

**EA1024RR01-24V**

# AC to DC switching power transfer device

## Constant Voltage | 0–1.5A | 36W

The purpose of the document is to specify a Single phase AC input, single output switching power supply.

This specification is suitable for: EA1024RR Series.

This product is AC to DC switching power transfer device, it can provide for a 24V/1.5A max & 36W max DC output with constant voltage source. This Specification defines the input, output, performance characteristics, environment, noise and safety requirement for a power supply.



### Input Electrical Specification

#### AC Input Voltage

Maximum Voltage	264 VAC
Normal Voltage	100 ~ 240 VAC
Minimum Voltage	90 VAC

#### AC Input Frequency

Maximum Frequency	63 Hz
Normal Frequency	50 ~ 60 Hz
Minimum Frequency	47 Hz

#### Input Current

- a. 1.0A (Max.) @ 115Vac input with full load.
- b. 0.5A(Max.) @ 230Vac input with full load.

#### Energy saving standards

Designed to meet the following standard DOE Level VI

#### Efficiency

87.40% minimum at 115Vac/60Hz & 230Vac/50Hz input voltage and 25%, 50%, 75% & 100% of max output current.  
Meet DOE Level VI

#### No Load Power Consumption:

No Load Watt < 0.1W at 115Vac/60Hz & 230Vac/50Hz input voltage.

#### Configuration

2-wire AC input (Line, Neutral)

#### Input Fuse

The hot line side of the input shall have a fuse, rating (T2A/250V)

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### Inrush Current

≤ 30A at 115 Vac	
≤ 60A at 230 Vac	At cold start, maximum load

### Line Regulation

This line regulation is less than ± 1%, of rated output voltage @ full load.

### Hold Up Time

≥ 8.3mSec., @ Normal line, with full load.

### Rise Time

≤ 50mSec., @ Rated AC input, with full load.  
From 10% to 90% of output voltage.

### Turn-ON Time

The output voltage should rise to 90% of rated output voltage in less than 3 SEC. from AC apply 220Vac to start up.

## Output Requirements

### Output Voltage and Current

Output Voltage (VDC)	Current Min. (A)	Current Max (A)
+24V	0	1.5A

### Load Regulation

Voltage (VDC)	Tolerance (%)	Regulation (VDC)
+24V	+5/,-5	22.8V ~ 25.2V

### Dynamic Load Regulation

±5% excursion for 50% - 100% or 100% - 50% load change of DC output at any frequency up to 1KHz(duty 50%)

### Ripple & Noise

The power supply shall not exceed the following limits on the indicated voltage for 60Hz or 50Hz ripple, Switching frequency ripple and noise and dynamic load variations measured with a 20MHz bandwidth

Output	Ripple/Noise
+24V	1.0% max. of rated output voltage

Ripple / Noise: 60Hz ripple + switching ripple and noise

Ripple & Noise are measured at the end of output cable which are added a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor

### Short-Circuit Protection

The adapter can withstand continuous short at DC output and no damage. It will enter into normal condition if the fault condition is removed.

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### Stability

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2% Max. at constant load with constant input  
(after 30 minutes of operation).

### Temperature Rise

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Less than 45 °C on top/bottom case at normal AC input & 80% load of DC output at environment temperature 25 °C.

### Frop-out (Power Line Disturbance)

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Output voltage shall remain within the specified regulation range, through the absence of a line input during 1/2 cycle, at full load at 115Vac/50Hz & 230Vac/50Hz input voltage.

### Voltage Isolation

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The DC ground will be isolated from the AC neutral and AC line.

## Reliability

### MTBF (MIL-HDBK-217F)

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The power supply shall be designed and produced to have a mean time between failures (MTBF) of 100,000 hours at 25 degrees C

## Environment

### Temperature

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Operating	0° C to +40° C
Storage	-20° C to +85° C

### Humidity

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Operating	10 to 90%
Storage	5 to 90%

### Altitude

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From sea level to 5,000Meter ( operation ) and 5,000Meter ( non operation )

## Safety

### Hi-Pot Test

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4242Vdc 5mA 2Sec. between primary and secondary circuit

### Insulation Test

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500Vdc, 2Sec. between primary and secondary circuit IR should  $\geq 100 \text{ M}\Omega$ .

