

## PS SERIES PSMATPLDCU127P1K-X Three Phase AC/DC POWER SUPPLY



- AC/DC power supply
- 115vac, 50/60/400hz, 3- phase
- High efficiency

- High density
- Single dc output
- Up to 1000 W

### Special Features

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Limited Inrush Current
- External On/Off Inhibit
- Fixed switching freq. (400 kHz)
- External sync. capability
- EMI filters included
- Up to 28 W/in<sup>3</sup>
- Power Factor 85%-90% at 75-100% load.
- Indefinite short circuit protection with auto-recovery
- Over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

### Electrical Specifications

#### Input Voltage Range

AC Input range:  
103 -127V<sub>AC</sub>, 50/60/400Hz, 3-phase.

**Optional:** Can be configured for continuous work during 80 V<sub>AC</sub> transient IAW MIL-STD-704F.

#### Line/Load regulation

Less than 1% (Low line to high line, no load to full load, -55°C to +85°C).

#### Ripple and Noise

100-150mV<sub>p-p</sub>, typical (max. 1%) without external capacitance.

#### DC Output

Voltage range: 5V to 50V  
Output power: Up to 1000W  
Output current: Up to 42A

#### Efficiency

90% typical (full load, nominal line voltage, room temperature)

#### Turn on Transient

No Voltage over shoot during power on.

#### Isolation

Input to Output: 500V<sub>DC</sub>  
Input to Case: 500V<sub>DC</sub>  
Output to Case: 100V<sub>DC</sub>

#### EMC\*\*

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

## Markets & Applications



Military, ruggedized, ground radar



Telecom, industrial

# PS Series: PSMATPLDCU127P1K-X

## Protections \*\*\*

### Input

#### • Inrush Current Limiter

Peak value of  $6 \times I_{nom}$  for inrush currents lasting over  $50\mu s$ .

### Output

#### • Passive Over-Voltage

**Protection** Transorb on outputs, chosen at  $120\% \pm 10\%$  of nominal voltage.

#### • Overload / Short-circuit

Continuous protection (10 to 30% above maximum current) for unlimited time.

### General

#### • Over Temperature Protection

Shutdown if baseplate temperature rises above  $+105^{\circ}C \pm 5^{\circ}C$ .

Automatic recovery upon cool down when baseplate temperature drops below  $+95^{\circ}C \pm 5^{\circ}C$ .

\* Available on special versions. Contact factory for further details.

\*\* Depending on configuration, an external filter may be required to comply with EMI requirements.

## Environmental Conditions

Designed to meet MIL-STD-810F

### Temperature

Operating:  $-55^{\circ}C$  to  $+85^{\circ}C$  (base plate)

Storage:  $-55^{\circ}C$  to  $+125^{\circ}C$

### Altitude

Method 500.4, Procedure I & II, 40,000 ft. and 70,000 ft.

Operational

### Salt Fog

Method 509

### Fungus Resistance

Method 508

### Humidity

Method 507.4 - Up to 95%.

### Salt and Dust

Method 510, Procedure I

### Vibration and Shock

Shock: Saw-tooth, 20g peak, 11ms.

Vibration: Figure 514.5C-17. General minimum integrity exposure, 1 hour per axis.

## Reliability

150,000 hours, calculated IAW MIL-HDBK-217F Notice 2 at  $+85^{\circ}C$  (at baseplate), Ground Fix conditions.

## Environmental Stress Screening (ESS)

Including random vibration and thermal cycles is also available. **Please consult factory for details.**

