



■ Features :

- Universal AC input / Full range
- Built-in active PFC function, PF>0.94
- High efficiency up to 89%
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Medical safety approved (MOOP level)
- Built-in cooling fan ON-OFF control
- Built-in DC OK signal
- Built-in remote ON-OFF control
- Standby 5V@0.3A
- Built-in remote sense function
- No load power consumption<0.8W (Note.7)
- Current sharing up to 2400W (3+1) (24V,36V,48V)
- 5 years warranty

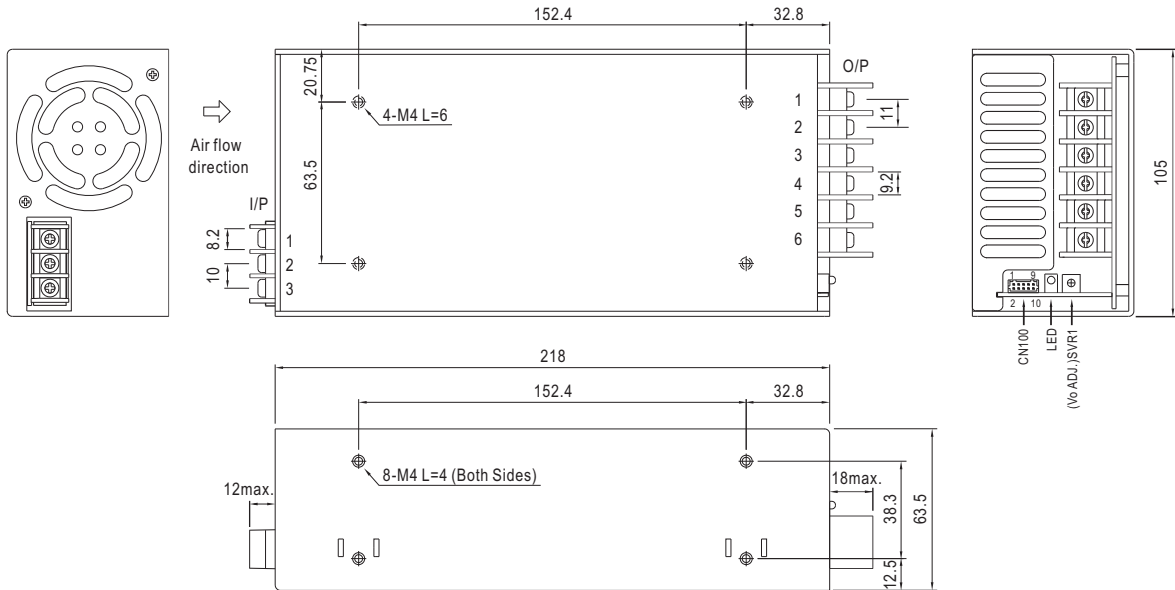


SPECIFICATION

| MODEL | MSP-600-3.3 | MSP-600-5 | MSP-600-7.5 | MSP-600-12 | MSP-600-15 | MSP-600-24 | MSP-600-36 | MSP-600-48 | | |
|-----------------------|--|---|-------------|--------------|-----------------------------|--------------|----------------|--------------|--------------|--|
| OUTPUT | DC VOLTAGE | 3.3V | 5V | 7.5V | 12V | 15V | 24V | 36V | 48V | |
| | RATED CURRENT | 120A | 120A | 80A | 53A | 43A | 27A | 17.5A | 13A | |
| | CURRENT RANGE | 0 ~ 120A | 0 ~ 120A | 0 ~ 80A | 0 ~ 53A | 0 ~ 43A | 0 ~ 27A | 0 ~ 17.5A | 0 ~ 13A | |
| | RATED POWER | 396W | 600W | 600W | 636W | 645W | 648W | 630W | 624W | |
| | RIPPLE & NOISE (max.) Note.2 | 100mVp-p | 100mVp-p | 100mVp-p | 120mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 240mVp-p | |
| | VOLTAGE ADJ. RANGE | 2.8 ~ 3.8V | 4.3 ~ 5.8V | 6.8 ~ 9V | 10.2 ~ 13.8V | 13.5 ~ 18V | 21.6 ~ 28.8V | 28.8 ~ 39.6V | 40.8 ~ 55.2V | |
| | VOLTAGE TOLERANCE Note.3 | ±2.0% | ±2.0% | ±2.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.3% | ±0.3% | ±0.2% | ±0.2% | ±0.2% | |
| | LOAD REGULATION | ±1.0% | ±1.0% | ±1.0% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | |
| | SETUP, RISE TIME | 1000ms, 50ms/230VAC 2500ms, 50ms/115VAC at full load | | | | | | | | |
| HOLD UP TIME (Typ.) | 16ms/230VAC 16ms/115VAC at full load | | | | | | | | | |
| INPUT | VOLTAGE RANGE Note.5 | 85 ~ 264VAC | | 120 ~ 370VDC | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | | | |
| | POWER FACTOR (Typ.) | PF>0.94/230VAC | | | PF>0.99/115VAC at full load | | | | | |
| | EFFICIENCY (Typ.) | 78.5% | 82% | 86% | 88% | 88% | 88% | 89% | 89% | |
| | AC CURRENT (Typ.) | 8.5A/115VAC | | 5A/230VAC | | | | | | |
| | INRUSH CURRENT (Typ.) | 35A/115VAC | | 80A/230VAC | | | | | | |
| LEAKAGE CURRENT | Earth leakage current < 300µA/264VAC , Touch leakage current < 100µA/264VAC | | | | | | | | | |
| PROTECTION | OVERLOAD | 105 ~ 135% rated output power Protection type : Constant current limiting, recovers automatically after fault condition is removed | | | | | | | | |
