

## PFC 1500W Single Output power supply

## AK1500 series



## Features :

## Universal AC input with active PFC

### Programmable output Voltage ( 30% ~ 105% )

### Programmable output Current ( 40% ~ 105% )

## High efficiency up to 90%

### +5V / 0.5A auxiliary output

### Intelligent LED indicators

**1.5U profile, High power density 10.8w / in<sup>3</sup>**

### Forced current sharing at parallel operation

**Power OK signal ( Power good, Logic low)**

### Remote ON-OFF, Remote sense function

**Protections : OVP, OLP, OTP, SCP, Fan failure**

### 3 years warranty

## SPECIFICATION

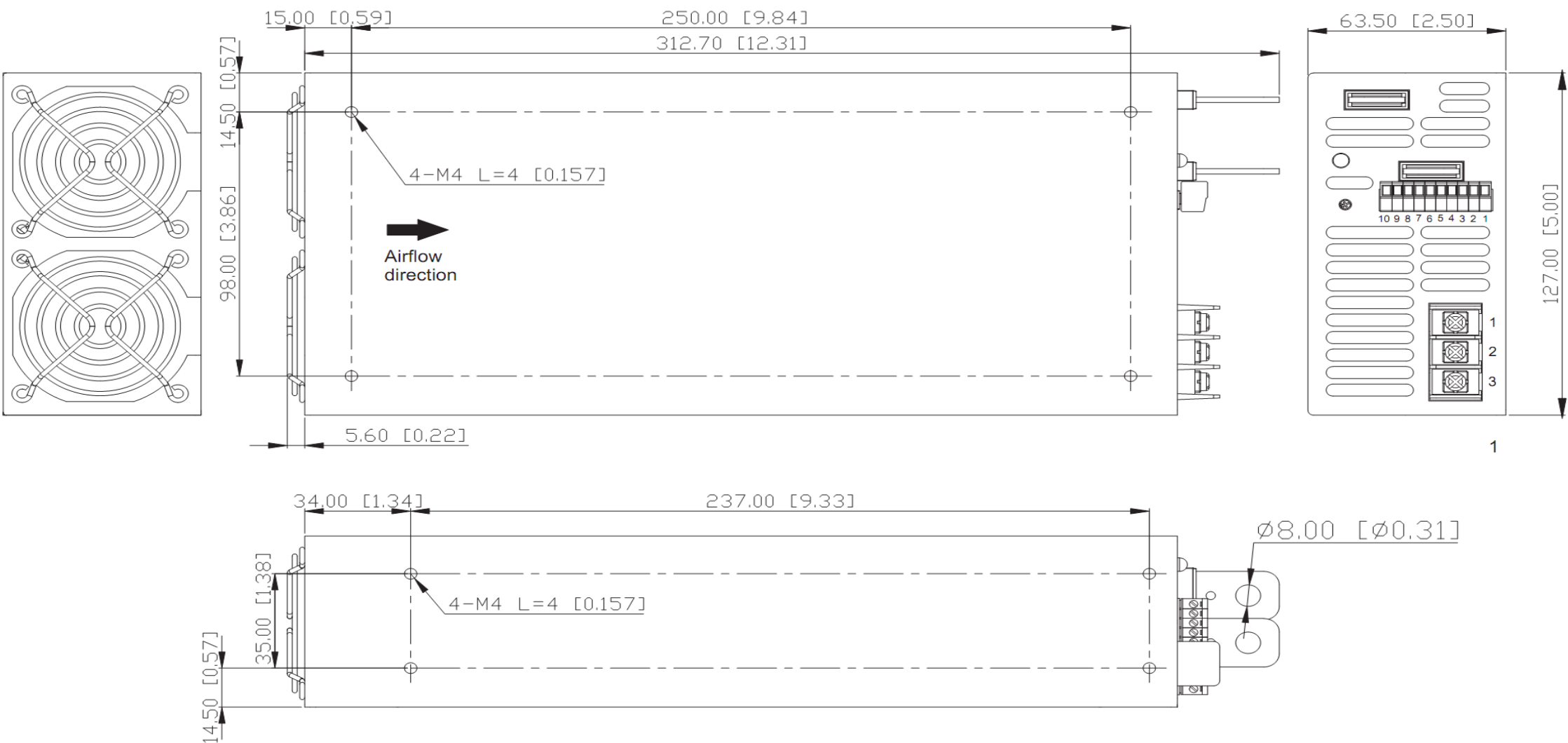
INPUT	Voltage and Frequency RANGE <sup>2</sup>	90 ~ 264VAC 47 ~ 63Hz, or 127 ~ 370VDC					
	AC CURRENT	18A / 115VAC, 9A / 230VAC					
	INRUSH CURRENT(Typ.)	30A / 115VAC, 45A / 230VAC					
	LEAKAGE CURRENT	<2.5mA / 240VAC					
	Power Factor (Typ.)	EN61000-3-2 (0.98 / 230VAC, 0.99 / 115VAC at full load)					
MODEL		AK-1500-12	AK-1500-15	AK-1500-24	AK-1500-27	AK-1500-48	
OUTPUT	DC VOLTAGE RANGE	12V	15V	24V	27V	48V	
	RATED CURRENT	125A	100A	62.5A	55.5A	31.3A	
	CURRENT RANGE	0~125A	0~100A	0~62.5A	0~55.5A	0~31.3A	
	RATED POWER	1500W	1500W	1500W	1500W	1500W	
	Ripple & Noise (max.) <sup>3</sup>	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	
	VOLTAGE ADJ. RANGE	±5.0% Typical adjustment by potentiometer					
	VOLTAGE TOLERANCE <sup>4</sup>	±1.0%					
	Line Regulation	±0.5%					
	Load Regulation	±0.5%					
	Setup, Rise Time	800ms, 200ms at full load					
	Hold Up Time (Typ.)	16ms / 230VAC at full load					
	EFFICIENCY (Typ.)	87%	88%	89%	89%	90%	
PROTECTION	Over Load	105 % ~ 110 rated output power					
	Over Voltage	Variable OVP, 125% ± 10% Vout. Protection type: Latch-style (Recovery after reset AC power ON or inhibit)					
	Over Temperature	80±5°C					
FUNCTION	Auxiliary Power	5V @ 0.3A ( +/- 3% )					
	Remote ON/OFF Control	External switch or NPN Transistor to turn ON / OFF					
