

Features

- Ultra High Efficiency (Up to 91%)
- High Power Factor (0.95 Typical)
- Constant Voltage with 300W Continuous Output Power
- Lightning Protection
- All-Around Protection: SCP, OTP, OVP and Open
- IP67 and Damp & Wet Location



Description

The ESV-300SxxxST series operate from a 249 ~ 528 Vac input range. They are designed to be highly efficient and highly reliable. Features include lightning protection, short circuit protection, over temperature protection, over voltage protection and open lamp protection.

Models

Output Voltage	Input Voltage Range	Output Current Range	Max. Output Power	Typical Efficiency (1)	Power Factor		Model Number (2)
					277Vac	480Vac	
24 Vdc	249~ 528 Vac	0~12.5 A	300 W	89%	0.95	0.90	ESV-300S024ST
28 Vdc	249~ 528 Vac	0~10.7 A	300 W	90%	0.95	0.90	ESV-300S028ST
36 Vdc	249~ 528 Vac	0~8.33 A	300 W	90%	0.95	0.90	ESV-300S036ST
48 Vdc	249~ 528 Vac	0~6.25 A	300 W	90%	0.95	0.90	ESV-300S048ST

Notes: (1) Measured at 25 °C, full load and 480 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	249 V	-	528 V	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.75 mA	At 480Vac 60Hz input
Input AC Current	-	-	1.4 A	Measured at full load and 277 Vac input.
	-	-	0.8 A	Measured at full load and 480 Vac input.
Inrush Current	-	-	135 A	At 480Vac input 25°C Cold start, Duration= 1.2 ms, 10%Ipk-10%Ipk
Inrush Current(I ² t)	-	-	9 A ² s	
PF	0.90	-	-	Measured at full load and 277~480 Vac input.

Specifications are subject to changes without notice.

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Voltage Tolerance	-3%		3%	
Ripple and Noise	-	-	2% V _O	
Output Voltage Overshoot / Undershoot	-	-	5% V _O	When power on and off
Line Regulation	-	-	±1%	
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	1.0 s	3.0 s	Measured at full load, 277Vac input
	-	1.0 s	3.0 s	Measured at full load, 480Vac input
Temperature coefficient	-	-	0.03%/°C	Case temperature = 0°C ~T _c max

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

Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Current Protection	110% I _O	145% I _O	180% I _O	Hiccup mode. The power supply shall be self-recovery when the fault condition is removed.
Over Temperature Protection-T _c	-	110°C	-	Latch mode. The power supply shall return to normal operation only after the power is turn-on again.
Short Circuit Protection	Hiccup and no damage shall occur when any output operating in a short circuit condition.			

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency	V _O = 24 V	89.0%	90.0%	Measured at full load, 277Vac input, 25°C ambient temperature, after the unit is thermally stabilized.
	V _O = 28 V	90.0%	90.5%	
	V _O = 36 V	90.0%	91.0%	
	V _O = 48 V	90.0%	91.0%	
Efficiency	V _O = 24 V	88.0%	89.0%	Measured at full load, 480Vac input, 25°C ambient temperature, after the unit is thermally stabilized.
	V _O = 28 V	89.0%	90.0%	
	V _O = 36 V	89.0%	90.0%	
	V _O = 48 V	89.0%	90.0%	
No Load Power Dissipation	-	-	3 W	
MTBF	-	250,000 Hours	-	Measured at 480Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Life Time	-	61,900 Hours	-	Measured at 480Vac input, 80%load; Case temperature=60°C @ T _c point. See life time vs. T _c curve for the details
Case temperature	-	-	83°C	
Dimensions	Inches (L × W × H)			
	8.82 × 3.70 × 1.71			
	Millimeters (L × W × H)			
	224 × 93.9 × 43.5			
Net Weight		1400 g		

