600ACP_SCF Series

600W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated

AC-DC Converter 600 Watt

- High efficiency up to 93.8%
- Universal AC input range (85~264VAC)
- Built-in Active PFC function, PF>0.95
- Short circuit protection (SCP)
- Over voltage protection (OVP)
- Over load protection (OLP)
- Short circuit protection (SCP)
- Wide operating ambient temperature (-20°C~70°C)
- Operating altitude up to 5000M
- 100% full load burn-in test
- PCB soldering side with conformal coating

The 600ACP_SCF 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.

UL-60950-1 (E347551)

Common specifications	
Short circut protection:	Long-term mode, automatic recovery
Temperature rise at full load:	40°C MAX
Cooling method*:	Fan
Operation temperature range:	-20°C~+70°C
Storage temperature range:	-40°C ~+85°C
Storage humidity range:	10%~95%, no condensing
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:	218*116.5*40.7mm
Weight:	1333.33g

12V
Fan working: temperature ctrl. up to 55±10°C or output current >17-22A
Fan stop working: temperature ctrl. down to 40±10°C or output current<15-20A
24V/48V
Fan working: temperature ctrl. up to 55±10°C or output current > 40%~60% of rated current
Fan stop working: temperature ctrl. down to 40±10°C or output current<30%~50% of rated current

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

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

Protection specifications	
Over-load protection	12V: 52.5~65A; 24V/48V: 26.25~32.5A Protection type: 12V: Intermittent working, working time>0.1s, recovery time >2s 24V/48V: Hiccup mode, auto recovery
Over-voltage protection	12V: 13.6~16V; 24V: 28~32V; 48V: 54~60W Protection type: Constant voltage, auto recovery
Over-temperature protection	95°C+5°C (detect on thermal protector on PFC mosfet); shut down,auto recovery after the temperature goes down to 40°C

Input specifications			
Input voltage range		90~264VAC	
Input frequency		47~63Hz	
Power factor	12V only @230VAC	115VAC 0.98 (typ)	230VAC 0.95 (typ)
AC current	• 12V • 24V/48V	5A (max) 6A (max)	
Inrush current	Cold start • 12V • 24V/48V	115VAC 15A (typ)	220VAC 40A (typ) 30A (typ)
Leakage current	Input—output: ≤0.25mA Input—PG: ≤3.5mA (264Vac, 63Hz)		
Standy power consumption	<5W		

Output specifications					
Item	Test conditions	Min	Typ	Max	Units
Output voltage accuracy	Full load • 12V • 24V/48V			 ±3 ±2	 % %
Line regulation	• 12V • 24V/48V			±1 ±0.5	% %
Load regulation	• 12V • 24V/48V			±2 ±1	% %
Set-up time	• 12V @220VAC input • 24V/48V @220VAC input • 24V/48V @110VAC input			2 1.5 2.5	s s s
Hold-up time	220VAC @full load	10			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:
600ACP_24SCF
600 = 600Watt
AC = AC-DC
P = series
24 = 24 Vout
S = Single Output
C = PFC (Power Factor Correction)
F = Fan

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

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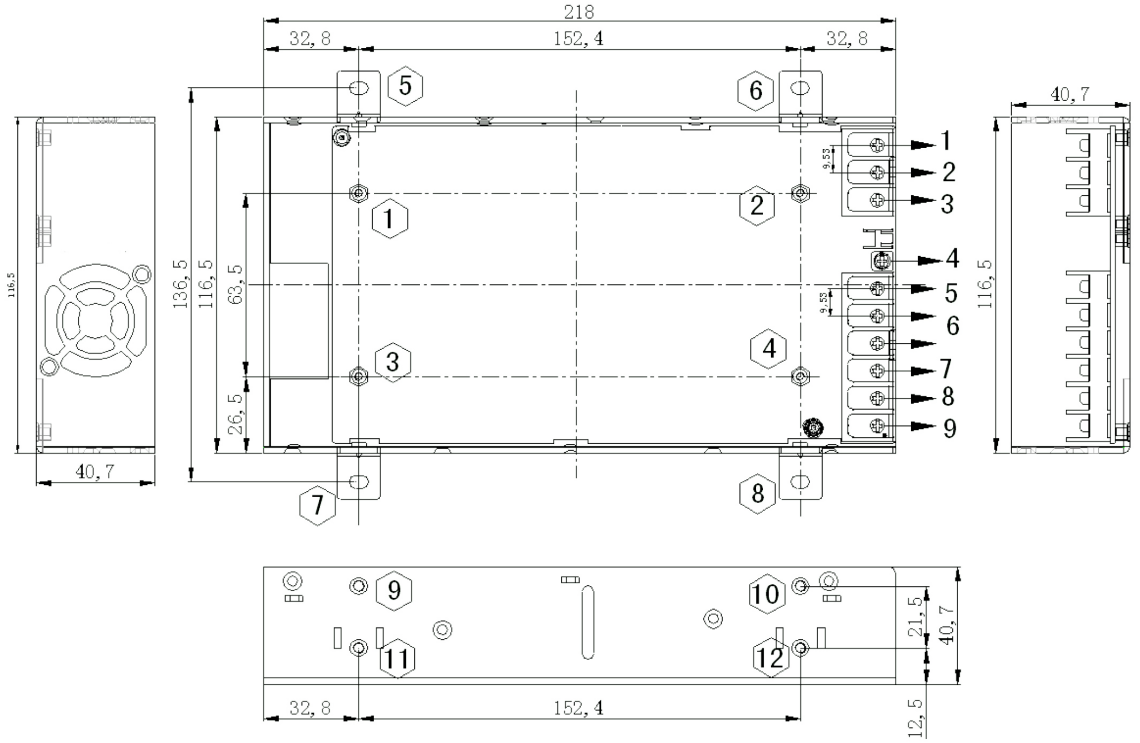
EMC specifications	
EMC / Conduction & Radiation	Compliance to EN55022, FCC PART 15, Class B
EMC / Harmonic Current	Compliance to EN61000-3-2, class D
EMC / Immunity	Compliance to EN61000-4-2, -3, -4, -5, -6, -8, -11; heavy industry level