	Power OK Signal	Open drain signal low when PSU turns on, Max. sink current: 20mA, Max. drain voltage: 40V.					
	Output Voltage Trim	Adjustment of output voltage is between 30 ~ 105% of rated output					
	Output Current Trim	Adjustment of output current is between 40 ~ 105% of rated output					
	Parallel (Current Sharing) <sup>5</sup>	Please refer to function					
ENVIRONMENT	WORKING TEMP.	-25 ~ +60°C (Refer to output load de-rating curve)					
	WORKING HUMIDITY	20 ~ 90% R.H non-condensing					
	STORAGE TEMP., HUMIDITY	-40~+85°C, 10 ~95% R.H					
	TEMP. COEFFICIENT	±0.02%/°C (0 ~ 50°C)					
	VIBRATION	Compliance to IEC 68-2-6, IEC 68-2-64					
SAFETY & EMC	SAFETY STANDARDS	UL 60950-1, 2 Edition, TUV EN60950-1 : 2006+A11 Approved					
	WITHSTAND VOLTAGE	I/P-O/P: 3KVAC I/P-FG: 1.5KVAC O/P-FG: 0.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG: 100MΩ / 500VDC					
	EMI CONDUCTION & RADIATION	EN55022: 2006 Class B					
	HARMONIC CURRENT	EN61000-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005					
	EMS IMMUNITY	EN61204-3: 2000, industry level, criteria A EN55024: 1998+A1: 2001+A2: 2003 light industry level, criteria A					
OTHERS	MTBF	166.2K HRS MIL-HDBK-217F					
	Cooling	Controlled by power rating & temperature (Internal ball bearing fan)					
	DIMENSION	280x127x63.5 mm / 11.02x5.00x2.50 inch					
	PACKING	3.2 kg ; 6pcs / 19.2kg / 0.98 CUFT					
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. 2. De-rating may be needed under low input voltages. Please check the de-rating curve for more details. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47 uf parallel capacitor. 4. Tolerance: includes set up tolerance, line regulation and load regulation. 5. In parallel connection, maybe only one unit operate if the total output load is less than 5% of rated load condition. 6. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.						