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

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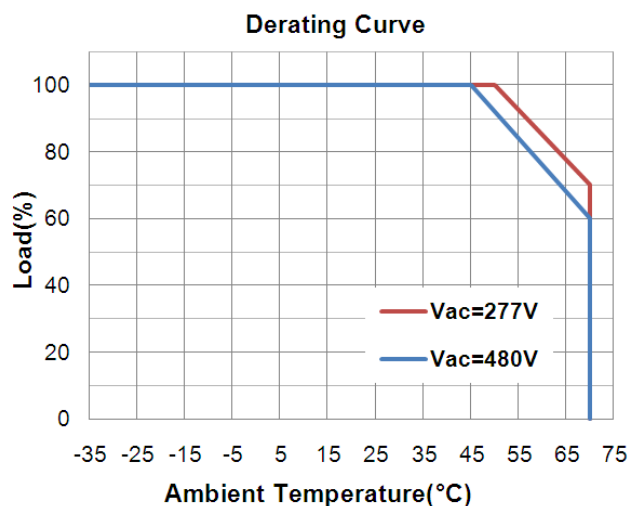
Environmental Specifications

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

Safety & EMC Compliance

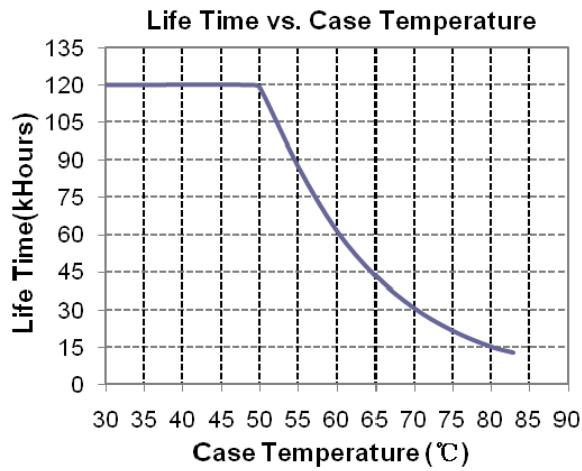
Safety Category	Standard
UL/CUL	UL8750, UL1012, CSA-C22.2 No. 107.1
CE	EN61347-1,EN61347-2-13
EMI Standards	Notes
EN 55015	Conducted emission Test & Radiated emission Test
EN 61000-3-3	Voltage fluctuations & flicker
FCC Part15	ANSI C63.4:2009 Class B
EMS Standards	Notes
EN 61000-4-2	Electrostatic Discharge (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 4 kV, line to earth 6 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

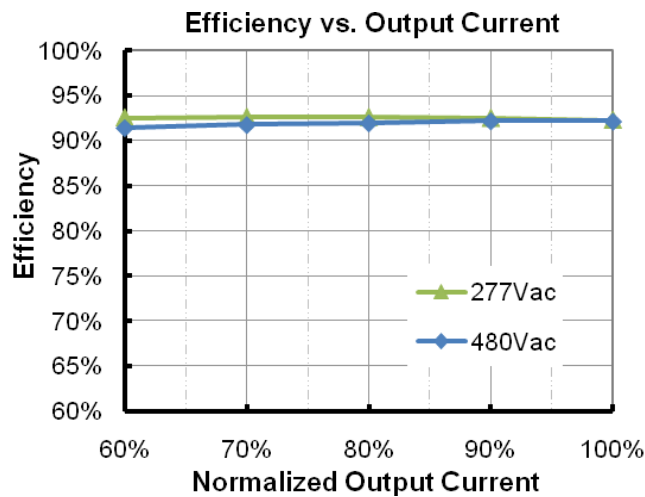


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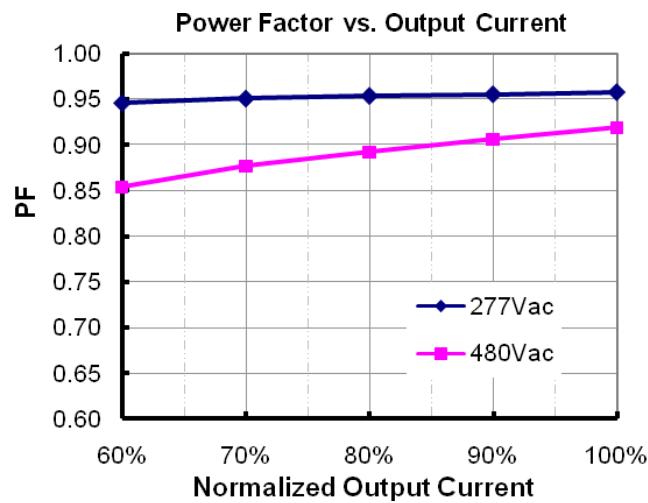
Life Time vs. Case Temperature Curve



