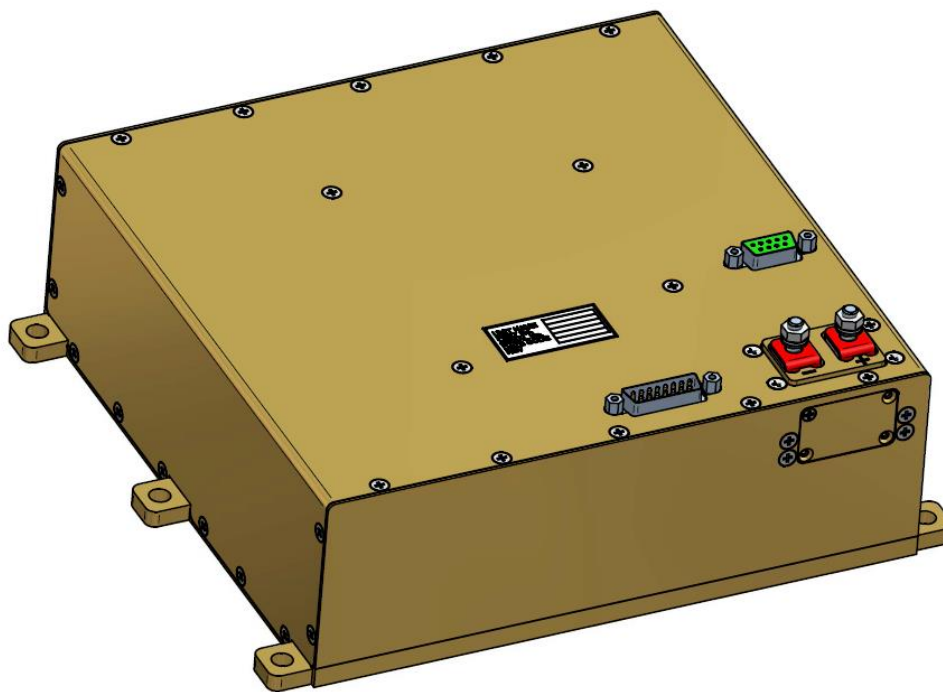


M3111 SERIES

3-PHASE AC/DC POWER SUPPLY WITH HOLD UP

The M3111 series is a 3-phase, High Power Factor and Low THDI AC to DC ruggedized military power supply. It accepts 115VAC input range from 100 to 130VAC (L-N), 50/60/400Hz and provides a single DC output from 5V to 50V with custom outputs available and Hold-Up of at least 25J. It is designed to meet military standards, MIL-STD-704, MIL-STD-810, MIL-STD-461.



M3111 Series– DC/DC Power Supply

Standard Models List (for other voltages – consult factory)

Part Number	Input	Output		Power	Hold Up
	Steady State Voltage range	Voltage	Current		
M3111-100	100 to 130 V _{AC}	28 V _{DC}	36 A	1008W	25J 25mSec@1kW 50mSec@500W

- 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.**

M3111 Series– DC/DC Power Supply

THE MAIN FEATURES OF THE M3111 ARE:

- High efficiency
- Wide input range
- Input / Output isolation
- Limited Inrush Current
- EMI filters included
- Output Good signal (option)
- P.F. > 97% (75-100% load)
- Lagging Power Factor - Optional
- THDI < 2% @ full load
- 25J Hold Up (25mSec/1kW; 50mSec/500W)
- Remote On/Off
- Over temperature shutdown with auto-recovery
- Indefinite short circuit protection with auto-recovery
- Over-voltage shutdown
- Current sharing capability - Optional

M3111 Series– DC/DC Power Supply

SPECIFICATIONS:

AC Input	Voltage Range	Nominal: 115/200 VAC, 47-440 Hz, 3-phase Steady state: 100 to 130 VAC (173 to 225 VAC Line to line) Transients: 180 VAC (312VAC Line to line)/ 50 msec per MIL-STD-704 Full performances between 104 to 127VAC (180 to 220VAC Line-to-Line)
	Isolation	Input to Output: 500 VDC Input to Case: 500 VDC
	Inrush Current and Phase loss detection	Inrush Current: Up to 0.09 A ² sec (for circuit breaker selection purposes) Up to 6 x lin, max in the first 20 ms post energizing. Phase loss detection: The unit disable in case of phase loss.
	Output Voltage Regulation	Up to $\pm 1\%$ (no load to full load, over input voltage normal range, -40°C to $+71^{\circ}\text{C}$)
DC Output	Voltage Regulation	Voltage range: 5 to 50 VDC Output power: up to 1000 W Output Current: Up to 40A
	Remote Sense	The SENSE is used to achieve accurate load regulation at the load (this is done by connecting the pins directly to the load). The remote sense will compensate up to 2V or 10% of the nominal voltage, the lower of. In case remote sense is not required, short the +SENSE pin to the +OUT stud and the -SENSE pin to the -OUT stud.
	Remote shutdown	The SHDN signal is used to turn the power supply ON and OFF. OPEN will turn the power supply ON. 5V applied between pin 9 and pin 2 will turn the power supply OFF.
	Ripple and Noise	100-150 mVp-p, typical (max. 1%) without external capacitance
	Hold Up	25J (25mSec at 1kW load ; 50mSec at 500W load)
	Isolation	Output to Case: 100 VDC
	Power Good signal -	Uncommitted collector and emitter of an opto-isolator. Low ($V < 0.8$ @ 1mA, relative to Power Good RTN) indicates normal output
	Efficiency	88% Typical (nominal input, 28VDC output, full load, roomtemperature)
	Current Limit & Overload	Over Voltage Protection: Shutdown and latch at 10-20% above maximum voltage.
	Over Temp. Protection	Shutdown at base plate temperature of $+100^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Automatic recovery at base plate temperature of $+85^{\circ}\text{C} \pm 5^{\circ}\text{C}$.

M3111 Series– DC/DC Power Supply

Specifications (Cont.):

Environment Designed to meet MIL- STD-810F	Temperature	Operating: –40 °C to +71 °C (at baseplate) Storage: –55 °C to +125 °C
	Humidity	Method 507.4 Procedure I : Up to 95% RH
	Salt-fog	Method 509.4
	Altitude	Method 500.4, Procedure I & II: Up to 70,000 ft. non-operational Up to 50,000 ft. operational
	Mechanical Shock	Method 516.5 Procedure I : 30 g, 11 ms terminal peak saw- tooth
	Vibration	Method 514.5 Category 4 - General minimum integrity exposure IAW Figure 514.5C-17 1 hour per axis.
	Fungus	Does not support fungus growth, in accordance with the guidelines of MIL-STD-454, Requirement 4
EMI	MIL-STD-461e	Complies with MIL-STD-461E: CE101, CE102, CS101, CS114, CS115, CS116, RE102, RS103
Reliability	74,677 hours, at +71 °C baseplate, Airborne Inhabited Fighter (AIF) environment. 37,128 hours, at +71 °C baseplate, Airborne Uninhabited Fighter (AUF) environment. 1,505,738 hours, at +25 °C baseplate, Ground Fixed (GF) environment. Calculated IAW MIL-HDBK-217F Notice 2.	
Cooling Requirements	The M3111 is a baseplate cooled unit. The base of the M3111 should be thermally attached to a suitable heatsink that maintains it below +85 °C.	
Form factor	9.18" wide, 2.75" high and 7.89" deep. For detailed dimensions and tolerances see Drawing: M3111001	
Weight	Approx. 6 lbs (2.75kg)	
Connectors	See Page 8	

