

# PAE3000 Series 3000W Programmable single output



## Features:

- Universal AC input / Full range
- Programmable output Voltage (0% ~ 105%)
- Programmable output Current (0% ~ 105%)
- Forced current sharing at parallel operation
- Constant current limit
- Selectable +5V / 0.5A or +9V / 0.3A auxiliary output
- Global control via UART (5V TTL)
- Remote setting multiple PSU via UART (5V TTL), I<sup>2</sup>C or RS485 (Optional)
- Power OK signal
- Remote ON / OFF, Remote sense function
- Protection: OVP, OLP, OTP, OCP, Fan failure

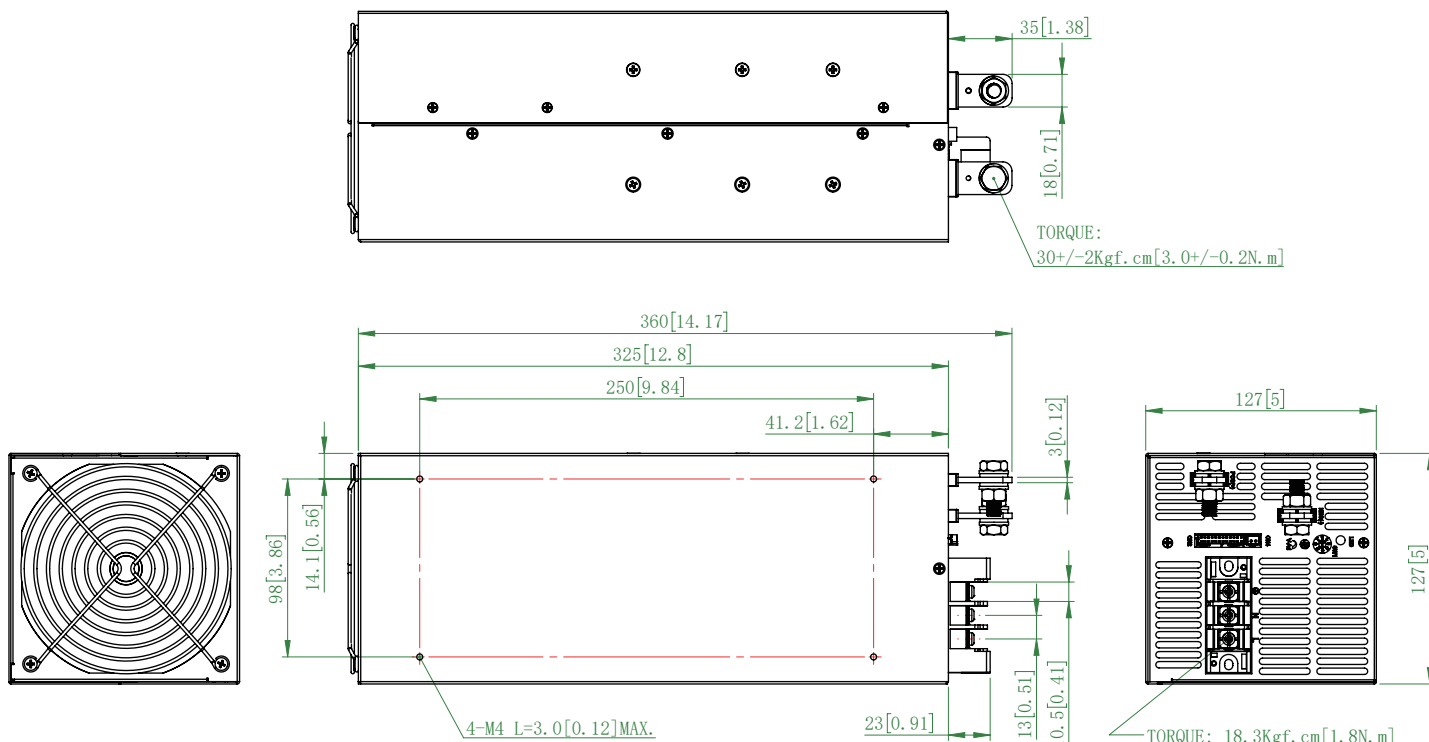


IEC62368-1

MODEL		PAE3000-12	PAE3000-15	PAE3000-24	PAE3000-30	PAE3000-36	PAE3000-48	PAE3000-60	
Output	DC Voltage Range	12V	15V	24V	30V	36V	48V	60V	
	Rated Current	250A	200A	125A	100A	83.5A	62.5A	50A	
	Current Range	0~250A	0~200A	0~125A	0 ~ 100A	0 ~ 83.5A	0 ~ 62.5A	0 ~ 50A	
	Rated Power	3000W	3000W	3000W	3000W	3000W	3000W	3000W	
	Ripple & Noise (Max.)	Note.2 150mVp-p	150mVp-p	240mVp-p	300mVp-p	360mVp-p	480mVp-p	600mVp-p	
	Voltage Adj. Range	±5.0% Typical adjustment by potentiometer. (VR1)							
	Voltage Tolerance	Note.3	±2.0%						
	Current Tolerance	±3.0% (rated output current of single unit)							
	Line Regulation	±1.0%							
	Load Regulation	±1.0%							
Setup, Rise Time	2000ms, 100ms at full load								
Hold Up Time (Typ.)	14ms / 230VAC at full load								
Input	Voltage Range	Note.4 90 ~ 264VAC, 127 ~ 370VDC	(Refer to de-rating curve)						
	Frequency Range	47 ~ 63Hz							
	Power Factor (Typ.)	0.95 / 230VAC, 0.98 / 115VAC at full load							
	Efficiency (Typ.)	89%	90%	91%	91%	92%	92%	93%	
	AC Current (Typ.)	36A / 115VAC (3000W), 18A / 230VAC (3000W)							
	Inrush Current (Typ.)	60A / 115VAC, 90A / 230VAC							
Leakage Current	< 3.5mA / 240VAC								
Protection	Over Load	105% rated output power Protection type: Constant current limit							
	Over Voltage	Variable OVP, 120 ± 7% Vout. Refer to VCI VS OVP curve. Protection type: Latch-style (Recovery after reset AC power ON or inhibit)							
	Over Temperature	85 ±5°C detect on NTC, Protection type: Auto recovery after temperature goes down							
