PSMDU48P200-X SERIES
DC/DC POWER SUPPLY
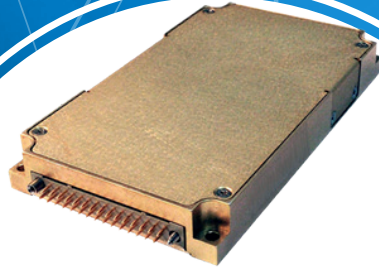
- **Miniature**
- **High density**
- **Single output**

- **DC/DC Power supply**
- **Up to 200 w**

Special Features

- Miniature size
- High efficiency
- High Density – up to 32.4 W/in³
- Wide input range
- Input / Output isolation
- Remote sense compensation

- Remote Inhibit (On/Off)
- Parallel connection (Option)
- Output voltage calibration (Option)
- Current limit calibration (Option)
- Fixed switching freq (250 kHz)
- External sync capability

- EMI filters included
- Non-latching protections:
  - Overload
  - Short circuit
  - Output Over Voltage
  - Over Temperature

Electrical Specifications

DC Input
Voltage range: 18 to 48 V_{DC},
IAW MIL-STD-704F

No damage due to overvoltage
transients IAW:
MIL-STD-1275A (100 V for 50 ms)
MIL-STD-704A (80 V for 0.1 s)

DC Output
Voltage range: 3.3 to 50 V_{DC}
Current range: 0 to 20 A
Power range: 0 to 200 W

Isolation
Input to Output: 200 V_{DC}
Input to Case: 200 V_{DC}
Output to Case: 100 V_{DC}

Line/Load regulation
Better than ±1% (no load to full
load, –55 °C to +85 °C and over
input voltage range).

Efficiency
Typical 86-87% - (at 28V full load,
room temperature)

EMC
Designed to meet MIL-STD-461F*
CE101, CE102, CS101, CS114,
CS115, CS116, RE101, RE102,
RS101, RS103

Ripple and Noise
Less than 50 mV_{p-p}, typical (max.
1%) without external capacitance.
When connected to system
capacitance ripple drops
significantly.

Transient Over-and-undershoot
Output change at load transient of
30%-100% with T_r & T_f of max 30 µs is
5% of output voltage. Output recover
to steady stated within less 0.5 ms.

Turn on Transient
No output voltage overshoot
during power on.

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

Markets & Applications

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

Telecom, Industrial Power Supply

www.amphenol-socapex.com
Due to technical progress, all information provided is subject to change without prior notice
Designed by Amphenol Socapex

1

Amphenol **SOCAPEX**

PSMDU48P200-X SERIES

Protections *

Input
- **Under Voltage Lockout**
  Turn off below 15 V_{DC}.
  Turn on above 16-18 V_{DC}.
  UVLO hysteresis is approx. 2-3 V.
- **Over Voltage Lockout**
  Turn off above 52-55 V_{DC}.
  Turn on below 48-51 V_{DC}.

Output
- **Over Voltage Protection**
  Active protection:
  Unit shuts down if output voltage rises 10% ± 5% above nominal voltage.
  Passive protection:
  Transorb selected at approx. 20% above nominal voltage.
- **Current limiting**
  Continuous protection (10-30% above maximum current) for unlimited time (Hiccup).

General
- **Over Temperature Protection**
  Shutdown at base plate temperature of +105 °C ± 5 °C. Automatic recovery at base plate temperature lower than +95 °C ± 5 °C.

Environmental Conditions

Designed to Meet MIL-STD-810F

Temperature
Methods 501.4 & 502.4
Operating: –55 °C to +85 °C (at baseplate)
Storage: –55 °C to +125 °C (ambient)

Altitude
Method 500.4
Procedures I – Storage/Air transport: up to 70 kft
Procedure II – Operation/Air Carriage: up to 70 kft

Humidity
Method 507.4
Up to 95% RH

Vibration
Method 514.5
Procedure I
Category 24 - General minimum integrity exposure

Shock
Method 516.5
30 g, 11 ms terminal peak saw-tooth

Salt Fog
Method 509.4

Reliability
150,000 hours, calculated IAW MIL-HDBK-217F Notice 2 at +85 °C 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.

www.amphenol-socapex.com
Due to technical progress, all information provided is subject to change without prior notice
Designed by Amphenol Socapex

2

Amphenol SOCAPEX

Pin Assignment

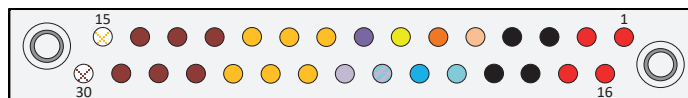**Connector:** WTB30PR7J –D23 or eq.

