz	8KHz	16KHz
12/24V	20A	20A	15A	10A
36/48V	15A	15A	10A	5A

Dimming Curve

RF and Push dimming



0/1-10V dimming



Malfunctions Analysis & Troubleshooting

Malfunctions	Causes	Troubleshooting
No light	1. No power. 2. Wrong connection or insecure.	1. Check the power. 2. Check the connection.
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.
No response from the remote	1. The battery has no power. 2. Beyond controllable distance. 3. The controller did not match the remote.	1. Replace battery. 2. Reduce remote distance. 3. Re-match the remote.

Installation Precautions

1. The products shall not be stacked, the distance should be ≥ 20cm,
   so as not to affect lifespan of the products due to poor heat dissipation.
2. The product shall not be installed close to the switching power supply
   with an interval of ≥ 20cm to avoid the radiation interference of the switching power supply.
3. The installation height shall be ≥ 1m from the floor to avoid shortening the remote control distance due to too weak reception signal.
4. The products are not allowed to be close to or covered by metal objects,
   with an interval of ≥ 20cm to avoid signal attenuation and shorten the remote control distance.
5. Avoid installation at the corner of the wall or the corner of the beam, with an interval of ≥ 20cm to avoid signal interference.

Statement

FCC Statement:
This device complies wth Part 15 of the FCC Rules.operation is subject to the following two conditions:
(1)this device may not cause harmful interference,and
(2)this device must accept any interference received,including interference that may cause undesired operation.

IC Statement:
This Class B digital apparatus complies with Canadian ICES-003.
(Cet appareil numérique de la Classe B conforme à la norme NMB-003 du Canada).