### Leakage Current

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$\leq 250\mu\text{A}$ , at 240 Vac/50 Hz

### Safety

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UL, CUL, TUV, CB, CE, FCC, CCC, RCM, PSE, CU, BSMI

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### EMS

Items	Specification	Reference
ESD	Contact: $\pm 4\text{KV}$	IEC 61000-4-2
	Air: $\pm 8\text{KV}$	
RS	Frequency: 80~1000MHz Field Strength: 3V/M 80% AM(1KHz)	IEC 61000-4-3
EFT	1.0 KV on input AC power ports.	IEC 61000-4-4
Surge	Line to Line: $\pm 1\text{KV}$ (peak)	IEC 61000-4-5

### EMI

Comply with Standards
CISPR 22, EN 55022 Class B FCC PART 15 Class B

## Mechanical Characteristics

### Physical Size

73.6 mm (L) \* 42.8 mm (W) \* 32.5 mm (H)

### Enclosure material

94V-0 minimum

### Output Cable (Reference)

UL1185 #18

### Vibration Test

The vibration frequencies are set at 20Hz, with total amplitude of 1.5mm Along the 3 directions namely X-Y-Z. The each direction should be vibrated for 60 minutes, after testing no abnormal electrical or mechanical should occur.

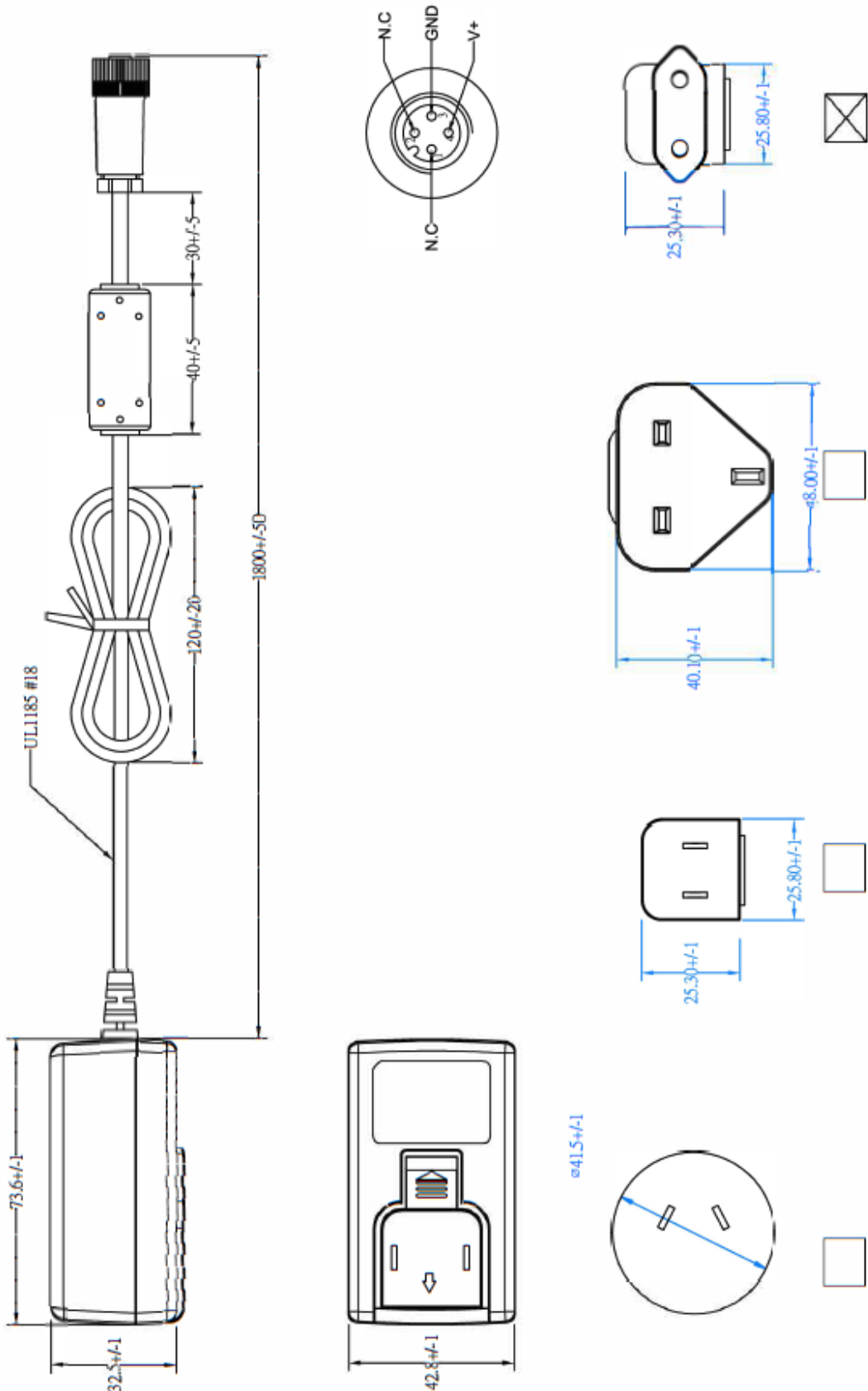
### Drop Test (Referencing to CSA C22.2 No.950/UL1950/UL1310/EN60950)

