M1467 SERIES

AC+DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- DUAL INPUT
- FIVE OUTPUT
- WIDE INPUT RANGE
- HIGH DENSITY
- AC+DC/DC POWER SUPPLY
- UP TO 380 W

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Amphenol
MILITARY HIGH SPEED

M1467 SERIES AC+DC/DC POWER SUPPLY

Applications

Military (Airborne, Mobile, Ground-Fix), Ruggedized, Telecom, Industrial

Special Features

- Quad (4) DC output
- Dual (2) input
- High efficiency
- High power factor (> 0.95)
- Inputs to Outputs isolation
- Inrush current limiting (AC & DC)
- Reverse voltage protection (DC)
- Remote Inhibit (ON/OFF)
- Fixed switching freq. (250 kHz)
- EMI filters included
- Indefinite short circuit protection with auto-recovery
- Over-voltage protection
- Over temperature shutdown with auto-recovery

Electrical Specifications

AC Input

Voltage range: 90–265V_{RMS}
Frequency range: 50-400Hz
Single phase

DC Input

Voltage Range: 18-70V
IAW MIL-STD-704A

Surge protection: 80V / 0.1s
IAW MIL-STD-704A

Isolation

AC input to outputs: 500V
DC input to outputs: 200V
AC input to chassis: 500V
DC input to chassis: 200V
Outputs to chassis: 100V

Outputs

#	Voltage	Current	Power
1	2.5-50V	25A	80W
2	2.5-50V	16A	140W
3	2.5-50V	18A	240W
4	2.5-50V	6A	20W
5	2.5-50V	4A	20W

Total output power – 380W

Line/Load regulation

Up to ±2% (No load to full load, -40°C to +85°C).

Ripple and Noise

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

Efficiency

AC input: Up to 73%
DC input: Up to 79%
Typical (Full load, nominal line voltage, room temperature)

Load Transient Overshoot and undershoot

Current change from 50%-100% output voltage change less than 10% within 200-300µSec

Turn on Transient

No output voltages overshoot during startup.

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Protections *

Input

- **Inrush Current Limiter**
  Peak value of up to twice I_{IN} for AC and DC Inputs.
- **Under Voltage Lock Out**
  Unit shuts down (no damage) below $75V_{AC}$ or $16V_{DC}$.
- **Reverse Polarity Protection**
  (On DC input).
  No damage up to -36V.

Output

- **Active Over Voltage Protection**
  Internal control protects unit (no damage) ~10% above nominal voltage.
- **Passive Over Voltage Protection**
  Transorbs on outputs protect loads ~20% above nominal voltage.
- **Overload/Short Circuit Protection**
  Continuous protection (10-50% 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 +90°C ± 5°C.

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

Environmental

Designed to meet or exceed MIL-STD-810F

Temperature

Operating: –40°C to +85°C (base plate)
Storage: –55°C to +125°C

Altitude

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

Salt Fog

Method 509-4

Humidity

Method 507.4 - Up to 95%.

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 per MIL-STD-217F at +85°C base plate,
Ground fixed.

EMC

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

* Compliance achieved with shielded harness and static resistive load. Depending on actual configuration, an external filter may be required for full compliance.

Environmental Stress Screening (ESS)

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

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Pin Assignment – Input (Connector J1)

Connector type: Eq. to M24308/3-13Z.
Mating connector type: M24308/2-2Z or eq.

Pin #	Function
1	DC IN
2	DC IN
3	DC IN
4	DC IN RETURN
5	DC IN RETURN

Pin #	Function
6	DC IN RETURN
7	INPUT STATUS
8	PHASE
9	DC IN
10	DC IN

Pin #	Function
11	DC IN
12	DC IN RETURN
13	DC IN RETURN
14	DC IN RETURN
15	NEUTRAL

Pin Assignment – Output (Connector J2)

Connector type: Eq. to M24308/1-27Z.
Mating connector type: M24308/4-5Z or eq.

Pin #	Function
1	OUT2
2	N.C.
3	REMOTE ON/OFF
4	OUT2 SENSE
5	OUTPUT STATUS
6	SIGNAL RETURN
7	OUT1
8	OUT1 RTN
9	SENSE OUT1
10	SENSE OUT1 RTN
11	OUT1
12	OUT1 RTN
13	OUT1 RTN
14	OUT1 SENSE
15	OUT1
16	OUT1 RTN
17	OUT3 (+)

Pin #	Function
18	OUT2
19	OUT2 RTN
20	OUT2 RTN
21	OUT2 SENSE RTN
22	OUT1
23	OUT1
24	OUT1 RTN
25	OUT1 RTN
26	OUT1
27	OUT1
28	OUT1 RTN
29	OUT1 RTN
30	OUT1 SENSE RTN
31	OUT1
32	OUT1 RTN
33	OUT3/4 RTN
34	OUT2

Pin #	Function
35	OUT2
36	OUT2 RTN
37	OUT2 RTN
38	OUT1
39	OUT1
40	OUT1 RTN
41	OUT1 RTN
42	OUT1
43	OUT1
44	OUT1
45	OUT1 RTN
46	OUT1 RTN
47	OUT3 (+)
48	OUT3/4 RTN
49	OUT4 (-)
50	OUT3/4 RTN

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

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Functions and Signals

SENSE

The SENSE is used to achieve accurate load regulation 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 of 2% to 5% of voltage output.

