



E-Star Power Development Co., Ltd. (E-STAR)
 1F., No.40, Juren Ln., Sec. 2, Sanmin Rd., Banciao Dist., New Taipei City
 22069, Taiwan (R.O.C.)
 Phone : 886-2-2957 5580 Fax : 886-2-2957 7473

1000W Enclosed type single output power supply > PSPA-1000



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

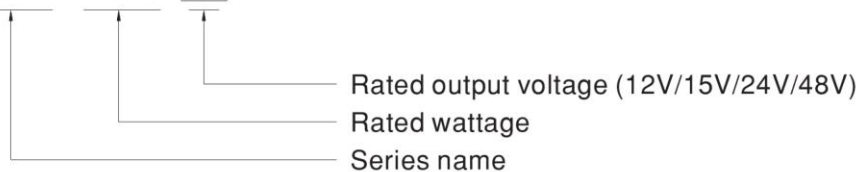
- Factory control or automation apparatus
- Test and measurement instrument
- Laser related machine
- Burn-in facility
- RF application

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





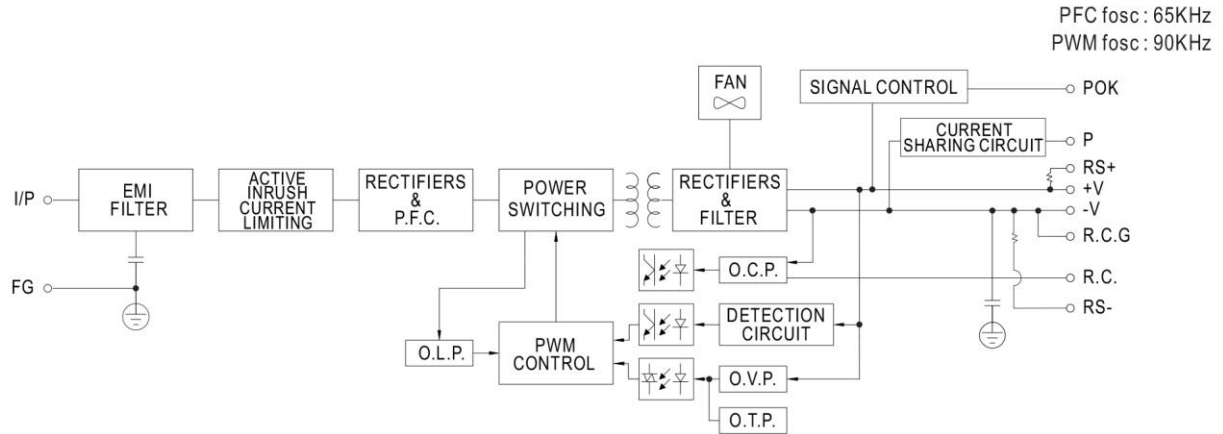
1000W Enclosed type single output power supply > PSPA-1000

SPECIFICATION

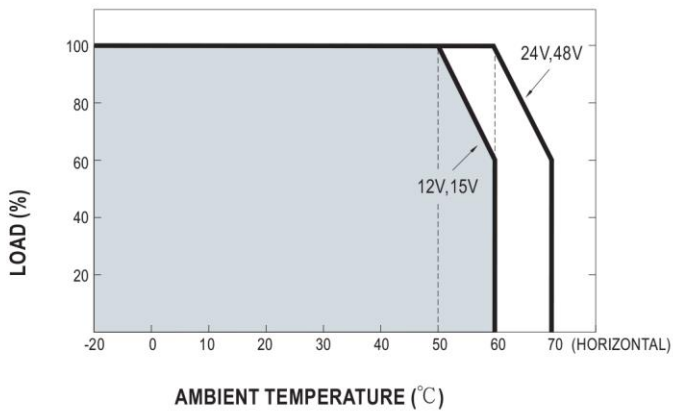
| MODEL | | PSPA-1000-12 | PSPA-1000-15 | PSPA-1000-24 | PSPA-1000-48 | |
|--------------------------------|---|---|--|--------------|---|--|
| OUTPUT | DC VOLTAGE | 12V | 15V | 24V | 48V | |
| | RATED CURRENT | 80A | 64A | 42A | 21A | |
| | CURRENT RANGE | 0 ~ 80A | 0 ~ 64A | 0 ~ 42A | 0 ~ 21A | |
| | 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 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 | EN55032 (CISPR32) | | Class B | |
| | | Radiated | EN55032 (CISPR32) | | Class B | |
| | | Harmonic Current | EN61000-3-2 | | Class A | |
| | | Voltage Flicker | EN61000-3-3 | | ----- | |
| | EMC IMMUNITY | EN55024, EN61000-6-2, BSMI CNS13438 | | | | |
| | | Parameter | Standard | | Test Level / Note | |
| | | ESD | EN61000-4-2 | | Level 3, 8KV air ; Level 2, 4KV contact | |
| | | Radiated | EN61000-4-3 | | Level 3 | |
| | | EFT / Burst | EN61000-4-4 | | Level 3 | |
| | | Surge | EN61000-4-5 | | Level 4, 2KV/Line-Line 4KV/Line-Earth | |
| Conducted | | EN61000-4-6 | | Level 3 | | |
| Magnetic Field | | EN61000-4-8 | | Level 4 | | |
| Voltage Dips and Interruptions | 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 | <ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. Tolerance : includes set up tolerance, line regulation and load regulation. Derating may be needed under low input voltages. Please check the derating curve for more details. 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." 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). | | | | | |

