Amphenol SOCAPEX

PS SERIES
PSMDU48P40D-X
DC TO DC POWER SUPPLY

Description

The PSMDU48P40D-X is a series of mechanically robust, base-plate cooled, high performance, power supplies, designed for Ground Mobile (MIL-STD-1275), Airborne (MIL-STD-704) and other Hi-Reliability applications where 28VDC has to be converted to a tightly regulated, filtered and protected DC output.

Standard Models List (for other voltages – consult factory)

Part number	Input		Output 1		Output 2	
	Voltage range	Output Power	Voltage	Current	Voltage	Current
PSMDU48P40D-0	$18V_{DC}$ -$48V_{DC}$	73W	3.3 V_{DC}	10 A	5 V_{DC}	8 A
PSMDU48P40D-1	$18V_{DC}$ -$48V_{DC}$	76W	5 V_{DC}	8 A	12 V_{DC}	3 A
PSMDU48P40D-2	$18V_{DC}$ -$48V_{DC}$	69W	12 V_{DC}	3 A	3.3 V_{DC}	10 A
PSMDU48P40D-3	$18V_{DC}$ -$48V_{DC}$	79.2W	28 V_{DC}	1.4 A	5 V_{DC}	8 A
PSMDU48P40D-4	$18V_{DC}$ -$48V_{DC}$	78.4W	48 V_{DC}	0.8 A	5 V_{DC}	8 A
PSMDU48P40D-5	$18V_{DC}$ -$48V_{DC}$	40W	5 V_{DC}	5 A	5 V_{DC}	3 A

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

Markets & Applications

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

Telecom, Industrial Power Supply

THE MAIN FEATURES OF THE PSMDU48P40D-X ARE:

- DC/DC Triple outputs power supply up to 80W
- 18 to 48VDC Standard Input version
- For extended input version - **Please contact factory for more details**
- Miniature size
- High efficiency
- Wide input range
- Up to 20 W/in³
- Input / Output isolation
- Fixed switching frequency (250 kHz)
- TTL logic enable
- EMI filters included
- Indefinite short circuit protection with auto-recovery
- Input over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

SPECIFICATIONS:

DC Input	*Voltage Range*	DC Input range: 18 to 48V_{DC} For extended input version **- Please contact factory for more details**
	Isolation	200V_{DC} between Input and Output 200V_{DC} between Input and Case
	Input transient	Input transient protection: All models withstand surges (no operation, no damage) IAW MIL-STD-1275A (100V for 50ms) and MIL-STD-704A/D (80V for 0.1s)
DC Output	*Rating*	See table on page 6
	Voltage Regulation	Better than or equal to ±1% (low to high line voltage, no load to full load, –55 °C to +85 °C at baseplate).
	Ripple & Noise	50mV_{p-p}, typical (up to 1%) Current limiting (Foldback): Continuous protection for unlimited time
	Isolation	100V_{DC} between Output and Case
	Current Limit & Overload	Continuous protection for unlimited time Overload/short-circuit
	Efficiency	Efficiency: Up to 82%
	Overvoltage Protection	Over voltage protection: Passive transorb on output at +120°C ±5°C
	Over Temp. Protection	Over temperature protection: Shutdown if baseplate temperature exceeds. +105°C ±5°C. Automatic recovery at baseplate temperature lower than +95°C ±5°C).
	Line/Load regulation	Up to ±1% (Low to high line voltage, no load to full load, –55°C to +85°C)

Specifications (Cont.):

Control & Indication	*INHIBIT Input*	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 Signal RTN – Power supply inhibited (output turned off). If this function is not required, leave this pin unconnected.
	SIGNAL RTN	INHIBIT and SYNC signals are referenced to this pin. This pin is referenced to IN RTN
	SYNC IN signal	The SYNC IN signal is used to allow the power supply frequency to sync with the system frequency. The system frequency should be 250 kHz ± 10 kHz. When not connected the power supply will work with internal sync at 250 kHz ± 10 kHz. This signal is referenced to the SIGNAL RTN pin.
Environment Designed to meet MIL-STD-810F	*Temperature*	Operating -55°C to +85°C (baseplate) Storage -55°C to +125°C
	Humidity	Method 507.4 Up to 95% RH
	Salt-fog	Method 509.4
	Altitude	Method 500.4
	Mechanical Shock	Method 516.5
	Vibration	Method 514.5
	Fungus	Does not support fungus growth, in accordance with the guidelines of MIL-STD-454, Requirement 4
EMI	*MIL-STD-461F*	Designed to meet* MIL-STD-461F* CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103
Reliability	150,000 hours, calculated per MIL-STD-217F at +85°C baseplate, ground fixed	
Cooling Requirements	The PSMDU48P40D-X is a baseplate cooled unit. The should be thermally attached to a suitable heatsink that maintains it below +85 °C.	
Form factor	2.6'' wide, 3.75'' high and 0.5'' deep. For detailed dimensions and tolerances see Drawing: PSMDU48P40D	
Weight	6.35oz (180gr)	
Connectors	See Page 6	

* Compliance achieved with 5µH LISN, shielded harness and static resistive load.

OUTPUTS RANGE

Output #	Voltage Range	Current Range	Output Regulation	Power Range
1	1.5 to 70 V_{DC}	0 to 10 A	±1%	0 to 40 W
2	1.5 to 70 V_{DC}	0 to 10 A	±1%	0 to 40 W
Total				0 to 80 W

PIN ASSIGNMENT

Connector type: Airborne RM272-040-312-2900 or eq.
Mates with: Airborne RM242-040-571-5900 (crimp removable pins) or RM242-040-241-5900 (solder cup pins).

