

50ACPDC_3 series

50W - Single Output AC-DC Converter



AC-DC Converter

50 Watt

- ⊕ Input voltage range:
100-240VAC / 140-340VDC
- ⊕ Operating temperature:
-30°C up to +70°C
- ⊕ 100% aging test
- ⊕ 3kVAC isolation
- ⊕ Short circuit protection (SCP)
- ⊕ Over-current and over-voltage protection
- ⊕ Standard slim model, height only 30mm

Introducing our reliable and compact 50ACPDC_3 series. Designed with a broad input voltage range of 100-240VAC or 140-340VDC, this converter is suitable for diverse applications and environments. It offers multiple output voltages—3.3V, 5V, 12V, 15V, 24V, 36V, and 48V—providing flexible options to meet various power needs. Engineered for durability, each unit undergoes a rigorous 100% aging test to ensure long-lasting performance. With a high 3kVAC isolation and essential safety protections, including short circuit protection (SCP), over-current, and over-voltage protection, this model delivers reliable operation under demanding conditions. Its slim, 30mm-high profile makes it easy to integrate into tight spaces, and it operates seamlessly in a temperature range of -30°C to +70°C. Upgrade your power solution with a converter designed for efficiency, safety, and versatility!



Common specifications	
Short circuit protection	Hiccup mode, recovers automatically after fault condition is removed.
Over current protection	110%Io (min.) 160%Io (max.) Hiccup mode, recovers automatically after fault condition is removed
Over voltage protection	110% (min.) 130% (max.) dual voltage loop voltage limiting
Dielectric test	Input-output/3000 VAC/7mA@60S Input-case/1500 VAC/7mA@60S Output-case/500 VAC/7mA@60S
Working temperature	-30°C - +70°C (with derating)
Storage temperature	-30°C - +80°C
Altitude	5000m (The ambient temperature derating of 0.5°C /100m for operating altitude higher than 2000m)
Working humidity	20~95% RH (non-condensing)
Storage humidity	10~95% RH (non-condensing)
Safety standard	UL 62368-1, EN62368-1, IEC 62368-1, GB 4943.1
MTBF (MIL-HDBK-217F)	600,000 hours 230VAC, 25°C, 80% Load
Weight	200g
Dimension	99.0 x 82.0 x 30.0 mm

Input specifications					
Item	Operating condition	Min	Typ	Max	Units
Input voltage range (AC)		90		264	VAC
Rated input voltage (AC)		100		240	VAC
Frequency range		47		63	Hz
Rated input voltage (DC)		140		340	VDC
Input Current	100% Load, 115VAC 100% Load, 230VAC			1.0 0.55	A
Leakage Current	240VAC/60Hz			0.75	mA
Input Voltage		120	230	277	VAC
Ipeak (typ.)			50		A

Output specifications					
Item	Operating condition	Min	Typ	Max	Units
Voltage tolerance	3.3/5VDC others	-2.0 -1.0		+2.0 +1.0	%
Ripple & noise (pk-pk)*	3.3VDC 5VDC 12/15/24VDC 36/48VDC			80 100 120 200	mV
Line regulation		-0.5		+0.5	%
Load regulation	3.3/5VDC others	-2.0 -1.0		+2.0 +1.0	%
Turn on delay time	230VAC			2500	ms
Rise time	230VAC			50	ms
Hold up time	230VAC		20		ms

Note: *Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.

Isolation specifications					
Item	Operating Conditions	Min	Typ	Max	Units
Ground Resistances				0.1	Ω
Isolation Resistance	500VDC, 60S		100		MΩ

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,

Example:

50ACPDC_05S3

50 = 50Watt; AC = AC-DC; PDC = Series; 05 = 5Vout; S = Single output;
3 = 3kVAC isolation

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EMC specifications					
EMI	CE	Conducted emission test & radiated emission test	EN55032	Class B	
EMI	CE	Harmonic current emissions	EN 61000-3-2	Class A	
EMI	CE	Voltage fluctuations & flicker	EN 61000-3-3		
EMS	CE	Electrostatic discharge (ESD)	EN 61000-4-2	Air 8kV / contact 6kV	Criteria B
EMS	CE	Radio-Frequency electromagnetic field susceptibility Test-RS	EN 61000-4-3	80MHz-1GHz 10V/m	Criteria B
EMS	CE	Electrical Fast Transient / Burst-EFT	EN 61000-4-4	±2kV, (5 or 100)kHz	Criteria B
EMS	CE	Surge Immunity Test	EN 61000-4-5	CM± 2kV/DM ±1kV	Criteria B
EMS	CE	Conducted Radio Frequency Disturbances Test-CS	EN 61000-4-6	10Vr.m.s;	Criteria A
EMS	CE	Power Frequency Magnetic Field Test	EN 61000-4-8	30A/m	Criteria A
EMS	CE	Voltage Dips	EN 61000-4-11	0% / 100% / 0.5 Period 70% / 30% / 25 Period 0% / 100% / 250 Period	Criteria C Criteria B Criteria B

Note: The power supply is considered a component which will be installed into a terminal equipment. All EMC test should be confirmed with the final equipment.

