DC DC Converter– High Precision constant voltage high efficiency dedicated to the LED panel MODEL: EF-DC-8A

DESCRIPTION: EF-DC-8A DC DC Converter, high efficiency Up to 96%, Use Aluminum solid capacitors, long life of 50,000 hours, high-precision constant voltage output, dedicated to 90w the following, all types of LED panels, to meet the EN55022classA, EN61000, EN60555 requirements

1. high efficiency（Up to 96%）
2. 8A Continuous Output Current
3. ±0.5% constant voltage
4. Stable with Low ESR Aluminum solid capacitors
5. Input Under Voltage Lockout
6. Cycle-by-Cycle Over Current Protection
7. Waterproof IP67
8. Very small size 58x35x18.8mm
9. 3 year warranty

SPECIFICATION

MODEL		EF-DC-2A-9.0V	EF-DC-2A-9.3V	EF-DC-2A-9.6V
OUTPUT	DC voltage	9.0V	9.3V	9.6V
	Rated current Note	8A	8A	8A
	Current range	0~8A	0~8A	0~8A
	Rated Power	20W		
	Voltage tolerance	±0.5% ,(Line Regulation 0.5% , Load Regulation 0.5%)		
	Ripple & Noise	<600mVp-p		
	Setup Time	Max 22mS		
INPUT	Voltage range	DC12~15V		
	Mini DC Current	8A		
	Efficiency (Typ.)	>95%（INPUT 12V）	>95%（INPUT12V）	>95%（INPUT12V）
	Power in No-Load	< 0.9W		
PROTECTION	Short Circuit	Cycle-by-Cycle Over Current Protection		
	Over Temperature	Thermal Shutdown 160°C		
	Input Under Voltage Lockout	Input Under Voltage Lockout		
ENVIRONMENT	Working TEMP	-25℃~55℃		
	Storage TEMP.	-40℃~80℃		
	Working Humidity	IP67		
	Vibration	10~500Hz 2G 10min/1cycle period for 60min. each along X, Y, Z axes		
	TEMP. coefficient	±0.03%/℃（0~50℃）		
SAFETY & EMC	EMI CONDUCTION & RADIATION	Compliance to EN55022classA		
	EMS IMMUNITY	Compliance to EN61000、EN60555		
	MTBF	600KHours MIL-HDBK-217F （25℃）		
	Life Time	55KHours / 80%Load and 45°C ambient temperature		
OTHER	Weight	55g		
	Dimension	58x35x18.8mm		

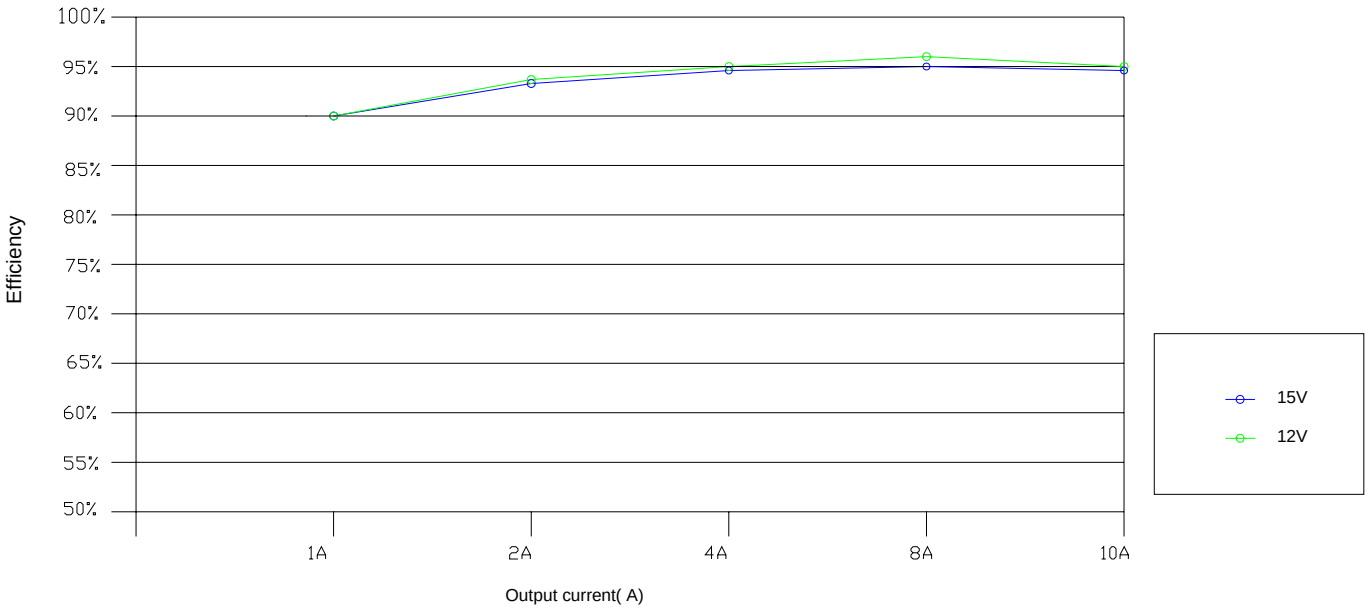
Notes All parameters NOT specially mentioned are measured at 12V DC input, Input output wire 16AWG, rated load and 25℃of ambient temperature.

