

FPS1000 SERIES

AC / DC Single Output: 1000 ~ 3000 Watts



Features

- Universal input 85 - 265VAC
- 1000W 1U Hot Swap Rectifier Modules
- Up to 3000W power in 1U x 19in Rack (with 3 modules)
- Isolation diodes for **N+1 Redundancy**
- Current share between modules, (up to 8 (FPS1000 modules)
- Status monitoring signals
- Harmonic correction EN61000-3-2 ,Power Factor 0.98
- EMC EN55022-B, Immunity to EN61000-4
- International safety approvals EN60950, UL60950
- Suitable for use in Battery Charging applications
- I² C Interface option

Instruction manual and further details available from our website.
FPS power supplies are only designed to operate in controlled environments.

Specifications

| | |
|----------------------------------|--|
| Input Voltage | 85 ~ 265VAC (120 – 380VDC) |
| Input Frequency | 47 ~ 63Hz |
| Input Current | 12A / 6A (110 / 230VAC) |
| Leakage Current | 1.1mA @ 230VAC |
| Inrush Current | 40A maximum |
| Power Factor | Typically 0.98 at full load |
| Harmonics | EN61000-3-2 |
| Output Voltage | 12V, 24V, 32V & 48V nominal |
| Output Power | Typically 1000W at 230VAC |
| Efficiency | Typically 86% (Model dependent) |
| Hold up time | 20ms at nominal input 110 / 230VAC |
| Line Regulation | ± 0.4% |
| Load Regulation | ± 0.80% |
| Output Ripple & Noise | 150mV for 12V output 250mV for 24/32V outputs 300mV for 48V output |
| Temperature Coefficient | < 0.02% per °C |
| Remote Sensing | Yes (refer to manual for complete details) |
| Parallel Operation | Yes. Single wire current share, 10% accuracy of rated output, up to 8 units max, refer to manual |
| Series Operation | Yes, refer to manual |
| Over current Protection | 105 ~ 120% of rated output |
| Over voltage Protection | Yes. Inverter shut down method. Reset by recycle AC voltage, or by On/Off control. |
| Over temp. Protection | Inverter shut down, automatic restart. |
| Remote ON/OFF | By electrical signal or dry contact. Refer to instruction manual. |
| DC OK Signal | Open Collector max sink current 10mA |
| Over Temp Signal | Open collector signal. |
| AC Fail Signal | Open collector signal. |
| Auxiliary output | 12V, 0.25A output |
| Vout Programming | By external voltage or Resistor, refer to manual for details. |

Description

The **FPS1000 series** power supply is a established, field proven, "High Power Density" design, aimed at key projects, where performance and reliability is paramount.

One 19in x 1U rack, can hold up to three 1000W rectifier modules, with up to eight modules in parallel to provide up to 8kw of power with N+1 Redundancy.

There are a number of programming and status signals, allowing end users to configure a system that suits their application.

Specifications Cont:

| | |
|---------------------------------|--|
| Front Panel LED | AC OK, DC OK , DC FAIL |
| I²c Interface | Optional, refer to Instruction Manual. |
| Operating Temp. | 0°C to +70°C. Refer to manual for derating |
| Operating Humidity | 10~90% RH, no condensation. |
| Cooling | By internal Fans. Variable speed control based on ambient temperature and power level. |
| Shock & Vibration | Built to meet IEC60068-2-64 (Basic Transportation) |
| Conducted Emission | Built to meet EN55022 Class B, FCC part 15 Class-B, VCCI Class-B |
| Radiated Emission | Built to meet EN55022 Class A, FCC part 15 Class-A, VCCI Class-A |
| Immunity | Built to meet IEC61000-4-2 (Level 2,3), -3 (Level 2), -4 (Level 2) , -5 (Level 3,4), -6 (Level 2), -8 (Level 4), -11 |
| Safety | UL60950-1 Second Edition, EN60950-1 Second Edition |
| Isolation | Input – Output: 3000VAC, |
| Dimensions (Modules) | 127 x 41 x 290mm Refer to outline drawing. (2Kg) |
| Rack | 1U x 19in , refer to outline drawing |

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| Model Power Supply | Output | | V Range | Power |
|-----------------------|--------|-----|--------------|-------|
| | V | A | | |
| FPS1000-12 | 12V | 72A | 10.5 ~ 13.2V | 864W |
| FPS1000-24 | 24V | 40A | 21.5 ~ 29.0V | 960W |
| FPS1000-32 | 32V | 31A | 28.8 ~ 38.4V | 992W |
| FPS1000-48 | 48V | 21A | 43.0 ~ 58.0V | 1008W |
| FPS1000-12P | 12V | 72A | 10.5 ~ 13.2V | 864W |
| FPS1000-24P | 24V | 40A | 21.5 ~ 29.0V | 960W |
| FPS1000-32P | 32V | 31A | 28.8 ~ 38.4V | 992W |
| FPS1000-48P | 48V | 21A | 43.0 ~ 58.0V | 1008W |