1000W Enclosed type single output power supply > PSPA-1000

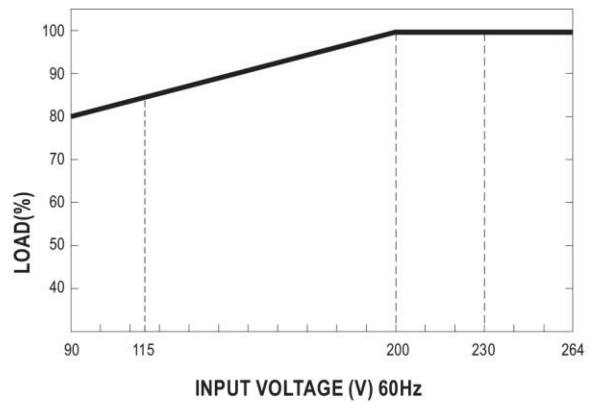
Block Diagram



Derating Curve



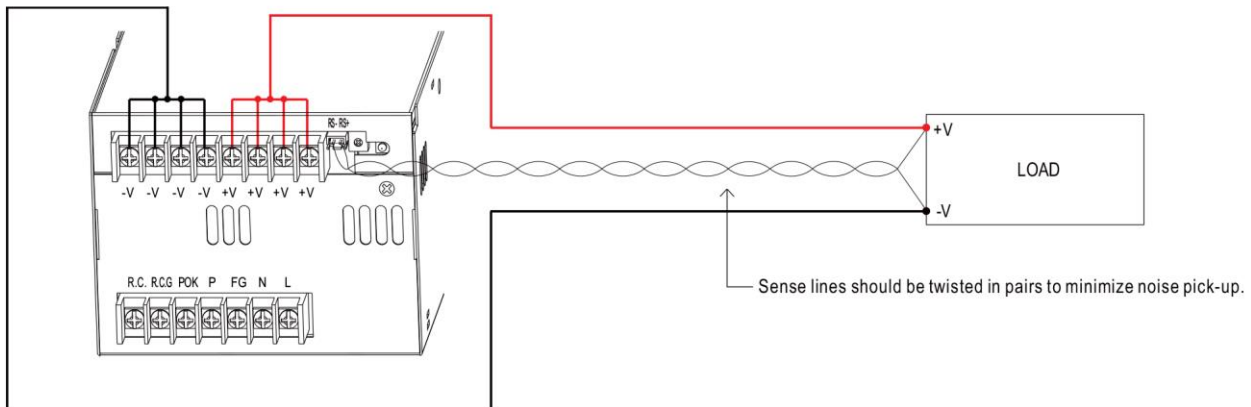
Output Derating VS Input Voltage



Function Manual

1. Remote Sense

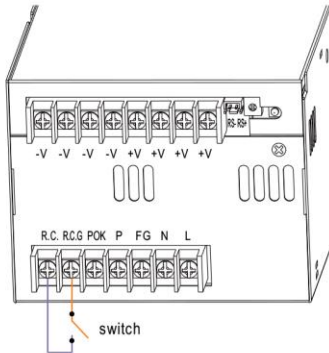
- ※ The Remote Sense compensates voltage drop on the load wiring up to 0.5V.
- ※ The minimum load is 5% when Remote Sense functions.



1000W Enclosed type single output power supply > PSPA-1000

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.

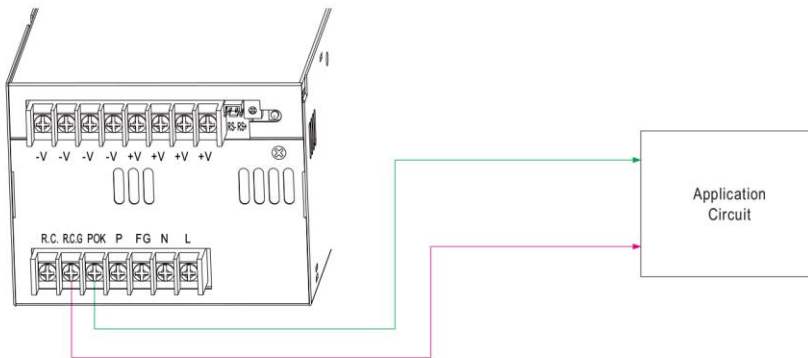


| Between R.C. and R.C.G | Power Supply Status |
|------------------------|---------------------|
| Switch Short | ON |
| Switch Open | OFF |

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.

