100ACP_SC Series

100W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated



AC-DC Converter 100 Watt

- High efficiency up to 87%
- Universal AC input range (85~264VAC)
- Built-in Active PFC function, PF>0.93
- Over power protection (OPP)
- Over load protection (OLP)
- Short circuit protection (SCP)
- Wide operating ambient temperature (-20°C~65°C)
- Operating altitude up to 5000M
- 100% full load burn-in test
- Easy assembling from top side
- PCB soldering side with conformal coating

The 100ACP_SC series features standard rail mounting, energy efficiency and is highly cost-effective. The series offers stability and high noise immunity especially for industrial control equipment, machinery and other demanding environments for industrial equipment. This converter offers a compact and light weight design with and standard rail installation (35mm). Furthermore this series offers Easy Fuse Tripping due and a built-in DC OK relay contact. The converter can be installed on TS-35/7.5 or TS-35/15.

SHORT CIRCUIT PROTECTED

c UL us
UL-60950-1 (E347551)

CE CB PFC

Common specifications	
Short circut protection:	Long-term mode, automatic recovery
Temperature rise at full load:	40°C MAX
Cooling:	Free air convection
Operation temperature range:	-20°C~+65°C
Storage temperature range:	-20°C ~+85°C
Storage humidity range:	< 95%
Temperature coefficient:	0.03%/°C MAX
MTBF (using MIL-HDBK-217F):	+25°C >200,000 hours
Power boost:	150% of rated current
Parallel function:	support
Safety standards:	UL60950-1 2nd Ed; IEC 60950-1:2005(2nd Ed); EN60950-1:2006
Case material:	Heat-resistant Plastic (UL94-V0) and metal
Dimensions:	199*99*38mm
Weight:	725g

Isolation specifications					
Item	Test condition	Min	Typ	Max	Units
Withstand voltage*	• Primary-Sec.: 10mA • Primary-PG: 10mA • Secondary-PG: 10mA	3000 1500 500			VAC
Isolation resistance		100			MΩ

* Input-Output, tested for 1 minute, 500VDC and leakage current less than 1mA

Protection specifications	
Over-load protection	105%~200% of rated output current, hiccup mode, auto recovery
Over-power protection	105%~200% of rated output current, hiccup mode, auto recovery

Note:
1. All parameters NOT specially mentioned are measured at rated input, rated load and 25°C of ambient temperature.

Input specifications			
Input voltage range		85~264VAC	
Input frequency		47~63Hz	
Power factor			230VAC • 0.93 (typ)
AC current		115VAC • 1.7A (max)	230VAC • 0.8A (max)
Inrush current	Cold start		230VAC • 50A (typ)
Leakage current	Input—output: ≤0.25mA Input—PG: ≤3.5mA		

Output specifications					
Item	Test conditions	Min	Typ	Max	Units
Output voltage accuracy (full load)	• 12V • Others			±2 ±1	% %
Voltage adjustment range				±10	%
Line regulation	Vin= min. to max. at full load			±0.5	%
Load regulation	• 36V • Others			±1 ±0.5	% %
Set-up time	• @230VAC input			2	s
Hold-up time		20			ms
Overshoot and undershoot				5	%
Switching frequency			100		KHz

* Measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 uF & 10uF parallel capacitor.

Example:
100ACP_24SC

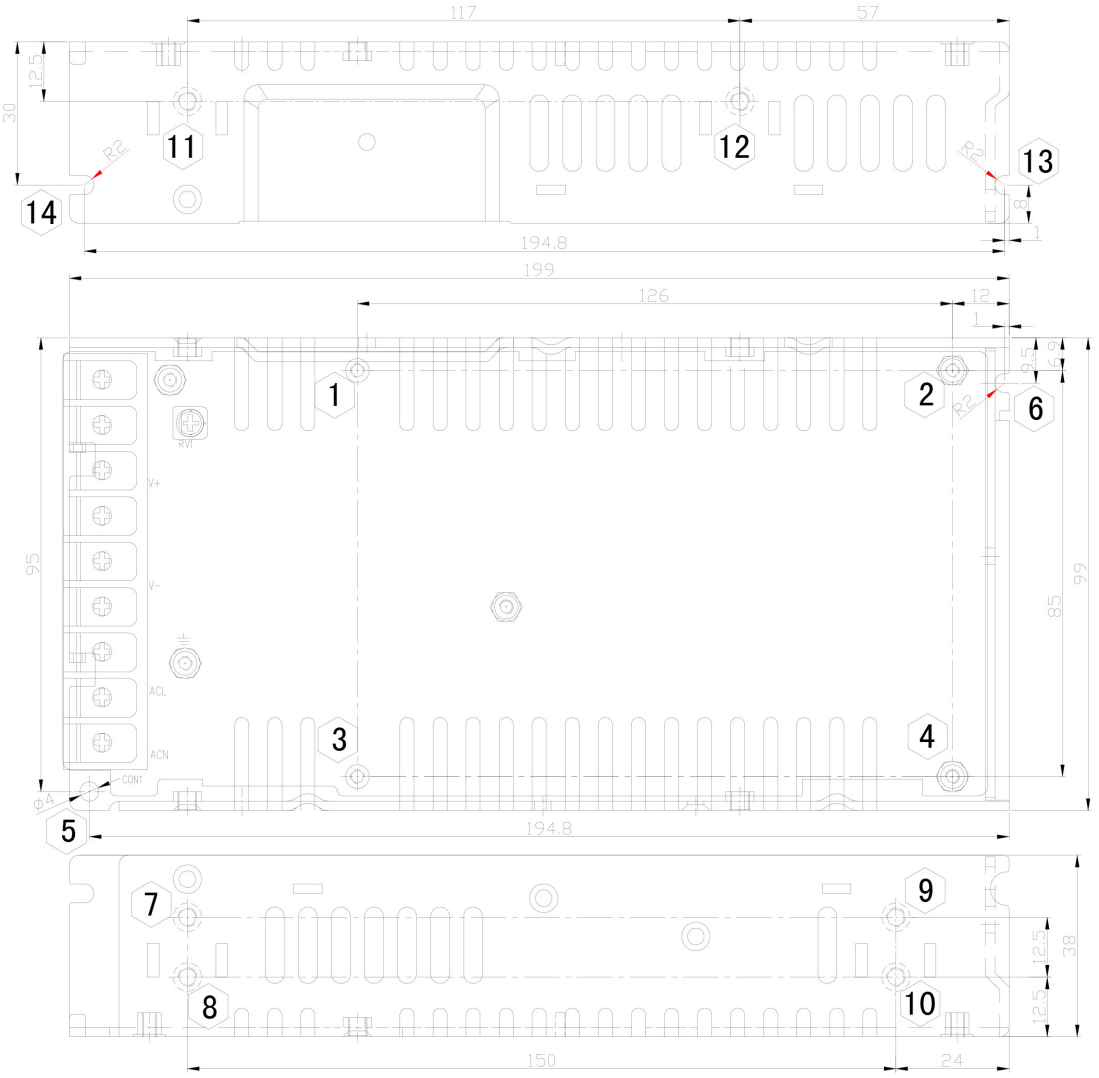
100 = 100Watt
AC = AC-DC
P = series
24 = 24 Vout
S = single output
C = PFC (Power Factor Correction)

