



## 500ACPSL\_SC3 series

500W - Single Output AC-DC Converter

### AC-DC Converter

500 Watt

- ⊕ Universal AC input range 90-264VAC
- ⊕ Built-in active PFC function, PFC >0.95
- ⊕ LED indicator for power on
- ⊕ Semi potted, fanless design

- ⊕ Support output remote voltage compensation and output on/off control
- ⊕ Operating temperature -30~+70°C
- ⊕ Short circuit/over load/over voltage/over temperature

Introducing our new 500ACPSL\_SC3 series, engineered to meet the highest standards of efficiency and performance. With a universal AC input range of 90-264VAC and a built-in active PFC function, this unit achieves a power factor of greater than 0.95, ensuring optimal energy efficiency while minimizing energy losses. The integrated LED indicator provides a clear and convenient way to monitor the power status at a glance. Designed with a semi-potted, fanless construction, this power supply offers silent operation and increased reliability, making it ideal for noise-sensitive environments. This model supports remote voltage compensation and output on/off control, giving you flexible and precise control over your power management. It operates in a wide temperature range of -30°C to +70°C, ensuring stable performance even in challenging environments. To ensure long-term safety and durability, the power supply is equipped with comprehensive protection features.



Common specifications	
Short circuit protection:	The output can be automatically restored after the short circuit is eliminated.
Over load	110-150% rated current, hiccup mode, recovers automatically after fault condition is removed
Over temperature	Shut down output voltage: recovers automatically after temperature decreases
Over voltage (10%loading)	500ACPSL_12SC3 ≤16.8V 500ACPSL_24SC3 ≤33.6V 500ACPSL_36SC3 ≤50.4V 500ACPSL_48SC3 ≤67.2V Hiccup mode, shut down output voltage: recovers automatically after fault condition is removed
Operating temperature	-30~+70°C (with derating)
Storage Temperature	-40~+80°C
Operating humidity	20%~95%RH, non condensing
Storage humidity	10%~95%RH, non condensing
Operating altitude	The ambient temperature derating of 0.5°C/100m for operating altitude higher than 2000m
Impact	20G, last 11mS, 3 impacts along X, Y and Z axes
MTBF	Under 25°C: 100.000hrs, Telcordia SR-332 issue 3
Vibration	10-500Hz, 2G, 10min/1 cycle, 60min. each along X, Y, Z axes
Standard	EN61000-4-2,3,4,5,6,8,11\GB17625.1\EN61000-3-2,-3\EN55032\GB4943\UL62368-1\IEC62368-1
Safety specification	Design refer to: GB4943/UL62368-1
Function	ON/OFF control - Suspended power on; High level power off (optional) Remote voltage - S+/S-; compensation voltage: typical value 0.25V (optional) Cooling method - semi-glue filling, fanless design, conduction cooled
Dimension:	232 x 81 x 31 mm

Input specifications					
Item	Operating condition	Min	Typ	Max	Units
Voltage range		90		264	VAC
Rated voltage		100		240	VAC
Current				≤7.0	A
Frequency range		47		63	Hz
Inrush current	230VAC		60		A
Leakage current	Input 240VAC - Frequency 63Hz			≤1	mA

Output specifications					
Item	Operating condition	Min	Typ	Max	Units
Line regulation			±0.5		%
Load regulation	12V Others		±2.0 ±1.0		%
Setup rise time	50ms/220VAC loading 100%		2000		ms
Hold up time	220VAC loading 100%		16		ms
Output voltage accuracy	12V Others		±2.0 ±1.0		%
Temperature coefficient	0-50°C		±0.03		%

Isolation specifications					
Item	Operating conditions	Min	Typ	Max	Units
Withstand voltage	I/P-O/P: 3kVAC/10mA; I/P-CASE: 1.5kVAC/10mA; O/P-CASE: 0.5kVAC/10mA The time for each test is: 1min				
Insulation impedance	500VDC: I/P-O/P: 10M ohms; I/P-Case: 10M ohms; O/P-Case: 10M ohms				

EMC specifications	
EMS	Design refer to: EN61000-4-2,3,4,5,6,8,119
Harmonic current	Design refer to: GB17625.1; EN61000-3-2 A
EMC	Design refer to: EN55032 (CISPR32) Class B

**Example:**  
**500ACPSL\_12SC3**  
**500 = 500 Watt; AC = AC-DC; PSL = Series; 12 = 12Vout; S = Single output;**  
**C = PFC (Power Factor Correction)**

- In order to extend the service life, it is recommended to leave 30% more allowance when loading. For example, if the equipment needs 100W power, please choose the power supply over 130W.
- Ripple&noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.
- All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature
- The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. All our EMC tests are carried out by mounting samples on metal plates.

