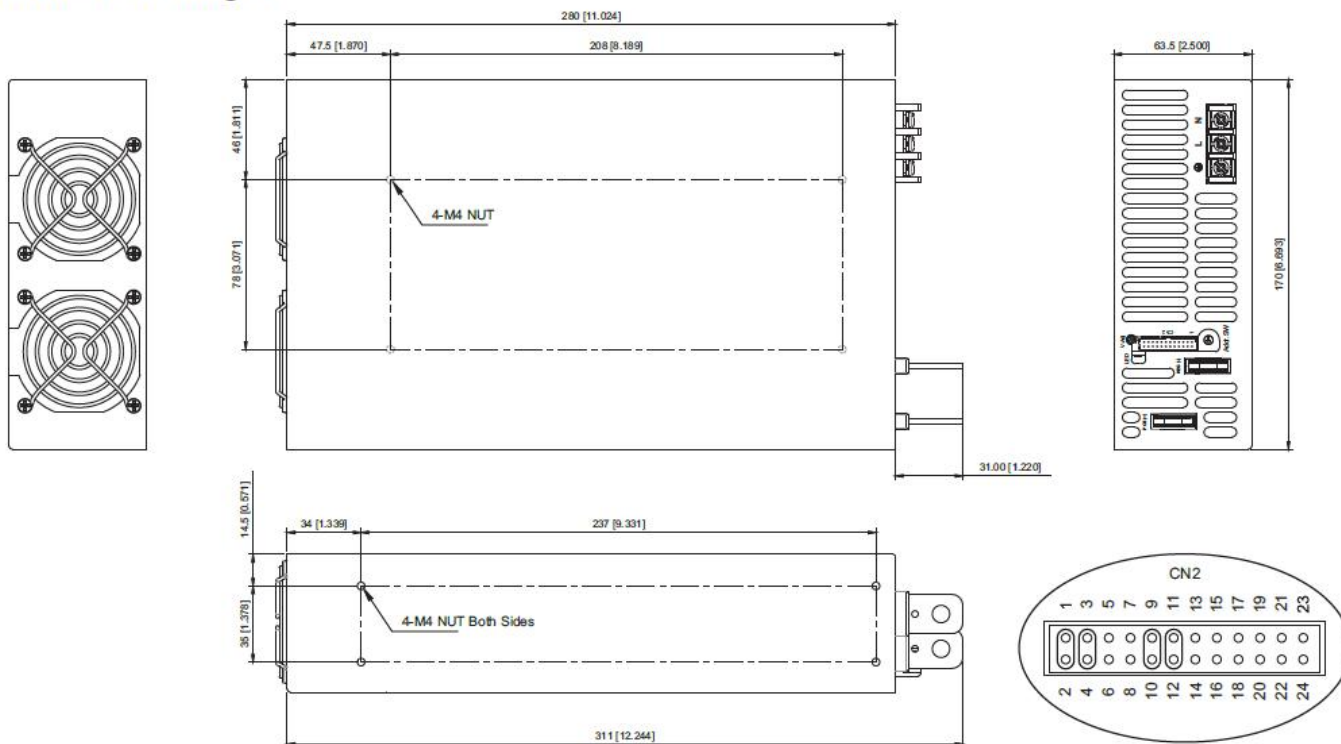


## HIGHLIGHTS

- Universal AC input / Full range
- Programmable output Voltage (0% ~ 105%)
- Programmable output Current (0% ~ 105%)
- High power density: 16.3W / cu. in.
- Forced current sharing at parallel operation
- Constant current limit
- Selectable +5V / 0.5A or +9V / 0.3A auxiliary output
- Global control via RS232
- Remote setting multiple PSU via RS232, RS485 & I<sup>2</sup>C
- Power OK signal
- Remote ON / OFF, Remote sense function
- Protection: OVP, OLP, OTP, SCP, Fan Failure
- 3 years warranty



