



## ■ Features :

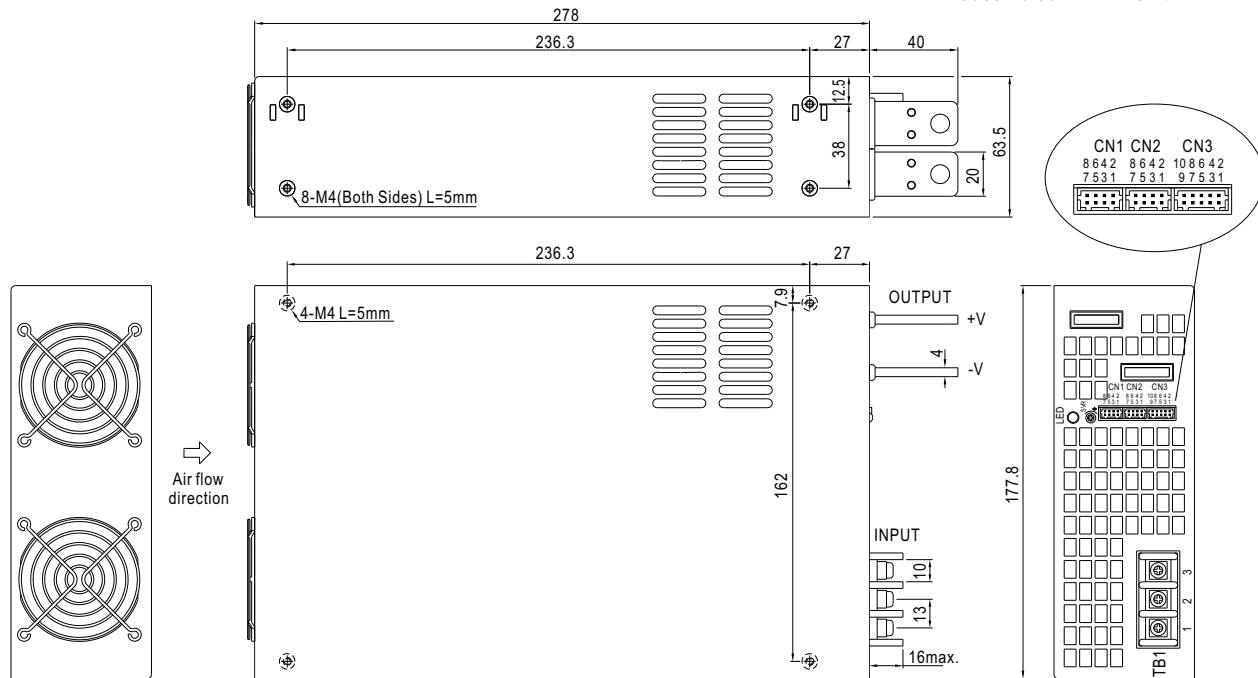
- AC input 180 ~ 264VAC
- AC input active surge current limiting
- High efficiency up to 90%
- Built-in active PFC function, PF>0.95
- Protections: Short circuit / Overload / Over voltage / Over temperature / Fan alarm
- Forced air cooling by built-in DC with fan speed control function
- Output voltage can be trimmed between 20~110% of the rated output voltage
- High power density 15.6W/inch<sup>3</sup>
- Current sharing up to 2 units
- Alarm signal output (relay contact and TTL signal)
- Built-in 12V/0.1A auxiliary output for remote control
- Built-in remote ON-OFF control
- Built-in remote sense function
- 3 years warranty