Direct connecting to LEDs is not using additional drivers is highly recommended

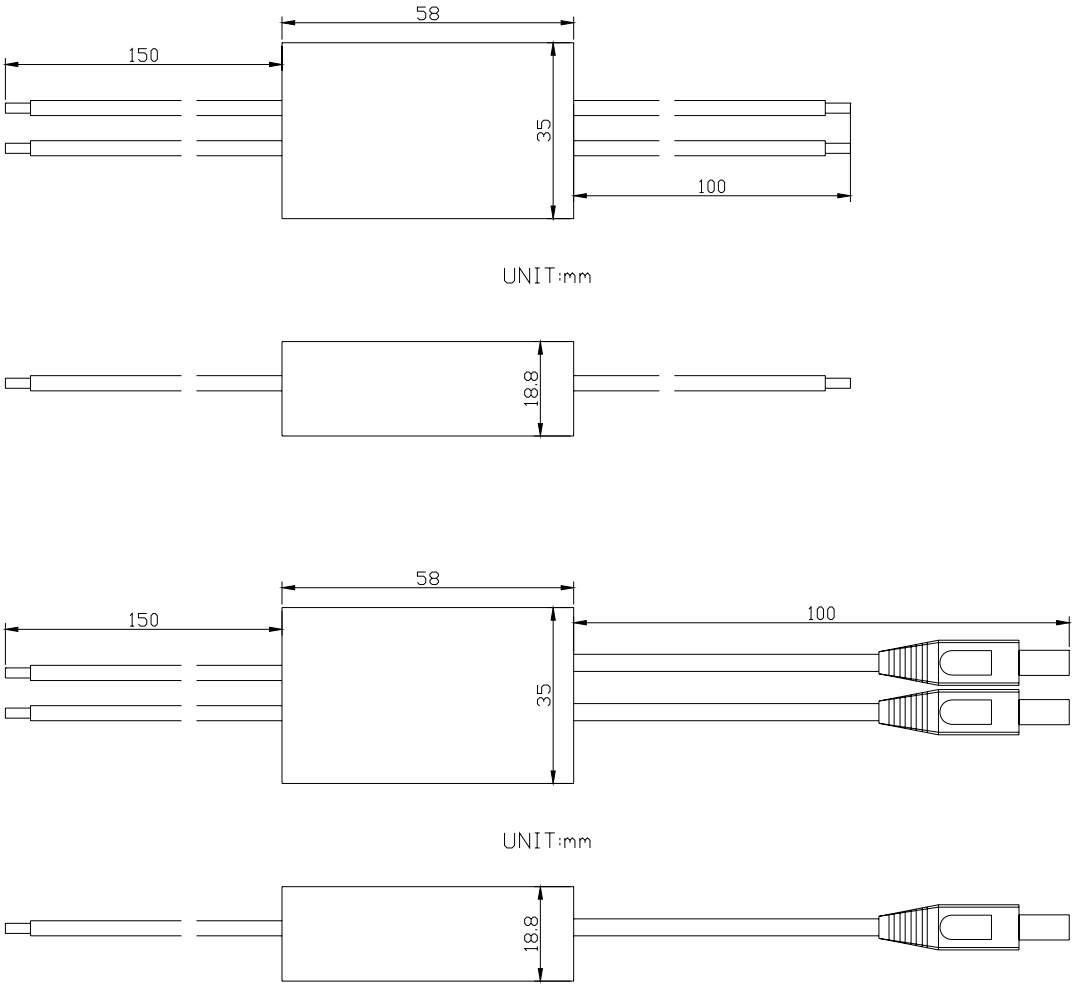
Do not reverse the positive and negative terminals,Wrong connection will damage product