Product Selection Guide

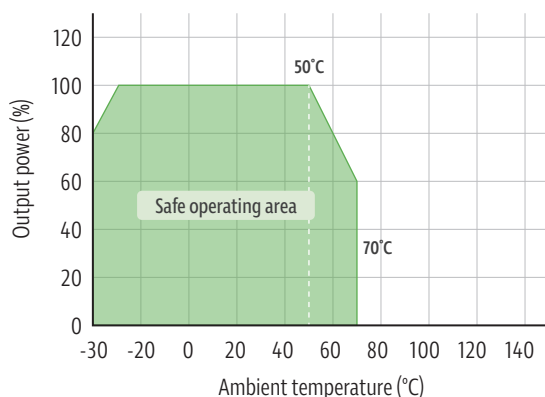
Approval	Part number	Output Power (W)	Input voltage (VAC)	Output voltage (VDC)	Default voltage (Min./Max)	Voltage ADJ. Range (Min./Max)	Output Current (A)	Efficiency* (%)	Efficiency** @110 VAC(%) typ.	Efficiency** @230 VAC(%) typ.	Max. Capacitive Load (µF)
	50ACPDC_03S3	33.0	100-240	3.3	3.3/3.4	2.9/3.6	0-10.0	84.0	84.0	84.0	6000
	50ACPDC_05S3	50.0	100-240	5	5/5.1	4.5/5.5	0-10.0	83.0	83.0	83.0	6000
	50ACPDC_12S3	50.4	100-240	12	12/12.2	10.8/13.2	0-4.20	85.0	85.0	85.0	1800
	50ACPDC_15S3	51.0	100-240	15	15/15.2	13.5/16.5	0-3.40	85.0	85.0	85.0	1200
	50ACPDC_24S3	50.4	100-240	24	24/24.3	21.6/26.4	0-2.10	85.0	85.0	85.0	600
	50ACPDC_36S3	50.4	100-240	36	36/36.4	33.0/39.0	0-1.40	86.0	86.0	86.0	360
	50ACPDC_48S3	52.8	100-240	48	48/48.4	44.0/52.0	0-1.10	86.0	86.0	86.0	120

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

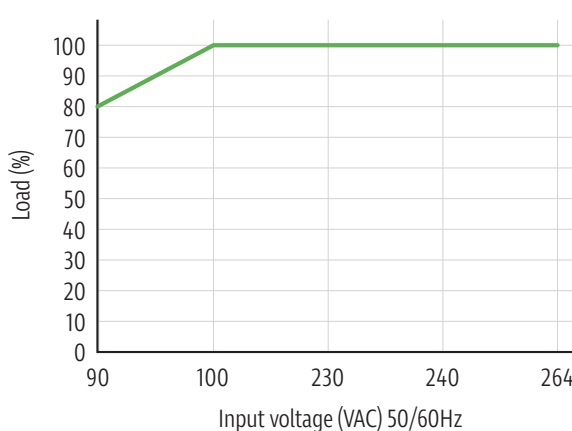
** 100%load,Ta=25°C

Typical characteristics

Temperature derating graph



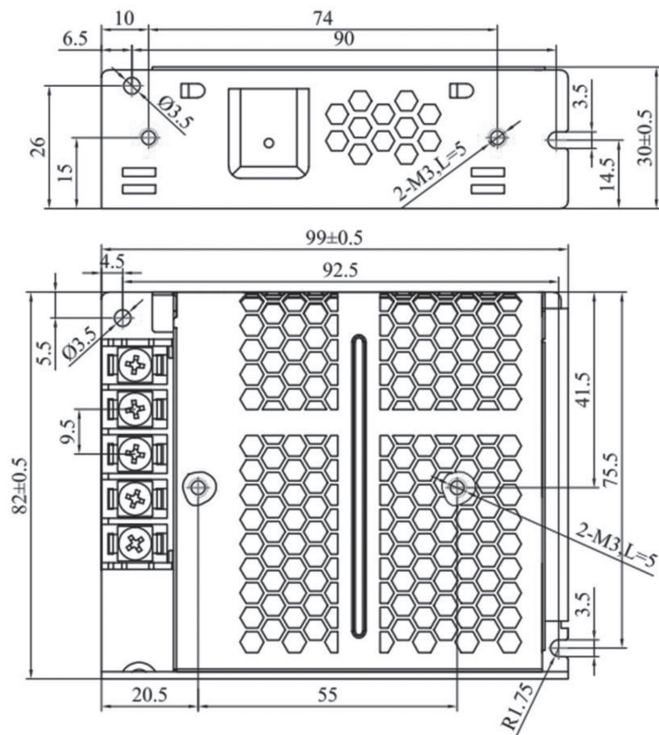
Load vs input voltage



Note:

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.

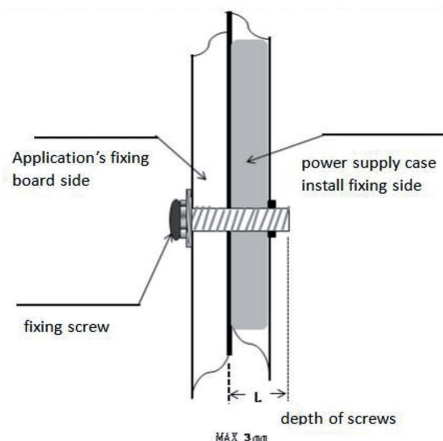
Mechanical dimensions



Input and Output Terminals Description

PIN Number	PIN Function	PIN Number	PIN Function
L	AC LINE	V+	DC output +
N	AC NEUTRAL	V-	DC output -
FG	EARTH		

Installation



Warning

- Use mounting screws by M4 * 6mm, 0.8N·m
- Max depth of screws into housing is 3mm
- Right picture with more details.
- Connector tightening torque:
Input Terminal: 1.0N·m
Output Terminal: 1.0N·m