Function	Auxiliary Power	Selectable +5V / 0.5A or +9V / 0.3A auxiliary output							
	Remote ON / OFF Control	By external switch							
	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 0 ~ 105% of rated output							
	Output Current Trim	Adjustment of output current is between 0 ~ 105% of rated output							
Parallel (Current Sharing)	Note.5	Please refer to page 5							
Environment	Working Temp.	-25 ~ +60°C (Refer to de-rating curve)							
	Working Humidity	20 ~ 90% RH non-condensing							
	Storage Temp. & Humidity	-40 ~ +85°C, 10 ~ 95% RH							
	Temp. Coefficient	±0.02% / °C (0 ~ 50°C)							
Vibration	10 ~ 500Hz, 2G 10min. / 1cycle, period for 60min. each along X, Y, Z axes Compliance to IEC 68-2-6, IEC 68-2-64								
Safety & EMC	Safety Standards	Certified EN 62368-1; UL 62368-1							
	Withstand Voltage	Note.7	I/P-O/P: 3KVAC (4242VDC), I/P-FG: 1.5KVAC (2121VDC), O/P-FG: 0.5KVAC (707VDC)						
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC							
	EMI Conduction & Radiation	Certified EN 55032; EN 61204-3; EN 610000-6-3							
	Power Harmonic & Voltage Fluctuation and Flicker	Certified EN 61000-3-2; EN 61000-3-3							
EMS Immunity	Note.6	Certified EN 55035: 2017 / A11: 2020; IEC 61000-4-2,3,4,5,6,8,11							
Others	MTBF	152.7K HRS Certified MIL-HDBK-217F							
	Cooling	Load and temperature control fan							
	Dimension (WxHxD)	127x127x325mm/5.00x5.00x12.80 inch							
Packing	5.25kg; 4pcs / 25kg / 1.86CUFT								
Note	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF &amp; 47uF parallel capacitor.</p> <p>3. Tolerance: includes setup time tolerance, line regulation and load regulation.</p> <p>4. De-rating may apply in low input voltage. Please check the de-rating curve for more details.</p> <p>5. In parallel connection only one unit will operate if the total output load is less than 5% of the rated power.</p> <p>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.</p> <p>7. This test is done without enclosure: I/P-O/P 4242VDC. If with enclosure: I/P-O/P 2121VDC, I/P-FG: 2121VDC, O/P-FG: 707VDC</p>								