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Mechanical Specification

Unit:mm/inch



AC Input Terminal  
Pin No. Assignment

Pin No.	Assignment
1	ACL
2	ACN
3	⏏

Control pin number assignment

Pin No.	Assignment	Pin No.	Assignment	Pin No.	Assignment
1	VS+	5	EN-	9	ACI
2	VO+	6	GND	10	PAR
3	AUX	7	P.OK		
4	EN+	8	VCI		

Function Description

Pin No.	Function	Description
1	VS+	Remote voltage sense (-)
2	VS-	Local output voltage sense (-)
3	AUX	+5V / 0.5A Auxiliary power
4	EN+	Inhibit ON/OFF (+)
5	EN-	Inhibit ON/OFF (-)
6	GND	Ground
7	P.OK	Power OK
8	VCI	V Program
9	ACI	I Program
10	PAR	Parallel operation current share

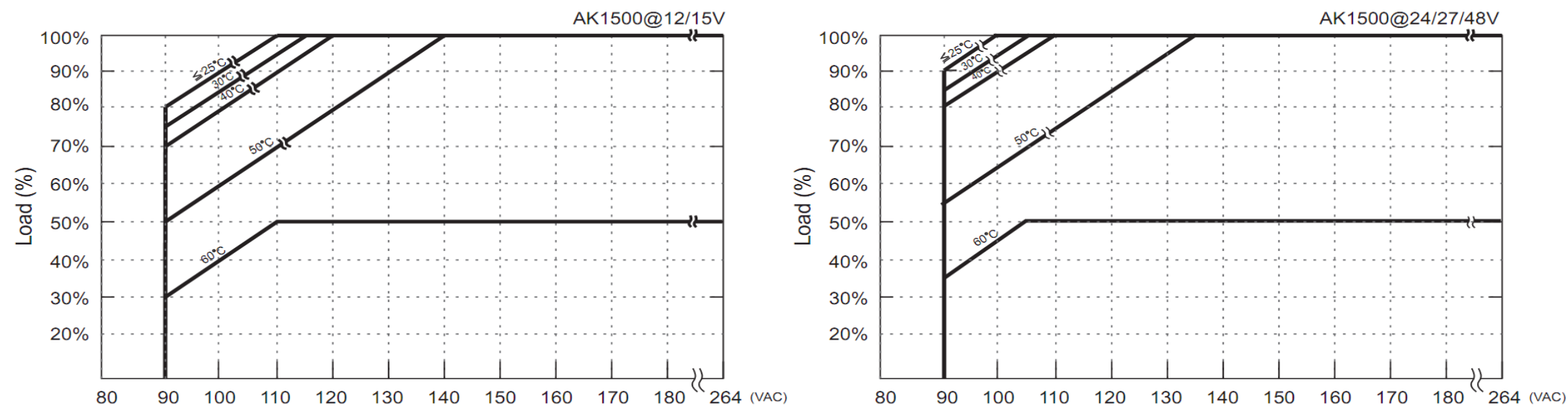
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LED Status

