Amphenol SOCAPEX

# PS SERIES
# PSMATPHDCU127P500-3
## Three Phase AC/DC POWER SUPPLY

- Three phase AC/DC power supply
- High efficiency
- Single output
- Up to 500 w

## Applications

Military (ground-fix, shipboard), Ruggedized, Telecom, Industrial

## Special Features

- Miniature size
- High efficiency
- Wide input range
- Input / Output Isolation
- Inrush Current Limiter
- Fixed switching freq. (250 kHz)
- External Inhibit
- EMI filters included
- Non-latching automatic recovery protections:
  - Short-circuit
  - Over-temperature

## Electrical Specifications

***AC Input***

115 $V_{RMS, L-N}$ ± 10%, 400 Hz
3-Phase

***Efficiency***

Typically: 90%
(270$V_{DC}$ output, full load, nominal input voltage, room temperature)

***Isolation* – Low voltage version**

Input to Output: 500 $V_{DC}$

Input to Case: 500 $V_{DC}$
Output to Case: 500 $V_{DC}$

***Transient over-and-undershoot*** Output resistance at load change of 50% to 100% is 1.5 Ω, typical.

***DC Output***

Voltage range: 100 to 320 $V_{DC}$
Current range: 0 to 5 A
Power range: 0 to 500 W

***Output voltage regulation***

Less than ±1%
(No load to full load, –55°C to +85°C and over normal input voltage range).

***Isolation* – High voltage version**

Input to Output: 1 000 $V_{DC}$

Input to Case: 200 $V_{DC}$
Output to Case: 1 000 $V_{DC}$

***Abnormal surge (no damage)***

IAW MIL-STD-704A-F:
0 V to 180V

***Ripple & Noise***

Less than 100$mV_{p-p}$, typical (max.
1%) without external capacitance. When connected to the system capacitance ripple drops significantly.

***EMC***

Designed to meet MIL-STD-461F
CE102, CS101, CS114, CS115, CS116, RE102, RS101, RS103.

## Markets & Applications

Military (Airborne, ground-fix, shipboard), Ruggedized

Telecom, Industrial

## Protections *

***Input***

- **Inrush Current Limiter** Peak value of 5x $I_{IN}$ for inrush current lasting over 50µsec.

***Output***

- **Passive Over-Voltage Protection** Transorb assembled across the output pins, selected at 120% ± 10% of nominal voltage.
- **Current Limiting** Continuous protection (10-30% above maximum current) for unlimited time (Hiccup).

**General**

- **Over Temperature Protection** Unit shuts down if baseplate temperature rises above +105°C ± 5°C.

  Automatic recovery when baseplate temperature falls below +95°C ± 5°C.

## Environmental Conditions

Designed to meet MIL-STD-810G

***Temperature***
Operating: –55 °C to +85 °C (at baseplate)
Storage:–55 °C to +125°C

***Altitude***
Method 500.4
Procedures I & II – Up to 33 kft.
Higher altitude option.

***Salt Fog***
Method 509.4

***Humidity***
Method 507.4
Procedure I

Up to 95% RH

***Vibration (random)***
Method 514.5
Category 4 - General minimum integrity exposure
IAW Figure 514.5C-17
1 hour per axis.

***Shock***
Method 516.5
Procedure I

20 g, 11 ms terminal peak saw-tooth,

## Reliability

150 000 hours, calculated IAW MIL-HDBK-217F Notice 2 at +85 °C baseplate, Ground Fixed environment.

***Notes:***

* Thresholds and protections can be modified / removed – please consult factory.