## Mechanical Drawings:



### AC Input Terminal Pin No. Assignment

Pin No.	Assignment
1	ACL
2	ACN
3	⏏

### Control pin number assignment (CN2): JST S24B-PHDSS or equivalent

Pin No.	Assignment	Pin No.	Assignment	Pin No.	Assignment	Mating Housing / Contact	
1	VS+	9	EN-	17	AUX	JST PHDR-24VS or equivalent	JST SPHD-002T-P0.5 or equivalent
2	VO+	10	GND	18	GND		
3	VS-	11	EN+	19	SCL		
4	VO-	12	AUX	20	SDA		
5	POK	13	ACI	21	AUX		
6	GND	14	GND	22	GND		
7	PAR	15	VCI	23	NC.		
8	VSET	16	GND	24	NC.		

MODEL	PART NUMBER	OUTPUT	VOLTAGE	ADJ. RANGE (VOLTS)	LOAD REGULATION	RATED CURRENT (A)	RATED POWER (W)	RIPPLE & NOISE (P-P)	EFFICIENCY	MTBF (HRS.)
PL3000-12	400350-01-3	V1	12	±5.0%	±1.0%	200	2400	150mV	88%	
PL3000-15	400350-02-1	V1	15	±5.0%	±1.0%	160	2400	150mV	89%	
PL3000-24	400350-03-9	V1	24	±5.0%	±1.0%	125	3000	240mV	91%	
PL3000-30	400350-04-7	V1	30	±5.0%	±1.0%	100	3000	300mV	91%	
PL3000-36	400350-05-4	V1	36	±5.0%	±1.0%	83.5	3006	360mV	92%	
PL3000-48	400350-06-2	V1	48	±5.0%	±1.0%	62.5	3000	480mV	92%	
PL3000-60	400350-07-0	V1	60	±5.0%	±1.0%	50	3000	600mV	93%	

Output	Voltage Tolerance	±2%	Note 3
	Setup, Rise Time	800ms, 50ms at full load	
	Hold Up Time	14ms at 230VAC and full load	
Input	Voltage Range	90 ~ 264VAC, 127 ~ 370VDC	Note 4
	Frequency Range	47 ~ 63Hz	
	Power Factor (Typical)	0.95 / 230VAC, 0.98 / 115VAC at full load	
	AC Current (Typical)	19.7A / 115VAC (2000W), 14.5A / 230VAC (3000W)	
	Inrush Current (Typ.)	33A / 115VAC, 65A / 230VAC	
	Leakage Current	< 1.0mA / 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 at the secondary side of the controller board. 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)	Please refer to page 5	Note 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	
	T emp. 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	Meet UL 60950-1; EN 60950-1	
	Withstand Voltage	I/P-O/P: 3KVAC (4242VDC), I/P-FG: 1.5KVAC (2121VDC), O/P-FG: 0.5KVAC (707VDC)	Note 7
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC	
	EMI Conduction & Radiation	Certified EN 55022; EN 61204-3; EN 61000-6-3	
	Harmonic Current	Certified EN 61000-3-2; EN 61000-3-3	
	EMS Immunity	Certified EN 55024; EN 61204-3; EN 61000-6-1; IEC 61000-4-2, 3, 4, 5, 6, 8, 11	Note 6
Physical Characteristics	Cooling	Load and temperature control fan	
	Dimension (W x H x D)	170 x 63.5 x 280 mm / 6.69 x 2.50 x 11.02 inch	
	Packing	3.8kg; 4pcs / 16.2kg	

### Notes:

1. All parameters NOT specifically mentioned are measured at 230VAC input, rated load and 25°C ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 0.47uF parallel capacitor.
3. Voltage tolerance includes setup time tolerance, line regulation and load regulation
4. De-rating may apply in low input voltage. Check the de-rating curve for more details.
5. In parallel connection, only one unit will operate if the total output load is less than 5% of the rated load condition.
6. The power supply is considered a component which will be installed into a unit of equipment. The equipment itself must also be certified as EMC compliant.
7. Conduct this test without enclosure.

