



1000W with PFC and Parallel Function

PSPA-1000 series



■ Features

- Universal AC input / Full range
- Built-in active PFC function
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Forced air cooling by built-in DC fan
- Current sharing up to 4000W(3+1)
- With DC OK Signal output
- Built-in remote ON-OFF control
- Built-in remote sense function
- 5 years warranty

■ Applications

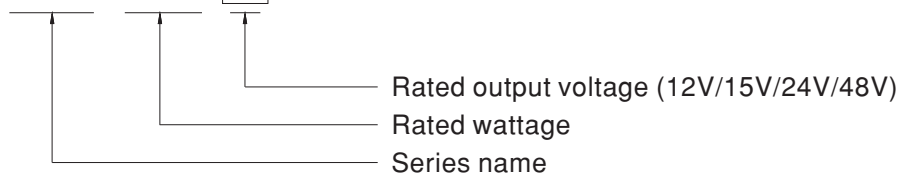
- Factory control or automation apparatus
- Test and measurement instrument
- Laser related machine
- Burn-in facility
- RF application

■ Description

PSPA-1000 series is a 1KW single output enclosed type AC/DC power supply. This series operates from 90~264VAC input voltage and offers models with different rated voltage ranging between 12V and 48V. Thanks to high efficiency up to 94% and built-in fan, the entire series is able to work for -20°C ~ +70°C ambient temperature. PSPA-1000 is equipped with various built-in functions, such as current sharing, remote ON-OFF control and remote sense, providing great design flexibility for different types of applications.

