

M8187 SERIES

DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- COMPACT
- HIGH DENSITY
- SINGLE OUTPUT
- DC/DC CONVERTER
- UP TO 2000W



<p>Applications</p> <p>Military Power Supply (Airborne, ground-fix, shipboard), Ruggedized, Telecom, Industrial Power Supply</p>											
<p>Special Features</p> <ul style="list-style-type: none"> • Miniature size • High efficiency • Wide input range • Input / Output isolation • Limited Inrush Current • Remote Inhibit (On/Off) • <u>EMI</u> filters included • Non-latching protections: <ul style="list-style-type: none"> ○ Output overload ○ Output short-circuit ○ Output over-voltage ○ Over temperature 											
<p>Electrical Specifications</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 33%; vertical-align: top;"> <p><u>Normal Input Voltage</u> DC voltage range: 220 to 350 V_{DC}</p> </td> <td style="width: 33%; vertical-align: top;"> <p><u>DC Output:</u> Voltage range: 5 to 60 V_{DC} Current range: 0 to 80 A Power range: 0 to 2 000 W</p> </td> <td style="width: 33%; vertical-align: top;"> <p><u>Isolation</u> Input to Output: 500 V_{DC} Input to Case: 500 V_{DC} Output to Case: 100 V_{DC}</p> </td> </tr> <tr> <td style="vertical-align: top;"> <p><u>Line/Load regulation</u> Up to ±1% (no load to full load, –55 °C to +85 °C and over input voltage range).</p> </td> <td style="vertical-align: top;"> <p><u>Efficiency</u> 90% - Typical (nominal line voltage, 28 V_{DC} output, full load, standard room temperature)</p> </td> <td style="vertical-align: top;"> <p><u>EMC</u> Designed to meet MIL-STD-461F±: CE102, CS101, CS114, CS115, CS116, RE102, RS101, RS103</p> </td> </tr> <tr> <td style="vertical-align: top;"> <p><u>Ripple and Noise</u> 100 to 150 mV_{p-p}, typical (max. 1% of nominal voltage) measured across a 1µF ceramic capacitor.</p> </td> <td style="vertical-align: top;"> <p><u>Transient Over-and-undershoot</u> Voltage change less than 10% of nominal value for load step from 50% to 100%. Return to regulation in under 1 ms.</p> </td> <td style="vertical-align: top;"> <p><u>Turn on Transient</u> No Voltage overshoot during turn on.</p> </td> </tr> </table>			<p><u>Normal Input Voltage</u> DC voltage range: 220 to 350 V_{DC}</p>	<p><u>DC Output:</u> Voltage range: 5 to 60 V_{DC} Current range: 0 to 80 A Power range: 0 to 2 000 W</p>	<p><u>Isolation</u> Input to Output: 500 V_{DC} Input to Case: 500 V_{DC} Output to Case: 100 V_{DC}</p>	<p><u>Line/Load regulation</u> Up to ±1% (no load to full load, –55 °C to +85 °C and over input voltage range).</p>	<p><u>Efficiency</u> 90% - Typical (nominal line voltage, 28 V_{DC} output, full load, standard room temperature)</p>	<p><u>EMC</u> Designed to meet MIL-STD-461F±: CE102, CS101, CS114, CS115, CS116, RE102, RS101, RS103</p>	<p><u>Ripple and Noise</u> 100 to 150 mV_{p-p}, typical (max. 1% of nominal voltage) measured across a 1µF ceramic capacitor.</p>	<p><u>Transient Over-and-undershoot</u> Voltage change less than 10% of nominal value for load step from 50% to 100%. Return to regulation in under 1 ms.</p>	<p><u>Turn on Transient</u> No Voltage overshoot during turn on.</p>
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* Thresholds and protections can be modified / removed – please consult factory.

± EMC compliance achieved when tested with shielded harness and static resistive load.

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)

Vibration

Method 514.5
 Procedure I, Category 24
 General minimum integrity exposure
 IAW Figure 514.5C-17
 1 hour per axis.

Altitude

Method 500.4
 Procedure I – Storage/Air transport:
 up to 70,000 ft. (non-operational)
 Procedure II – Operation/Air Carriage:
 up to 40,000 ft. (operational)

Shock

Method 516.5
 Procedure I
 20 g / 11 ms terminal peak sawtooth shock pulse

Humidity

Method 507.4
 Up to 95% RH

Salt Fog

Method 509.4

Reliability

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

Environmental Stress Screening (ESS)

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

Pin Assignment

INPUT CONNECTOR

Type: D38999/20TD05PN or Eq.