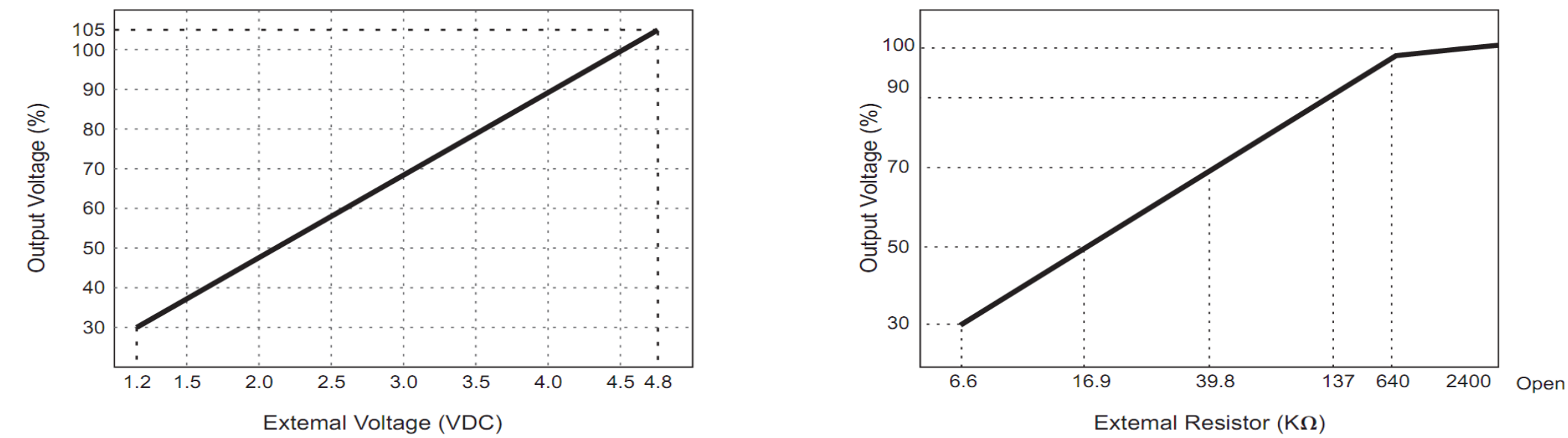
Green LED	LED Signal	Status
Solid	<div></div>	Power OK
Slow Blink	<div></div>	Power Standby
Red LED	LED Signal	Status
Fast Blink	<div></div>	Over Voltage Protection ( OVP )
Solid	<div></div>	Over Load Protection ( OLP )
		Output Shorted Circuit Protection ( SCP )
		Under Voltage Protection ( UVP )
		Over Temperature Protection ( OTP )
Slow Blink	<div></div>	Fan Failure
Intermittent Blink	<div></div>	Power Failure

