



150ACPM_SC series

150W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated



AC-DC Converter

150 Watt

- ⊕ High efficiency up to 87%
- ⊕ Universal AC input range (85~264VAC)
- ⊕ Built-in Active PFC function, PF>0.95
- ⊕ Over power protection (OPP)
- ⊕ Over load protection (OLP)
- ⊕ Short circuit protection (SCP)
- ⊕ Wide operating ambient temperature (-20°C~70°C)
- ⊕ Withstand 300VA surge input for 5 secs.
- ⊕ 100% full load burn-in test
- ⊕ Easy assembling from top side
- All using 105°C long life electrolytic capacitors

The 150ACPM_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 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.



Common specifications

Short circuit 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:	-30°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 2 nd Ed; IEC 60950-1:2005(2 nd Ed); EN60950-1:2006
Case material:	Heat-resistant Plastic (UL94-V0) and metal
Dimensions:	199*99*38mm
Weight:	750g

Isolation specifications

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

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

Protection specifications

Over-load protection	• 12V: 13.125~18.75A • 15V: 10.5~17A • 24V: 6.93~9.45A • 48V: 3.36~4.8A	Protection type: Constant power, auto recovery
Over-power protection	• 12V: 160~225W • 15V: 160~255W • 24V: 160~225W • 48V: 160~225W	Protection type: Constant power, auto recovery
Over-voltage protection	• 12V: 14~18V • 15V: 17.8~22.5V • 24V: 27~36V • 48V: 52.5~72V	Protection type: Constant power, auto recovery
Over-temperature protection	105°C +5°C (detect on Mosfet temperature); shut down, auto recovery after the temperature goes down to 50°C	

Input specifications

Input voltage range	85~264VAC, 120~370Vdc
Input frequency	47~63Hz
Power factor	115VAC • 0.98 (typ) 230VAC • 0.95 (typ)
AC current	2A (max)
Inrush current	Cold start 115VAC • 30A (typ) 230VAC • 45A (typ)
Leakage current	Input—output: ≤0.25mA (input 264Vac, 63Hz) Input—PG: ≤3.5mA

Output specifications

Item	Test conditions	Min	Typ	Max	Units
Output voltage accuracy	Full load			±2	%
Voltage adjustment range	• 12V • 15V • 24V • 48V	10.8	13.2	16.5	V
Line regulation	Vin= min. to max. at full load			±0.5	%
Load regulation	• 12V, 15V • 24V, 48V			±2	%
Set-up time	• @230VAC input • @115VAC input	2	s	3	s
Hold-up time		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:

150ACPM_24SC

150= 150Watt
AC= AC-DC
PM= series
24= 24 Vout
S= single output
C= PFC (Power Factor Correction)

Note:

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

150ACPM SC series

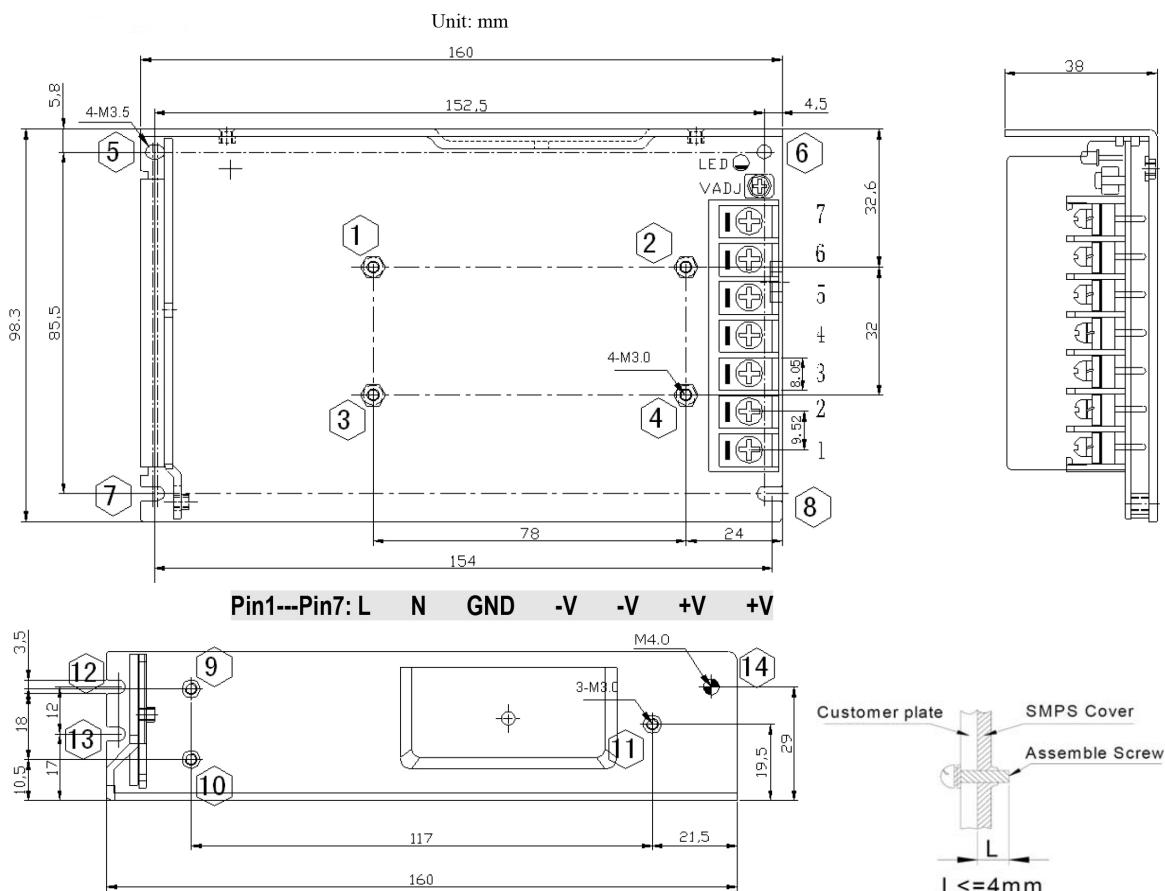
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EMC specifications	
EMC / Emission	Compliance to EN55022, Class B
EMC / Harmonic current	Compliance to EN61000-3-2, CLASS D
EMC / Immunity	Compliance to EN61000-4-2, -3, -4, -5, -6, -8, -11; heavy industry level