## Mechanical Drawings:

Unit:mm / inch

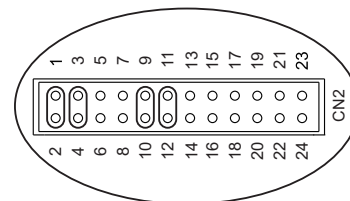


Recommended screw length is measured from the power supply surface

AC Input Terminal Pin No. Assignment

Pin No.	Assignment
1	L
2	N
3	⊥

CN4	1	VS+
	2	VS-



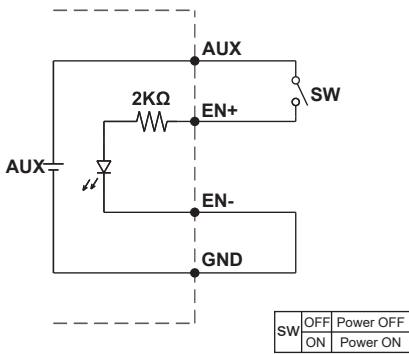
## CN2 Function Description:

Pin No.	Function	Description	Pin No.	Function	Description	Mating Housing / Contact	
1	VS+	Remote sense (+)	13	ACI	I Program	JST PHDR-24VS or equivalent	JST SPHD-002T-P0.5 or equivalent
2	VO+	Positive output voltage	14	GND	Ground		
3	VS-	Remote sense (-)	15	VCI	V Program		
4	VO-	Negative output voltage	16	GND	Ground		
5	POK	Power OK	17	AUX	+5V / 0.5A or +9V / 0.3A Auxiliary power		
6	GND	Ground	18	GND	Ground		
7	PAR	Parallel operation current share	19	SCL	Serial Clock used in the I <sup>2</sup> C interface		
8	VSET	Aux output setting	20	SDA	Serial Data used in the I <sup>2</sup> C interface		
9	EN-	Inhibit ON/OFF (-)	21	AUX	+5V / 0.5A or +9V / 0.3A Auxiliary power		
10	GND	Ground	22	GND	Ground		
11	EN+	Inhibit ON/OFF (+)	23	RX	For UART (5V TTL) Receiver function		
12	AUX	+5V / 0.5A or +9V / 0.3A Auxiliary power	24	TX	For UART (5V TTL) Transmission function		



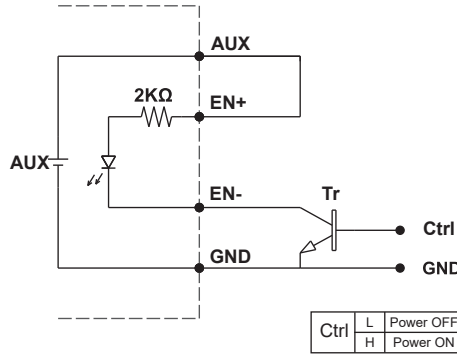
## Remote ON/OFF:

(A) Default Setting



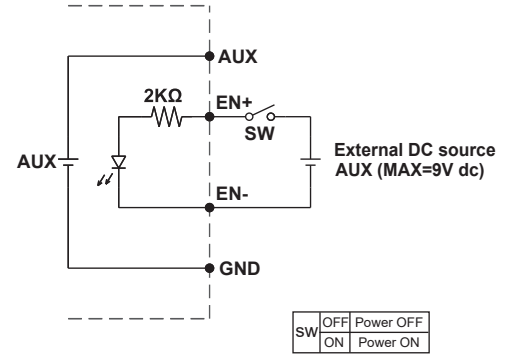
(A) Using internal 5V auxiliary source

(B)



(B) ON / OFF Control by NPN transistor

(C)



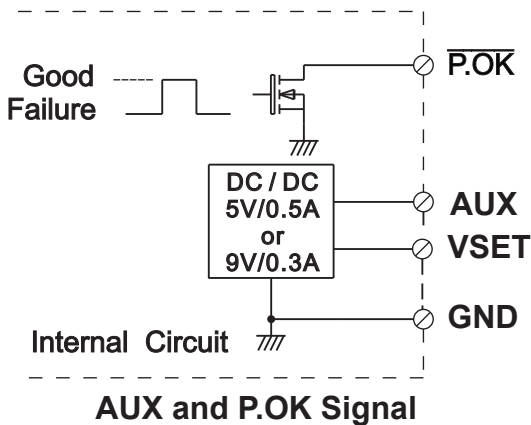
(C) Using external voltage source

\*GND shown in above diagram is referring to the GND of CN2, not the Grounding from main power(NEG-).\*

## Power OK Signal & Auxiliary Power Setting:

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

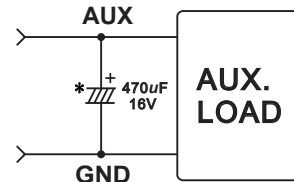
Open drain signal low when PSU turns on, Max. P.OK sink current: 20mA, Max. drain voltage: 40V.



AUX and P.OK Signal

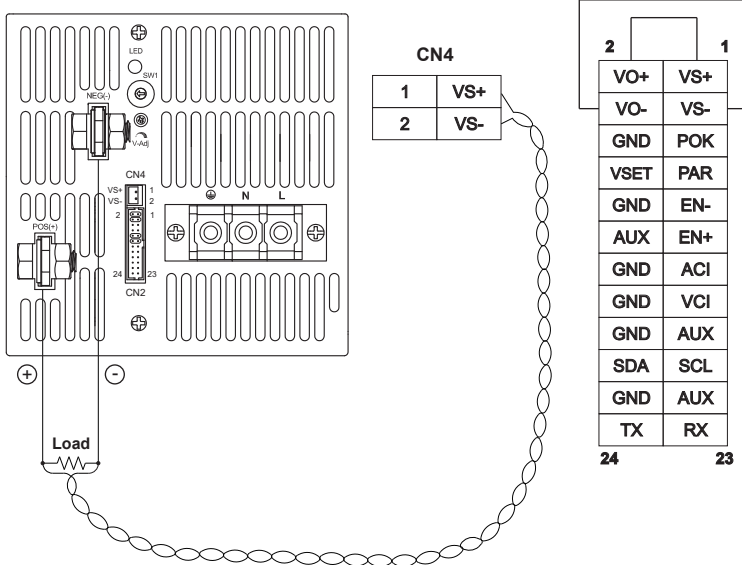
\*GND shown in above diagram is referring to the GND of CN2, not the Grounding from main power(NEG-).\*

