COTEK

1500W Single Output Power Supply — AK-1500 series

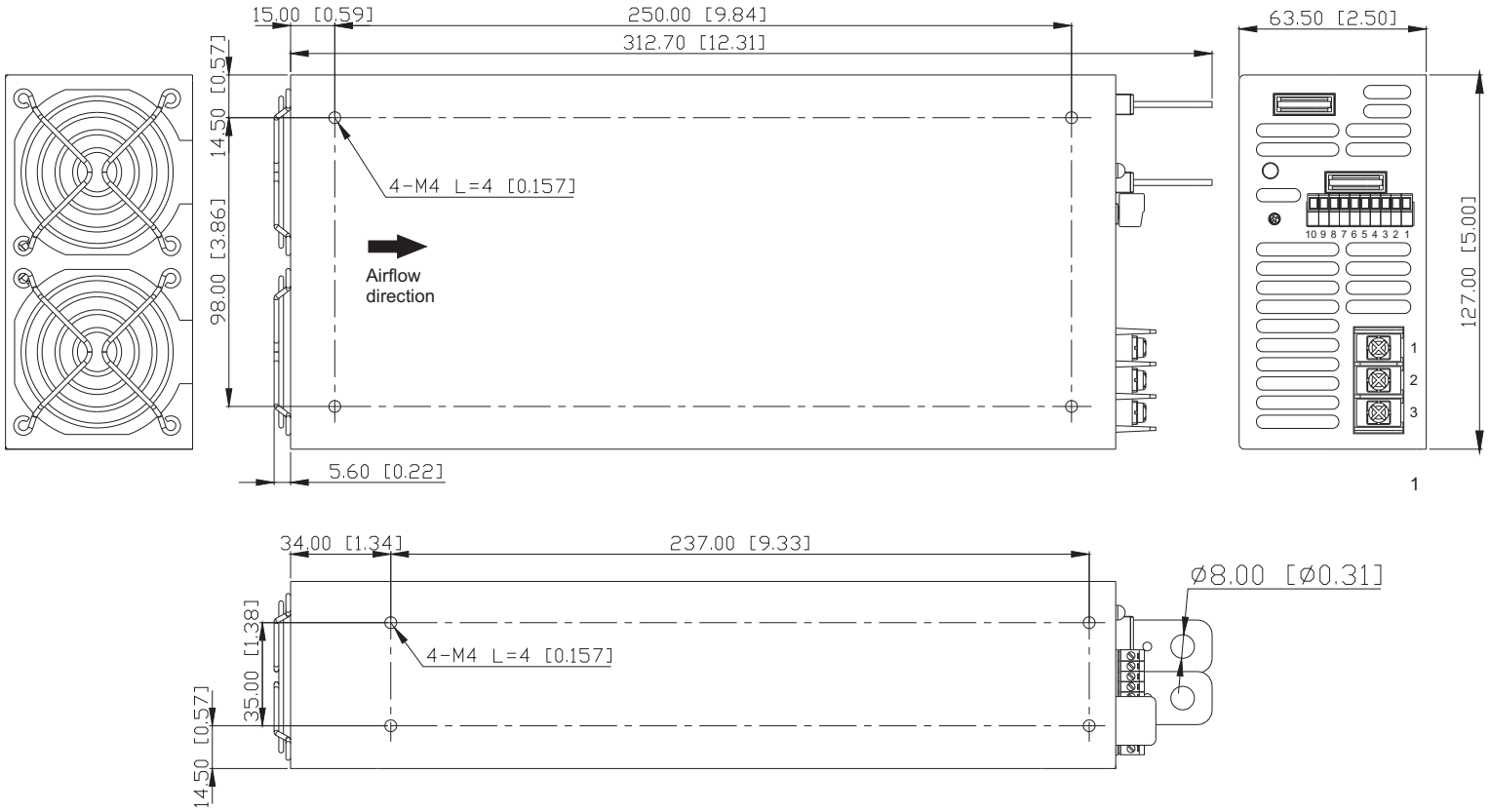
Features :