Pin No.	Function
A	Vin (+)
B	Vin (+)
C	Vin RTN (-)
D	Vin RTN (-)
E	CHASSIS

OUTPUT CONNECTOR

Type: D38999/20TE35SN or eq.

Pin No.	Function
30, 32 – 38, 40 – 55	V _{OUT} (+)
1 – 16, 18 – 23, 26, 29	V _{OUT} RTN (-)
25	SENSE (+)
17	SENSE RTN (-)
31	ENABLE
24	ENABLE RTN
39	CHASSIS
27, 28	N/C

Functions and Signals

INHIBIT

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

OPEN – will turn on the power supply.

SHORT – between pin TBD and pin TBD will turn off the power supply. This signal is referenced to the ***INHIBIT RTN*** pin.

SENSE

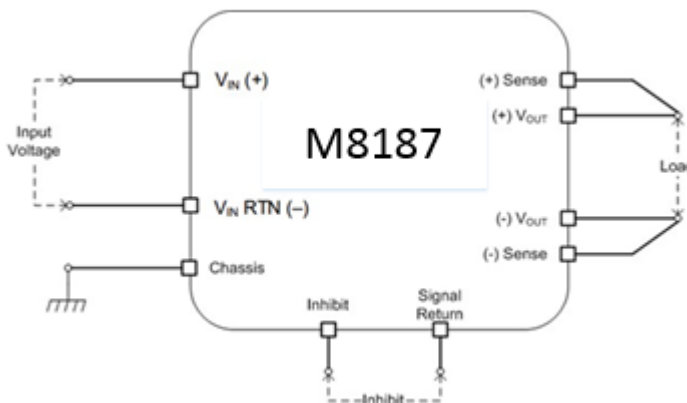
The SENSE is used to achieve accurate load regulations at load terminals (this is done by connecting the pins directly to the load's terminals).

The use of remote sense has a limit of voltage dropout between converter's output and load terminals of 2-10% of voltage output (up to 2V).

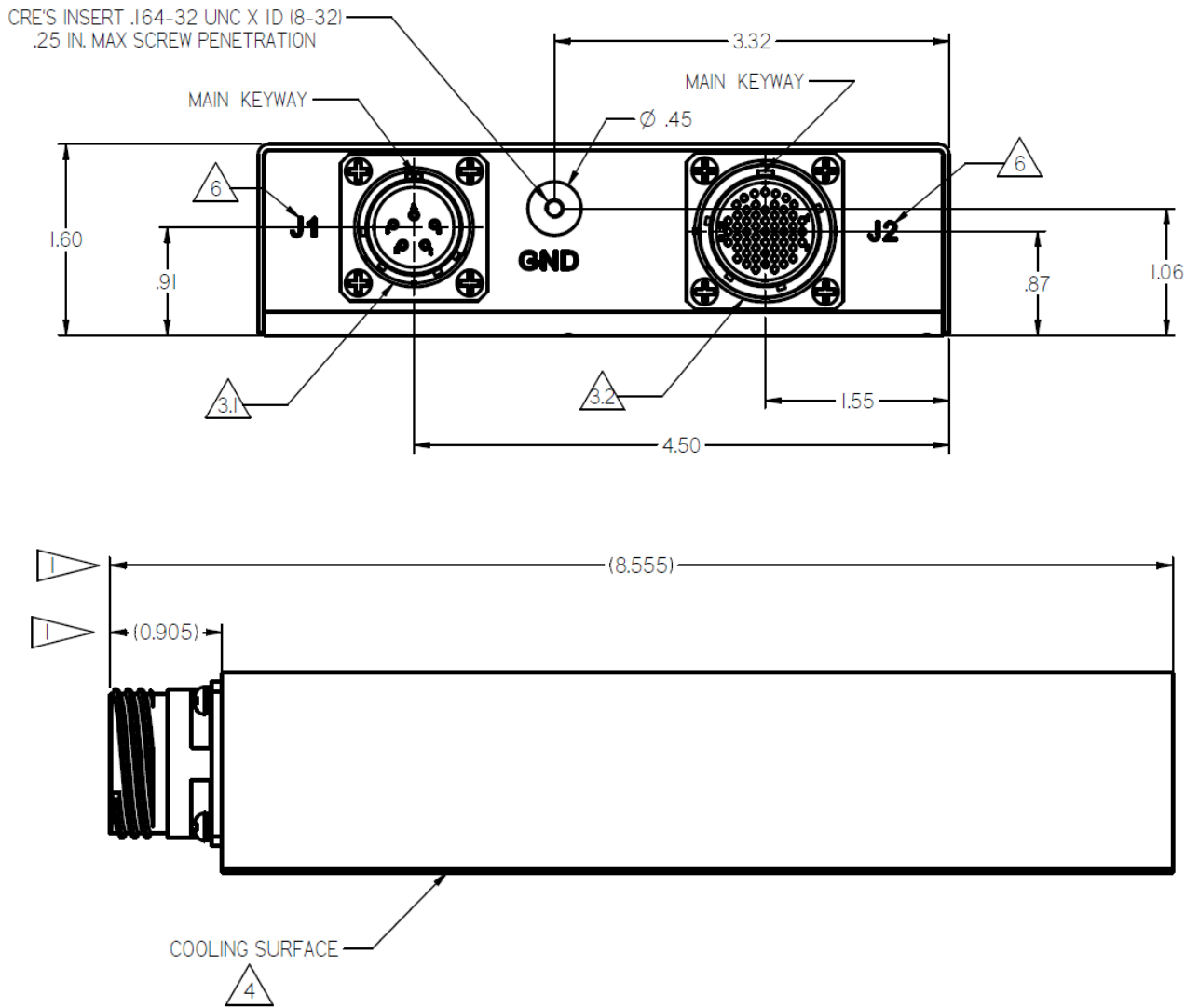
Please note that if Sense lines are not used the output may rise as much as 2V above nominal outputs.