## 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	NC.	For RS232 Receiver function		
12	AUX	+5V / 0.5A or +9V / 0.3A Auxiliary power	24	NC.	For RS232 Transmission function		

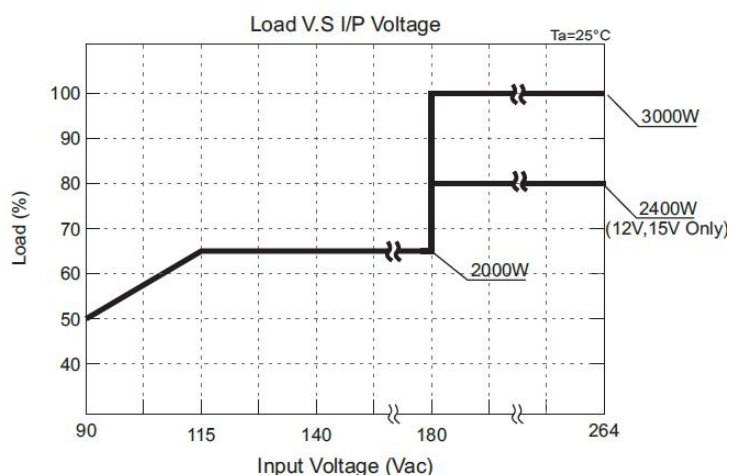
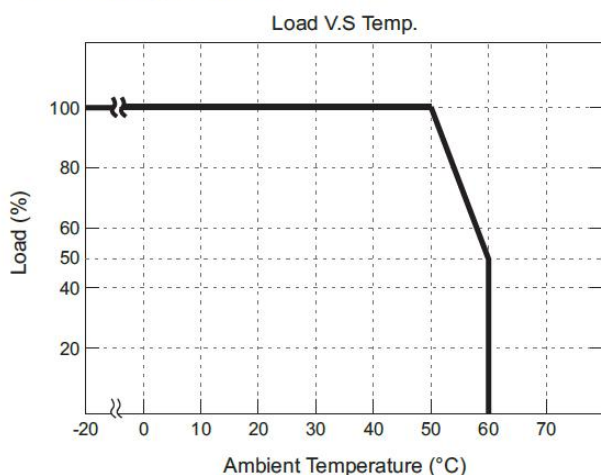
## LED Status:

LED	LED Signal	Status
Solid(Green)		Power OK (Local mode)
Solid(Orange)		Power OK (Remote mode)
Slow Blink(Green)		Power Standby
Fast Blink(Red)		Over Voltage Protection ( OVP )
Solid(Red)		Over Load Protection ( OLP )
Slow Blink(Red)		Over Temperature Protection ( OTP )
Intermittent Blink(Red)		Fan Failure
Interface Blink(Red)		Power Failure

\*Local mode : Use ACI/VCI control output current and voltage.

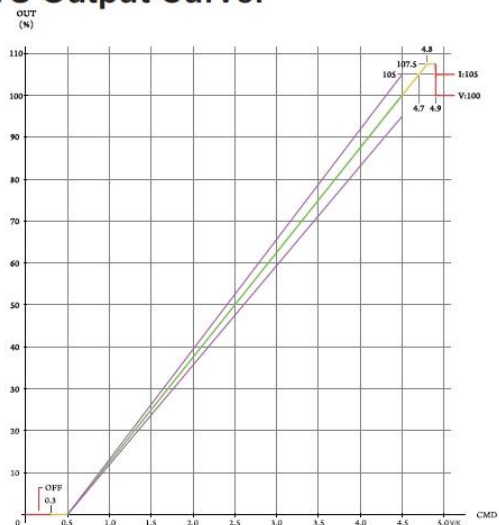
Remote mode : Use RS-232 or I<sup>2</sup>C command control output current and voltage.

