

M1987 SERIES

SINGLE-OUTPUT, 300W FILTER

Intended for use with Single-Phase PFC AC/DC power supply M1982. The M1987 is a series of mechanically robust, base plate cooled, high performance, 300W input filter, for Navy shipboard applications.

The M1987 has input per MIL-STD-1399-300B.

The product meet MIL-STD requirements (specified herein)



M1987 Series – AC Input Filter

Standard Models List (for other voltages – consult factory)

| Part number | Input | | Output |
|-------------|---------------------------|-------------|-----------------|
| | Voltage range | Frequency | |
| M1987-100 | 85 to 265 V _{AC} | 50/60/400Hz | Following input |
| M1987-800 | 85 to 265 V _{AC} | 50/60/400Hz | Following input |

- 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.**

SPECIAL FEATURES:

- **M1987-800:** this variant is REACH Compliant
- **M1987-800:** The aluminum parts comprising this variant are chromate conversion coated per MIL-DTL-5541F, Type II CLASS 1A or eq.
- **M1987-800:** The shell of the connectors are Zinc:
 - **J1 - Input connector:** M24308/24-37Z or eq.
 - **J2 - Output connector:** M24308/23-25Z or eq.

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THE MAIN FEATURES OF THE M1987 ARE:

- UP to 300W
- Miniature size
- Wide input range
- Improve 1399-300B performance

M1987 Series – AC Input Filter

SPECIFICATIONS:

| | | |
|------------------|-----------------------------|---|
| AC Input | <i>Voltage Range</i> | 85 to 265 VAC ; 50/60/400Hz Single-phase |
| | <i>Isolation</i> | AC Input to Chassis: 1000 VDC |
| AC Output | <i>Rating</i> | Following input |

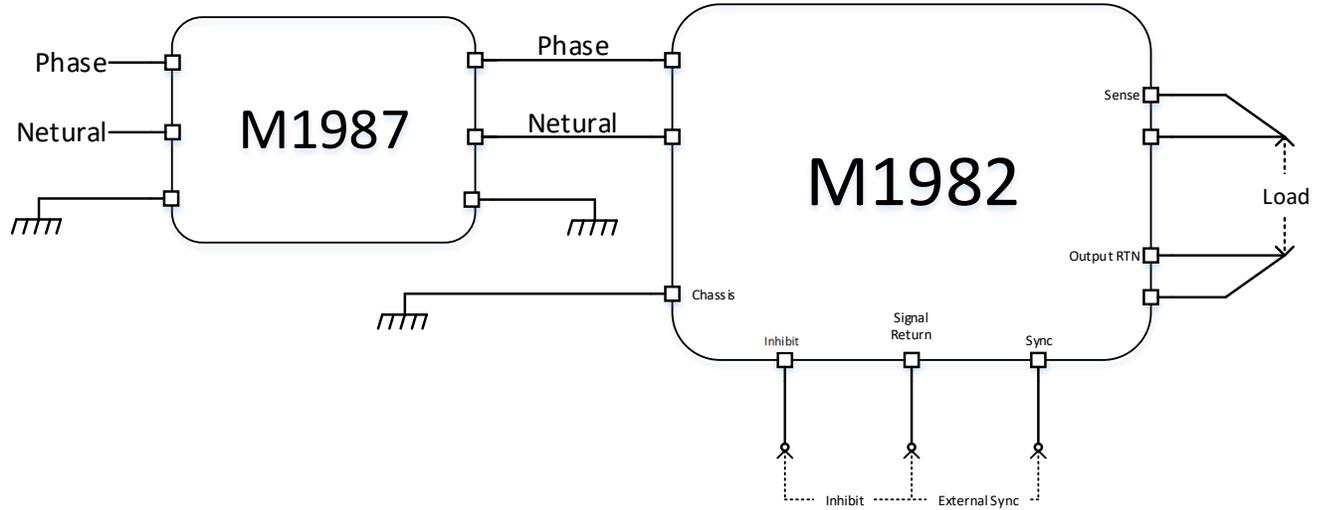
M1987 Series – AC Input Filter

Specifications (Cont.):

| | | |
|--|---|---|
| Environment Designed to meet MIL-STD-810F | Temperature | Methods 501.4 & 502.4 Operating: –40°C to +85°C (at baseplate) Storage: –55°C to +125°C (ambient) |
| | Humidity | Method 507.4 Up to 95% RH |
| | Salt-fog | Method 509.4 |
| | Altitude | Method 500.4 Procedures I – Storage/Air transport: up to 70,000 ft. (non-operational) Procedure II – Operation/Air Carriage: up to 40,000 ft. (operational) |
| | Mechanical Shock | Method 516.5 Procedure I 20 g / 11 ms terminal peak sawtooth shock pulse |
| | Vibration | Method 514.5 Procedure I, Category 24 General minimum integrity exposure IAW Figure 514.5C-17 1 hour per axis. |
| | Fungus | Method 509.4 |
| EMI | MIL-STD-461F* | CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103 * When tested with M1982 at full load and in accordance with the provisions of MIL-STD-461F– with shielded Output and Signals cables. |
| Reliability | 2M hours, calculated IAW MIL-HDBK-217F Notice 2 at +85°C baseplate, Ground fixed conditions. | |
| Cooling Requirements | The M1987 is a baseplate cooled unit. The base of the M1987 should be thermally attached to a suitable heatsink that maintains it below +85 °C. | |
| Form factor | 3.965" wide, 1.34" high and 4.179" deep. For detailed dimensions and tolerances see Drawing: M1987001 | |
| Weight | 380gram Typical | |
| Connectors | See Page 6 | |