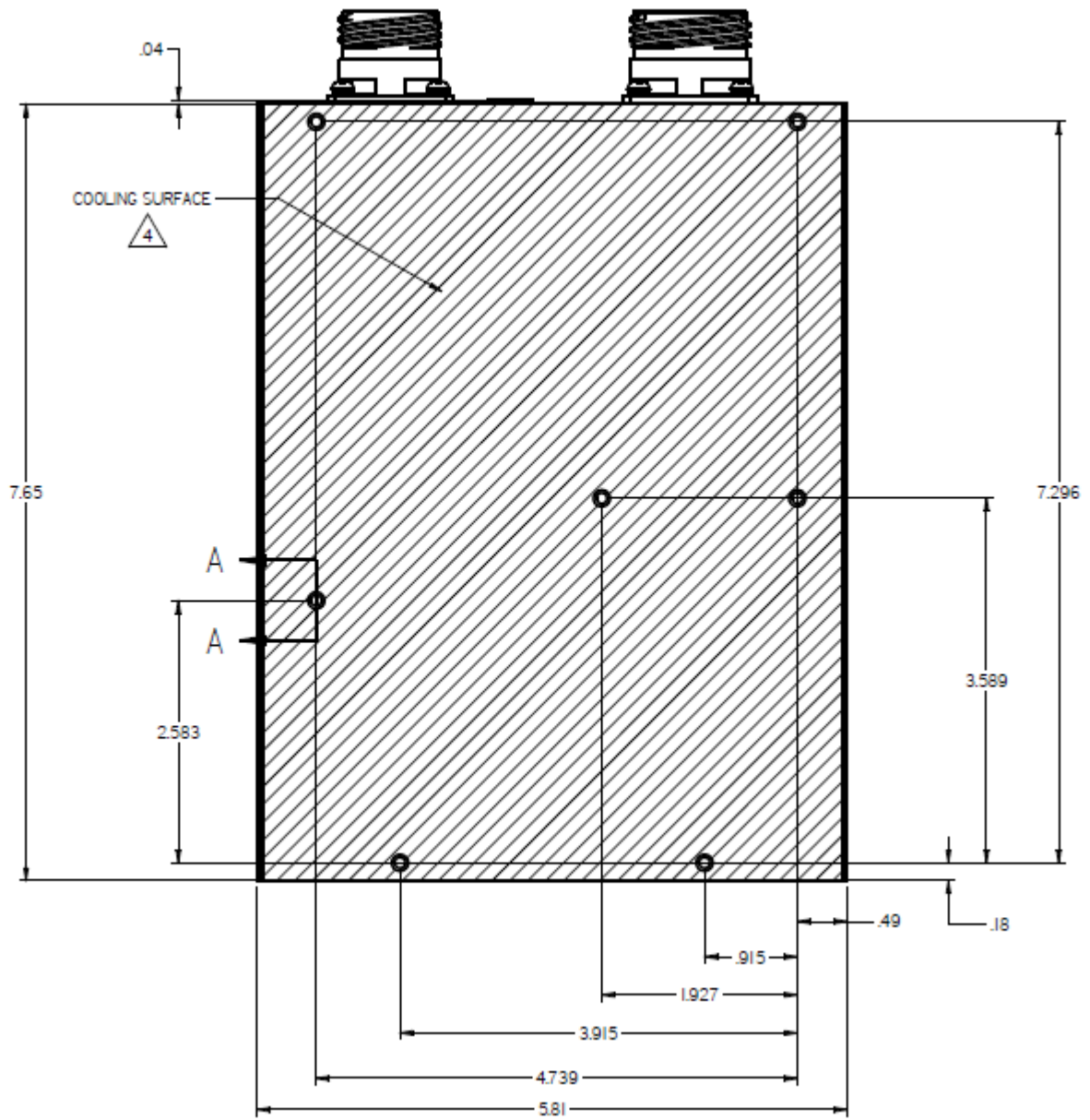
If sense lines are not to be used in the application, please inform factory for internal connection to output pins.