## Pin Assignment †

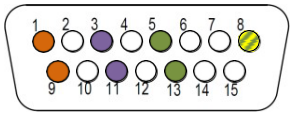
### *J1 - Input Connector*

**Type:** M24308/24-38F or eq.
**Mates with:** M24308/2-2F or eq.

| Pin No. | Function |
|---|---|
| 1 | PHASE A |
| 2 | N.C. |
| 3 | PHASE B |
| 4 | N.C. |
| 5 | PHASE C |

| Pin No. | Function |
|---|---|
| 6 | N.C. |
| 7 | N.C. |
| 8 | CHASSIS |
| 9 | PHASE A |
| 10 | N.C. |

| Pin No. | Function |
|---|---|
| 11 | PHASE B |
| 12 | N.C. |
| 13 | PHASE C |
| 14 | N.C. |
| 15 | N.C. |



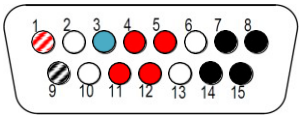

### *J2 - Output Connector*

**Type:** M24308/23-38F or eq.
**Mates with:** M24308/4-2F or eq.

| Pin No. | Function |
|---|---|
| 1 | BIT |
| 2 | N.C. |
| 3 | INHBIT |
| 4 | OUT |
| 5 | OUT |

| Pin No. | Function |
|---|---|
| 6 | N.C. |
| 7 | OUT RTN |
| 8 | OUT RTN |
| 9 | BIT RTN |
| 10 | N.C. |

| Pin No. | Function |
|---|---|
| 11 | OUT |
| 12 | OUT |
| 13 | N.C. |
| 14 | OUT RTN |
| 15 | OUT RTN |




† All pins with identical function/designation should be connected for best performance

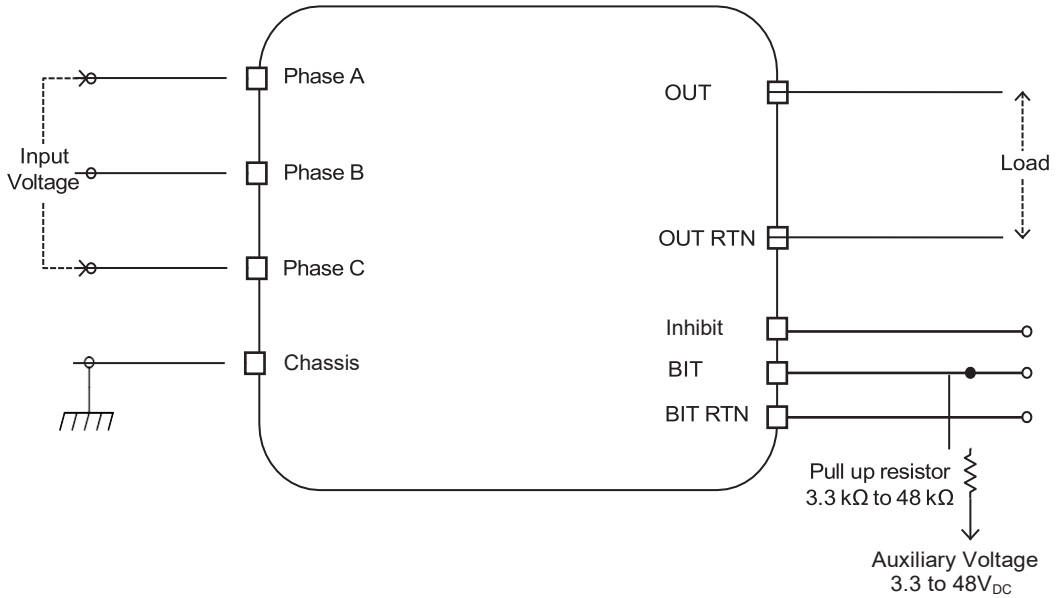
## Functions and Signals

**INHIBIT** (connector J2, pin 3)
The INHIBIT signal is used to turn the power supply ON and OFF. “1” or OPEN – Power supply active (output turned on).
“0” or SHORT to OUT RTN – Power supply inhibited (output turned off). If this function is not required, leave this pin unconnected.