De-rating Curve



Function Manual

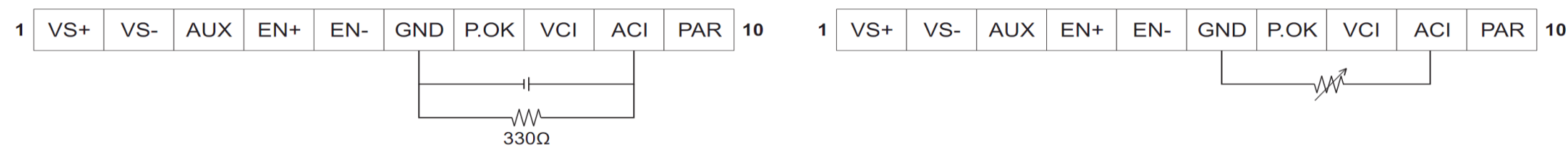
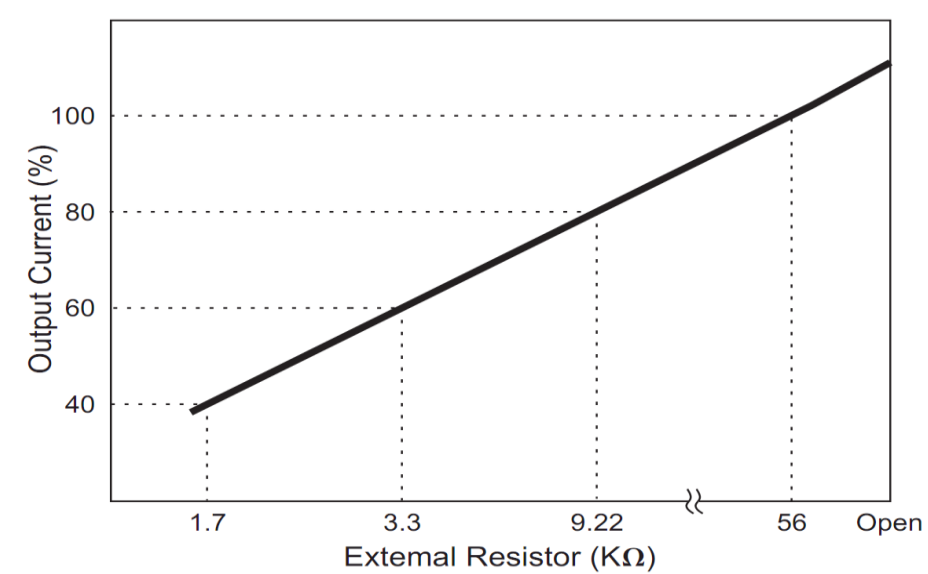
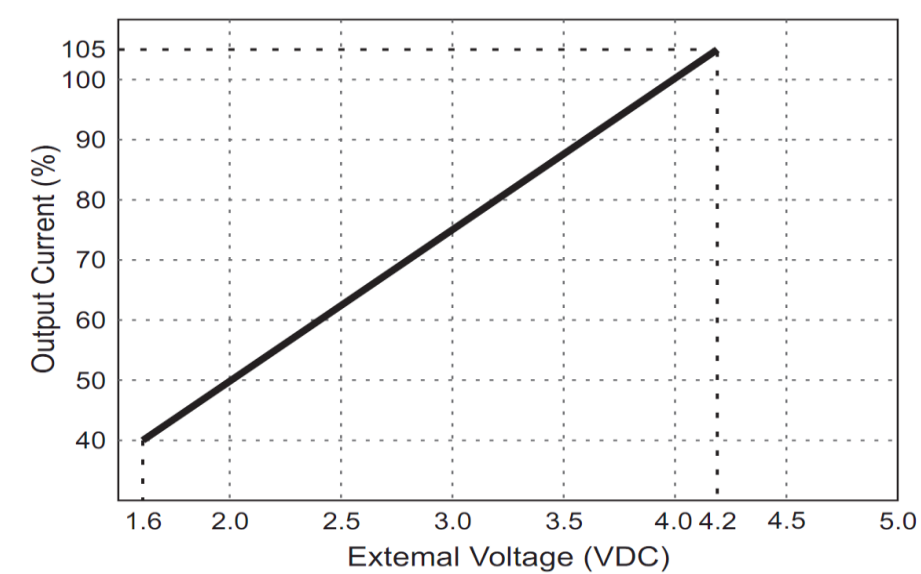
1. Output Voltage Trim