**SPECIFICATION**

MODEL	RSP-3000-12	RSP-3000-24	RSP-3000-48
OUTPUT	DC VOLTAGE	12V	24V
	RATED CURRENT	200A	125A
	CURRENT RANGE	0 ~ 200A	0 ~ 125A
	RATED POWER	2400W	3000W
	RIPLINE & NOISE (max.) Note.2	150mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	10.8 ~ 13.2V	22 ~ 28V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%
INPUT	SETUP, RISE TIME	1000ms, 80ms at full load	
	HOLD UP TIME (Typ.)	10ms at full load	
PROTECTION	VOLTAGE RANGE	180 ~ 264VAC	254 ~ 370VDC
	FREQUENCY RANGE	47 ~ 63Hz	
	POWER FACTOR (Typ.)	0.95/230VAC at full load	
	EFFICIENCY (Typ.)	86%	90%
	AC CURRENT (Typ.)	20A/180VAC	16A/230VAC
	INRUSH CURRENT (Typ.)	60A/230VAC	
	LEAKAGE CURRENT	<2.0mA / 240VAC	
FUNCTION	OVERLOAD	100 ~ 110% rated output power User adjustable continuous constant current limiting or constant current limiting with delay shutdown after 5 seconds, re-power on to recover	
	OVER VOLTAGE	13.8 ~ 16.8V	28.8 ~ 33.6V
	OVER TEMPERATURE	90°C±5°C (12V), 110°C±5°C (24V), 105°C±5°C (48V) (TSW1: detect on heatsink of power transistor) 90°C±5°C (12V), 85°C±5°C (24V), 75°C±5°C (48V) (TSW2 : detect on heatsink of o/p diode)	
	AUXILIARY POWER(AUX)	12V@0.1A(Only for Remote ON/OFF control)	
	REMOTE ON/OFF CONTROL	Please see the Function Manual	
ENVIRONMENT	ALARM SIGNAL OUTPUT	Please see the Function Manual	
	OUTPUT VOLTAGE TRIM	2.4 ~ 13.2V	4.8 ~ 28V
	CURRENT SHARING	Please see the Function Manual	
SAFETY & EMC (Note 4)	WORKING TEMP.	-20 ~ +70°C (Refer to output load derating curve)	
	WORKING HUMIDITY	20~90% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.05%/°C (0 ~ 50°C)	
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes	
OTHERS	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC	I/P-FG:1.5KVAC
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms	500VDC / 25°C / 70% RH
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22)	
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3	
NOTE	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, light industry level, criteria A	
	MTBF	104.5K hrs min. MIL-HDBK-217F (25°C)	
	DIMENSION	278*177.8*63.5mm (L*W*H)	
	PACKING	4Kg; 4pcs/16Kg/1.89CUFT	
	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 & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. 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

Case No. 982B Unit:mm



## AC Input Terminal Pin No. Assignment

Pin No.	Assignment
1	AC/L
2	AC/N
3	FG $\pm$

## Control Pin No. Assignment(CN1,CN2) : HRS DF11-8DP-2DS or equivalent

Pin No.	Assignment	Pin No.	Assignment	Mating Housing	Terminal
1	RCG	5,7	-S		
2	RC	6	CS(Current Share)	HRS DF11-8DS	HRS DF11-**SC
3	PV	8	+S	or equivalent	or equivalent
4	PS				

RCG: Remote ON/OFF Ground

-S : -Remote Sensing

RC : Remote ON/OFF

CS: Load Share

PV : Output Voltage External Control

+S: +Remote Sensing

PS : Reference Voltage Terminal

## Control Pin No. Assignment(CN3) : HRS DF11-10DP-2DS or equivalent

Pin No.	Assignment	Mating Housing	Terminal						
1	P OK GND	4	P OK2	7	AUXG	10	OL-SD		
2	P OK	5	RCG	8	AUX			HRS DF11-10DS	HRS DF11-**SC
3	P OK GND2	6	RC	9	OLP			or equivalent	or equivalent

P OK GND: Power OK Ground

RCG: Remote ON/OFF Ground

AUX: Auxiliary Output

P OK: Power OK Signal (Relay Contact)