| | OVER VOLTAGE | 3.96 ~ 4.62V | 6 ~ 7V | 9.4 ~ 10.9V | 14.4 ~ 16.8V | 18.8 ~ 21.8V | 30 ~ 34.8V | 41.4 ~ 48.6V | 57.6 ~ 67.2V | |
| | OVER TEMPERATURE | Shut down o/p voltage, recovers automatically after temperature goes down | | | | | | | | |
| FUNCTION | 5V STANDBY | 5VSB : 5V@0.3A ; tolerance ±5%, ripple : 50mVp-p(max.) | | | | | | | | |
| | DC OK SIGNAL | PSU turn on : 3.3 ~ 5.6V ; PSU turn off : 0 ~ 1V | | | | | | | | |
| | REMOTE CONTROL | RC+ / RC- : 4 ~ 10V or open = power on ; 0 ~ 0.8V or short = power off | | | | | | | | |
| | FAN CONTROL (Typ.) | Load 35 ± 15% or RTH2 ≥ 50°C Fan on | | | | | | | | |
| ENVIRONMENT | WORKING TEMP. | -40 ~ +70°C (Refer to "Derating Curve") | | | | | | | | |
| | WORKING HUMIDITY | 20 ~ 90% RH non-condensing | | | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85°C, 10 ~ 95% RH | | | | | | | | |
| | TEMP. COEFFICIENT | ±0.03%/°C (0 ~ 50°C) | | | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 5G 10min./1 cycle, 60min. each along X, Y, Z axes | | | | | | | | |
| SAFETY & EMC (Note 4) | SAFETY STANDARDS | ANSI/AAMI ES60601-1, IEC60601-1 approved | | | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:4KVAC | | I/P-FG:2KVAC | | | O/P-FG:0.5KVAC | | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH | | | | | | | | |
| | EMC EMISSION | Compliance to EN55011 (CISPR11) Class B, EN61000-3-2,-3 | | | | | | | | |
| | EMC IMMUNITY | Compliance to EN61000-4-2,3,4,5,6,8,11, EN60601-1-2 | | | | | | | | |
| OTHERS | MTBF | 138.7K hrs min. MIL-HDBK-217F (25°C) | | | | | | | | |
| | DIMENSION | 218*105*63.5mm (L*W*H) | | | | | | | | |
| | PACKING | 1.57Kg;8pcs/13.6Kg/1.34CUFT | | | | | | | | |
| NOTE | <ol style="list-style-type: none"> 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. For guidance on how to perform these EMC tests, please refer to EMI testing of component power supplies. (as available on http://www.meanwell.com) 5. Derating may be needed under low input voltages. Please check the derating curve for more details. 6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time. 7. No load power consumption<0.8W when RC+ & RC- (CN100 pin3,4) 0 ~ 0.8V or short. 8. When the input voltage is less than 40VAC, the SPS may exhibit degradation of performance. The final product manufacturers must re-confirm this deviation that does not affect basic safety or essential performance. | | | | | | | | | |

Mechanical Specification

Case No. 977A Unit:mm



AC Input Terminal Pin No. Assignment

| Pin No. | Assignment |
|---------|------------|
| 1 | AC/L |
| 2 | AC/N |
| 3 | FG \perp |