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2. Output Current Trim



1

VS+

VS-

AUX

EN+

EN-

GND

P.OK

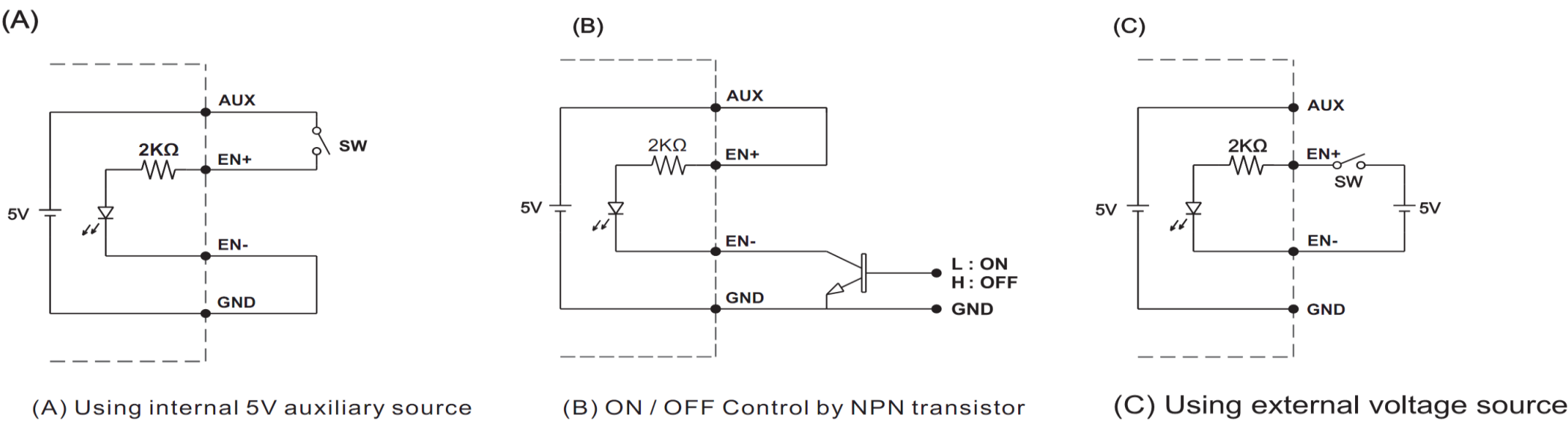
VCI

ACI

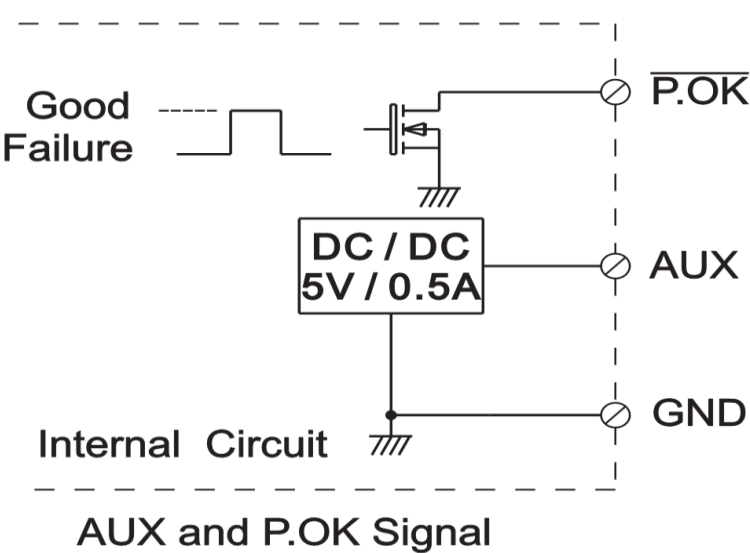
PAR

10

3. Remote ON/OFF

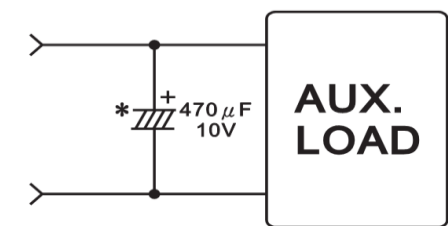


4. Power OK Signal



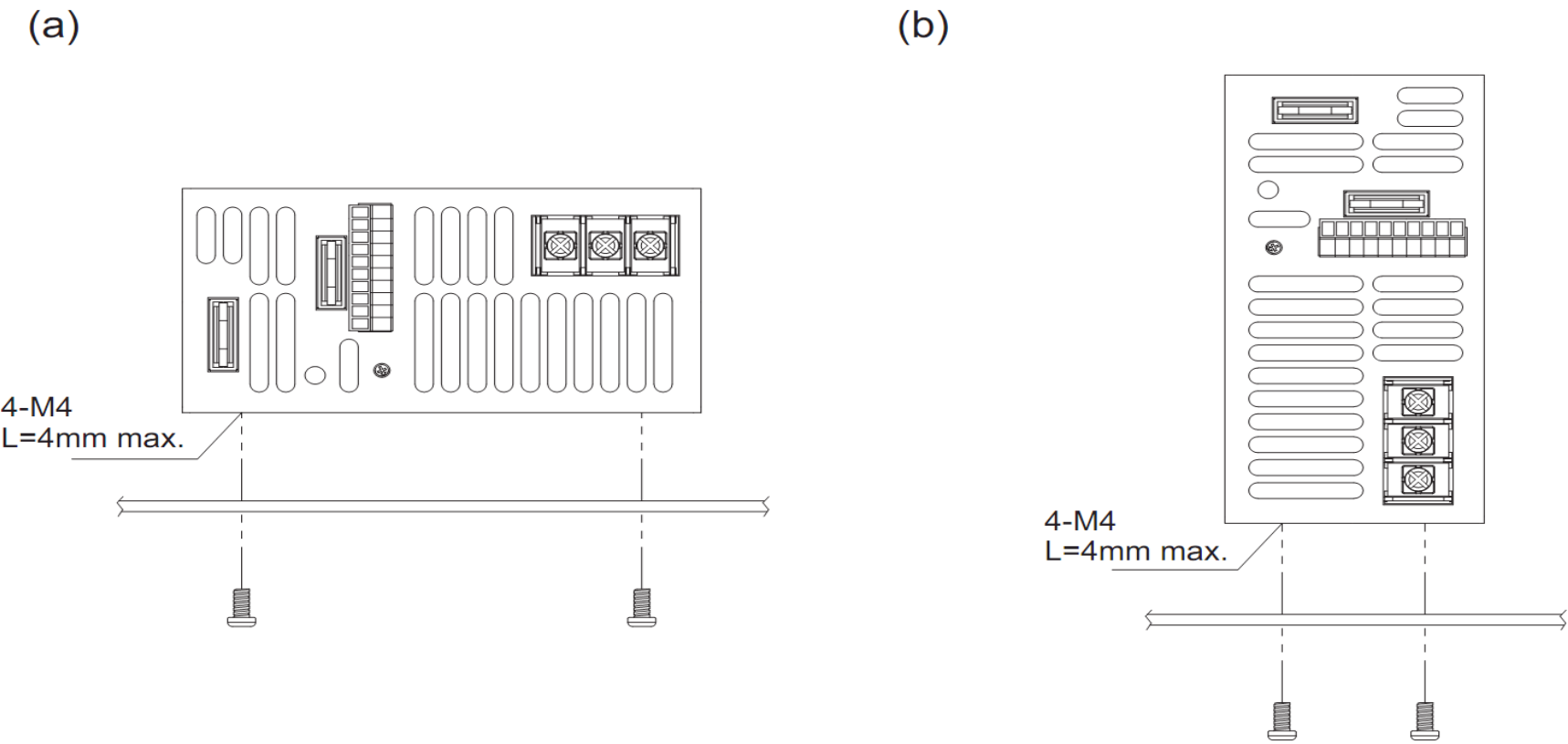
\*Place an additional capacitor to have a better performance of auxiliary power operation.

\*The grounding of "AUX" power should be connected to "GND" port. If "V-" is connected as Grounding, make sure to short the GND and V- ports.



■ Installation Instruction

1. Mounting Directions
- 1-1 Recommended standard mounting methods:



2. Mounting Method
- 2-1 There are ventilating holes on the front and back side panels, do not obstruct; allow 50mm at least for air flow.
- 2-2 The Maximum allowable penetration of screw is 4mm. Incomplete threading should not be penetrated.
- 2-3 Recommended the torque of mounting screw:  
M4 screw: 1.27N • m (13.0kgf • cm)