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TYPICAL CONNECTION DIAGRAM



M1987 Series – AC Input Filter

PIN ASSIGNMENT:

Input Connector

Connector type: M24308/24-37F, OR EQ

| Pin No. | Description |
|---------|-----------------|
| 1 | 115V AC |
| 2 | 115V AC |
| 3 | 115V AC NEUTRAL |
| 4 | 115V AC NEUTRAL |
| 5 | 115V AC NEUTRAL |
| 6 | 115V AC |
| 7 | CHASSIS |
| 8 | CHASSIS |
| 9 | CHASSIS |

Output Connector

Connector type: M24308/23-55F, OR EQ

| Pin No. | Description |
|---------|-----------------|
| 1 | 115V AC NEUTRAL |
| 2 | 115V AC NEUTRAL |
| 3 | 115V AC NEUTRAL |
| 4 | 115V AC |
| 5 | 115V AC |
| 6 | CHASSIS |
| 7 | CHASSIS |
| 8 | CHASSIS |
| 9 | 115V AC |

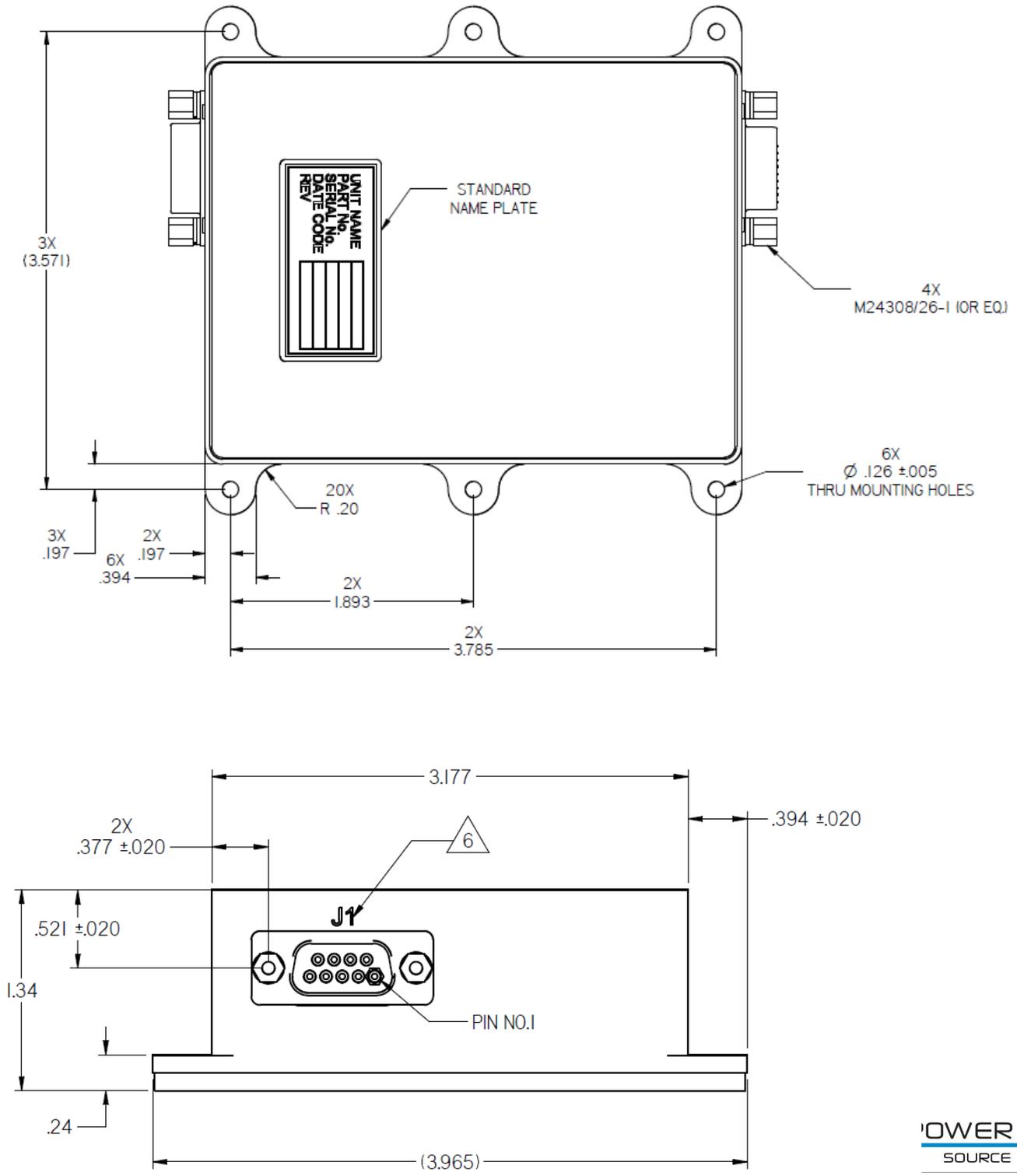
Note: All pins with identical function/designation should be connected together for optimal performance.