RC: Remote ON/OFF

OLP: OLP Signal

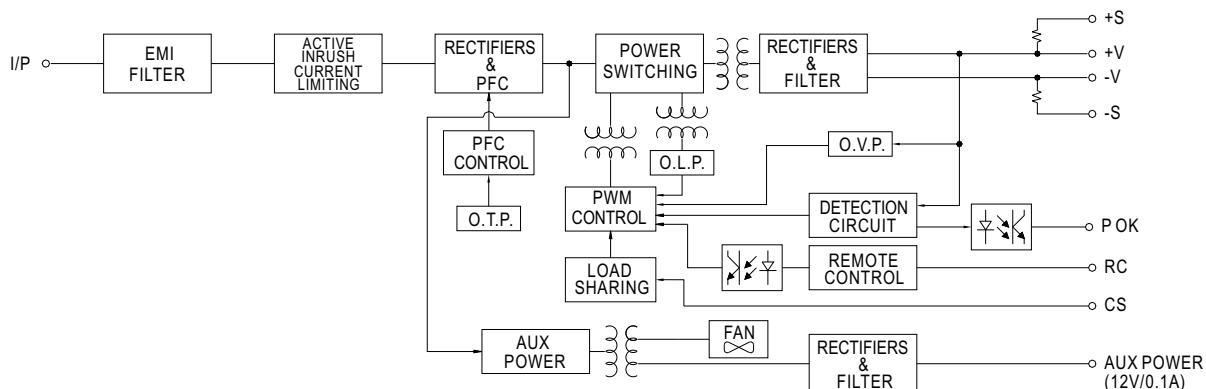
P OK2: Power OK Signal (TTL Signal)

AUXG: Auxiliary Ground

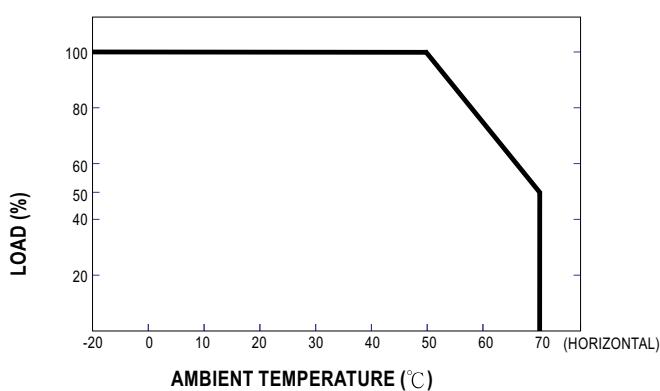
OL-SD: OLP Shutdown Signal

 PFC fosc : 88KHz  
 PWM fosc : 100KHz

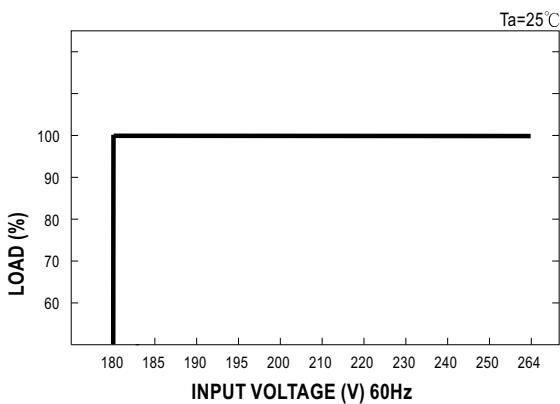
## ■ Block Diagram



## ■ Derating Curve



## ■ Static Characteristics



## ■ Function Manual

## 1. Remote ON/OFF

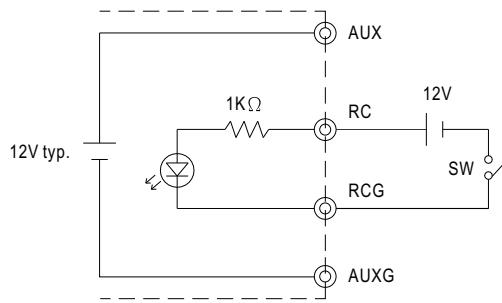
- (1) Remote ON/OFF control becomes available by applying voltage in CN1 & CN2 & CN3.
- (2) Table 1.1 shows the specification of Remote ON/OFF function.
- (3) Fig. 1.2 shows the example to connect Remote ON/OFF control function.