When not used, connect +OUT1 SENSE to +OUT1 and + *OUT1 SENSE RTN* to OUT1 RETURN.

When not used connect +OUT2 SENSE to +OUT2 and + *OUT2 SENSE RTN* to OUT2 RETURN.

When not used connect +OUT3 SENSE to +OUT3 and + *OUT3 SENSE RTN* to OUT3 RETURN.

REMOTE ON/OFF Signal (Connector J2, Pin #3)

The remote on/off signal is used to turn the power supply ON and OFF.

OPEN – will turn off the power supply.

SHORT - For normal operation short the signal to signal return.

This signal is TTL, and is referenced to SIGNAL RETURN on connector J2 (Pin #6).

INPUT STATUS Signal (Connector J1, Pin #7)

This signal shows the status of the input voltage.

Logic '1' – DC input

Logic '0' – AC input

This signal is open collector type, and is referenced to SIGNAL RETURN on connector J2 (Pin #6).

OUTPUT STATUS Signal (Connector J2, Pin #5)

This signal shows the status of all outputs.

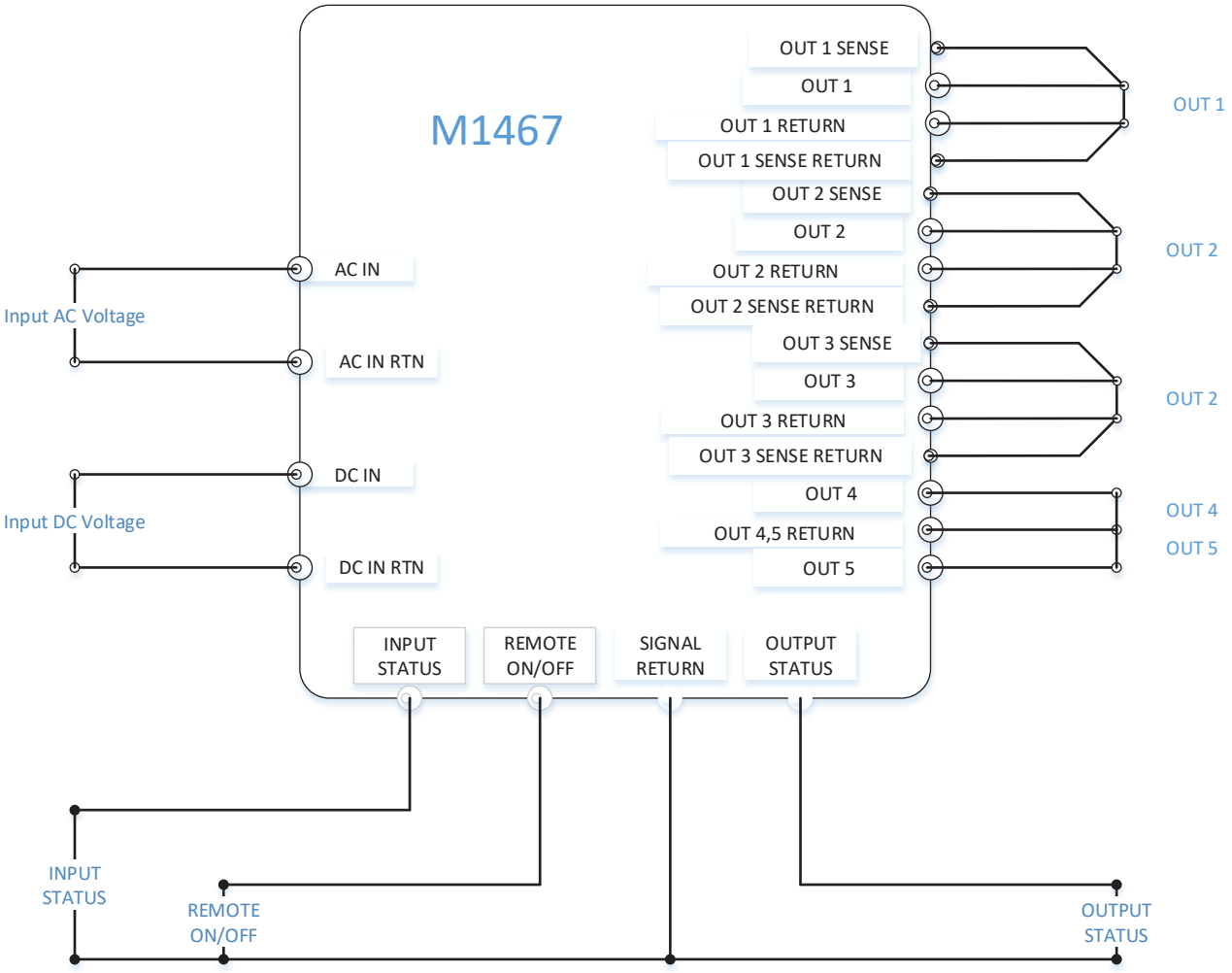
Logic '1' - all outputs are within the tolerance of +/-5% of nominal values.