## De-rating Curve:

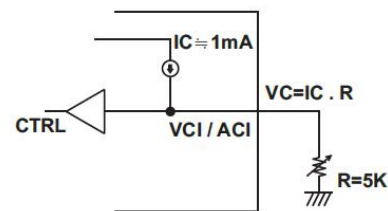
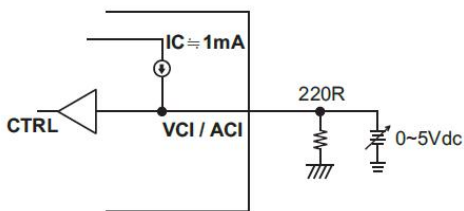
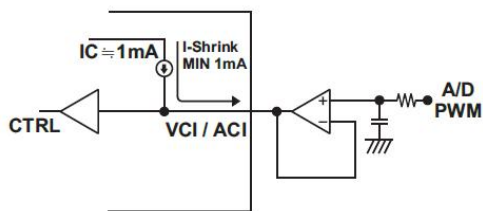
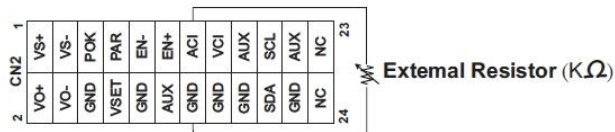
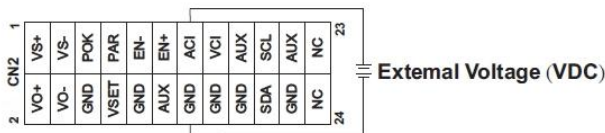
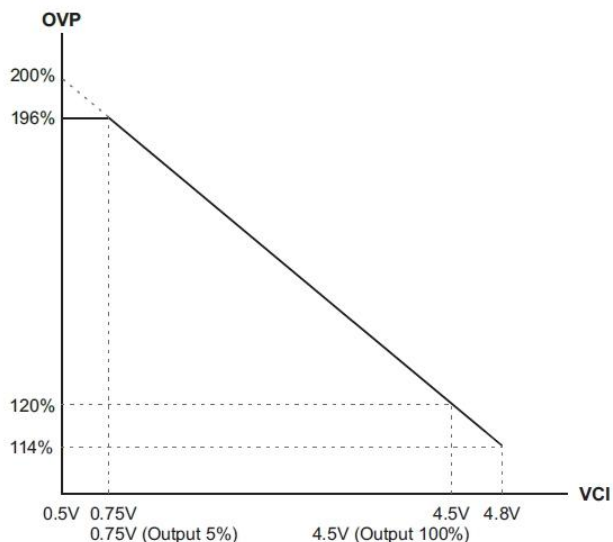




### CMD VS Output Curve:

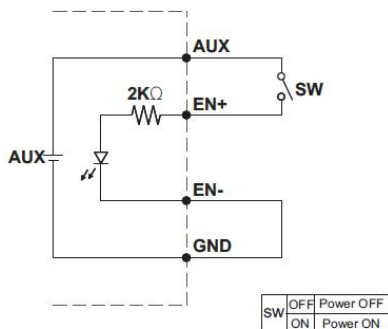


### VCI VS OVP Curve:



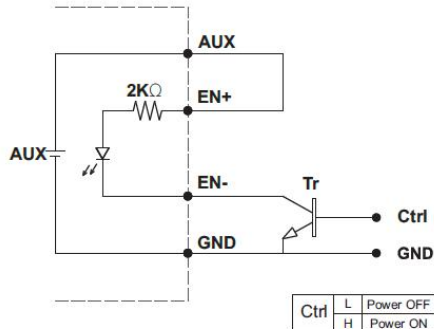
### Remote ON/OFF:

(A) Default Setting



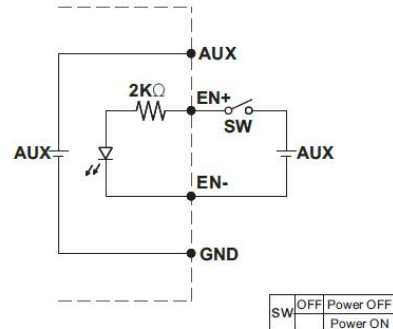
(A) Using internal 5V auxiliary source

(B)



(B) ON / OFF Control by NPN transistor

(C)



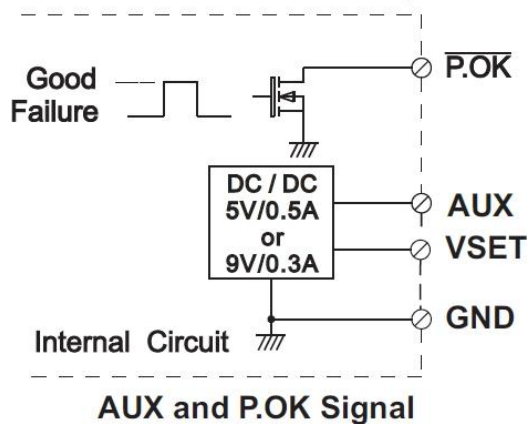
(C) Using external voltage source

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

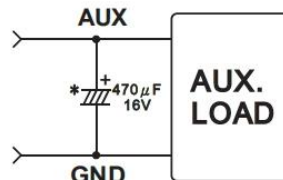
## Power OK Signal & Auxiliary Power Setting:

\*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.



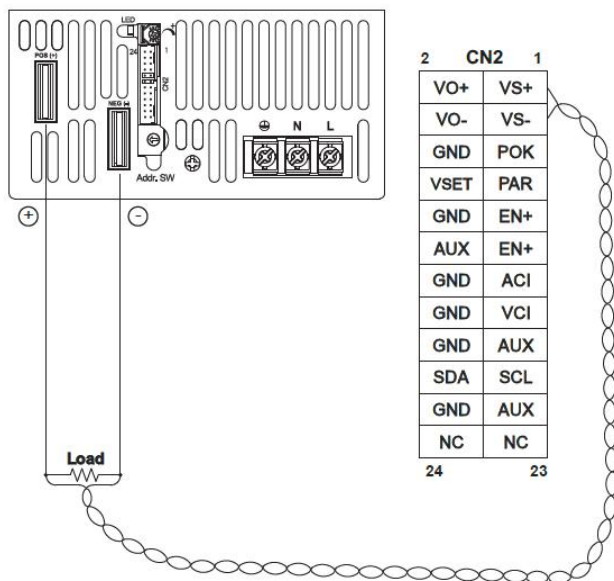
\*Place an additional capacitor to have a better performance of auxiliary power operation.