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

# PS Series: PSMATPLDCU127P1K-X

## Standard Models List (for other voltages – consult factory)

Part number	Input		Output		Type	
	Voltage range	Frequency	Voltage	Current	A	B
PSMATPLDCU127P1K-0	103V <sub>AC</sub> - 127V <sub>AC</sub> / 3-phase	50/60/400 Hz	5 V <sub>DC</sub>	40 A	V	
PSMATPLDCU127P1K-1	103V <sub>AC</sub> - 127V <sub>AC</sub> / 3-phase	50/60/400 Hz	12 V <sub>DC</sub>	40 A	V	
PSMATPLDCU127P1K-2	103V <sub>AC</sub> - 127V <sub>AC</sub> / 3-phase	50/60/400 Hz	15 V <sub>DC</sub>	40 A	V	
PSMATPLDCU127P1K-3	103V <sub>AC</sub> - 127V <sub>AC</sub> / 3-phase	50/60/400 Hz	24 V <sub>DC</sub>	40 A	V	
PSMATPLDCU127P1K-4	103V <sub>AC</sub> - 127V <sub>AC</sub> / 3-phase	50/60/400 Hz	28 V <sub>DC</sub>	36 A	V	
PSMATPLDCU127P1K-5	103V <sub>AC</sub> - 127V <sub>AC</sub> / 3-phase	50/60/400 Hz	48 V <sub>DC</sub>	20 A	V	
PSMATPLDCU127P1K-20	103V <sub>AC</sub> - 127V <sub>AC</sub> / 3-phase	50/60/400 Hz	5 V <sub>DC</sub>	40 A		V
PSMATPLDCU127P1K-21	103V <sub>AC</sub> - 127V <sub>AC</sub> / 3-phase	50/60/400 Hz	12 V <sub>DC</sub>	40 A		V
PSMATPLDCU127P1K-22	103V <sub>AC</sub> - 127V <sub>AC</sub> / 3-phase	50/60/400 Hz	15 V <sub>DC</sub>	40 A		V
PSMATPLDCU127P1K-23	103V <sub>AC</sub> - 127V <sub>AC</sub> / 3-phase	50/60/400 Hz	24 V <sub>DC</sub>	40 A		V
PSMATPLDCU127P1K-24	103V <sub>AC</sub> - 127V <sub>AC</sub> / 3-phase	50/60/400 Hz	28 V <sub>DC</sub>	36 A		V
PSMATPLDCU127P1K-25	103V <sub>AC</sub> - 127V <sub>AC</sub> / 3-phase	50/60/400 Hz	48 V <sub>DC</sub>	20 A		V

- Additional standard configurations available. **Contact factory for more details.**
- All of our products can be configured to comply with EU REACH regulations. **Contact factory for more details.**

# PS Series: PSMATPLDCU127P1K-X

## Pin Assignment – type A

### Connector J1 (Input)

Connector type: M24308/24-38F or eq.

Mating connector: M24308/2-2F or eq.

Pin No.	Pin Function	Pin No.	Pin Function
1	N.C.	9	PHASE C
2	PHASE C	10	PHASE C
3	N.C.	11	N.C.
4	PHASE B	12	PHASE B
5	PHASE B	13	N.C.
6	N.C.	14	PHASE A
7	PHASE A	15	PHASE A
8	N.C.		

### Connector J2 (Output)

Connector type: M24308/23-39F or eq.

Mating connector: M24308/4-3F or eq.

Pin No.	Pin Function	Pin No.	Pin Function	Pin No.	Pin Function
1	N.C	10	OUT RTN (-)	19	OUT (+)
2	N.C	11	OUT RTN (-)	20	OUT RTN (-)
3	INHIBIT	12	OUT RTN (-)	21	OUT RTN (-)
4	OUT (+)	13	OUT RTN (-)	22	OUT RTN (-)
5	OUT (+)	14	OUT (+)	23	OUT RTN (-)
6	OUT (+)	15	OUT (+)	24	OUT RTN (-)
7	OUT (+)	16	OUT (+)	25	OUT RTN (-)
8	OUT (+)	17	OUT (+)		
9	OUT RTN (-)	18	OUT (+)		

\* All output parallel pins should be connected together for best performance.

# PS Series: PSMATPLDCU127P1K-X

## Pin Assignment – type B

### Connector J1 (Input)

**Connector type:** M24308/24-38F or eq.

**Mating connector:** M24308/2-2F or eq.

Pin No.	Pin Function	Pin No.	Pin Function
1	N.C.	9	PHASE C
2	PHASE C	10	PHASE C
3	N.C.	11	N.C.
4	PHASE B	12	PHASE B
5	PHASE B	13	N.C.
6	N.C.	14	PHASE A
7	PHASE A	15	PHASE A
8	N.C.		

### Connector J2 (Output)

**Connector type:** M24308/23-39F or eq.

**Mating connector:** M24308/4-3F or eq.

Pin No.	Pin Function	Pin No.	Pin Function	Pin No.	Pin Function
1	SENSE	10	OUT RTN (-)	19	OUT (+)
2	SENSE RTN	11	OUT RTN (-)	20	OUT RTN (-)
3	INHIBIT	12	OUT RTN (-)	21	OUT RTN (-)
4	OUT (+)	13	OUT RTN (-)	22	OUT RTN (-)
5	OUT (+)	14	OUT (+)	23	OUT RTN (-)
6	OUT (+)	15	OUT (+)	24	OUT RTN (-)
7	OUT (+)	16	OUT (+)	25	OUT RTN (-)
8	OUT (+)	17	OUT (+)		
9	OUT RTN (-)	18	OUT (+)		

\* All output parallel pins should be connected together for best performance.