Table 1.1 Specification of Remote ON/OFF

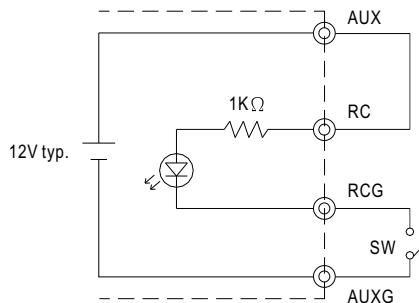
Connection Method	Fig. 1.2(A)	Fig. 1.2(B)	Fig. 1.2(C)
SW Logic	Output on SW Open	SW Open	SW Close
	Output off SW Close	SW Close	SW Open

Fig. 1.2 Examples of connecting remote ON/OFF

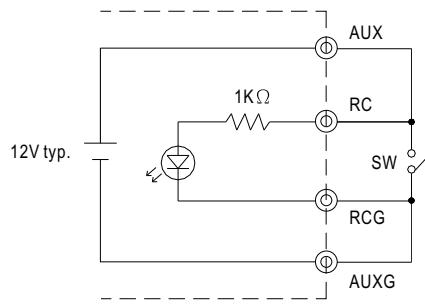
(A) Using external voltage source



(B) Using internal 12V auxiliary output



(C) Using internal 12V auxiliary output



## 2. Alarm Signal Output

(1) Alarm signal is sent out through "P OK" & "P OK GND" and P OK2 & P OK GND2 pins.

(2) An external voltage source is required for this function.

(3) Table 2.1 explain the alarm function built-in the power supply.

Function	Description	Output of alarm(P OK, Relay Contact)	Output of alarm(P OK2, TTL Signal)
P OK	The signal is "Low" when the power supply is above 80% of the rated output voltage-Power OK	Low (0.5V max at 500mA)	Low (0.5V max at 10mA)
	The signal turns to be "High" when the power supply is under 80% of the rated output voltage-Power Fail	High or open (External applied voltage, 500mA max.)	High or open (External applied voltage, 10mA max.)

Table 2.1 Explanation of alarm

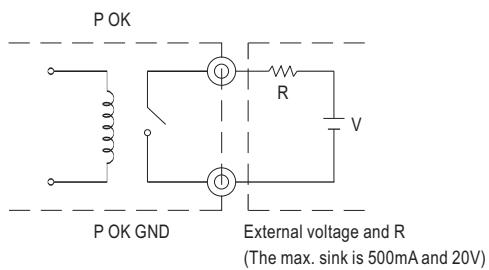


Fig. 2.2 Internal circuit of P OK (Relay, total is 10W)

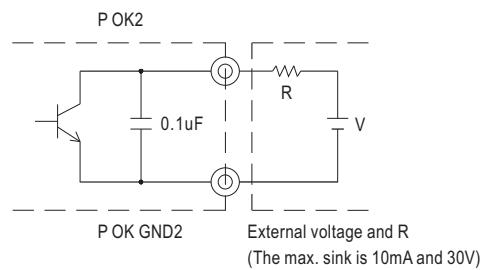


Fig. 2.3 Internal circuit of P OK2 (Open collector method)

## 3. Output Voltage TRIM

(1) Connecting an external DC source between PV and -S on CN1 or CN2 that is shown in Fig. 3.1.

(2) Adjustment of output voltage is possible between 20~110%(Typ.) of the rated output which is shown in Fig. 3.2. Reducing output current is required when the output voltage is trimmed up.