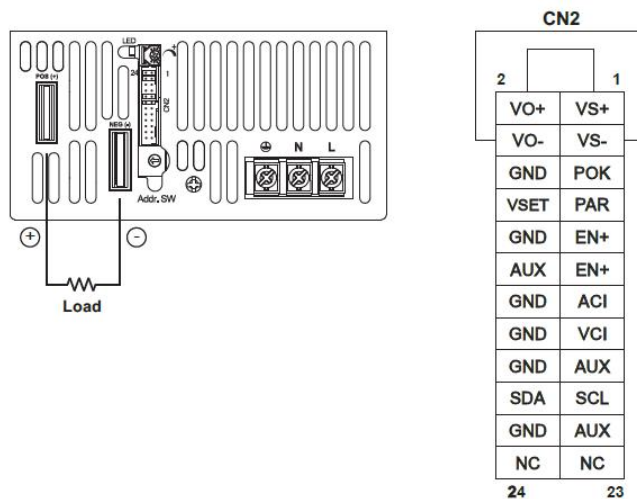
Do NOT exceed 5V/0.5A or 9V/0.3A

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

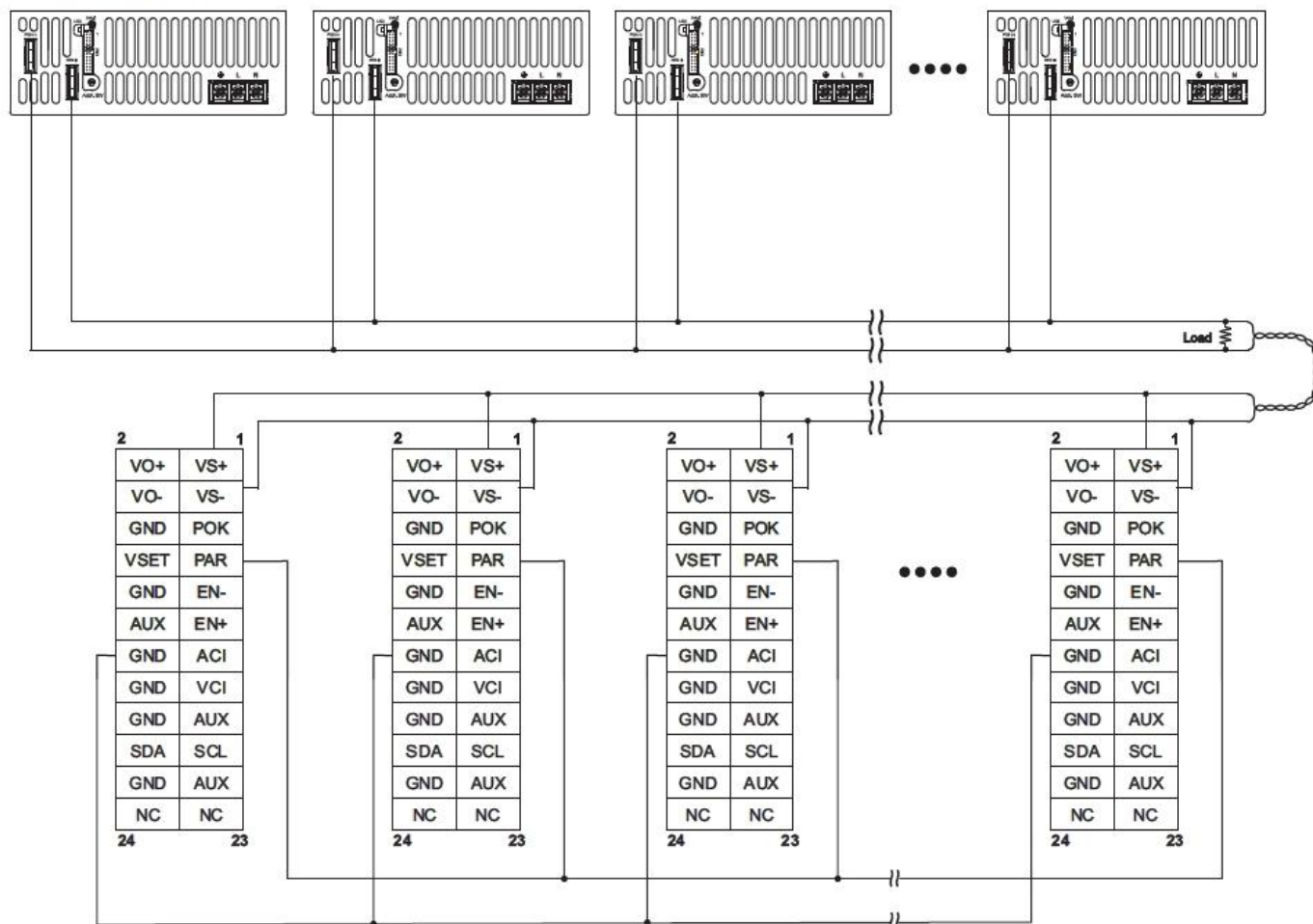