2011-03

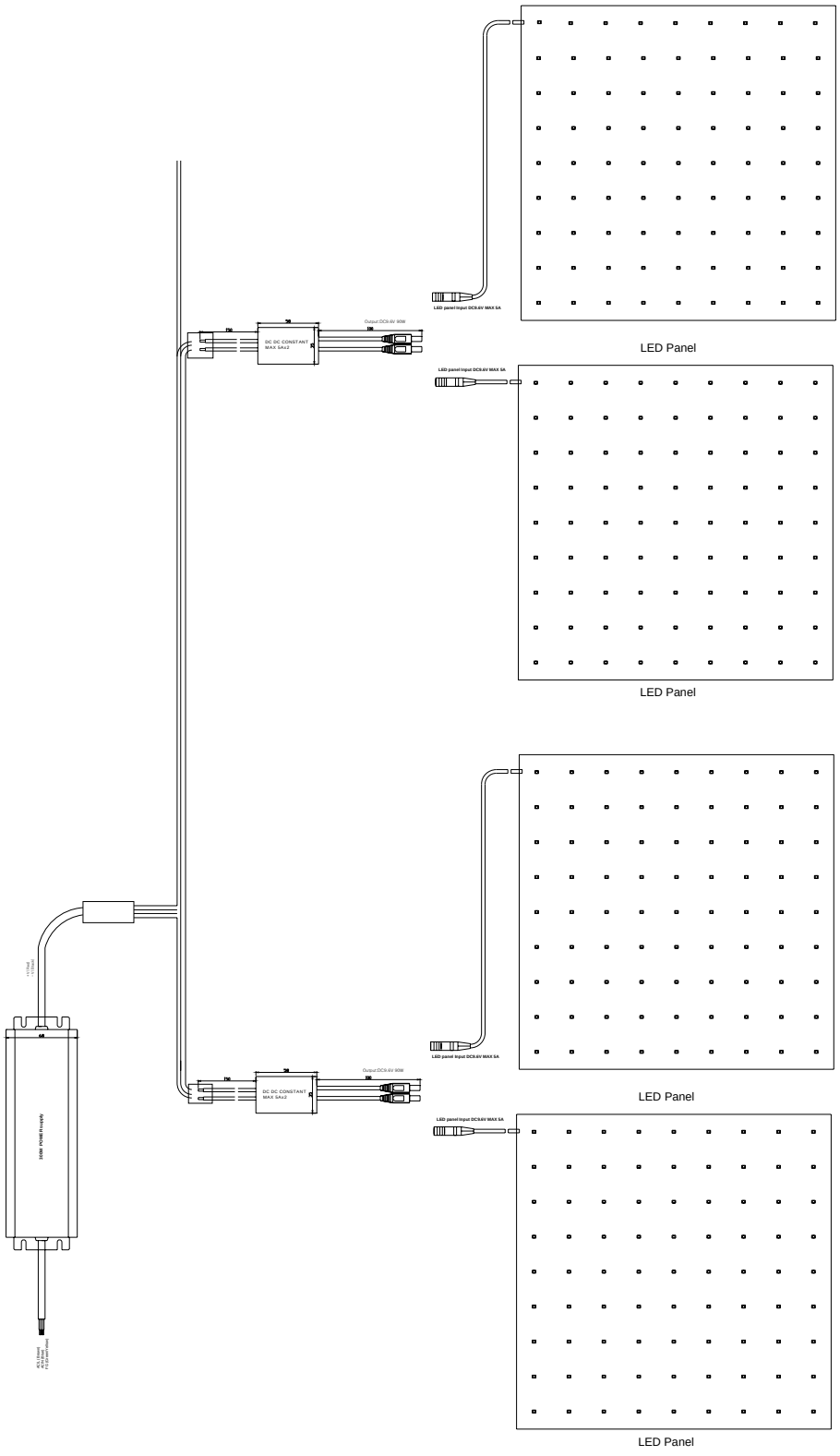
Efficiency



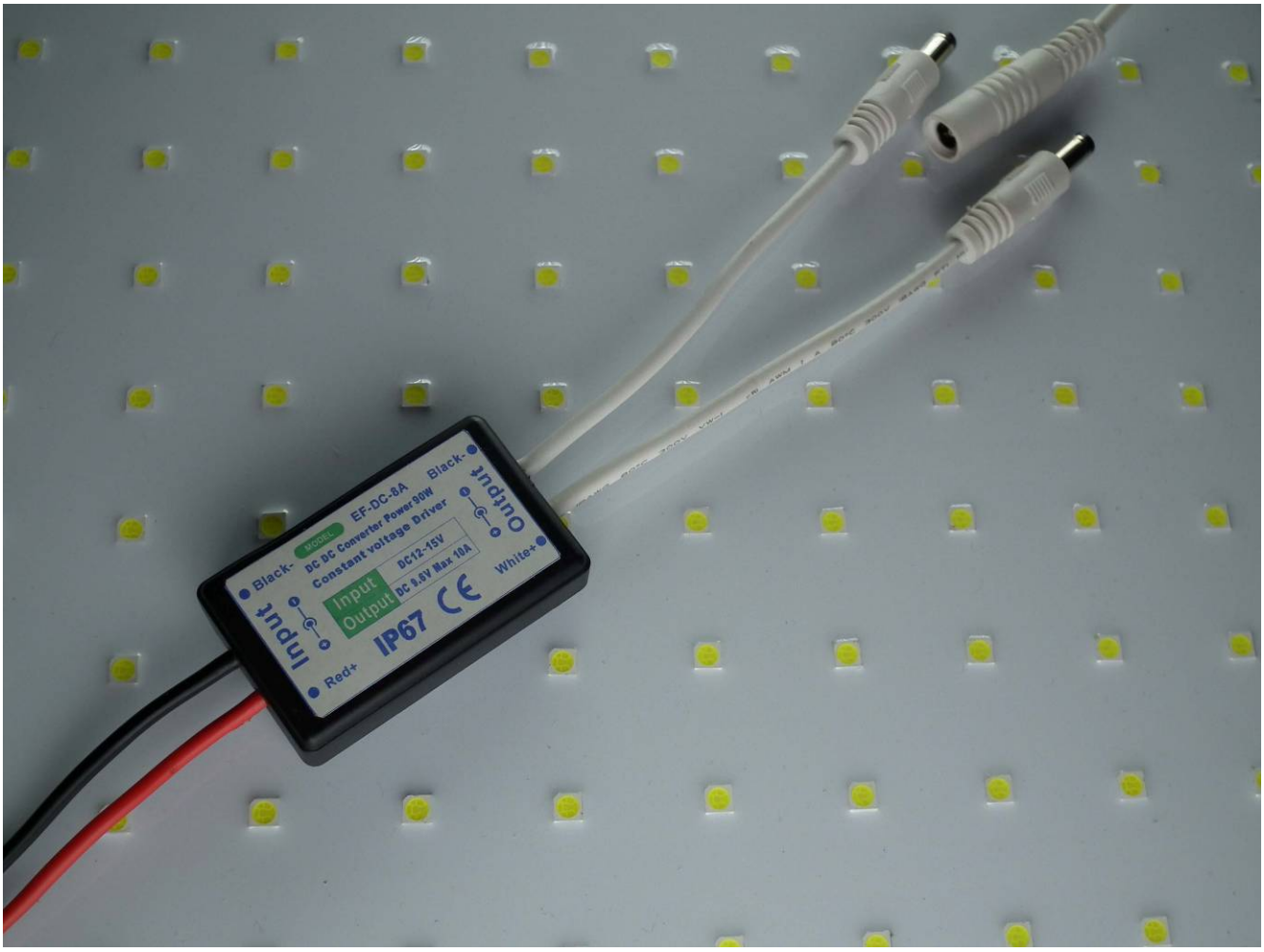
Dimension



Wiring diagram



Power supply



DC DC Converter and the LED panel's related issues

1. Why use constant drive LED panel?

There is a variety of sizes, power consumption in LED panel light, but also continued to increase in species, If you use a constant current drive, need to match each other, so will need to be very many types of constant current drive. Our LED panels, regardless of power level, input voltage is unified. For easy installation, so we use the constant voltage drive! Less than 20W power LED panel, you can use my EF-DC-2A converter. Less than 100W power LED panel, you can use EF-DC-8A converter.