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] 90-175VAC	Rated Current [A] 176-264VAC	Voltage Adj. Range [V]	Ripple&Noise* [mV, typ] 0~70°C	Ripple&Noise* [mV, typ] -20~0°C	Efficiency [%, min]
UL	600ACP_12SCF	600	12	35	50	11.8~13.2	≤120	≤240	90
UL	600ACP_24SCF	600	24	20	25	23.4~26.4	≤150	≤240	91.8
UL	600ACP_48SCF	600	48	10	12.5	47.5~52.8	≤480	≤480	93.8

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

Mechanical dimensions



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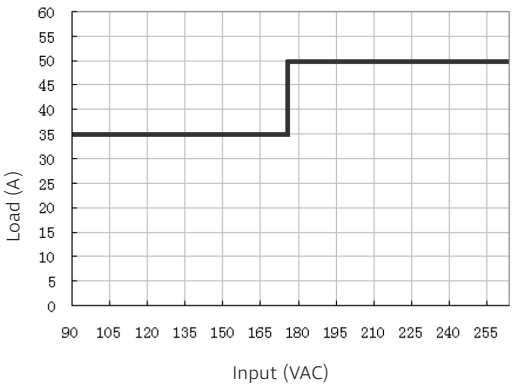
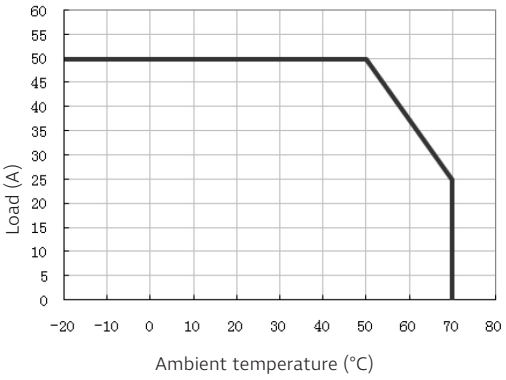
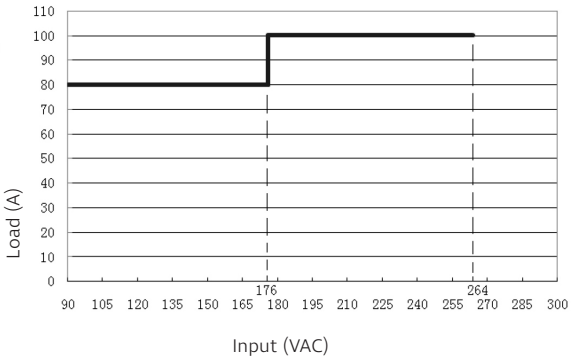
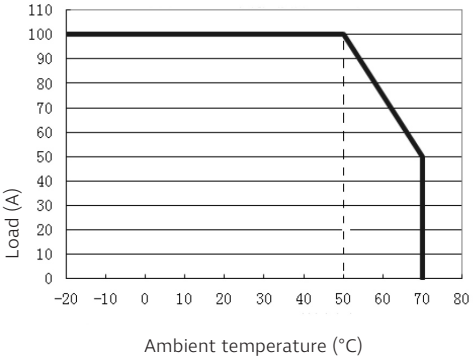
Typical characteristics

Derating Curves









Functional block diagram

Block diagram