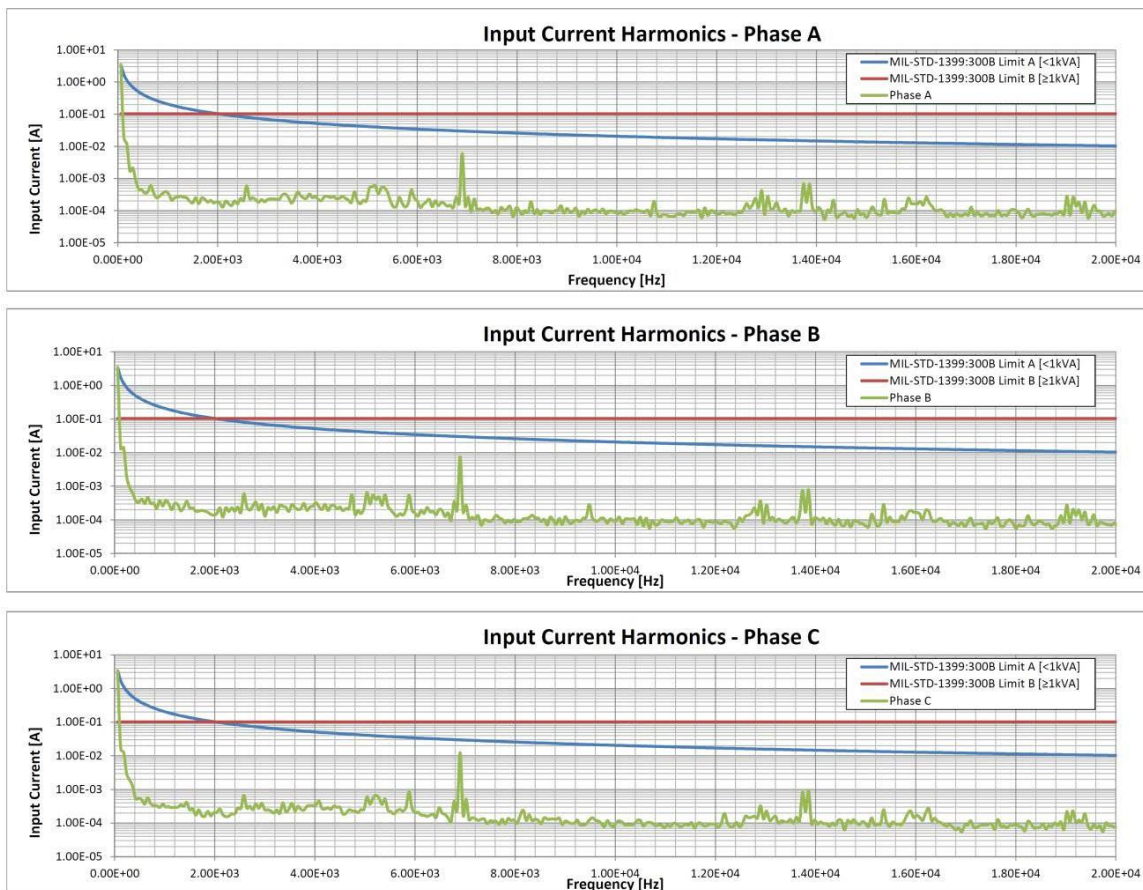
M3111 Series— DC/DC Power Supply

HIGHLIGHTS AND TYPICAL CHARACTERISTICS

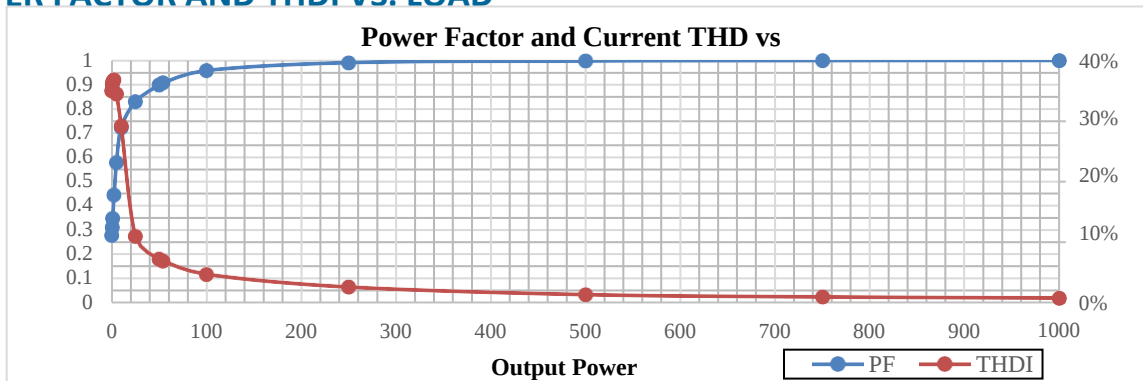
INPUT CURRENT HARMONICS

Input: 3x 115 Vrms

400 Hz Output: 28 VDC

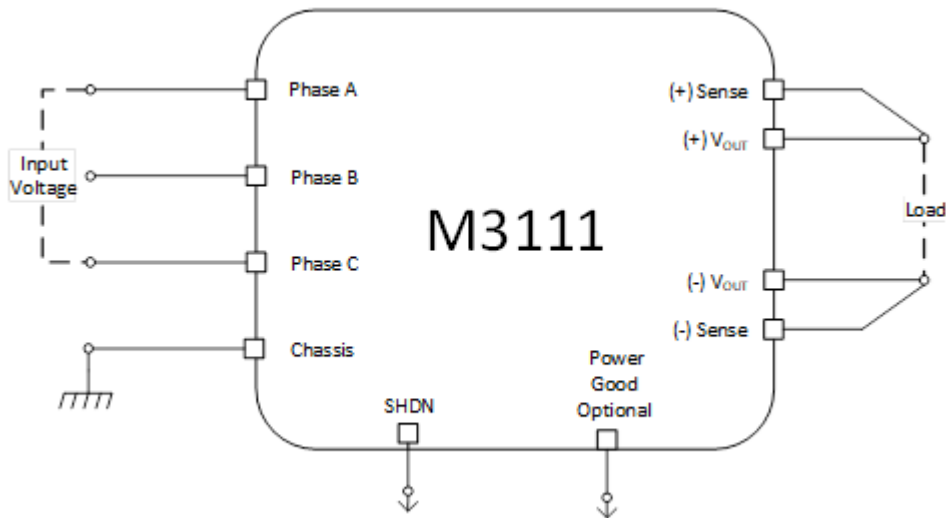


POWER FACTOR AND THDI VS. LOAD



M3111 Series– DC/DC Power Supply

TYPICAL CONNECTION DIAGRAM



M3111 Series– DC/DC Power Supply

PIN ASSIGNMENT:

J1 - INPUT CONNECTOR

Connector type: CONN D-TYPE 15P M24308/24-26F OR EQ.

Mates with: M24308/2-2F or eq.

Pin No.	Pin Function
1,2,9	PHASE A
4,5,12	PHASE B
7,8,15	PHASE C
10,14	SAFETY GROUND
3,6,11,13	N.C.

J2 - SIGNAL CONNECTOR

Connector type: CONN D-TYPE 9S M24308/2-1F OR EQ.

Mates with: M24308/4-1F or eq.

Pin No.	Pin Function
1	REMOTE SENSE (+)
2	REMOTE SENSE (-)
3,4,5,6,7,8	N.C.
9	REMOTE SHUTDOWN