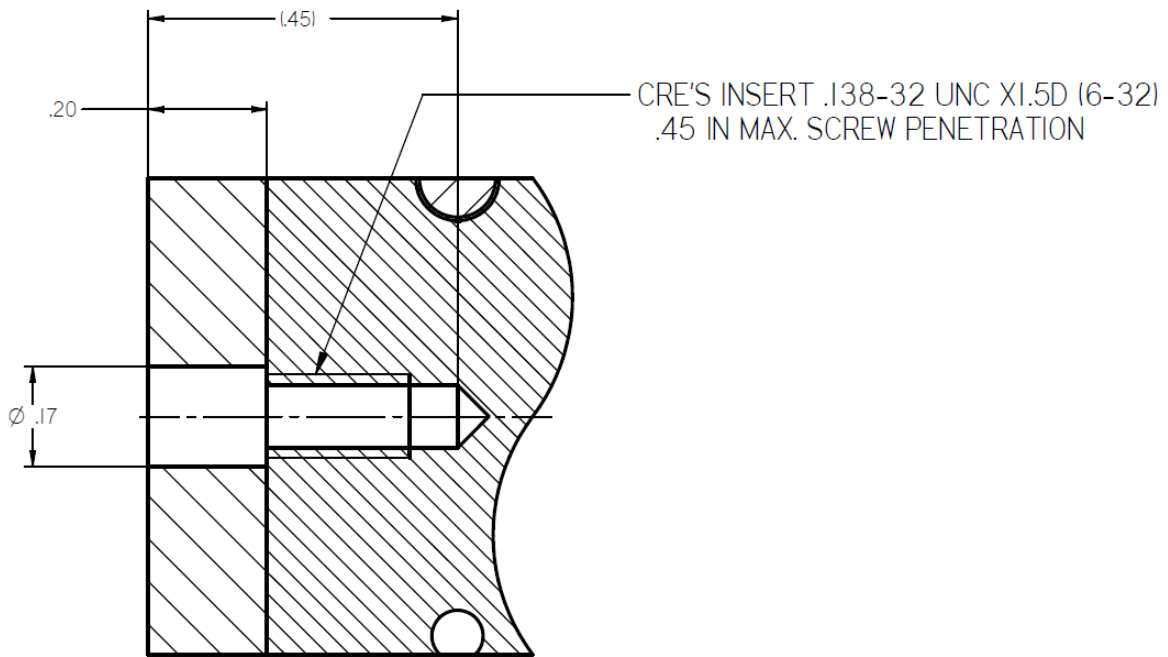
Typical Connection Diagram



Outline Drawing







SECTION A-A
5:1
7 PLACED

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