■ Model Encoding

PSPA - 1000 - 12

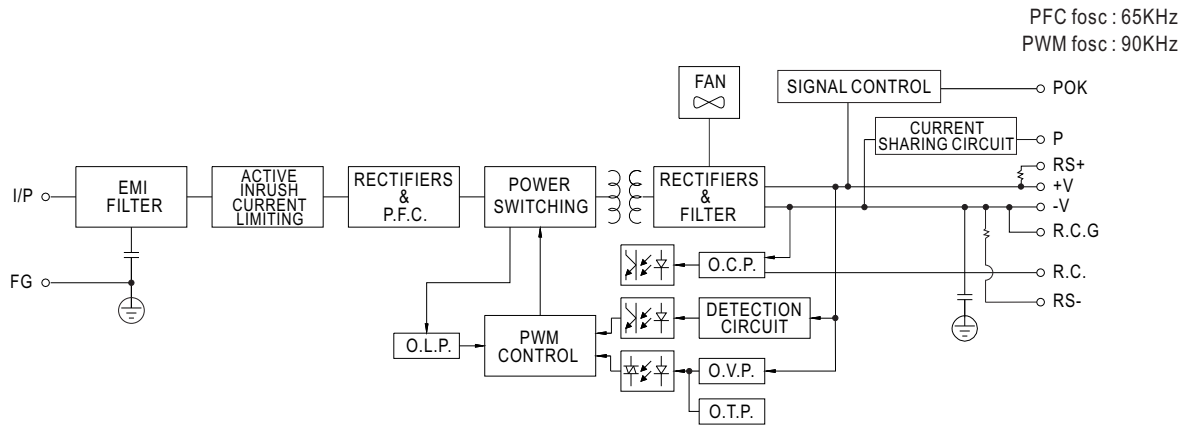




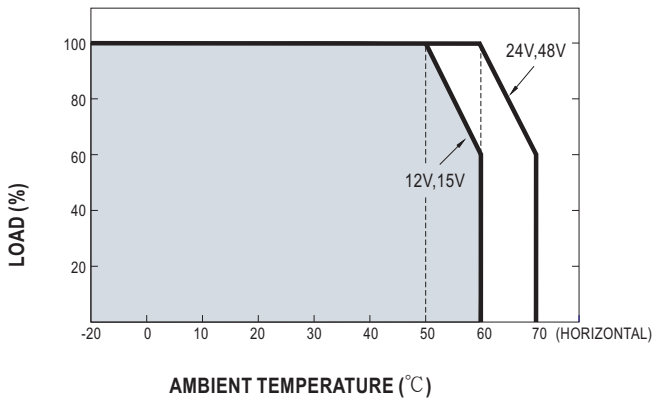
SPECIFICATION

| MODEL | | PSPA-1000-12 | PSPA-1000-15 | PSPA-1000-24 | PSPA-1000-48 | |
|--------------------------------|--|---|--|---------------------------------------|---|--|
| OUTPUT | DC VOLTAGE | 12V | 15V | 24V | 48V | |
| | RATED CURRENT | 80A | 64A | 42A | 21A | |
| | CURRENT RANGE | 0 ~ 80A | 0 ~ 64A | 0 ~ 42A | 0 ~ 21A | |
| | RATED POWER | 960W | 960W | 1008W | 1008W | |
| | RIPPLE & NOISE (max.) Note.2 | 150mVp-p | 150mVp-p | 200mVp-p | 250mVp-p | |
| | VOLTAGE ADJ. RANGE | 11 ~ 14V | 14 ~ 17V | 22 ~ 28V | 46 ~ 56V | |
| | VOLTAGE TOLERANCE Note.3 | ±2.0% | ±1.5% | ±1.0% | ±1.0% | |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | |
| | LOAD REGULATION | ±2.0% | ±1.5% | ±0.5% | ±0.5% | |
| | SETUP, RISE TIME | 1000ms,50ms/115VAC 1000ms,50ms/230VAC | | | | |
| HOLD UP TIME (Typ.) | 16ms at full load | | | | | |
| INPUT | VOLTAGE RANGE Note.4 | 90 ~ 264VAC(300VAC for 5 sec.) 127 ~ 370VDC | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | |
| | POWER FACTOR (Typ.) | 0.95/230VAC 0.99/115VAC at full load | | | | |
| | EFFICIENCY(Typ.) | 92% | 93% | 93.5% | 94% | |
| | AC CURRENT (Typ.) | 8.5A/115VAC 5A/230VAC | | | | |
| | INRUSH CURRENT (Typ.) | 20A/115VAC 40A/230VAC | | | | |
| | LEAKAGE CURRENT | <0.5mA/240VAC | | | | |
| PROTECTION | OVERLOAD | 105 ~ 135% rated output power Protection type : Constant current limiting, recovers automatically after fault condition is removed | | | | |
| | OVER VOLTAGE | 14.5 ~ 16.5V | 18.2 ~ 20.6V | 29 ~ 33V | 58 ~ 65V | |
| | OVER TEMPERATURE | Shut down o/p voltage, re-power on to recover | | | | |
| FUNCTION | CURRENT SHARING | Up to 4000W or (3+1) units. Please refer to the Function Manual. | | | | |
| | REMOTE ON-OFF CONTROL | Power ON : short; Power OFF : open. Please refer to the Function Manual. | | | | |
| | REMOTE SENSE | Compensate voltage drop on the load wiring up to 0.5V. Please refer to the Function Manual. | | | | |
| | POK SIGNAL | The TTL signal out, PSU turn on = 2.4 ~ 5V ; PSU turn off = 0 ~ 0.4V. Please refer to the Function Manual. | | | | |
| ENVIRONMENT | WORKING TEMP. | -20 ~ +70°C (Refer to "Derating Curve") | | | | |
| | WORKING HUMIDITY | 20 ~ 90% RH non-condensing | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85°C, 10 ~ 95% RH non-condensing | | | | |
| | TEMP. COEFFICIENT | ±0.03%/°C (0 ~ 50°C) | | | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes | | | | |
| SAFETY & EMC (Note 5) | SAFETY STANDARDS | UL62368-1, CAN/CSA C22.2 No. 62368-1, TUV BS EN/EN62368-1, BSMI CNS14336-1, AS/NZS62368.1, EAC TP TC 004 approved | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3KVAC 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 | Parameter | Standard | | Test Level / Note | |
| | | Conducted | BS EN/EN55032 (CISPR32) | | Class B | |
| | | Radiated | BS EN/EN55032 (CISPR32) | | Class B | |
| | | Harmonic Current | BS EN/EN61000-3-2 | | Class A | |
| | Voltage Flicker | BS EN/EN61000-3-3 | | ----- | | |
| | EMC IMMUNITY | BS EN/EN55024, BS EN/EN61000-6-2, BSMI CNS13438 | | | | |
| | | Parameter | Standard | | Test Level / Note | |
| | | ESD | BS EN/EN61000-4-2 | | Level 3, 8KV air ; Level 2, 4KV contact | |
| | | Radiated | BS EN/EN61000-4-3 | | Level 3 | |
| | | EFT / Burst | BS EN/EN61000-4-4 | | Level 3 | |
| Surge | | BS EN/EN61000-4-5 | | Level 4, 2KV/Line-Line 4KV/Line-Earth | | |
| Conducted | | BS EN/EN61000-4-6 | | Level 3 | | |
| Magnetic Field | | BS EN/EN61000-4-8 | | Level 4 | | |
| Voltage Dips and Interruptions | BS EN/EN61000-4-11 | | >95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods | | | |
| OTHERS | MTBF | 274.3K hrs min. Telcordia SR-332 (Bellcore) ; 94.4K hrs min. MIL-HDBK-217F (25°C) | | | | |
| | DIMENSION | 170*120*93mm (L*W*H) | | | | |
| | PACKING | 1.93Kg ; 8pcs/16.4Kg/1.53CUFT | | | | |
| 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 & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Derating may be needed under low input voltages. Please check the derating curve for more details.</p> <p>5. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. 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)</p> <p>6. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | | |

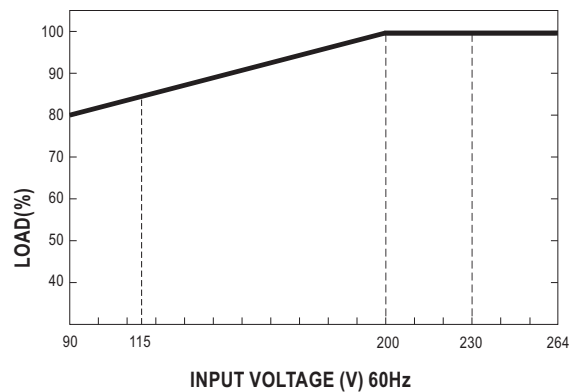
Block Diagram



Derating Curve



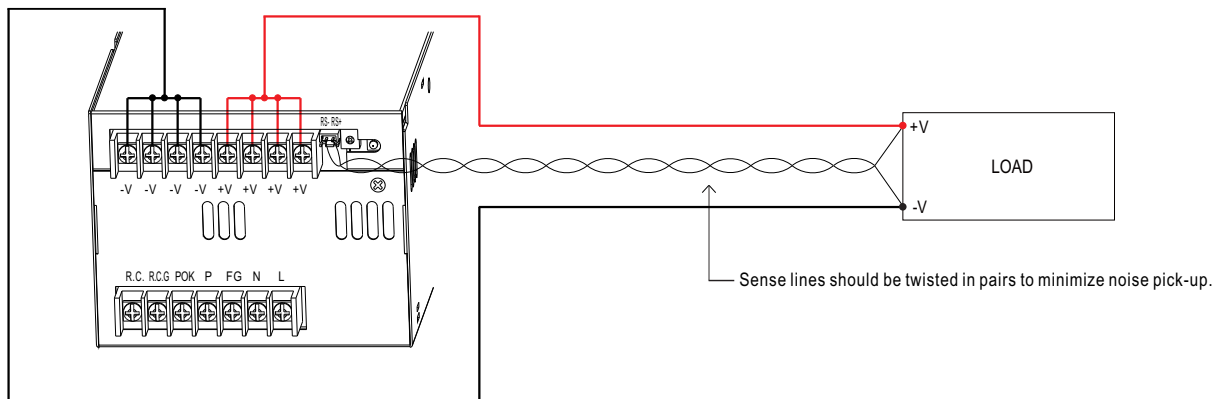
Output Derating VS Input Voltage



Function Manual

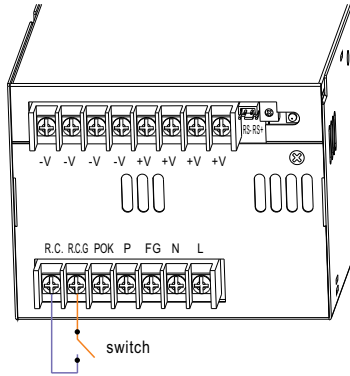
1.Remote Sense

- ※ The Remote Sense compensates voltage drop on the load wiring up to 0.5V.
- ※ The minimum load is 5% when Remote Sense functions.