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]		Efficiency [%], typ	
						0~70°C	-20~0°C	230VAC	115VAC
UL (pending)	150ACPM_12SC	150	12	12.5	0~12.5	100	200	86	82.5
UL (pending)	150ACPM_15SC	150	15	10	0~10	100	200	87	82.5
UL (pending)	150ACPM_24SC	150	24	6.3	0~6.3	100	200	88	85
UL (pending)	150ACPM_48SC	150	48	3.2	0~3.2	100	200	88	83.9

Mechanical dimensions



Mounting method	Mounting holes	Screw specs	L max.	Torque max.
Bottom	1-4	M3	4mm	12kgf.cm (max)
Bottom	5-8	M3	/	10kgf.cm (max)
Side	9-11	M3	4mm	6.5kgf.cm (max)
Side	12-14	M3	/	10kgf.cm (max)

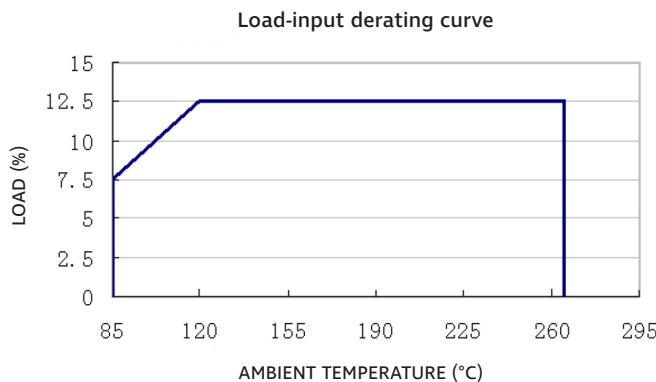
DC terminal blocks installation information			
Terminal No.	Function	Wire specs	Rec. torque
4-5	-V	22-12AWG	7.5Kgf.cm
6-7	+V		

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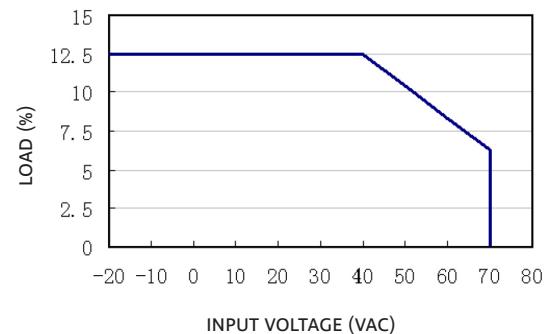
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Typical characteristics