Mating connector options (Other options available - consult factory)**:**

- Solder cup sockets: WTAX30SACJT# or eq.
- Removable crimp sockets: WTDXA30SJT# or eq.

Pin No.	Function		Pin No.	Function		Pin No.	Function	
1	INPUT	●	11	OUTPUT	○	21	VLTG CAL	●
2	INPUT	●	12	OUTPUT RTN	●	22	SIGNAL RTN	●
3	INPUT RTN	●	13	OUTPUT RTN	●	23	SYNC IN	●
4	INPUT RTN	●	14	OUTPUT RTN	●	24	OUTPUT	○
5	PAR IN		15	SENSE		25	OUTPUT	○
6	PAR OUT		16	INPUT	●	26	OUTPUT	○
7	CRNT LMT CAL		17	INPUT	●	27	OUTPUT RTN	●
8	SYNC OUT		18	INPUT RTN	●	28	OUTPUT RTN	●
9	OUTPUT	○	19	INPUT RTN	●	29	OUTPUT RTN	●
10	OUTPUT	○	20	INHIBIT	●	30	SENSE RTN	

www.amphenol-socapex.com
Due to technical progress, all information provided is subject to change without prior notice
Designed by Amphenol Socapex

3

Amphenol SOCAPEX

Functions and Signals

INHIBIT signal
The INHIBIT signal is used to turn the power supply ON and OFF.
TTL "1" or OPEN – will turn on the power supply. (For normal operation leave the signal not connected.)
TTL "0" or short– will turn off the power supply.

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 at 250 kHz ± 10 kHz.

SYNC OUT signal
The SYNC OUT signal is a buffered clock used to synchronize other units to the switching frequency of this unit.
The signal amplitude is 12V. It is recommended to source and sink up to 1A on this pin.

PAR IN signal
The PAR IN signal is used to connect the power supply in parallel to other power supplies and have them almost equally divide the power between one another. All the power supplies should connect PAR IN signals together except the master unit where the PAR OUT signal connects to all the PAR IN signals.

PAR OUT signal
The PAR OUT signal is used to connect the power supply in parallel to other power supplies and have them almost equally divide the power between one another. The master unit connects the PAR OUT signals to all PAR IN pins of the slave units.

VLTG CAL signal
The VLTG CAL signal is used to control and adjust the output voltage of the power supply by up to ±5%.
The calibration upwards is performed by connecting a resistor between this pin to SENSE pin.
The calibration downwards is performed by connecting a resistor between this pin to SENSE RTN pin.
Use a 1MΩ potentiometer set to full resistance and slowly decrease resistance until required output voltage reached.

CRNT LMT CAL signal
The CRNT LMT CAL signal is used to adjust the output current limit of the power supply.