Pin No.	Function
18, 19, 20, 38, 39	VOUT 1 (+)
16, 17, 35, 36, 37	VOUT 1 RTN (–)
12, 13, 32, 33	VIN (+)
10, 11, 29, 30	VIN RTN (–)
3, 4, 5, 23, 24	VOUT 2 (+)

Pin No.	Function
6, 7, 25, 26, 27	VOUT 2 RTN (–)
1	SYNC
21	SIGNAL RTN
22	INHIBIT
40	SENSE 1 (+)

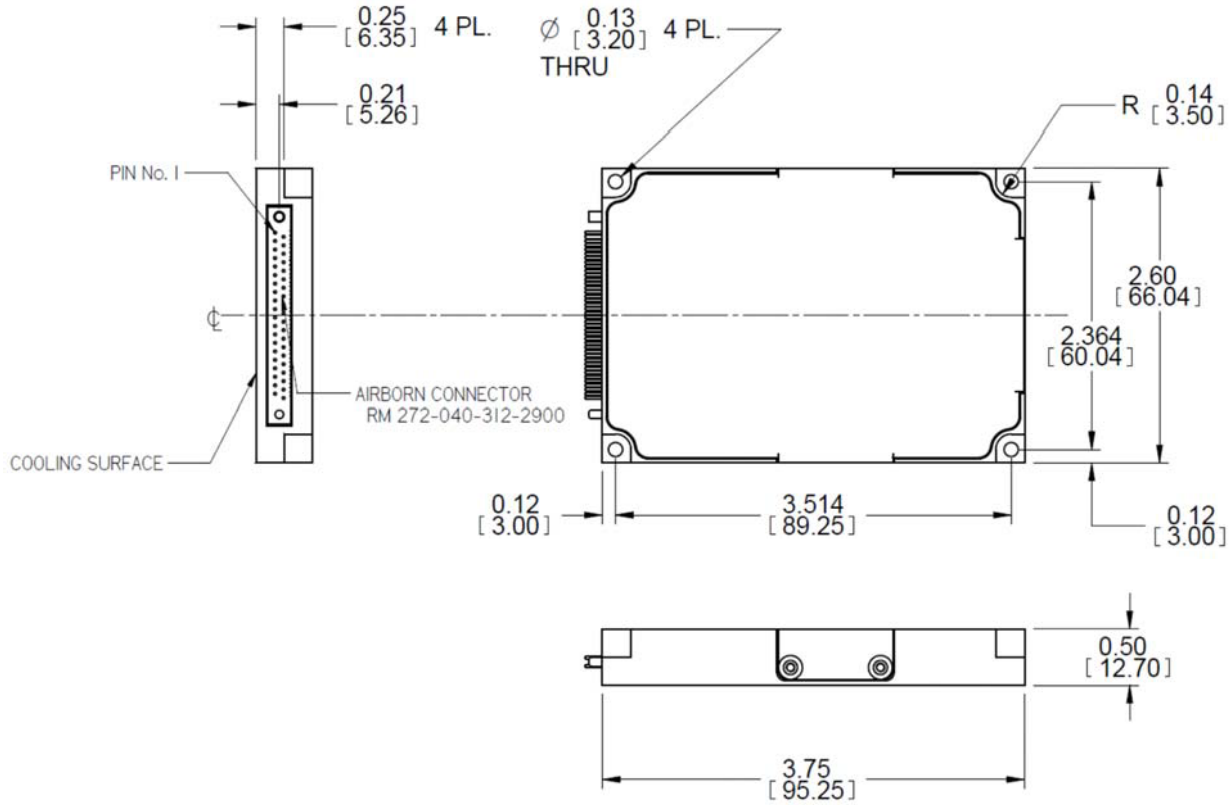
Pin No.	Function
15	SENSE 1 RTN (–)
2	SENSE 2 (+)
8	SENSE 2 RTN (–)
14	CHASSIS
9, 28, 31, 34	N.C.

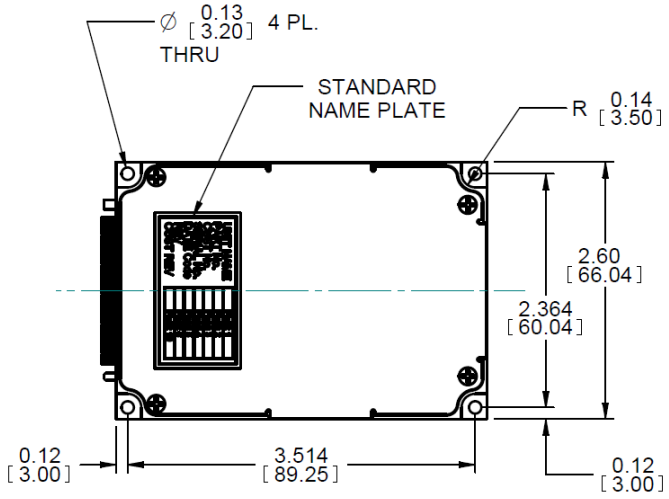
Notes:

1. SIGNAL RTN is the reference line for INHIBIT and SYNC signals.
2. For optimal performance, connect all pins with identical function/designation together.
3. Always connect the sense lines to either the respective load terminals or their respective output pins – do not leave the sense lines open! Please contact factory if sense functionality is not required.

OUTLINE DRAWING

For detailed dimensions and tolerances see Drawing: PSMDU48P40D





Notes:

1. Dimensions are in Inches [mm]
2. Tolerance is:
   XX ± 0.01 IN
   XXX ± 0.005 IN
3. Weight: Approx. 6.35 oz (180g)

Please note: Specifications are subject to change without prior notice by the manufacturer.

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