2. Remote ON-OFF Control

※ The power supply can be turned ON-OFF individually or along with other units by using the "Remote ON-OFF" function.

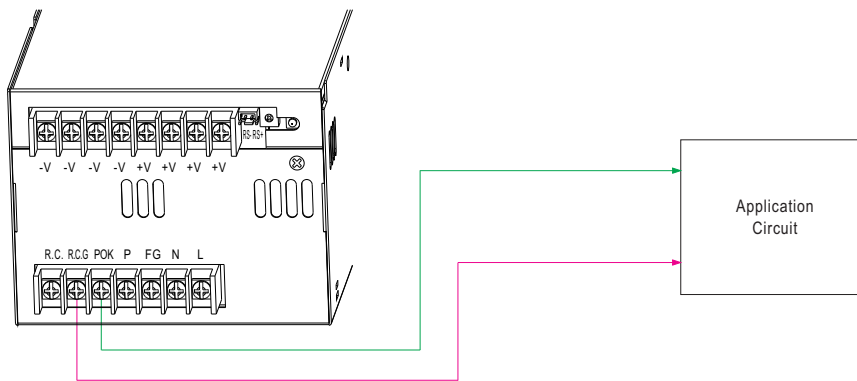


| Between R.C. and R.C.G | Power Supply Status |
|------------------------|---------------------|
| Switch Short | ON |
| Switch Open | OFF |

3. POK signal

※ POK signal indicates the output status of the power supply. It can operate in two ways : One is sinking current from external TTL signal ; the other is sending out a TTL voltage signal.

◎ **Sinking current from external TTL signal:** The maximum sink current is 10mA and the maximum external voltage is 5.6V.



4. Current Sharing with Remote Sense

PSPA-1000 has the built-in active current sharing function and can be connected in parallel, up to 4 units, to provide higher output power as exhibited below :

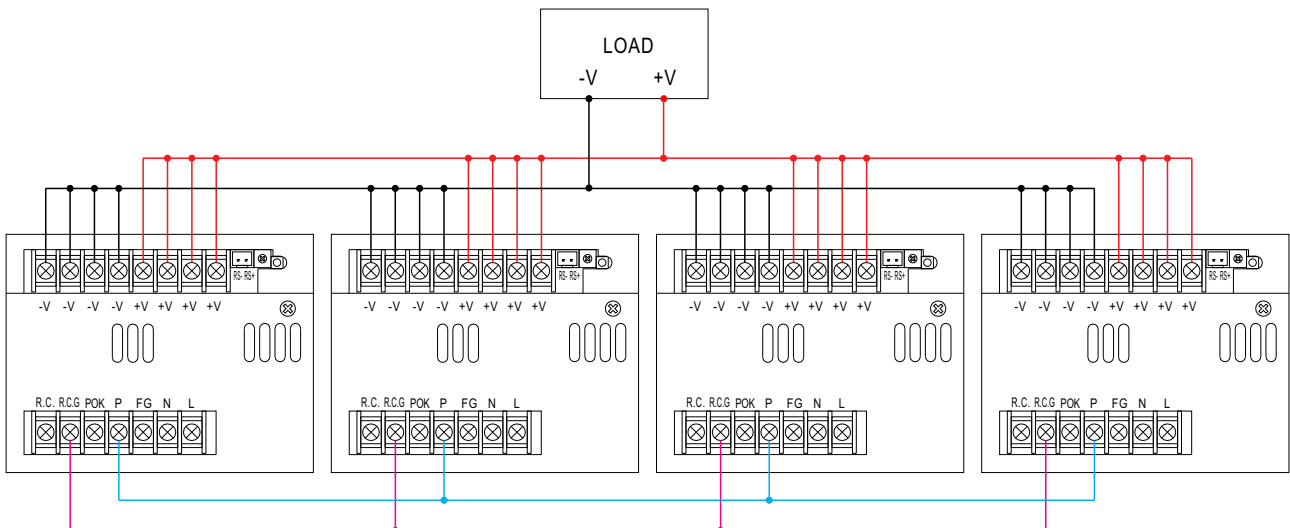
※ The power supplies should be paralleled using short and large diameter wiring and then connected to the load.