- 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^3
- 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

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.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p
	Voltage Adj. Range	±5.0% Typical adjustment by potentiometer. (VR1)				
	Voltage Tolerance Note.3	±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				
Input	Voltage Range Note.4	90 ~ 264VAC 127 ~ 370VDC				
	Frequency Range	47 ~ 63Hz				
	Power Factor (Typ.)	EN61000-3-2 (0.98 / 230VAC, 0.99 / 115VAC at full load)				
	Efficiency (Typ.)	87%	88%	89%	89%	90%
	AC Current (Typ.)	18A / 115VAC, 9A / 230VAC				
	Inrush Current (Typ.)	30A / 115VAC, 45A / 230VAC				
	Leakage Current	<2.5mA / 240VAC				
Protection	Over Load	105 % ~ 110% rated output power				
		Protection type : Constant current limiting, Latch-style (Recovery after reset AC power ON or inhibit)				
	Over Voltage	Variable OVP, 120% ± 5% Vout. Protection type: Latch-style (Recovery after reset AC power ON or inhibit)				
	Over Temperature	80±5°C				
		Protection type: Shut down o/p voltage (Auto recovery after temperature goes down)				
Function	Auxiliary Power	5V @ 0.5A (+/- 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) Note.5	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	10 ~ 500Hz, 5G 10min./1 cycle, period for 60 min each along X,Y,Z axes Compliance to IEC 60068-2-6-2007				
Safety & EMC Note.6	Safety Standards	UL 60950-1, 2nd 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, EN55024: 1998+A1: 2001+A2: 2003 light industry level, criteria A				
Other	Cooling	Controlled by power rating & temperature (Internal ball bearing fan)				
	Dimension (L*W*H)	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.Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47 uf parallel capacitor. 3.Tolerance: includes set up tolerance, line regulation and load regulation. 4.De-rating may be needed under low input voltages. Please check the de-rating curve for more details. 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.					

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	Mating Housing	Terminal
1	VS+	5	EN-	9	ACI	ECH350R-10P	EC350V-10P
2	VO+	6	GND	10	PAR		
3	AUX	7	P.OK				
4	EN+	8	VCI				