### 1. Remote Sense



### 2. Local Sense (Default setting)

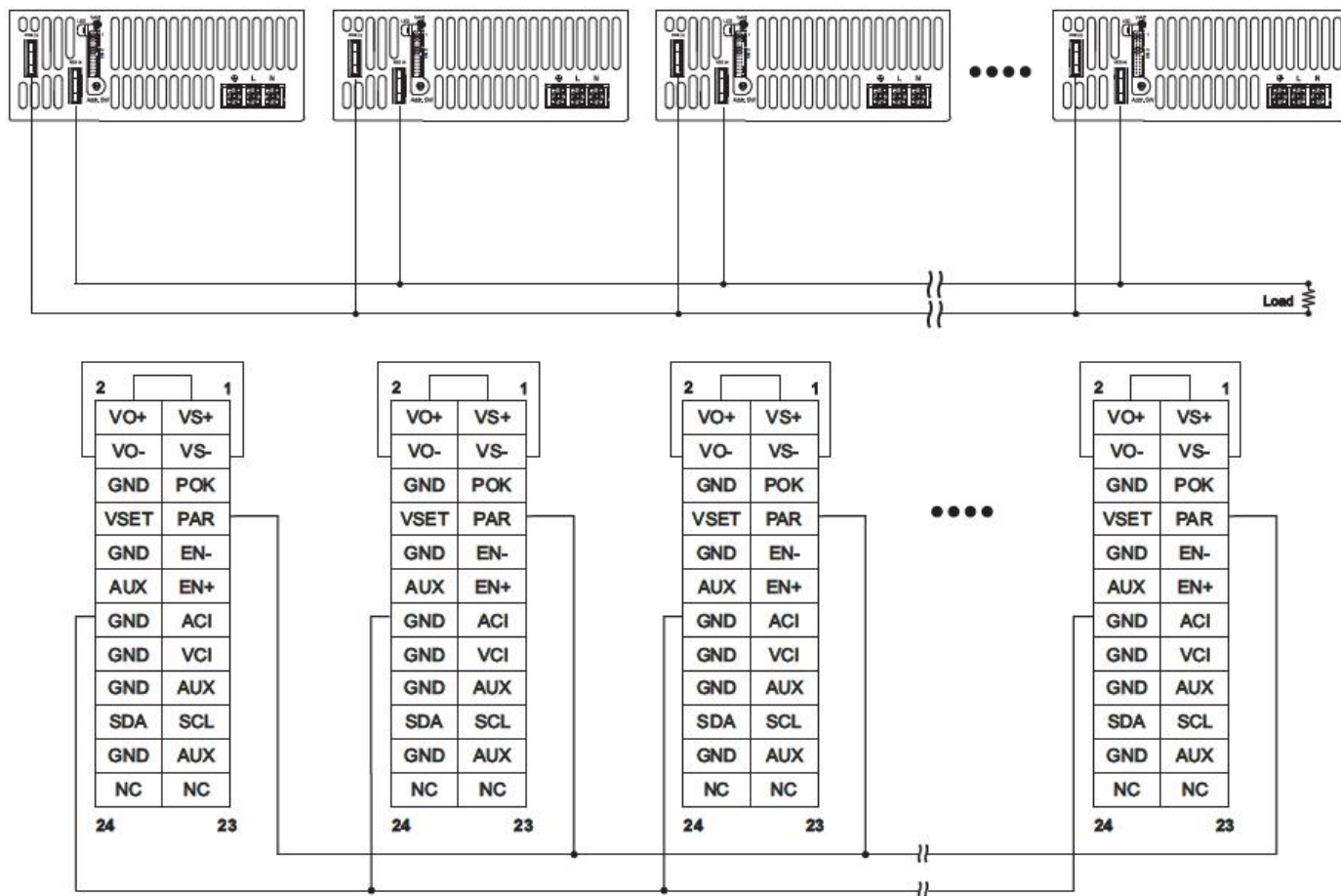


### 3. Current Sharing with Remote Sensing





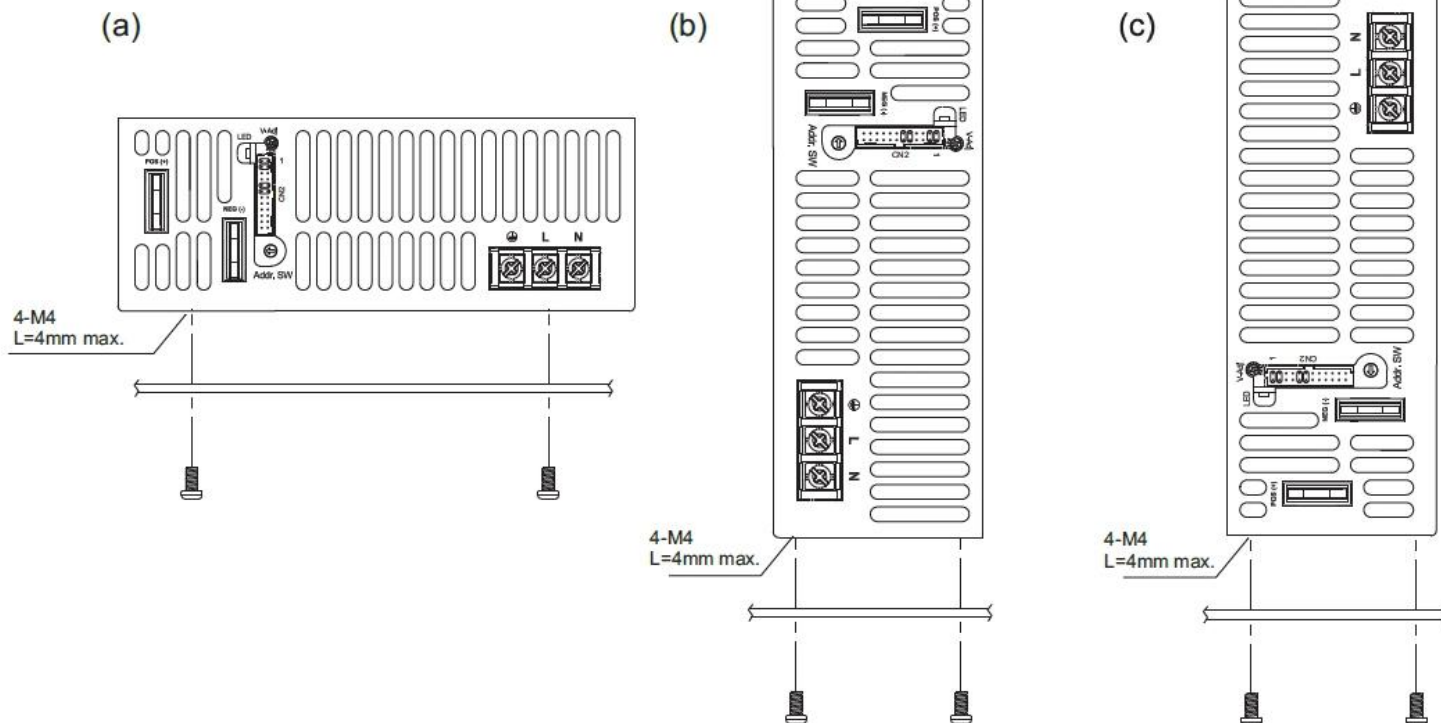
#### 4. Current Sharing with Local Sensing



## Installation Instruction:

### 1. Mounting Directio

#### 1-1 Recommended standard mounting methods:



### 2. Mounting Meth

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)