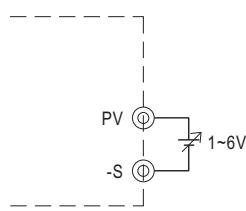


Fig. 3.1 Add on 1~6V external voltage

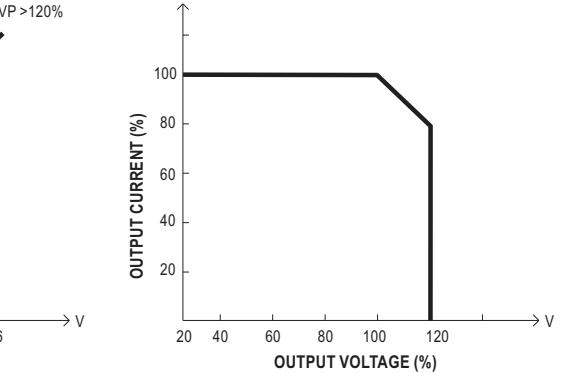
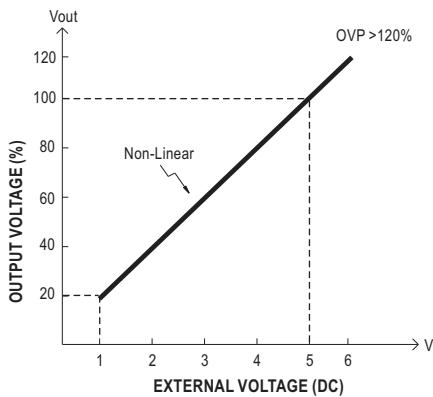
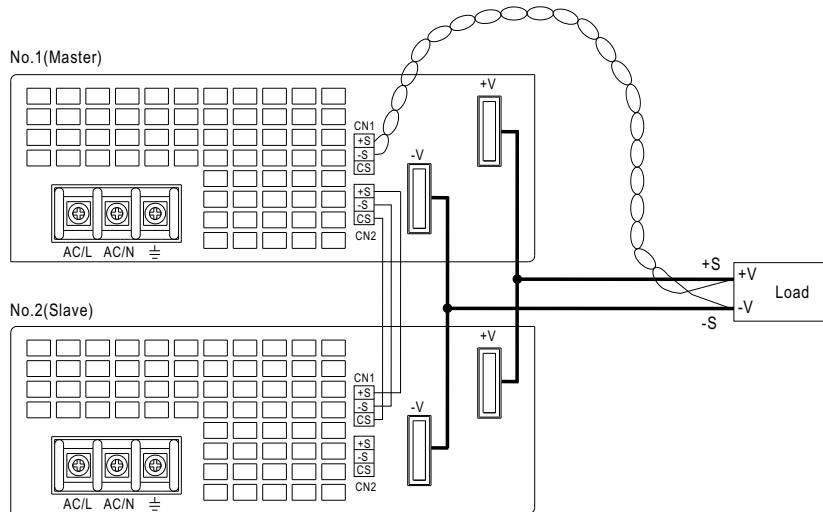


Fig. 3.2 Output voltage trimming

#### 4. Current Sharing

- (1) Parallel operation is available by connecting the units shown as below  
(+S, -S and CS are connected mutually in parallel):
- (2) The voltage difference among each output should be minimized that less than  $\pm 2\%$  is required.
- (3) The total output current must not exceed the value determined by the following equation.  
(Output current at parallel operation) = (The rated current per unit) x (Number of unit) x 0.9
- (4) In parallel operation 2 units is the maximum, please consult the manufacturer for other applications.
- (5) When remote sensing is used in parallel operation, the sensing wire must be connected only to the master unit.
- (6) Wires of remote sensing should be kept at least 10 cm from input wires.



- (7) Under parallel operation, the O.L.P. function can only choose "constant current limiting with delay shut down".
- (8) Under parallel operation, the "output voltage trim" function is not available.

#### 5. Select O.L.P mode

- (1) Remove the shorting connector on CN3 that is shown in Fig 5.1, the O.L.P. mode will be "continuous constant current limiting".
- (2) Insert the shorting connector on CN3 that is shown in Fig 5.2, the O.L.P. mode will be "constant current limiting with delay shutdown after 5 seconds, re-power on to recover".

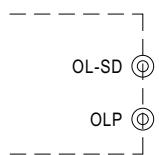


Fig. 5.1 Remove the CN3

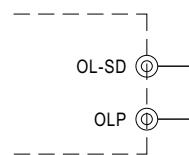


Fig. 5.2 Insert the CN3