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

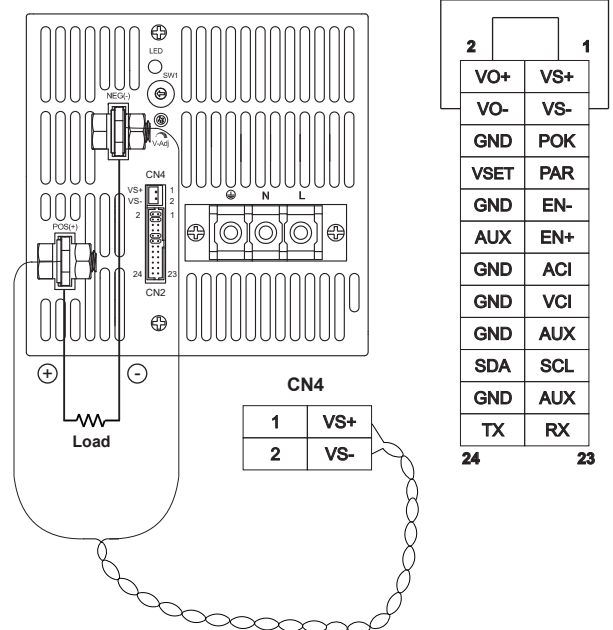


Do NOT exceed 5V/0.5A or 9V/0.3A

1. Remote Sense

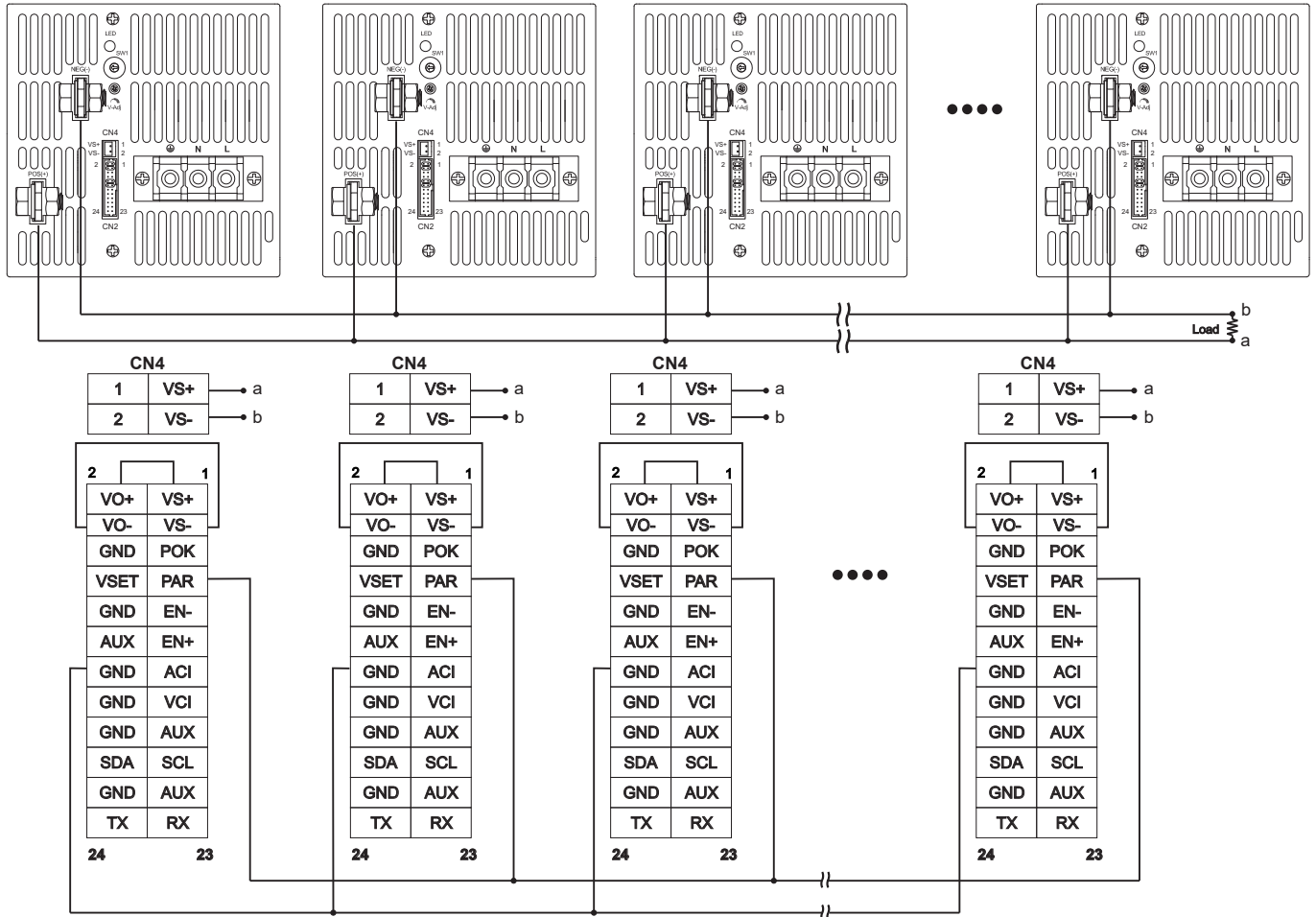


2. Local Sense (Default setting)



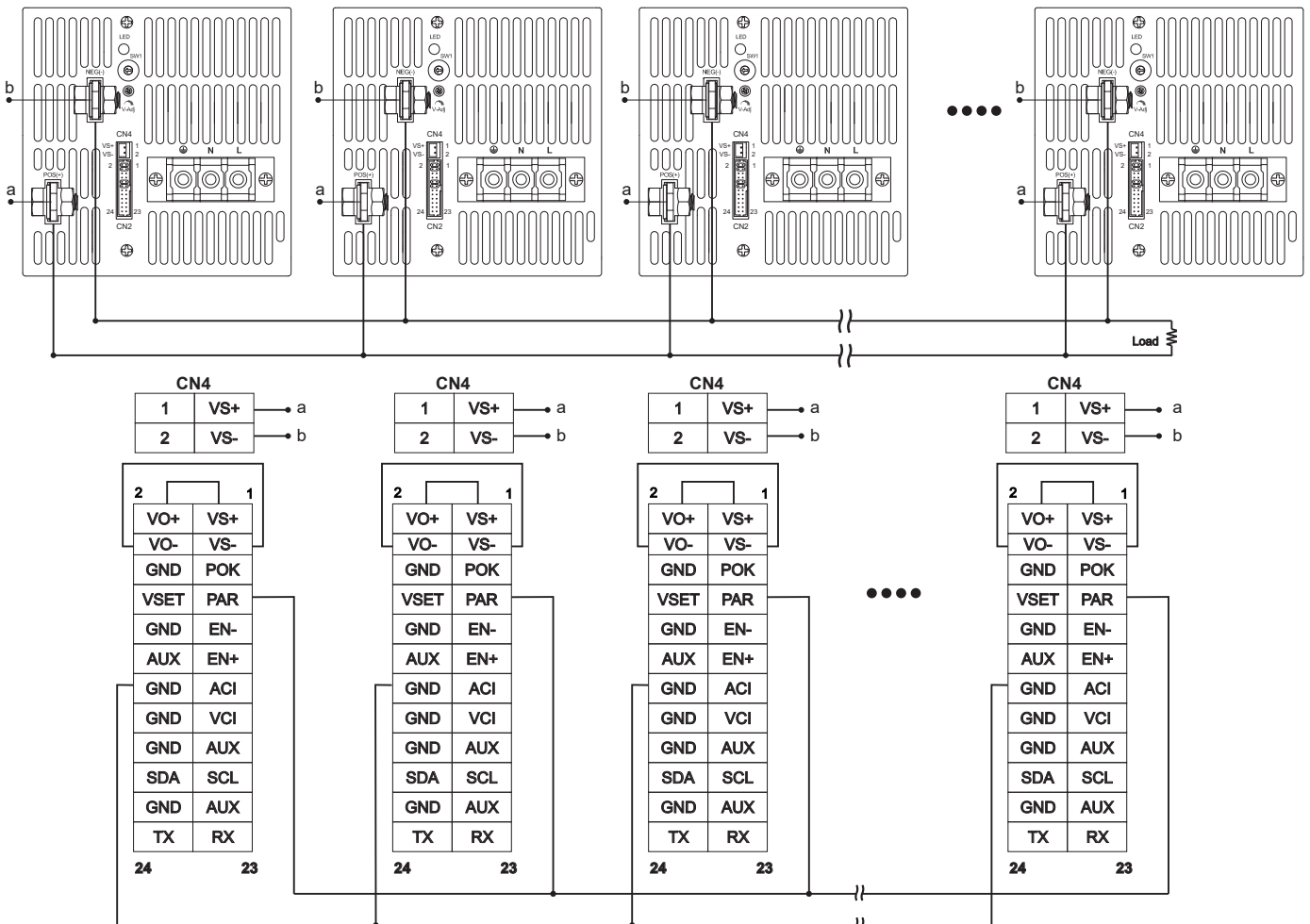
VS-,VS+ Compensation Voltage < 0.5V