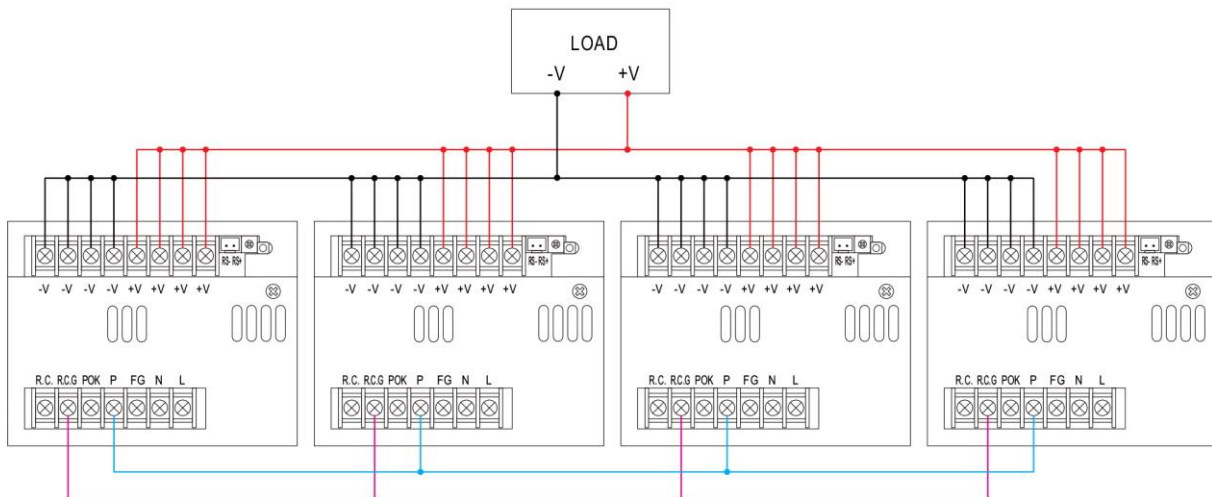


4. Current Sharing with Remote Sense

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% of Rated current per unit) \times (Number of unit) the current shared among units may not be fully balanced.



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



E-Star Power Development Co., Ltd. (E-STAR)

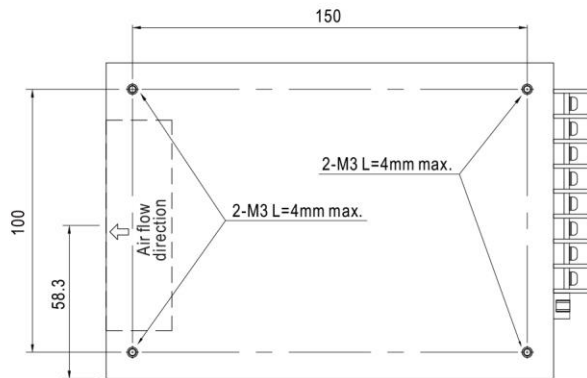
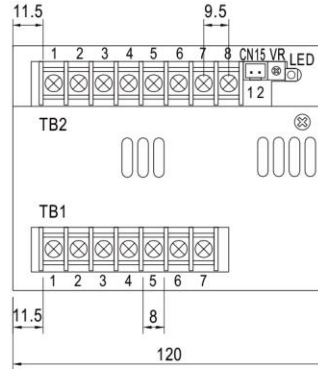
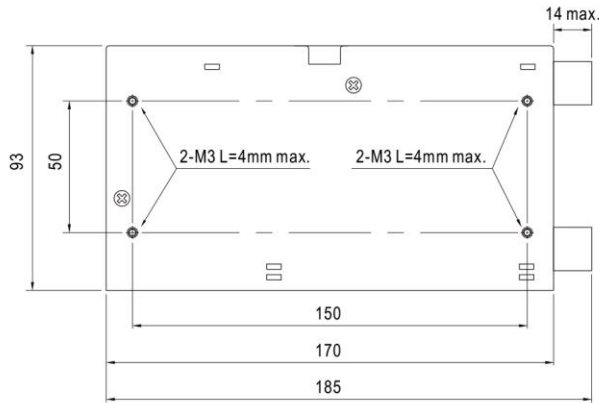
1F., No.40, Juren Ln., Sec. 2, Sanmin Rd., Banciao Dist., New Taipei City 22069, Taiwan (R.O.C.)

Phone : 886-2-2957 5580 Fax : 886-2-2957 7473

1000W Enclosed type single output power supply > PSPA-1000

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 |