2. Temperature rise, the constant voltage drive LED panel, current increases, will not damage the LED panel?

Our LED panel with full Aluminum plate heat, Temperature Rise is very small, Different models according to specifications, the relative Ambient Temperature, temperature rises are 5°C, 10°C, 15°C. We tested the highest temperature rise model RX-ALF5050-25, at Ambient Temperature 55°C , LED panel, the surface temperature of 70 ° C, Current rise is less than 10%(Relative Ambient Temperature 25°C). We produce the LED panels are all derating of 10% -20%.That is our LED panel, when the ambient temperature of 55 °C, as stable and reliable! Together with our DC DC converter has a very good stability, measured at 80°C ambient temperature, can be reliable. We tested LED panel an additional 30% of the current; also stability.

1. Comparison of two LED panel

LED panel TYPE	Common type and LED panel size mm	Luminous flux	Illuminance Lux(Centre distance)			Light efficiency Input voltage	Comparative advantage
			Spacing6cm	Spacing1m	Spacing2m		
12V LED panel	RX-ALF3528-33 300x300x3.5 5W	460Lm	3300	150	39	90Lm/W Input DC12V	Advantages: safe, reliable, after the test of time, the direct use 12V power supply; or 12V battery power supply, common voltage, power supply to buy is easy, you can use a large power supply to drive multiple LED panels, you can use low-cost PWM dimming Disadvantages: relatively low luminous efficiency
	RX-ALF3528-33 300x600x3.5 10W	900Lm	3500	260	70		
	RX-ALF3528-33 600x600x3.5 20W	1800Lm	3300	380	130		
	RX-ALF5050-33 300x300x3.5 15W	1350	9000	380	100		
	RX-ALF5050-33 300x600x3.5 30W	2650	9000	700	205		
	RX-ALF5050-33 600x600x3.5 58W	5200	8600	1000	350		
9.6V LED panel	RX-ALF3528-33 300x300x3.5 5W	550Lm	3500	155	42	110Lm/W Input DC9.6V	Advantages: light-emitting efficiency is relatively 12V LED panel light efficiency increased by 20% Disadvantages: drive power is difficult to get, need constant current drive (hard to match a variety of specifications), recommended using a dedicated high-precision DC DC constant voltage drive EF-DC-2A or EF-DC-8A
	RX-ALF3528-33 300x600x3.5 10W	1100Lm	3600	280	75		
	RX-ALF3528-33 600x600x3.5 19W	2100Lm	3680	430	136		
	RX-ALF5050-25 300x300x3.5 25W	2750Lm	16000	780	216		
	RX-ALF5050-33 300x600x3.5 30W	3200Lm	10000	820	220		
	RX-ALF5050-33 600x600x3.5 58W	6200Lm	10000	1150	390		

2. Comparison of LED panel drive

LED panel drive type	LED panel type	Advantages	Disadvantages	TY Light efficiency
Constant voltage power supply driver Input 100-240v Output 12v (optional 24v)	12V or 24V	Can be a big power to drive multiple LED panels; damage to one module will not affect the other LED panel; power can be backward compatible; the power to choose the brand and more; certification is complete, the power easy to buy. Choose low-cost PWM dimming.	Relatively low luminous efficiency However, compared to other vendors LED panel;Luminous efficiency increased by 30%.	90Lm/W (12V input) 76Lm/W(AC input) Power Efficiency 85%
Constant current Power supply driver Input 100V or 230V Constant Current Output 9-10V 2A	9.0-9.6V	Integrated light-emitting efficiency, high power factor, compatible with TRIAC dimmer.	Type less, only a 20W drive, only the LED panel for the 20W	90Lm/W(AC input)
Constant voltage power supply + DC DC converter drive Constant power output 12-15V DC DC output 9.6V	9.6V	You can use an ordinary power supply, a dedicated DC,DC converters, integrated light-emitting efficiency. Easy to match the power to choose the brand and more, you can use a power supply to drive multiple LED panels.	Additional DC DC Converter	90Lm/W(AC input) Power Efficiency 85%

Note: The above parameters for the white LED data

Recommended:

1, LED panel, the only 20W, it is recommended to use suite of products RX-ALF3528-KD20

2, the need to use a power-driven multi-block LED panel,
it is recommended to use constant voltage power supply + DC DC Converter
20W using the following EF-DC-2A; 100W following use EF-DC-8A

3, higher reliability requirements, please use the 12V LED panels