Logic '0' – One output signal is outside the tolerance of +/-5% of nominal value.

This signal is open collector type, and is referenced to SIGNAL RETURN on connector J2 (Pin #6).

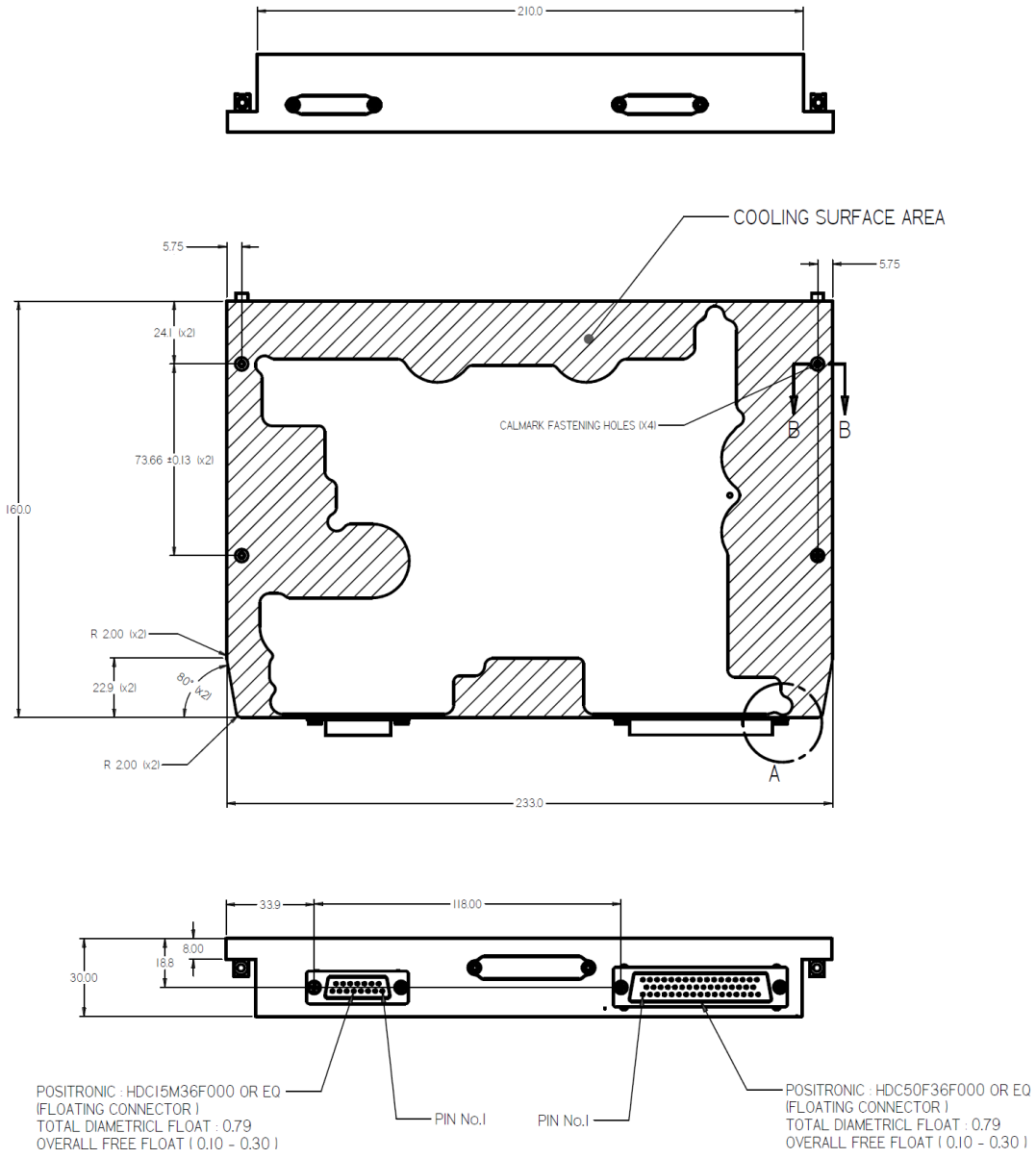
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Typical Connection



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Outline Drawing



Notes

1. Dimensions are in mm
2. Tolerances are:
   .X ±0.4 mm
   .XX ±0.20 mm
3. Weight: Approx. 1,720 g.

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

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