# 500ACPSL\_SC3 series

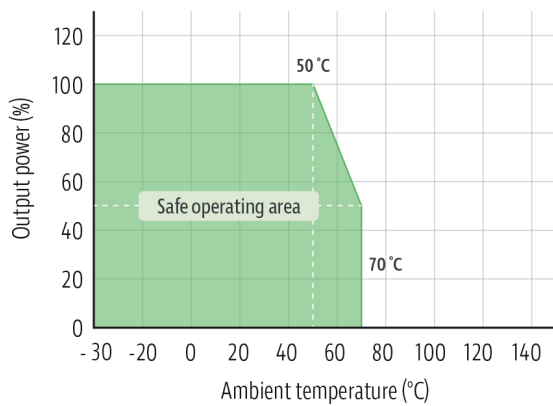
500W - Single Output AC-DC Converter

## Product Selection Guide

Certification	Part number	DC Voltage (V)	Rated Current (A)	Rated Power (W)	Voltage adjust (V)	Efficiency (Typ) (%)	Factory Voltage setting range (10% loading) (V)	Ripple & Noise (mVpk-pk)
	500ACPSL_12SC3	12	0~41.7	500.4	11.4-12.6	92	12.0-12.2	200
	500ACPSL_15SC3	15	0~33.4	501.0	14.2-15.8	91	15.0-15.2	220
	500ACPSL_24SC3	24	0~20.9	501.6	22.8-25.2V	93	24-24.3	240
	500ACPSL_36SC3	36	0~13.9	500.4	34.2-37.8V	93	36.0-36.4	240
	500ACPSL_48SC3	48	0~10.45	501.6	45.6-50.4V	93	48.0-48.4	240