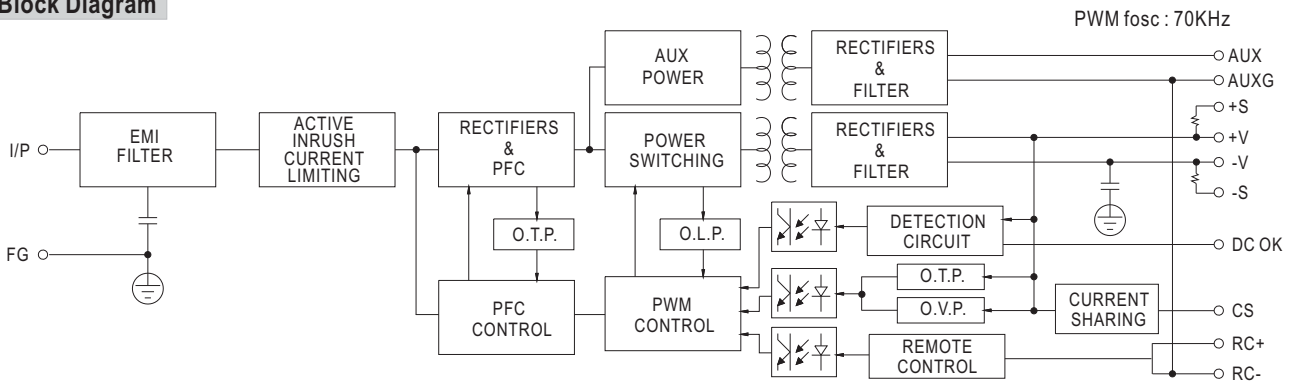
DC Output Terminal Pin No. Assignment

| Pin No. | Assignment |
|---------|------------|
| 1~3 | -V |
| 4~6 | +V |

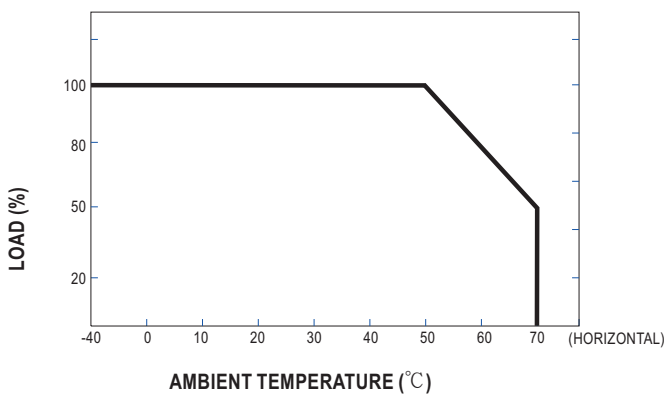
Connector Pin No. Assignment (CN100) : HRS DF11-10DP-2DS or equivalent

| Pin No. | Assignment | Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|---------|------------|-----------------------------|-----------------------------|
| 1 | AUXG | 6,8 | GND | HRS DF11-10DS or equivalent | HRS DF11-**SC or equivalent |
| 2 | AUX | 7 | DC-OK | | |
| 3 | RC+ | 9 | +S | | |
| 4 | RC- | 10 | -S | | |
| 5 | CS | | | | |

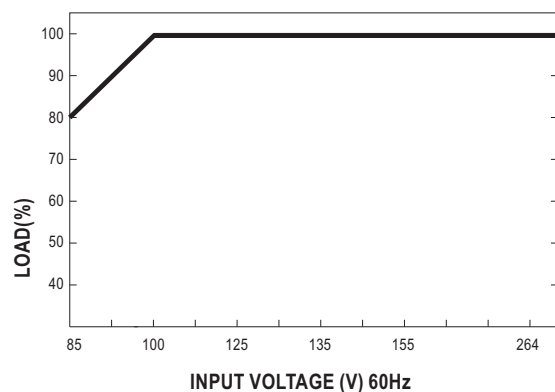
Block Diagram



Derating Curve



Output Derating VS Input Voltage



■ Function Description of CN100

| Pin No. | Function | Description |
|---------|----------|---|
| 1 | AUXG | Auxiliary voltage output ground. The signal return is isolated from the output terminals (+V & -V). |
| 2 | AUX | Auxiliary voltage output, 4.75~5.25V, referenced to pin 1(AUXG). The maximum load current is 0.3A. This output has the built-in oring diodes and is not controlled by the "remote ON/OFF control". |
| 3 | RC+ | Turns the output on and off by electrical or dry contact between pin 4 (RC-), Short: Power OFF, Open: Power ON. |
| 4 | RC- | Remote control ground. |
| 5 | CS | Current sharing signal. When units are connected in parallel, the CS pins of the units should be connected to allow current balance between units. |
| 6,8 | GND | This pin connects to the negative terminal(-V). Return for DC-OK signal output. |
| 7 | DC-OK | DC-OK signal is a TTL level signal, referenced to pin8(DC-OK GND). High when PSU turns on. |
| 9 | +S | Positive sensing. The +S signal should be connected to the positive terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.5V. |
| 10 | -S | Negative sensing. The -S signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.5V. |