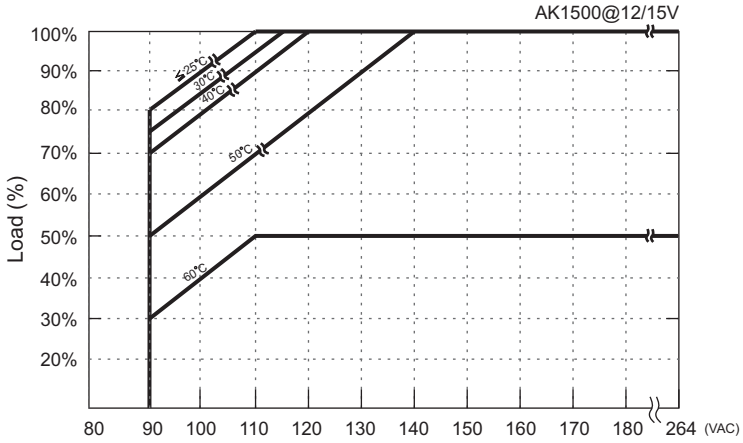
Function Description

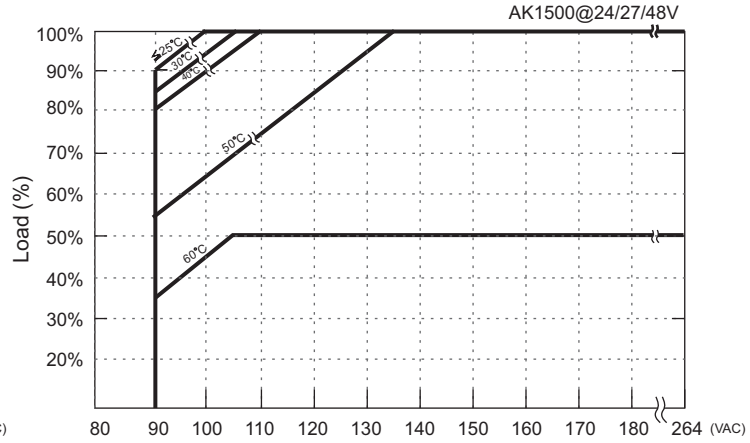
Pin No.	Function	Description
1	VS+	Remote voltage sense (–)
2	VS-	Local output voltage sense (–)
3	AUX	+5V / 0.5A Auxiliary power
4	EN+	Inhibit ON/OFF (+)
5	EN-	Inhibit ON/OFF (–)
6	GND	Ground
7	P.OK	Power OK
8	VCI	V Program
9	ACI	I Program
10	PAR	Parallel operation current share

