

## Features

- Ultra High Efficiency (Up to 93%)
- High Power Factor (0.99 Typical)
- 100W Continuous Output Power
- Lightning Protection
- All-Round Protection: OVP, OCP, SCP, OTP
- Waterproof (IP67)
- Comply With UL8750 & EN61347 Safety Regulations



## Description

The EWV-100SxxxST Series operate from a 90 ~ 264 Vac input range. These units will provide up to 100 W of output power and a maximum output current of 8.33 A for 12 V output model. They are designed to be highly efficient and highly reliable. Features include lightning protection, over voltage protection, over current protection, short circuit protection and over temperature protection.

## Models

Output Voltage	Input Voltage	Max. Output Current	Max. Output Power	Typical Efficiency (1)	Power Factor		Model Number (2)
					110Vac	220Vac	
12 Vdc	90 ~ 264 Vac	8.33 A	100 W	91%	0.99	0.96	EWV-100S012ST
24 Vdc	90 ~ 264 Vac	4.05 A	100 W	93%	0.99	0.96	EWV-100S024ST
36 Vdc	90 ~ 264 Vac	2.75 A	100 W	93%	0.99	0.96	EWV-100S036ST
42 Vdc	90 ~ 264 Vac	2.25 A	100 W	93%	0.99	0.96	EWV-100S042ST
48 Vdc	90 ~ 264 Vac	1.95 A	100 W	92%	0.99	0.96	EWV-100S048ST
54 Vdc	90 ~ 264 Vac	1.75 A	100 W	93%	0.99	0.96	EWV-100S054ST
81 Vdc	90 ~ 264 Vac	1.23 A	100W	93%	0.99	0.96	EWV-100S081ST
105 Vdc	90 ~ 264 Vac	0.95 A	100W	93%	0.99	0.96	EWV-100S105ST

**Notes:** (1) Measured at full load and 220 Vac input.

(2) A suffix -xxx may be added to denote variations or modifications to the base product, where x can be any alphanumeric character or blank.

## Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 V	-	264 V	
Input Frequency	47 Hz	-	63 Hz	
Input AC Current	-	-	1.20 A	Measured at full load and 100 Vac input.
	-	-	0.60 A	Measured at full load and 220 Vac input.
Inrush Current	-	-	65 A	At 230Vac input 25°C Cold Start

Specifications are subject to changes without notice.

## Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Range				Measured at the end of output cable, including line, load and temperature regulations.
$V_O = 12\text{ V}$	11.40 V	12 V	12.60 V	
$V_O = 24\text{ V}$	22.80 V	24 V	25.20 V	
$V_O = 36\text{ V}$	34.20 V	36 V	37.80 V	
$V_O = 42\text{ V}$	39.90 V	42 V	44.10 V	
$V_O = 48\text{ V}$	45.60 V	48 V	50.40 V	
$V_O = 54\text{ V}$	51.30 V	54 V	56.70 V	
$V_O = 81\text{ V}$	76.95 V	81 V	85.05 V	
$V_O = 105\text{ V}$	99.75 V	105 V	110.25V	
Load Current				
$V_O = 12\text{ V}$	0 A	-	8.33 A	
$V_O = 24\text{ V}$	0 A	-	4.05 A	
$V_O = 36\text{ V}$	0 A	-	2.75 A	
$V_O = 42\text{ V}$	0 A	-	2.25 A	
$V_O = 48\text{ V}$	0 A	-	1.95 A	
$V_O = 54\text{ V}$	0 A	-	1.75 A	
$V_O = 81\text{ V}$	0 A	-	1.23 A	
$V_O = 105\text{ V}$	0 A	-	0.95 A	
Ripple and Noise (pk-pk)	-	-	1.5% $V_O$	Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 $\mu\text{F}$ ceramic capacitor and a 10 $\mu\text{F}$ electrolytic capacitor.
Line Regulation	-	-	1%	
Load Regulation	-	-	2%	
Turn-on Delay Time	-	-	3 S	
Output Overshoot / Undershoot	-	-	10%	When power on or off.
Load Dynamic Response	Output Deviation	-	5% $V_O$	R/S: 1 A/ $\mu\text{S}$ Load: 25% ~ 75% full load.
	Settling Time	-	10 mS	