1. Standard units, input is via IEC socket on the rear of 1U Rack.
2. -P models have input via IEC socket on front of FPS1000 modules (Option)
3. Add "S", for optional I²C Interface

| Rack Selector | Rack Details | Rack Option | Part no: FPS-T1U |
|----------------------------|--|--|------------------|
| FPS-S1U (Standard Rack) | 1U x 19in Rack Assembly. Suitable for 1-3 FPS1000-xx rectifier modules, with input via three separate IEC sockets on rear of rack. | 1U x 19in rack, with the three outputs "floating" from each other, allowing a combination of different voltages of FPS1000 modules to be loaded into the rack. | |
| FPS-S1U-P | 1U x 19in Rack Assembly. Suitable for 1-3 FPS1000-xx P rectifier modules, with input via individual front panel IEC sockets on each module. | | |

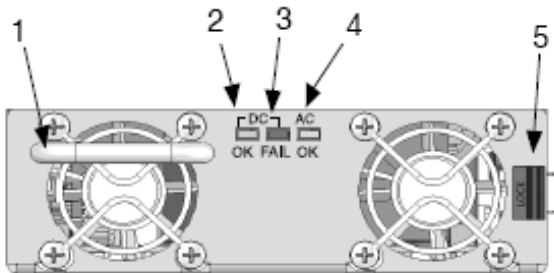


Fig. 3-1: FPS1000 front panel

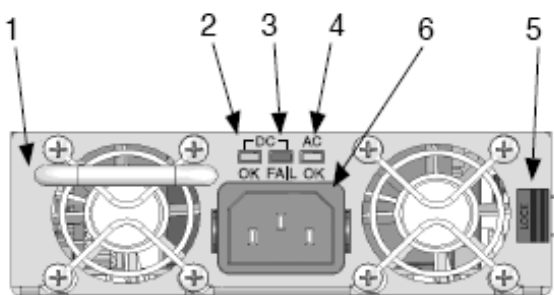


Fig. 3-2: FPS1000/P front panel

FPS1000 Front Panel Details.

1. Handle
2. DC OK green LED, ON when output is on.
3. DC Fail red LED, ON when output has failed
4. AC OK green LED, ON when input voltage is on
5. Lock / Unlock level. Automatically locks the power supply module to the FPS-S1U rack.
 - Push the lock / unlock lever towards the power supply cooling fan to withdraw the FPS1000 power supply from the rack
6. IEC320 AC inlet for FPS1000-xx-P models

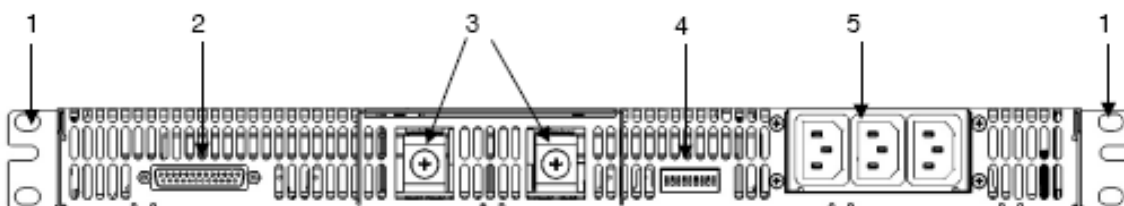
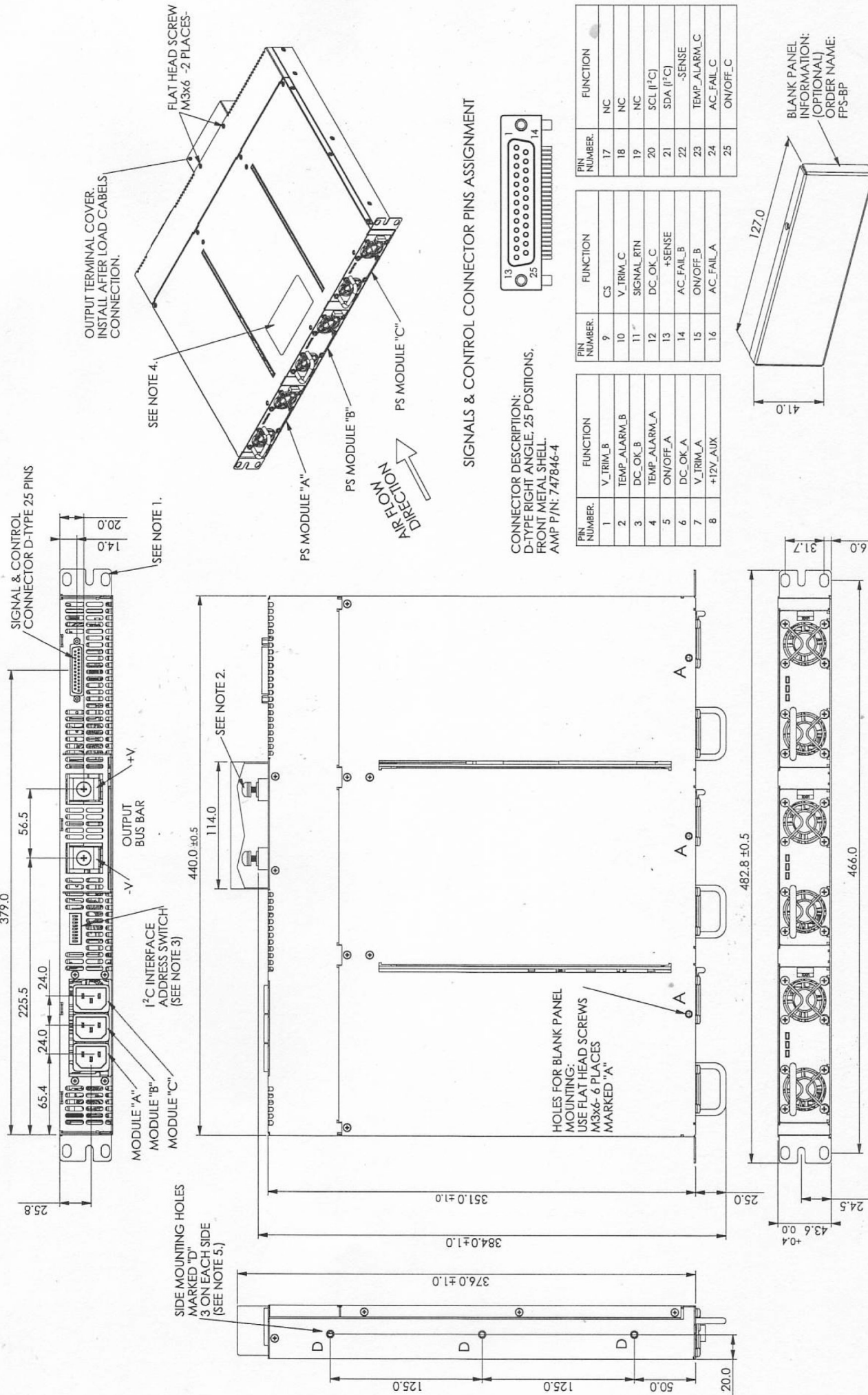