LED Status

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

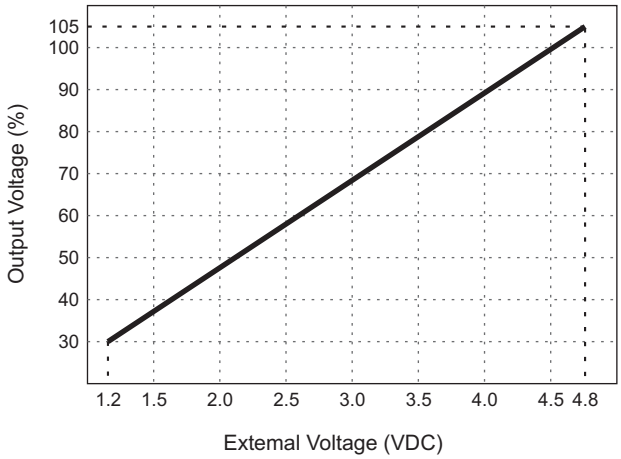
De-rating Curve

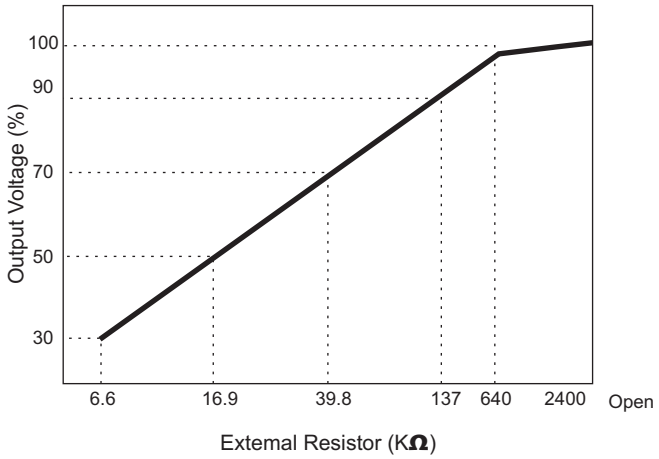


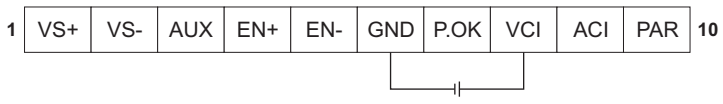


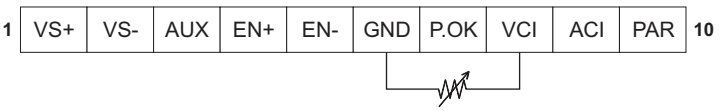
Function Manual

1. Output Voltage Trim

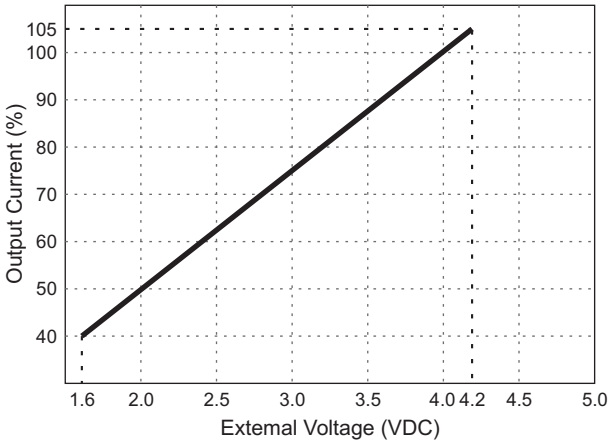


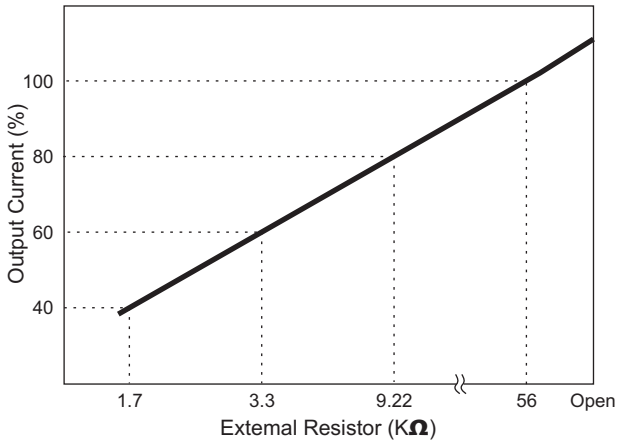


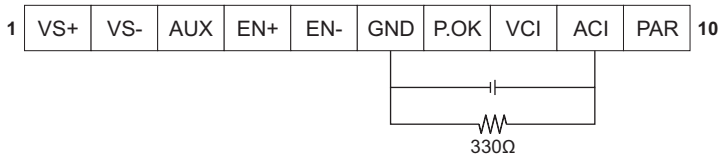


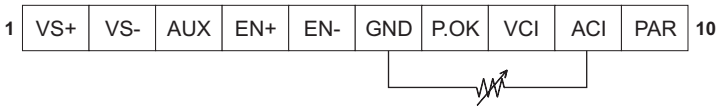


2. Output Current Trim