■ Function Manual

1. Remote Sense

The remote sensing compensates voltage drop on the load wiring up to 0.5V.

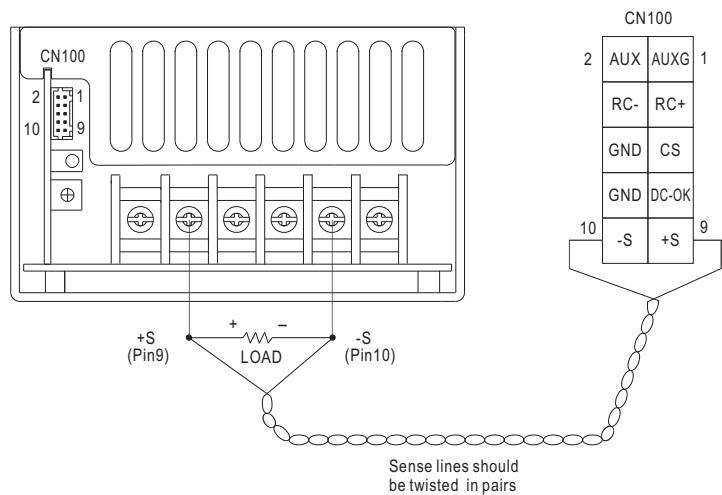


Fig 1.1

2. DC-OK Signal

DC-OK signal is a TTL level signal. High when PSU turns on.

| Between DC-OK(pin7) and GND(pin6,8) | Output Status |
|-------------------------------------|---------------|
| 3.3 ~ 5.6V | ON |
| 0 ~ 1V | OFF |

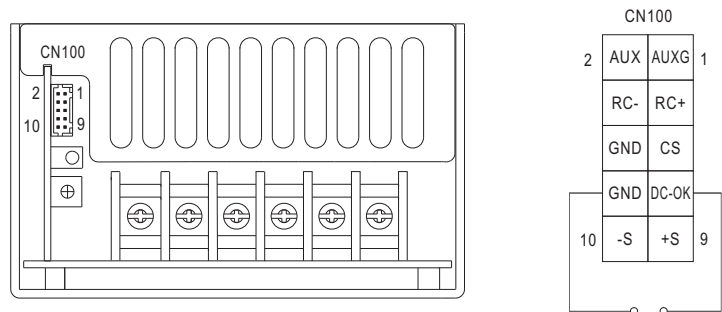


Fig 2.1

3.Remote Control

The PSU can be turned ON/OFF by using the "Remote Control" function.

| Between RC+(pin3) and RC-(pin4) | Output Status |
|---------------------------------|---------------|
| SW ON (Short) | OFF |
| SW OFF (Open) | ON |

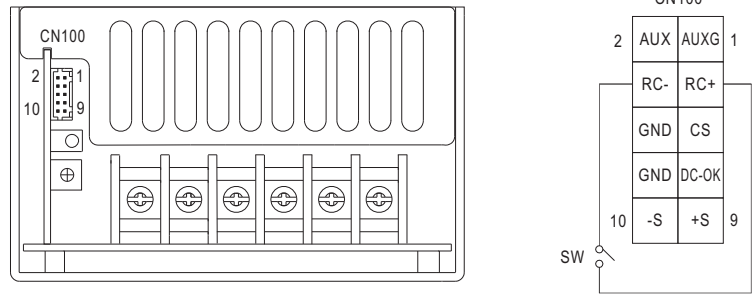


Fig 3.1

4.Current Sharing with Remote Sensing (Only for 24V, 36V and 48V)

MSP-600 has the built-in active current sharing function and can be connected in parallel to provide higher output power :

- (1) Parallel operation is available by connecting the units shown as below.
(+S, -S, CS and GND are connected mutually in parallel).
- (2) Difference of output voltages among parallel units should be less than 2%.
- (3) The total output current must not exceed the value determined by the following equation.
(output current at parallel operation)=(Rated current per unit) × (Number of unit) × 0.9
- (4) In parallel operation 4 units is the maximum, please consult the manufacturer for applications of more connecting in parallel.
- (5) The power supplies should be paralleled using short and large diameter wiring and then connected to the load.