\*\* Please consult factory for details.

# PS Series: PSMATPLDCU127P1K-X

## Functions and Signals

### **INHIBIT signal**

The INHIBIT signal is used to turn the power supply ON and OFF.

TTL "1" or OPEN – Power supply active (output turned on).

TTL "0" or SHORT to Output RTN – Power supply inhibited (output turned off).

If this function is not required, leave this pin unconnected.

### **SENSE**

The SENSE line is used to achieve accurate voltage regulation at load terminals.

To use this feature, connect this pin directly to load's positive terminal.

If this function is not required, short SENSE pin to OUTPUT pins as close as possible to the unit.

### **SENSE RTN**

The SENSE RTN line is used to achieve accurate voltage regulation at load terminals.

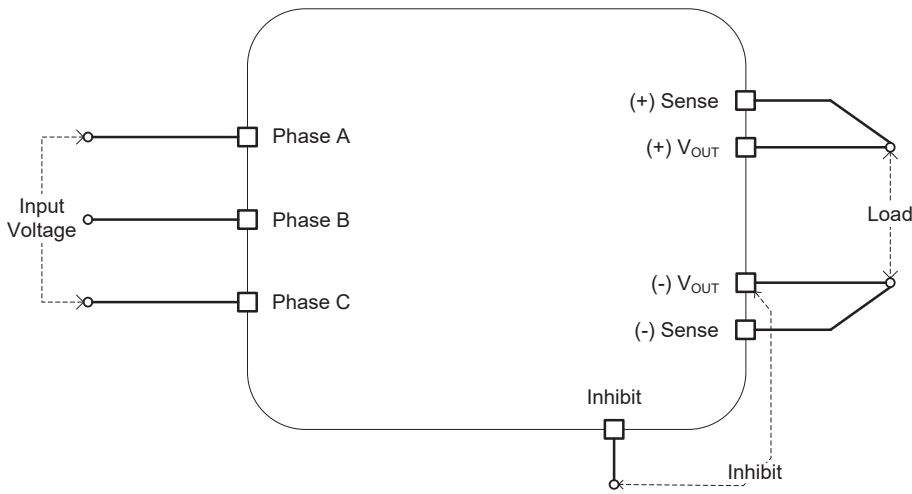
To use this feature, connect this pin directly to load's negative terminal.

If this function is not required, short SENSE RTN pin to OUTPUT RTN pins as close as possible to the unit.

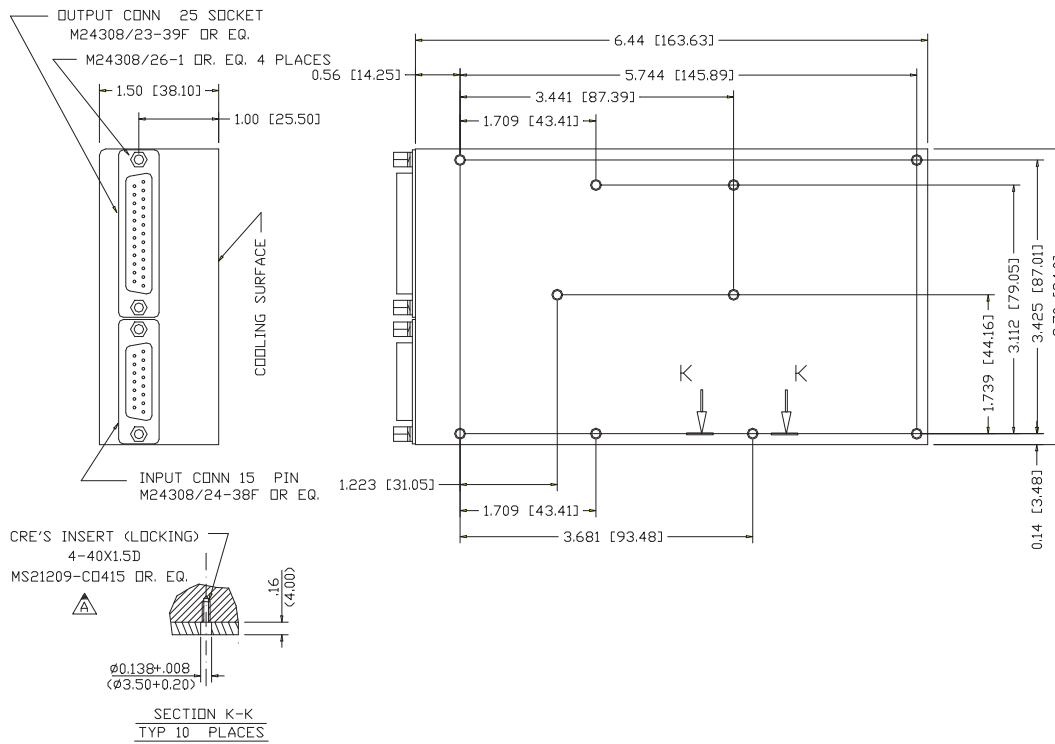
**Note:** The use of remote sense has a limit of voltage dropout between the converter's output and the load's terminals of approximately 5% of nominal output voltage.