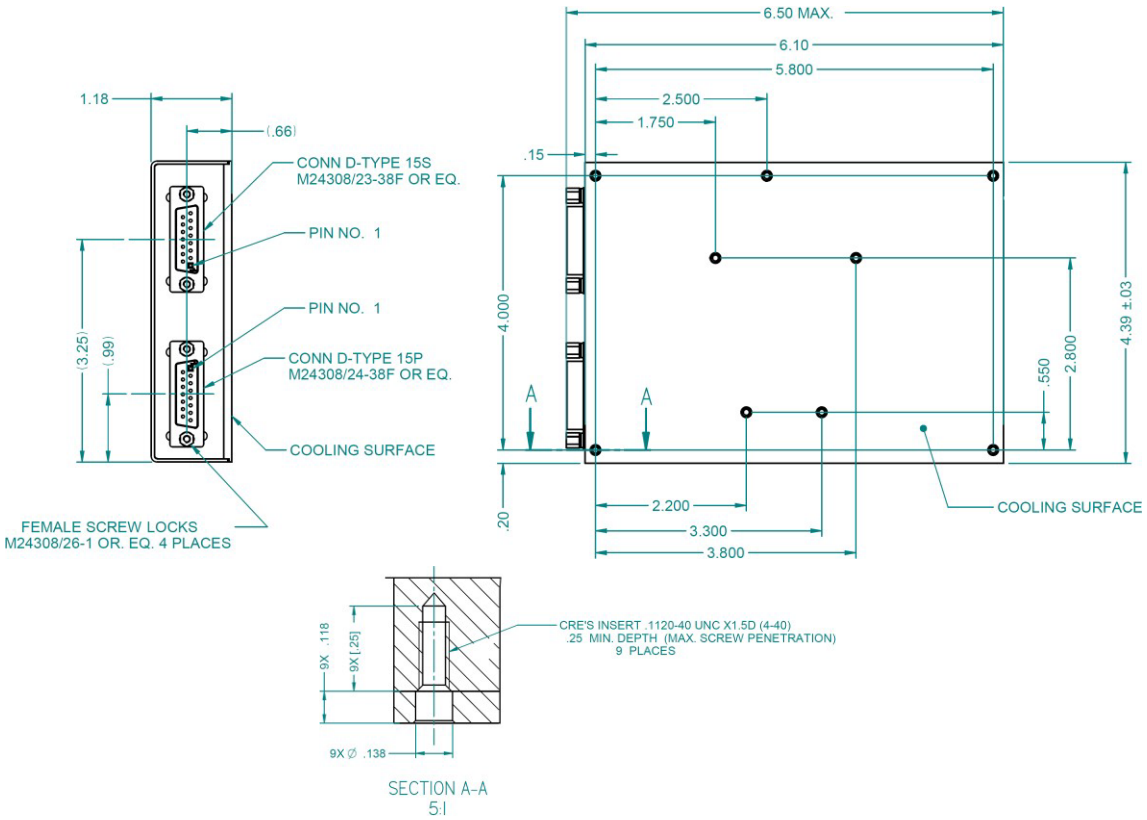
**BIT** (connector J2, pin 1)
The **BIT** signal indicates the status of the output voltage.
When output voltage rises above 90% ± 5% of its nominal value, pin 1 will be pulled down to pin 9 through a 20 Ω ± 1% resistor and a phototransistor.
When output voltage falls below 90% ± 5% of its nominal value, pin 1 will be in high impedance mode. If not used, leave this pin open.
This signal is referenced to **BIT RTN** pin **(connector J2, pin 9)**
Absolute maximum voltage between BIT and BIT RTN: 52 $V_{DC}$
Absolute maximum current into BIT pin: 2 mA (connect external voltage to this pin via an external resistor) Both pins 1 and 9 are isolated from all other parts of the circuitry.

**CHASSIS** (connector J1, pin 8)
The CHASSIS pin allows additional connection of unit's chassis to the system ground.

## Typical Connection Diagram



## Outline Drawing




***Notes***

1. Dimensions are in inches [mm]
2. Tolerance is:
   .XX ± 0.02 in
   .XXX ± 0.010 in
3. Weight: approx. 900 gr

***Note: Specifications are subject to change without prior notice by the manufacturer***

Amphenol Socapex
948, promenade de l'Arve BP29
74311 Thyez Cedex - France
Phone: +33 (0)4 50 89 28 00
contact@amphenol-socapex.fr