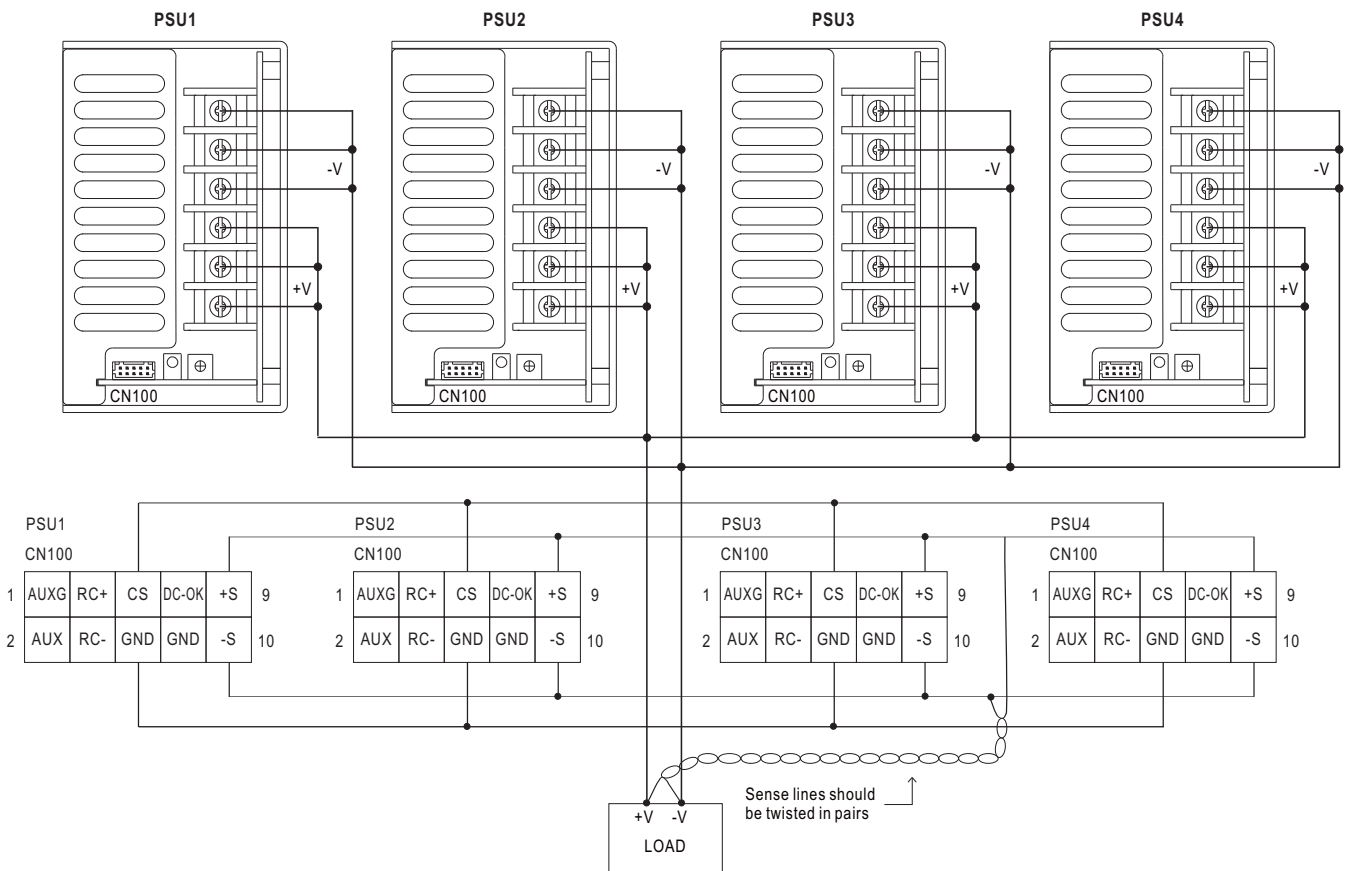


Fig 4.1

Note : 1. In parallel connection, maybe only one unit (master) operate if the total output load is less than 2% of rated load condition.
The other PSU (slave) may go into standby mode and its output LED and relay will not turn on.
2.2% min. of dummy load is required.