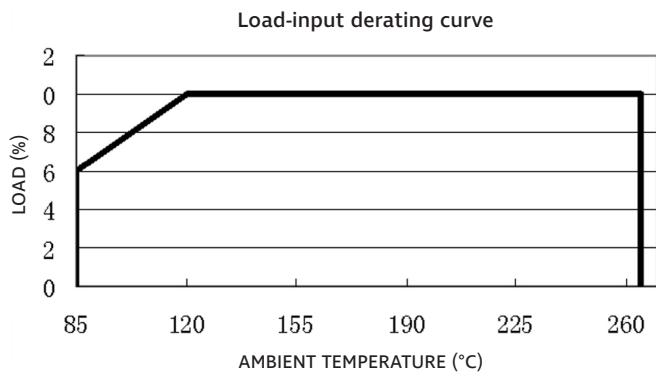
150ACPM_12SC



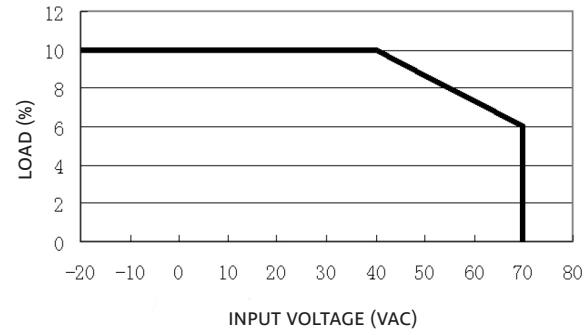
Ambient derating curve



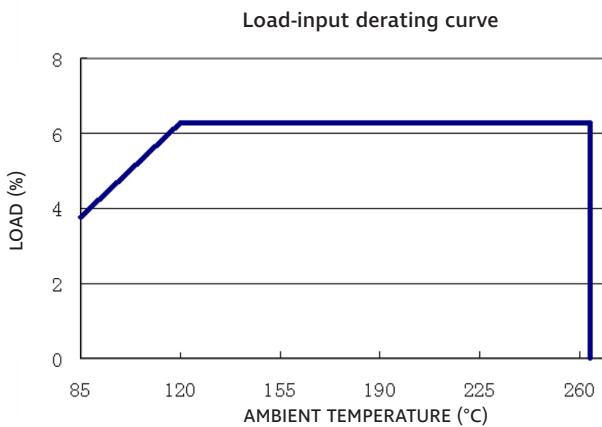
150ACPM_15SC



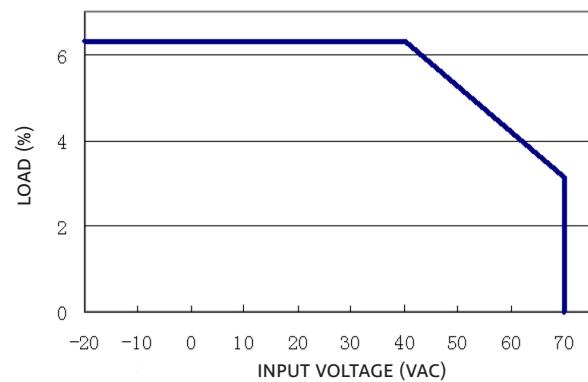
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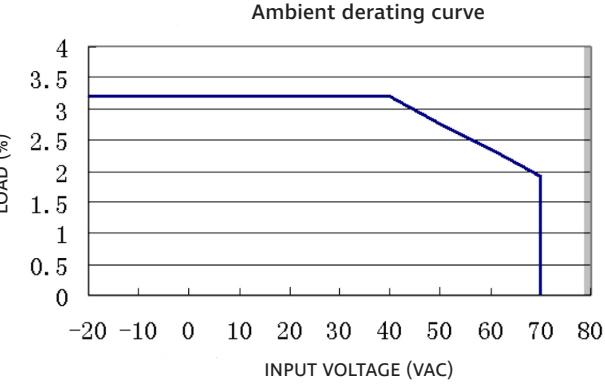
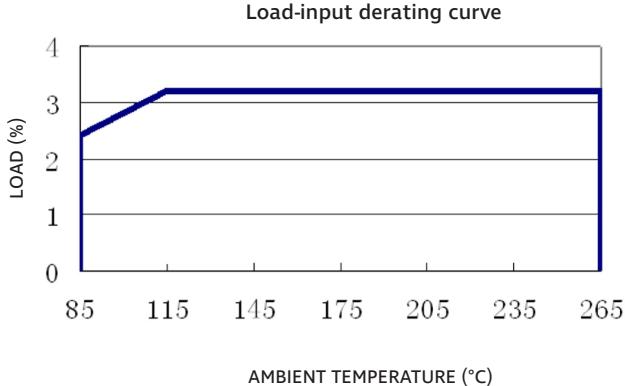
150ACPM_24SC



Ambient derating curve



150ACPM_48SC



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Functional block diagram

Functional diagram