OUTPUT STUDS

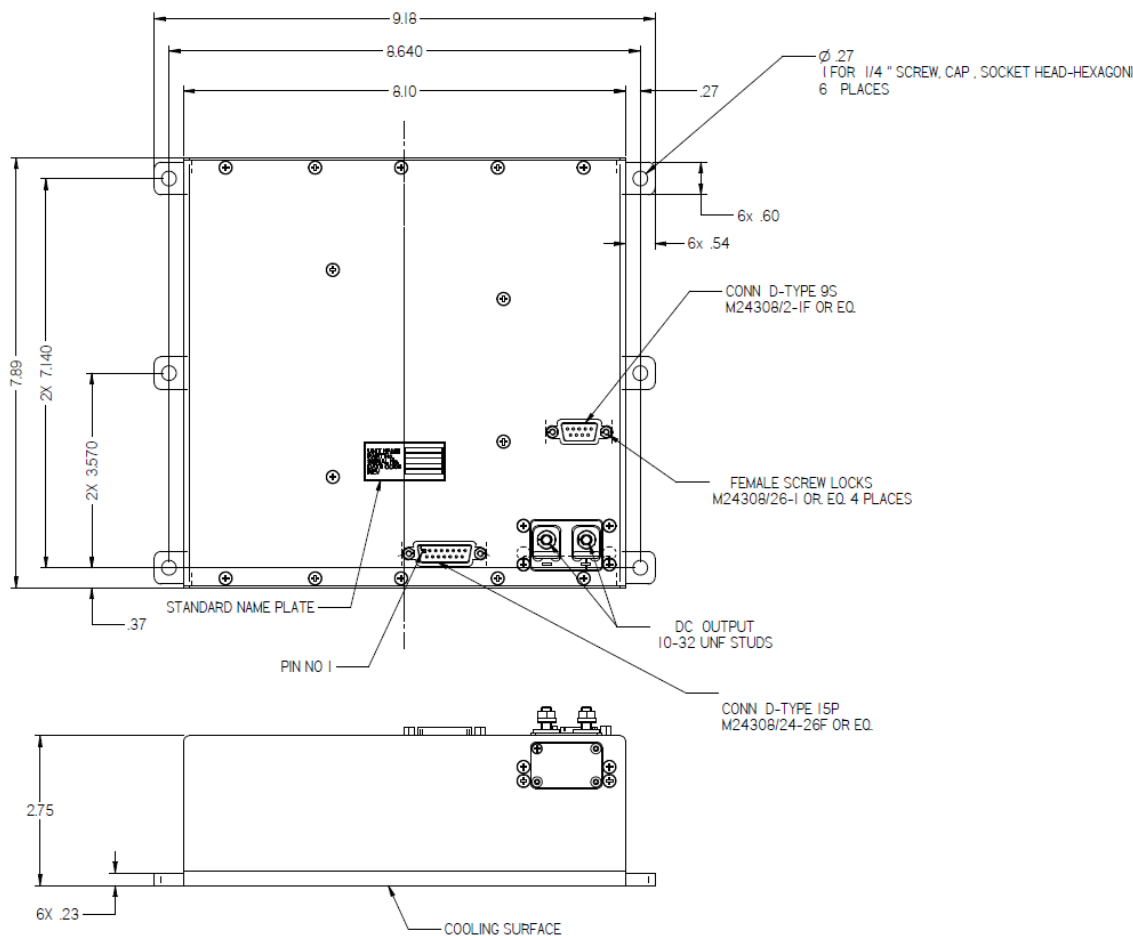
DC OUTPUT: 10-32 UNF STUDS

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

M3111 Series— DC/DC Power Supply

OUTLINE DRAWING:

For detailed dimensions and tolerances see Drawing: M3111001



NOTES :

1. MTL. AL 6061-T651, AL 5052-H32.
2. FINISH: CHROMATE CONVERSION COATING PER MIL -DTL-5541, TYPE 1 CLASS 3.
3. COOLING:
 - 3.1 HEAT DISSIPATION AREA- 63.909 [In²] .
4. ENGRAVING
 - 4.1. CHARACTER HEIGHT : 4.0 MM.
 - 4.2. CHARACTER DEPTH : 0.5 MM.
 - 4.3. CHARACTER ARE CENTRALLY LOCATED,
 - 4.4. 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.