**Note:** All specifications are typical at 25 °C unless otherwise stated.

## Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Voltage Protection				Latch mode. The power supply shall return to normal operation only after the power is turn-on again.
$V_O = 12\text{ V}$	14 V	15 V	16 V	
$V_O = 24\text{ V}$	27 V	30 V	34 V	
$V_O = 36\text{ V}$	40 V	47 V	50 V	
$V_O = 42\text{ V}$	47 V	52 V	57 V	
$V_O = 48\text{ V}$	54 V	59 V	63 V	
$V_O = 54\text{ V}$	60 V	68 V	75 V	
$V_O = 81\text{ V}$	91 V	95 V	100 V	
$V_O = 105\text{ V}$	120 V	125 V	140 V	
Over Current Protection	110% $I_O$	135% $I_O$	180% $I_O$	Hiccup mode. The power supply shall be self-recovery when the fault condition is removed.
Over Temperature Protection	-	110 °C	-	Maximum temperature of components inside the case.
Short Circuit Protection	No damage shall occur when any output operating in a short circuit condition. The power supply shall be self-recovery when the fault condition is removed.			

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## General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency				
$V_O = 12\text{ V}$	88%	89%	-	Measured at full load and 110 Vac input.
$V_O = 24\text{ V}$	90%	91%	-	
$V_O = 36\text{ V}$	89%	90%	-	
$V_O = 42\text{ V}$	90%	91%	-	
$V_O = 48\text{ V}$	89%	90%	-	
$V_O = 54\text{ V}$	90%	91%	-	
$V_O = 81\text{ V}$	90%	91%	-	
$V_O = 105\text{ V}$	90%	91%	-	
Efficiency				
$V_O = 12\text{ V}$	89%	91%	-	Measured at full load and 220 Vac input.
$V_O = 24\text{ V}$	92%	93%	-	
$V_O = 36\text{ V}$	92%	93%	-	
$V_O = 42\text{ V}$	92%	93%	-	
$V_O = 48\text{ V}$	91%	92%	-	
$V_O = 54\text{ V}$	92%	93%	-	
$V_O = 81\text{ V}$	92%	93%	-	
$V_O = 105\text{ V}$	92%	93%	-	
No Load Power Dissipation	≤ 1.5 W			
MTBF	450,000 hours			At 100 Vac input, full load and 25°C ambient temperature (MIL-HDBK-217F)
Life Time	100,000 hours			At 25°C ambient temperature.
Dimensions				
Inches (L x W x H)	7.24 x 2.66 x 1.46			
Millimeters (L x W x H)	184 x 67.5 x 37			
Net Weight	-	950 g	-	

**Note:** All specifications are typical at 25 °C unless otherwise stated.

## Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes
Operating Temperature	-35 °C	-	+70 °C	Humidity: 10% RH to 100% RH
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5% RH to 100% RH