# PS Series: PSMATPLDCU127P1K-X

## Typical Connection

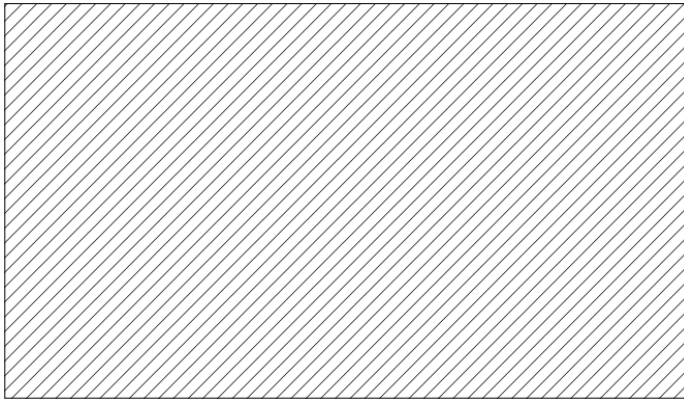


## Outline Drawing



# PS Series: PSMATPLDCU127P1K-X

## Heat Dissipation Surface

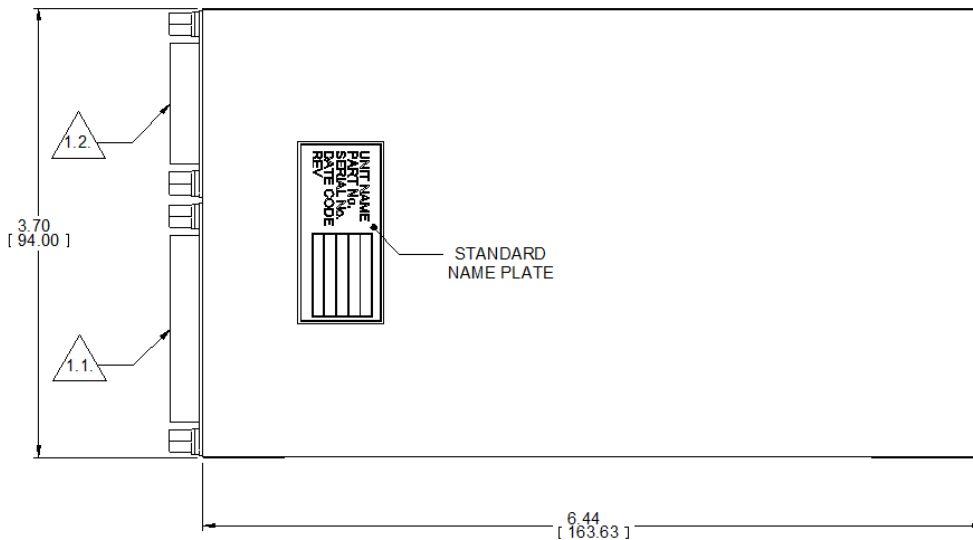


Dissipation Area  
23.84 in<sup>2</sup>  
(15380 mm<sup>2</sup>)

### Notes

1. Dimensions are in Inches [mm]
2. Tolerance is:  
.XX ±.02 IN  
.XXX ±.01 IN
3. Weight: 37.4 oz (1075 g)
4. Parasolid 3D model available

## Label location:



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