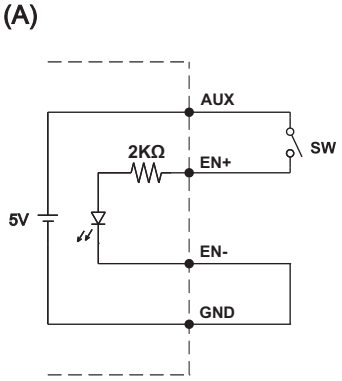




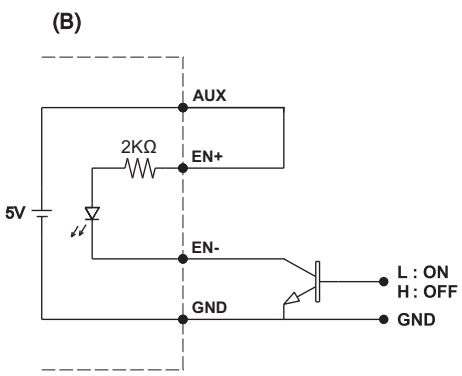




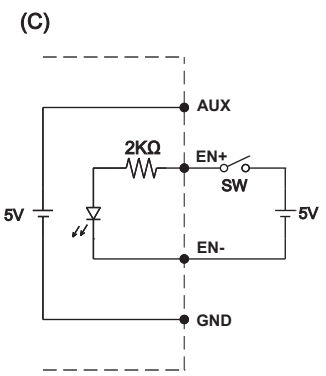
3. Remote ON/OFF



(A) Using internal 5V auxiliary source

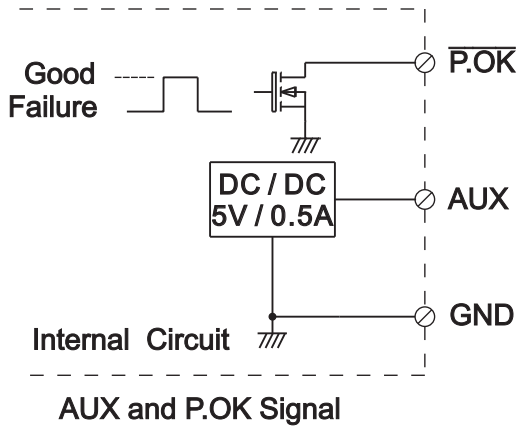


(B) ON / OFF Control by NPN transistor



(C) Using external voltage source

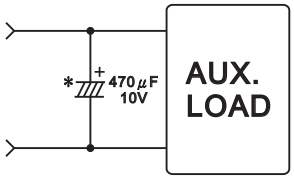
4. Power OK Signal



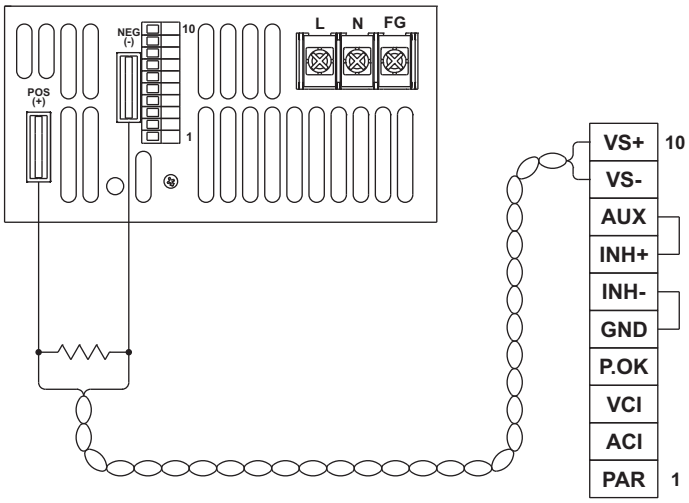
AUX and P.OK Signal

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