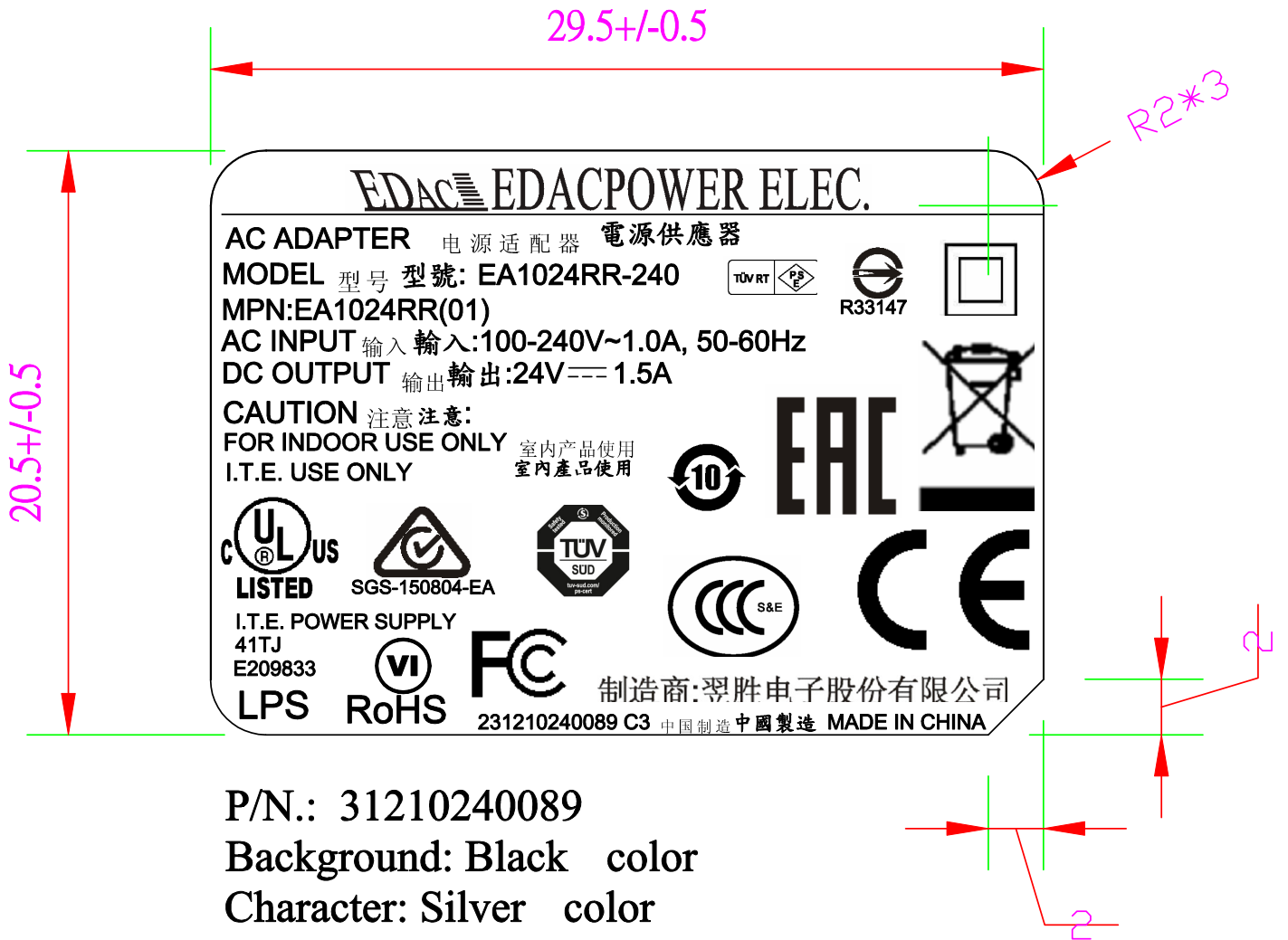
Products shall be dropped from a height of 900 mm onto a horizontal surface consists of hardwood at 13mm thick, mounted on two layers of plywood each 19mm to 20mm thick, all supported on a concrete or equivalent non-resilient floor. Upon conclusion of test, the equipment need not be operational.

### Net Weight (Reference)

200g

Mechanical Specification





P/N.: 31210240089  
Background: Black color  
Character: Silver color  
Unit: mm