EMC specifications	
EMC / Emission	Compliance to EN55022, EN55024, FCC PART 15 Class B
EMC / Harmonic current	Compliance to EN61000-3-2, CLASS D
EMC / Immunity	Compliance to EN61000-4-2, -3, -4, -5, -6, -8, -11; heavy industry level

The power supply is considered as a component which will be installed into a final equipment.
The final equipment must be re-confirmed that it still meets EMC directives.

Approval	Model	Power [W]	Output [Vo, VDC]	Rated Current [A]	Current Range [A]	Ripple&Noise* [mV, typ] 0~65°C	Ripple&Noise* [mV, typ] -20~0°C	Efficiency [%, typ] 230VAC	Efficiency [%, typ] 120VAC
UL	100ACP_12SC	100	12	8.5	0~8.5	100	200	85	83
UL	100ACP_24SC	100	24	4.2	0~4.2	150	300	86	83
UL	100ACP_36SC	100	36	2.75	0~2.75	250	500	86	83
UL	100ACP_48SC	100	48	2.15	0~2.15	250	500	87	84

Mechanical dimensions

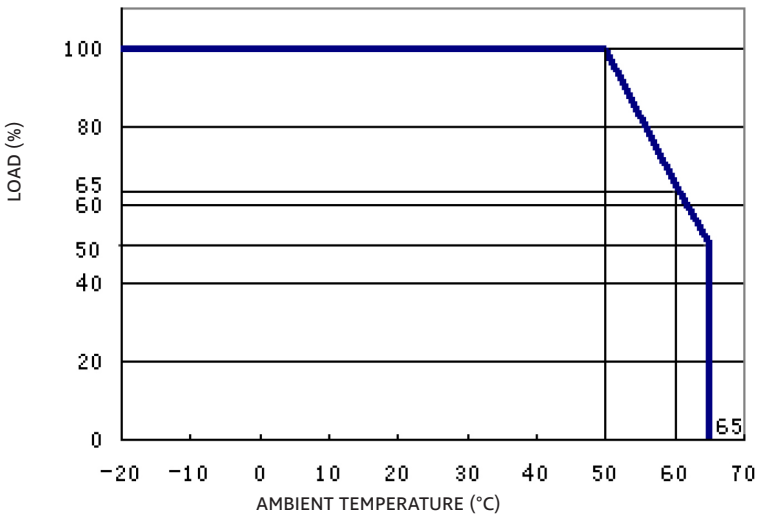


1-4	M3	2.5mm	6.5kgf.cm (max)
5-6	M3	4mm	6.5kgf.cm (max)
7-12	M3	4mm	6.5kgf.cm (max)
13-14	M4	4mm	12kgf.cm (max)

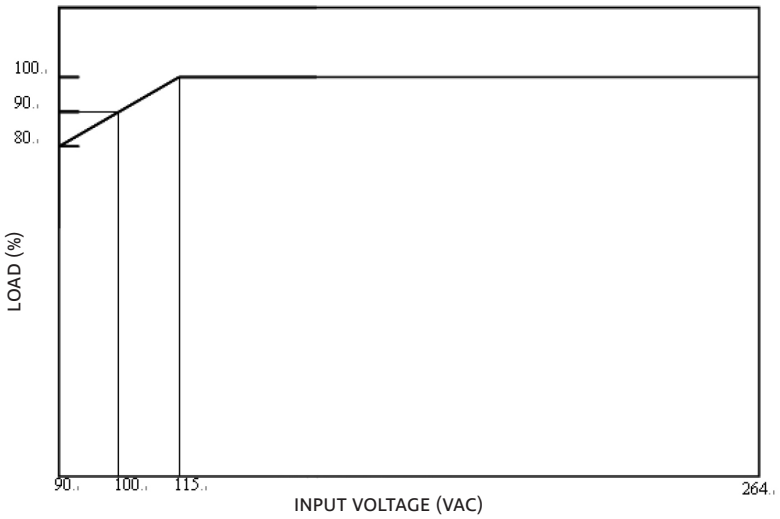
Unit: mm
Tolerance: ±1mm

Typical characteristics

Derating Curve



Efficiency



Functional block diagram

Functional diagram