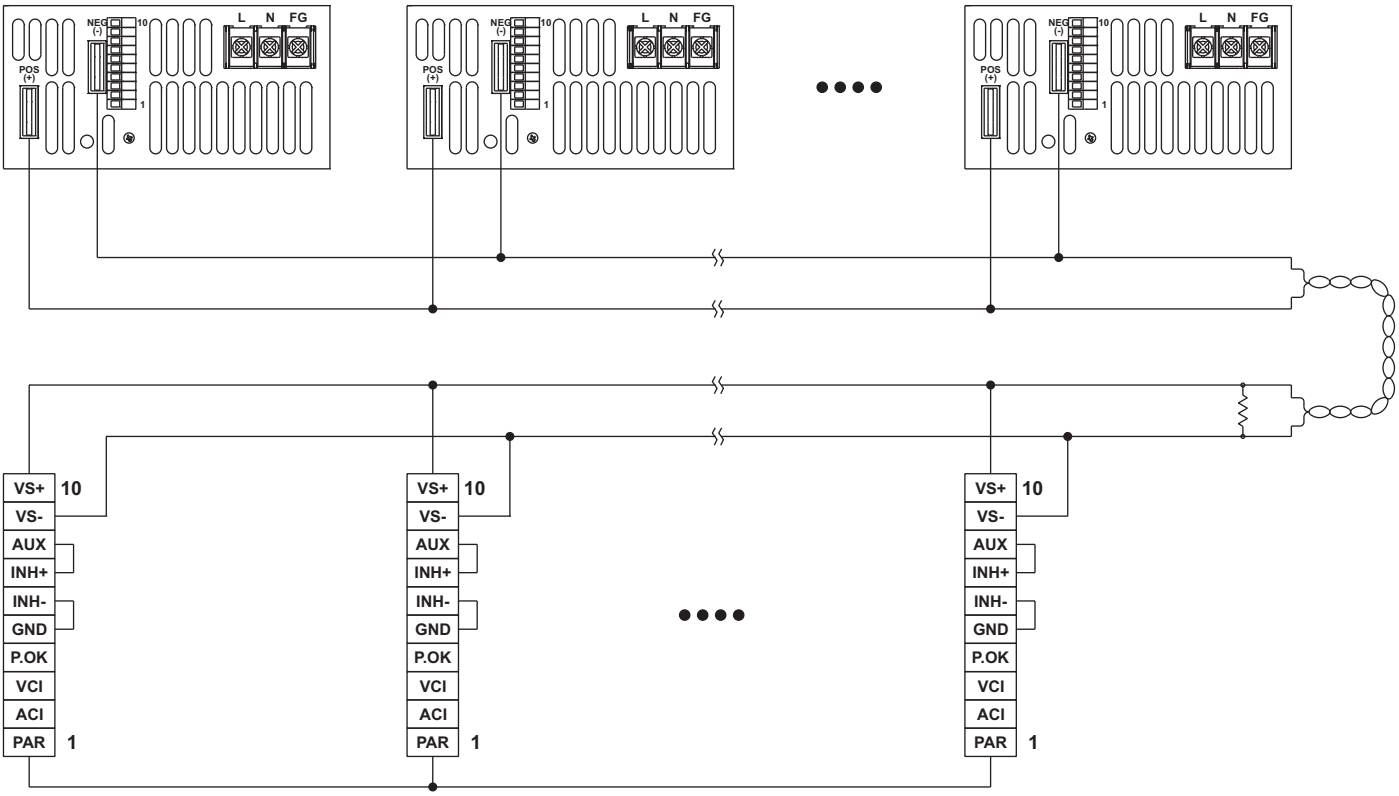
*The grounding of "AUX" power should be connected to "GND" port. If " V-" is connected as Grounding, make sure to short the GND and V- ports.



5. Remote Sensel



6. Current sharing with remote sensing

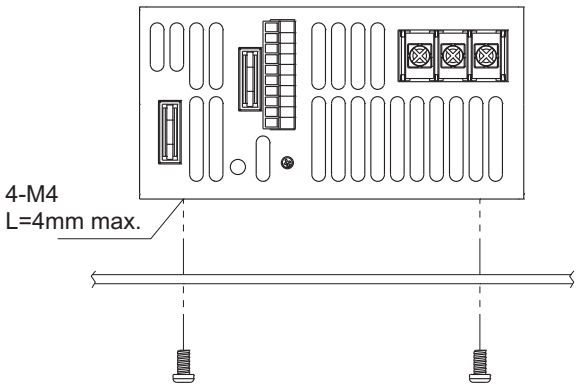


Installation Instruction

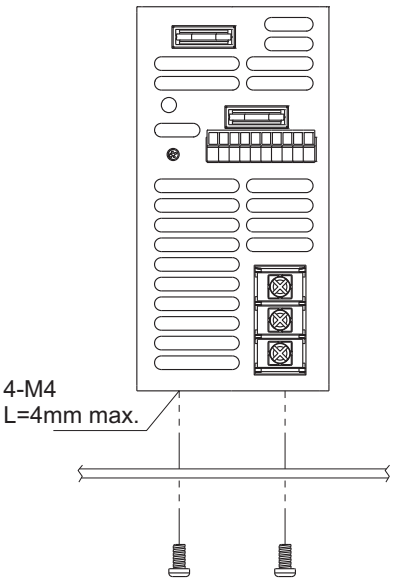
1. Mounting Directions

1-1 Recommended standard mounting methods:

(a)



(b)



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)