GAPTEC®
GREEN TECHNOLOGY



15ACP_S Series

15W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated

AC-DC Converter 15 Watt

- **High efficiency up to 83%**
- **Universal AC input range (90~264VAC)**
- **Withstand 300VA surge input for 5 sec.**
- **Over voltage protection (OVP)**
- **Over load protection (OLP)**
- **Short circuit protection (SCP)**
- **Wide operating ambient temperature (-20°C~70°C)**
- **100% full load burn-in test**
- **Easy assembling from top side**
- **PCB soldering side with conformal coating**

The 15ACP_S 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 CB CE

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~+70°C
Storage temperature range:	-40°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 (L*W*H):	79x51x28mm
Weight:	217g

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	• 3.3V: 4.4~7.2A • 5V: 3.3~5.4A • 12V: 1.43~2.34A • 15V: 1.1~1.8A • 24V: 0.77~1.26A	Protection type: constant power
Over-voltage protection	• 3.3V: 14.52~23.76W • 5V: 16.5~27W • 12V: 17.16~28.08W • 15V: 16.5~27W • 24V: 18.48~30.24W	Protection type: constant voltage

Input specifications

Input voltage range		90~264VAC	
Input frequency		47~63Hz	
AC current	230VAC	0.7A (max)	
Inrush current	Cold start, 230VAC	• 120VAC 20A (typ)	• 230VAC 40A (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			±3	%
Voltage adjustment range	• 3.3V • 5V • 12V • 24V • 48V	3.1 4.75 11.4 14.25 22.8		3.5 5.25 12.6 15.75 25.2	V V V V V
Line regulation	Vin= min. to max. at full load			±1	%
Load regulation	0% to 100% load			±2	%
Set-up time (full load)	• @230VAC input • @120VAC input			1 2	s s
Hold-up time (full load)	• @230VAC input • @120VAC input			20 10	ms 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:
15ACP_24S

15= 15Watt
AC= AC-DC
P= series
24= 24 Vout
S= single output

Note:
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.

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EMC specifications	
EMC / Emission	Compliance to EN55022 CALSS B FCC PART15 B
EMC / Immunity	Compliance to EN61000-4-2, 4, 5, 6, 8, 11

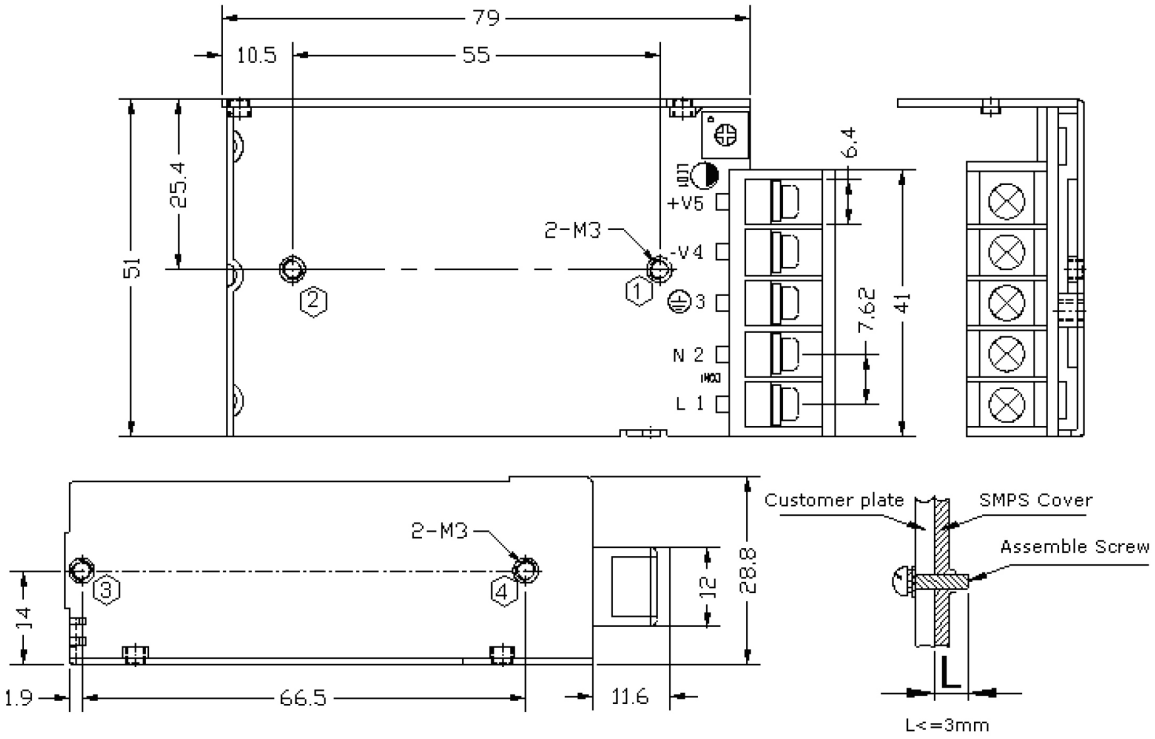
The SPS is considered as a component which will be installed into a final equipment.
The final equipment must be re-confirmed that it still meets EMC directives.