Efficiency vs. Load (24V Model)

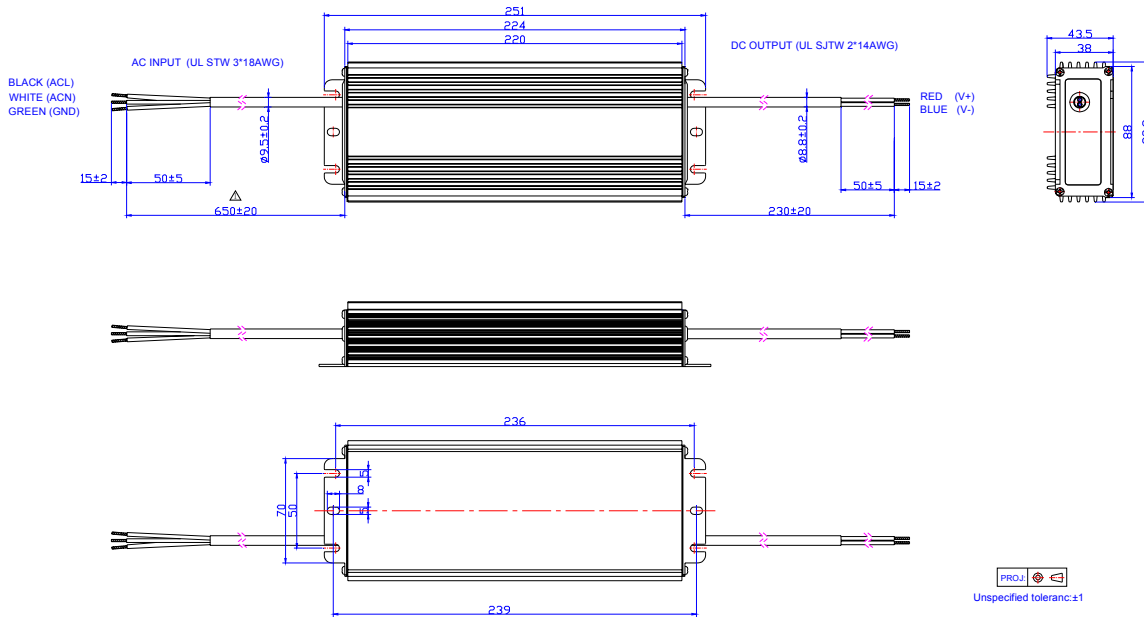


Power Factor Characteristics



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Mechanical Outline



RoHS Compliance

Our products comply with the European Directive 2011/65/EC, calling for the elimination of lead and other hazardous substances from electronic products.

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2011-06-22	A	Datasheet Released		
2011-08-05	B	Output Specifications-Turn-on Delay Time	2 s	3 s
2011-09-22	C	UL,CE,FCC	/	Added
2011-10-12	D	PF,EFF Curve	/	Added
2012-06-06	E	Life Time Curve	/	Added
		Notes of life time	/	Updated
		EN61000-4-5	line to line 2 kV, line to earth 4 kV	line to line 4 kV, line to earth 6 kV
2012-7-17	F	Max Case Temperature	/	Updated
2012-8-2	G	Safety Details	/	Updated
		Inrush Current	60 A	135 A
2012-9-28	H	Inrush Current(I ² t)	/	Added
		Min PF	/	Added
		Temperature coefficient	/	Added
		MTBF & Life time Typical	/	Added
		Life time curve	/	Added
2012-12-27	I	Mechanical Outline	/	Updated
		Dimensions-height	44.5mm	43.5mm
2013-3-25	J	Efficiency	/	1% lower
		Output Voltage Overshoot/ Undershoot	2%Vo	5%Vo
		Mechanical Outline	/	Updated