※ Difference of output voltages among parallel units should be less than 0.2V.

※ The total output current must not exceed the value determined by the following equation:

$$\text{Maximum output current at parallel operation} = (\text{Rated current per unit}) \times (\text{Number of unit}) \times 0.9$$

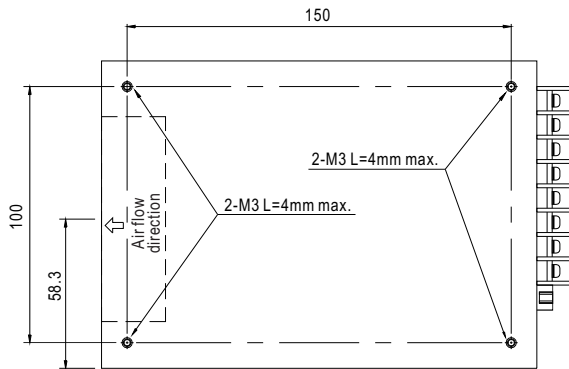
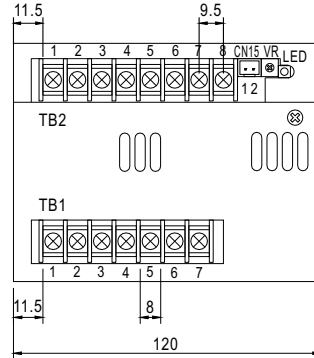
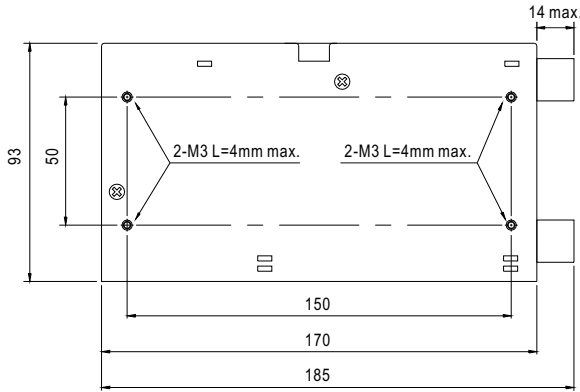
※ When the total output current is less than 5% of the total rated current, or say $(5\% \text{ of Rated current per unit}) \times (\text{Number of unit})$ the current shared among units may not be fully balanced.



◎ For Remote Sense, please refer to "Remote Sense" section.

Mechanical Specification

Case No.910A Unit:mm



RS Connector(CN15) : JST B-XH or equivalent

| Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|--------------------------|-------------------------------|
| 1 | RS- | JST XHP or equivalent | JST SXH-001T or equivalent |
| 2 | RS+ | | |

Terminal Pin No. Assignment(TB1)

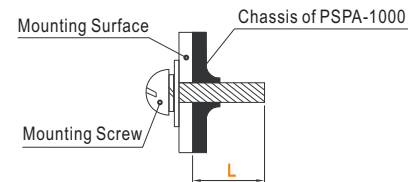
| Pin No. | Assignment |
|---------|------------------|
| 1 | R.C. |
| 2 | R.C.G |
| 3 | POK |
| 4 | P(Current Share) |
| 5 | FG \perp |
| 6 | AC/N |
| 7 | AC/L |

Terminal Pin No. Assignment(TB2)

| Pin No. | Assignment |
|---------|--------------|
| 1~4 | DC OUTPUT -V |
| 5~8 | DC OUTPUT +V |

※ Mounting Instruction

| Recommended Screw Size | MAX. Penetration Depth L | Recommended mounting torque |
|------------------------|--------------------------|-----------------------------|
| M3 | 4mm | 6-8Kgf-cm |



INSTALLATION MANUAL

Please refer to : <http://www.meanwell.com/manual.html>