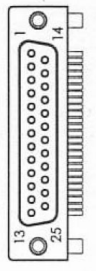
Fig 10.1: FPS-S1U Rear Panel

1. Mounting brackets. Use M6 x 12 screws to fix the FPS-S1U to the rack
2. DB25 connector for control and monitoring signals
3. Output voltage terminals. Use M6 x 16 screws and lug to connect load wires.
4. DIP switch for I²C option address settings. Refer to manual for details
5. IEC320 AC Inlets shown on FPS-S1U rack. One for each FPS1000-xx rectifier
6. Optional terminal block connector available, rack part no: FPS-S1U/TB

11.1 FPS-S1U Outline Drawing



SIGNALS & CONTROL CONNECTOR PINS ASSIGNMENT



CONNECTOR DESCRIPTION:
D-TYPE RIGHT ANGLE, 25 POSITIONS,
FRONT METAL SHELL
AMP P/N: 747846-4

| PIN NUMBER | FUNCTION | PIN NUMBER | FUNCTION | PIN NUMBER | FUNCTION |
|------------|--------------|------------|------------|------------|------------------------|
| 1 | V_TRIM_B | 9 | CS | 17 | NC |
| 2 | TEMP_ALARM_B | 10 | V_TRIM_C | 18 | NC |
| 3 | DC_OK_B | 11 | SIGNAL_RTN | 19 | NC |
| 4 | TEMP_ALARM_A | 12 | DC_OK_C | 20 | SCL (I ² C) |
| 5 | ON/OFF_A | 13 | +SENSE | 21 | SDA (I ² C) |
| 6 | DC_OK_A | 14 | AC_FAIL_B | 22 | -SENSE |
| 7 | V_TRIM_A | 15 | ON/OFF_B | 23 | TEMP_ALARM_C |
| 8 | +12V_AUX | 16 | AC_FAIL_A | 24 | AC_FAIL_C |
| | | | | 25 | ON/OFF_C |

BLANK PANEL INFORMATION:
(OPTIONAL)
ORDER NAME:
FPS-BP

- NOTES
1. MOUNTING HOLES FOR 19" RACK. USE M6x12 TO FIX THE UNIT TO A RACK.
 2. M6x16 SCREWS FOR LOAD WIRES FIXING. USE M6 LUG FOR THE LOAD WIRES. RECOMMENDED TIGHTENING TORQUE 42-56 kgf.cm
 3. REFER TO INSTRUCTION MANUAL FOR SETTING DETAILS.
 4. MODEL NAME, VOLTAGE AND CURRENT RATING AND SAFETY APPROVALS SYMBOLS WILL BE SHOWN HERE ACCORDING TO THE SPECIFICATIONS.
 5. MOUNTING HOLES M5 FOR MOUNTING BRACKETS. USE M5x8 SCREWS TO FIX THE BRACKETS TO THE CHASSIS. SCREWS MUST NOT PENETRATE THE CHASSIS MORE THAN 6 mm.
 6. THE FPS-S1U RACK IS SHOWN WITH 3 FPS1000 UNITS INSTALLED.