SIGNAL RTN
The SIGNAL RTN is referred to the output.
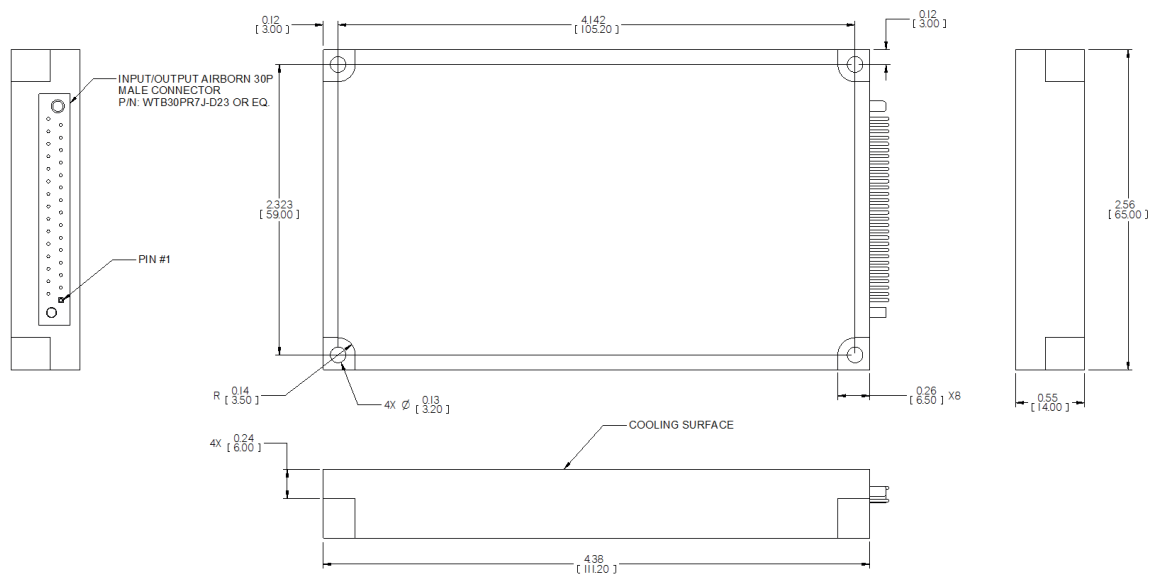This is used as grounding for all signals.

SENSE
The SENSE is used to achieve accurate load regulations at load terminals (this is done by connecting the pins directly to the load's terminals).
The use of remote sense has a limit of voltage dropout between converter's output and load terminals up to 0.5V.
When not used connect + SENSE to +VOUT and –SENSE to –VOUT.

www.amphenol-socapex.com
Due to technical progress, all information provided is subject to change without prior notice
Designed by Amphenol Socapex

4

Amphenol SOCAPEX

PSMDU48P200-X SERIES

Outline Drawing

INPUT/OUTPUT AIRBORN 30P
MALE CONNECTOR
P/N: WTB30PR7J-D23 OR EQ.

PIN #1

0.12 [3.00]

4.142 [105.20]

0.12 [3.00]

2.323 [59.00]

2.56 [65.00]

R 0.14 [3.50]

4X Ø 0.13 [3.20]

0.26 [6.50] X8

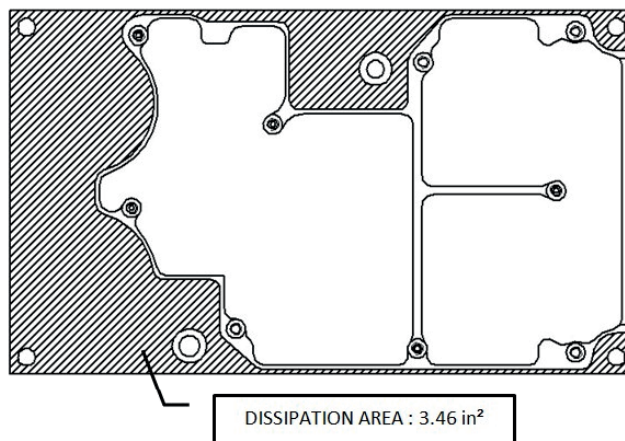0.55 [14.00]

4X 0.24 [6.00]

COOLING SURFACE

4.38 [111.20]

Notes
1. Dimensions are in inches [mm]
2. Tolerance is:
   .XX ± 0.02 in
   .XXX ± 0.008 in
3. Weight: Approx. 6.4 oz [180 g]

Heat Dissipation Surface

DISSIPATION AREA : 3.46 in²

Standard Configurations

Part number	Input voltage range	Output Voltage	Output Current
PSMDU48P200-0	18 to 48 V_{DC}	5 V_{DC}	20 A
PSMDU48P200-1	18 to 48 V_{DC}	12 V_{DC}	16 A
PSMDU48P200-2	18 to 48 V_{DC}	15 V_{DC}	13 A
PSMDU48P200-3	18 to 48 V_{DC}	24 V_{DC}	8 A
PSMDU48P200-4	18 to 48 V_{DC}	28 V_{DC}	7 A
PSMDU48P200-5	18 to 48 V_{DC}	48 V_{DC}	4 A

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

www.amphenol-socapex.com
Follow Amphenol Socapex on social media :

Designed by Amphenol Socapex

Amphenol SOCAPEX