Approval	Model	Power [W]	Output [Vo, VDC]	Rated Current [A]	Current Range [A]	Ripple&Noise* [mV, typ] 0~70°C	-20~0°C	Efficiency [%, typ] 220VAC
UL	15ACP_03S	15	3.3	4	0~0.4	50	50	70
UL	15ACP_05S	15	5	3	0~3	50	50	76
UL	15ACP_12S	15	12	1.3	0~1.3	120	120	80
UL	15ACP_15S	15	15	1	0~1	120	120	81
UL	15ACP_24S	15	24	0.7	0~0.7	120	120	83

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

Mechanical dimensions

Unit: mm



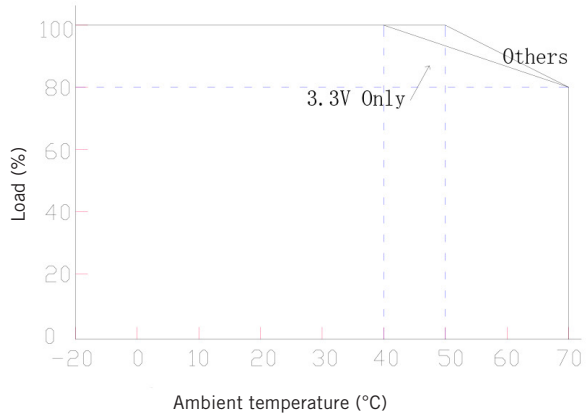
AC terminal blocks installation information			
Terminal No.	Function	Wire specs	Torque max.
1	L	22-14AWG	7.5Kgf.cm
2	N		
3	PG		

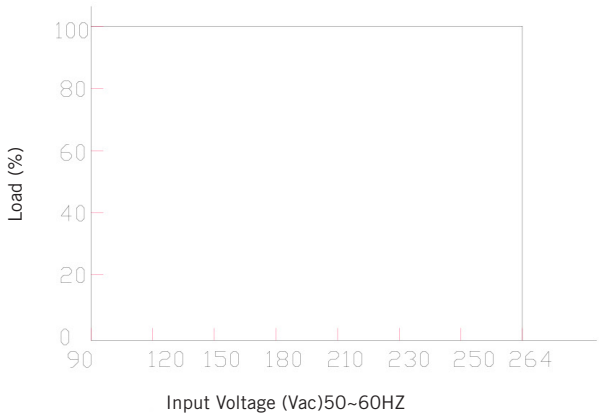
DC terminal blocks installation information			
Terminal No.	Function	Wire specs	Rec. torque
4	-V	22-14AWG	7.5Kgf.cm
5	+V		

Mounting method	Mounting holes	Screw specs	Torque max.
Bottom	1~2	M3	6.5kgf.cm (max)
Side	3~4	M3	6.5kgf.cm (max)

Typical characteristics

Derating Curves





Functional block diagram