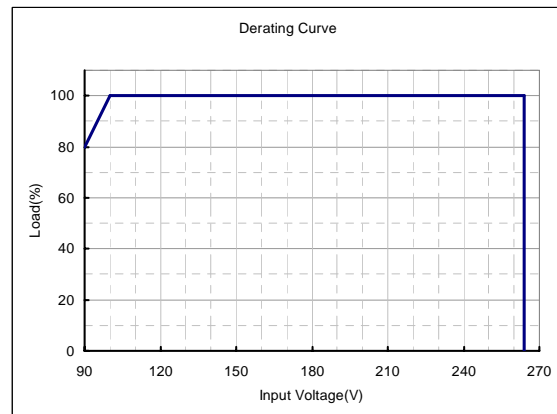
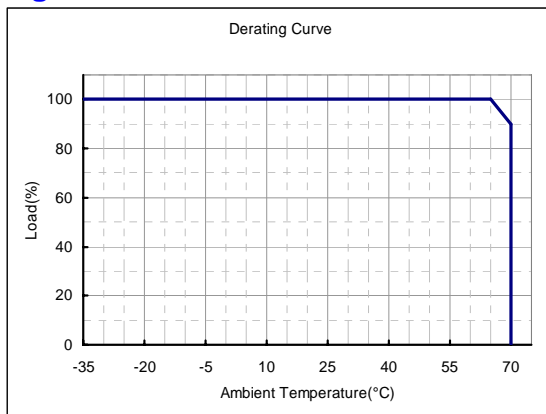
## Safety & EMC Compliance

Safety Category	Country	Standard
CUL	USA & Canada	UL8750 Compliance to UL1310 Class2 UL1012 UL935, CAN/CSA-C22.2 No. 0, CSA-C22.2 No. 107.1, CSA-C22.2 No. 250.0
CE	Europe	EN 61347-1, EN61347-2-13
EMI Standards		Notes
EN 55015		Conducted emission Test & Radiated emission Test with 6 dB margin

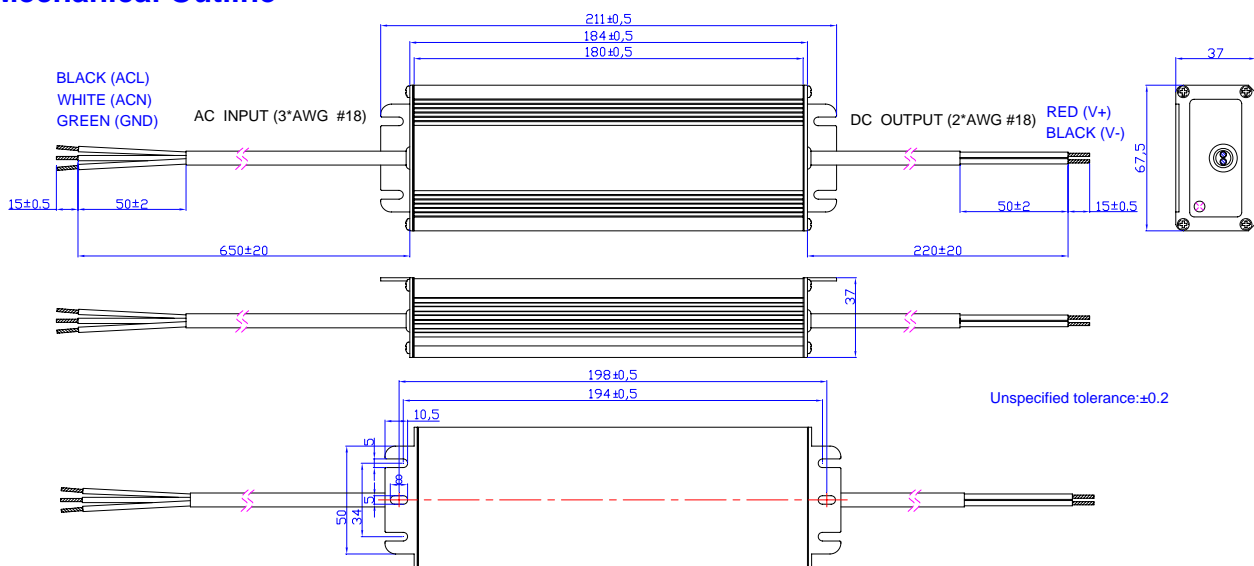
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EMS Standards	Notes
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient / Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 2 kV, line to earth 4 kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity Requirements Applies to Lighting Equipment

## Derating Curve



## Mechanical Outline



## RoHS Compliance

Our products comply with the European Directive 2002/95/EC, calling for the elimination of lead and other hazardous substances from electronic products.

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