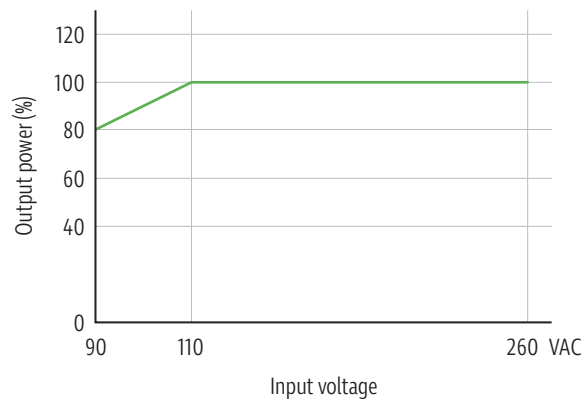
## Product characteristic curve

Temperature derating graph

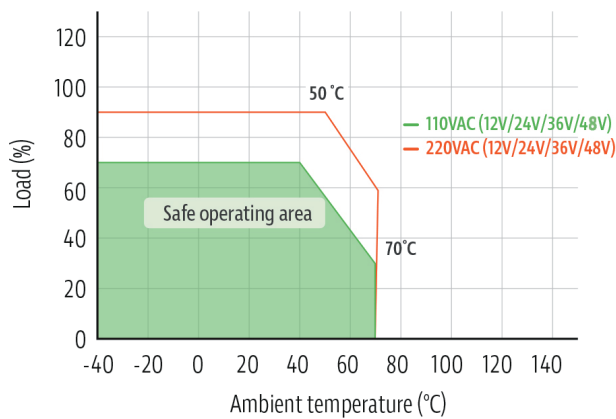


Aluminum plate heat dissipation

Input voltage derating curve

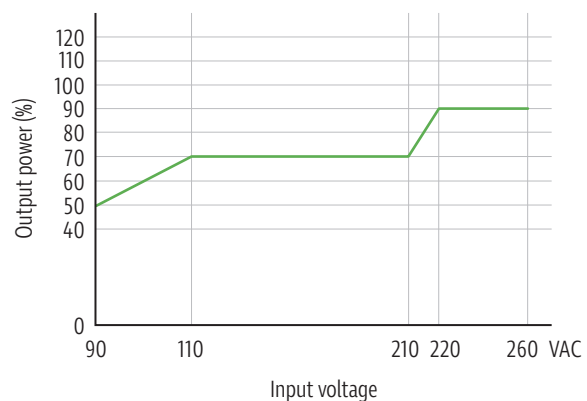


Temperature derating graph

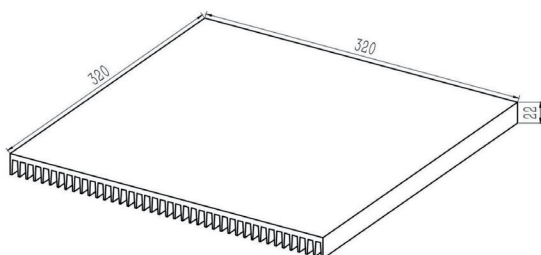


Without aluminum plate heat dissipation

Input voltage derating curve

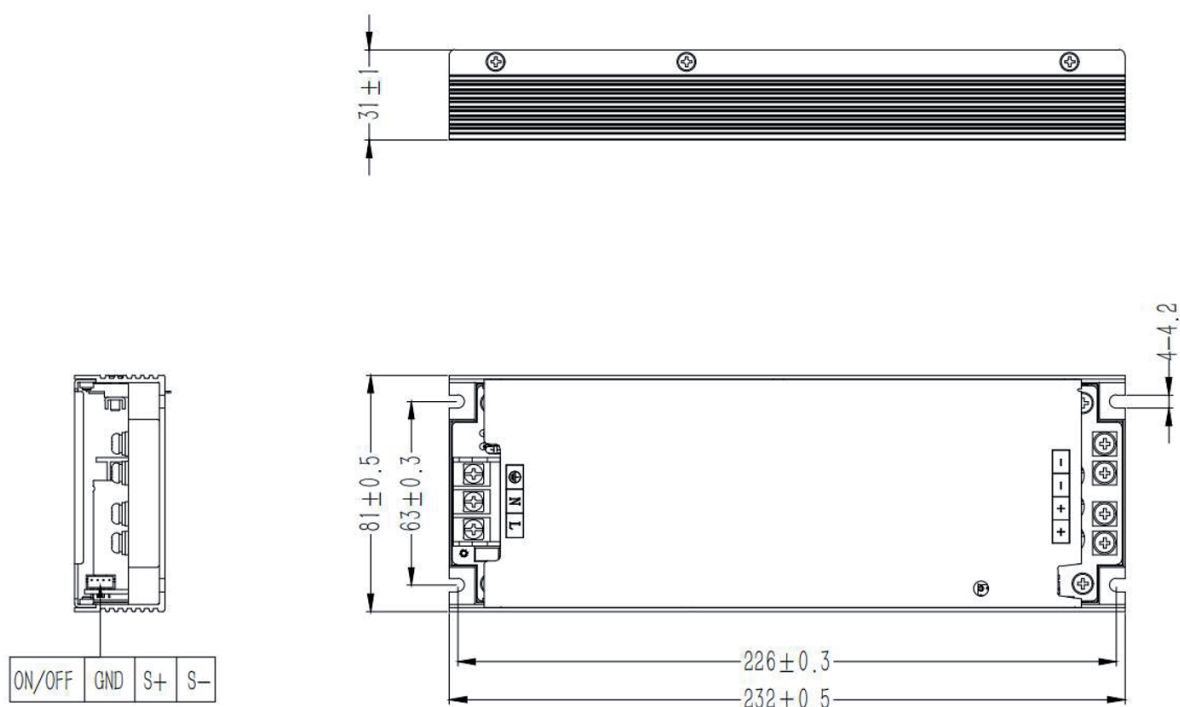


## Install



In order to ensure that this product meets the electrical performance requirements declared in the specification, this product must be installed on an aluminum plate or metal casing. The recommended dimensions of the aluminum plate are as shown in the figure below: At the same time, the product must be tightly installed in the center of the aluminum plate with screws and coated with thermally conductive silicone, helps to dissipate heat.

## Dimensions and recommended layout



Input/output terminal pin definition			
Pin No.	Pin function	Pin No.	Pin function
⊕	EARTH	++	DC Vo+
N	AC NETURAL	--	DC Vo-
L	AC LINE	ON/OFF	Output ON/OFF control
		GND	DC Vo-
		S+	Induction signal+
		S-	Induction signal-

### Instructions:

1. Please follow the installation instructions when use the power supply.
2. Before power on test run after installation, please check and proofread the wiring on each terminal, make sure that the input and output, AC and DC, positive and negative, voltage and current values are correct, prevent the occurrence of wrong connection, and avoid damaging the power supply and user equipment.
3. Before power on, please use a multimeter to measure whether the live wire, zero wire and ground wire are short circuited, and whether the output terminal is short circuited; it is better to start without load when power on.
4. Do not exceed the nominal value of the power supply when using, so as not to affect the reliability of the product. If you need to change the output parameters of the power supply, please consult our technical department before using.
5. In order to ensure the safety of use and reduce interference, please ensure that the grounding terminal is reliably grounded (ground wire please thicker than AWG18#).
6. If the power supply fails, please do not repair it without permission. Please contact our customer service department as soon as possible,

### Transport, storage:

1. Transport: The package is suitable for shipping by automobiles, ships, airs, trains, etc. During transportation, it shall be rain proof,loaded and unloaded gently.
2. Storage: When the product is not in use, it shall be placed in the packing box. The storage environment temperature and relative humidity shall meet the requirements of the product. No corrosive gas or product in the warehouse, and no strong mechanical vibration, impact and strong magnetic field. The packing box shall be padded at least 20cm above the ground, and not be soaked. If the storage time is too long (more than 1 year), it shall be rechecked by professionals before use.