CHASSIS Note: The CHASSIS pin allows additional connection of unit's chassis to system ground.

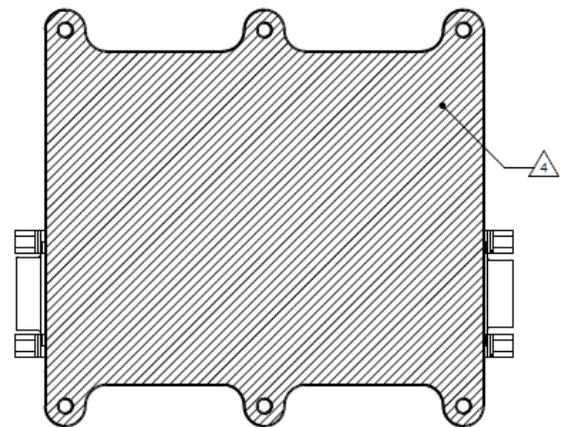
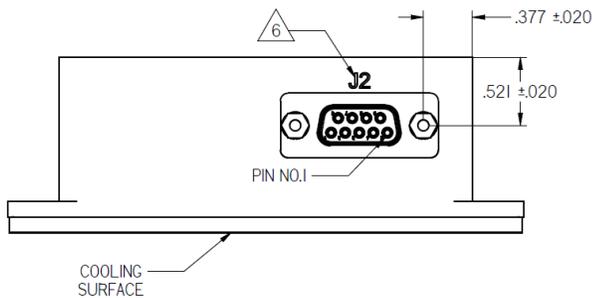
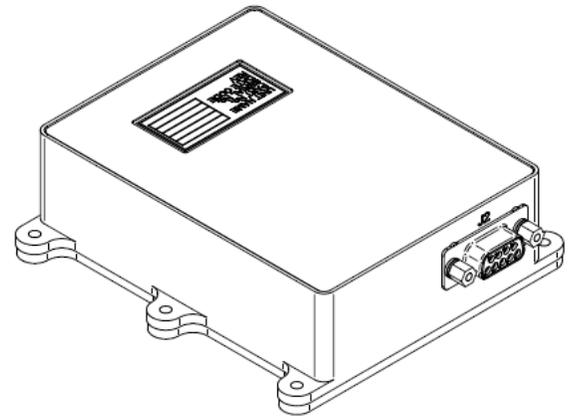
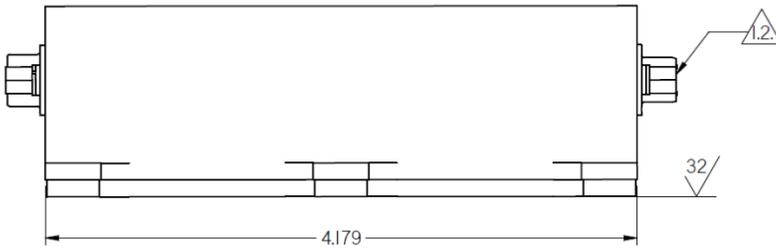
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OUTLINE DRAWING:

For detailed dimensions and tolerances see Drawing: M1987100



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NOTES:

1. CONNECTORS LIST:

- 1.1. J1- INPUT, D-TYPE 9M, M24308/24-37F, OR EQ.
- 1.2. J2- OUTPUT, D-TYPE 9F, M24308/23-55F, OR EQ.

2. MTL. AL 6061-T651, AL 5052-H32.

3. FINISH: CHROMATE CONVERSION COATING PER MIL-DTL-5541, TYPE I, CLASS IA, OR EQ.

4. HEAT DISSIPATION AREA- 13.1 [IN²].

5. WORKMANSHIP SHALL BE MIL-STD-454, REQT. 9.

6. ENGRAVING

6.1. FONT: ARIAL.

6.2. CHARACTER HEIGHT: .12 [IN].

6.3. CHARACTER DEPTH: .02 [IN].

6.4. FILL ENGRAVING WITH BLACK LUSTERLESS EPOXY PAINT, COLOR PER FED-STD 595 NO: 37038.

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