### 3. Current Sharing with Remote Sensing(Parallel Connection)



Please connect PAR pins together for current sharing function

### 4. Current Sharing with Local Sensing



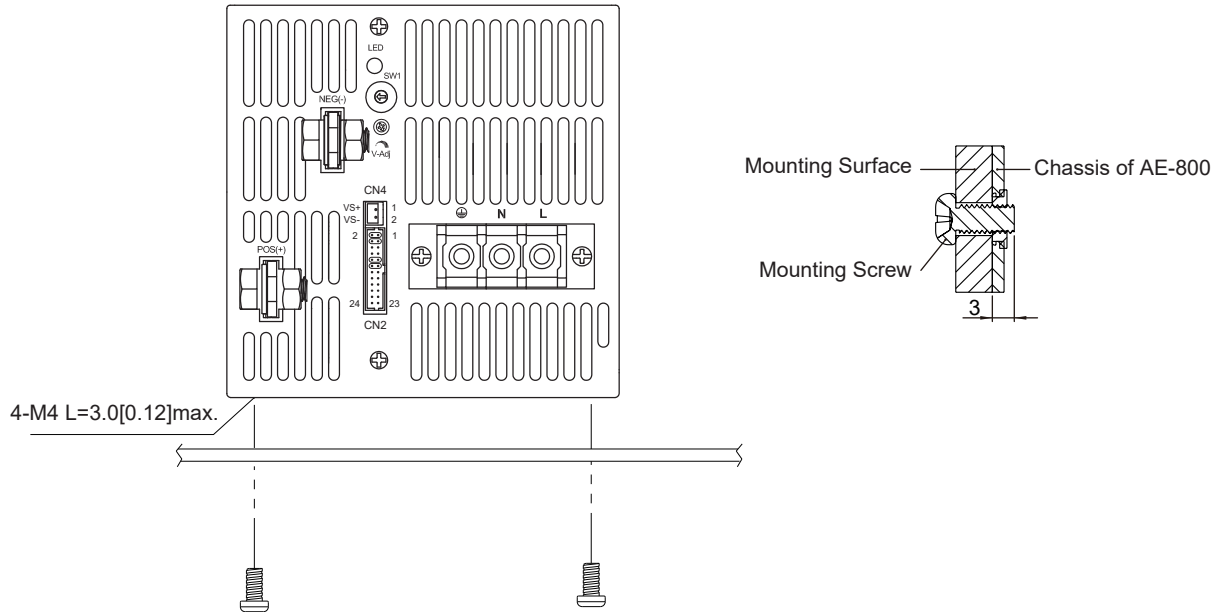
Please connect PAR pins together for current sharing function

## Installation Instruction:

### 1. Mounting Directions

1-1 Recommended standard mounting methods:

(a)



Recommended screw length is measured from the power supply surface

### 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 Recommended the torque of mounting screw:  
M4 screw: 1.27N • m (13.0kgf • cm)

