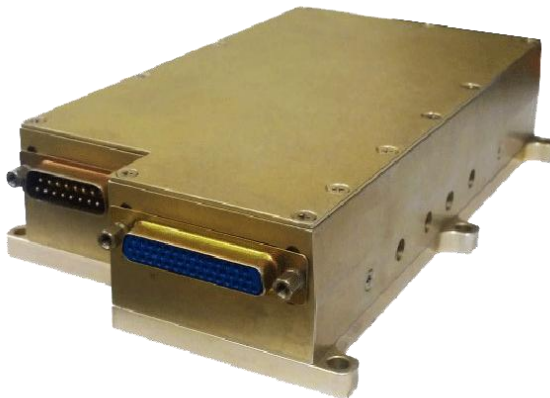


# M167 SERIES

3-PHASE AC/DC  
POWER SUPPLY



## PRODUCT HIGHLIGHTS

- COMPACT
- HIGH DENSITY
- HIGH EFFICIENCY
- SINGLE OUTPUT
- AC/DC POWER SUPPLY
- UP TO 1600 W

## M167 SERIES 3-PHASE AC/DC POWER SUPPLY

<p><b>Applications</b></p> <p>Military (Airborne, ground-fix, shipboard), Ruggedized, Telecom, Industrial</p>											
<p><b>Special Features</b></p> <ul style="list-style-type: none"> <li>• High efficiency</li> <li>• Wide input range</li> <li>• Input / Output isolation</li> <li>• Limited Inrush Current</li> <li>• <b>Fixed</b> switching frequency</li> <li>• <b>EMI</b> filters included</li> <li>• Indefinite short circuit protection with auto-recovery</li> <li>• Over-voltage shutdown with auto-recovery</li> <li>• Over temperature shutdown with auto-recovery</li> </ul>											
<p><b>Electrical Specifications</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%; vertical-align: top;"> <p><b>AC Input Range:</b> 115V/400 Hz (320-520Hz), 3-phase per MIL-STD-704A/D</p> </td> <td style="width: 33%; vertical-align: top;"> <p><b>DC Output:</b> Voltage: 3.3V to 50V Current: Up to 55A Power: Up to 1.6kW</p> </td> <td style="width: 33%; vertical-align: top;"> <p><b>Isolation:</b> 500V between Input and Output 500V between Input and Case 100V between Output and Case</p> </td> </tr> <tr> <td style="vertical-align: top;"> <p><b>Line/Load regulation:</b> Less than 1% (no load to full load, -40°C to +71°C).</p> </td> <td style="vertical-align: top;"> <p><b>Efficiency:</b> 85% - minimum (full load, room temperature)</p> </td> <td style="vertical-align: top;"> <p><b>EMC:</b> Designed to meet MIL-STD- 461F at 45A: CE102, CS101, CS114, CS115, CS106, RE101, RE102, RS101, RS103</p> </td> </tr> <tr> <td style="vertical-align: top;"> <p><b>Ripple and Noise:</b> 100÷150mV<sub>p-p</sub>, typical (max. 1%) without external capacitance. When connected to system capacitance ripple drops significantly.</p> </td> <td style="vertical-align: top;"> <p><b>Turn on Transient</b> No Voltage over shoot during power on.</p> </td> <td></td> </tr> </table>			<p><b>AC Input Range:</b> 115V/400 Hz (320-520Hz), 3-phase per MIL-STD-704A/D</p>	<p><b>DC Output:</b> Voltage: 3.3V to 50V Current: Up to 55A Power: Up to 1.6kW</p>	<p><b>Isolation:</b> 500V between Input and Output 500V between Input and Case 100V between Output and Case</p>	<p><b>Line/Load regulation:</b> Less than 1% (no load to full load, -40°C to +71°C).</p>	<p><b>Efficiency:</b> 85% - minimum (full load, room temperature)</p>	<p><b>EMC:</b> Designed to meet MIL-STD- 461F at 45A: CE102, CS101, CS114, CS115, CS106, RE101, RE102, RS101, RS103</p>	<p><b>Ripple and Noise:</b> 100÷150mV<sub>p-p</sub>, typical (max. 1%) without external capacitance. When connected to system capacitance ripple drops significantly.</p>	<p><b>Turn on Transient</b> No Voltage over shoot during power on.</p>	
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\* Thresholds and protections can be modified / removed – please consult factory.

***Environmental***

Designed to meet MIL-STD-810E

***Temperature:***

Operating: -40°C to +71°C (at base plate)

Storage: -55°C to +125°C

***Humidity:***

Method 507.4 - Up to 95%.

***Altitude:***

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

Operational

***Vibration and Shock:***

Shock - Sow-tooth, 20g peak, 11mS.

Vibration - method 514.6, proc. I. and method 519.6, proc. I

***Salt Fog:***

Method 509-4

***Reliability***

Min 50,000 hours, calculated per MIL-STD-217F at +70°C base plate, Ground fixed.

Note: at 100°C base plate MTBF will be lower

***Environmental Stress Screening (ESS)***

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

## M167 SERIES 3-PHASE AC/DC POWER SUPPLY

### Pin Assignment (Input Connector) for Type A

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

### Pin Assignment (Output Connector) Type A

Pin No.	Function	Pin No.	Function	Pin No.	Function	Pin No.	Function
1	SENSE-	12	- OUT	23	+ OUT	34	+ OUT
2	INHIBIT	13	- OUT	24	- OUT	35	+ OUT
3	+ OUT	14	- OUT	25	- OUT	36	+ OUT
4	+ OUT	15	- OUT	26	- OUT	37	+ OUT
5	+ OUT	16	SENSE +	27	- OUT	38	+ OUT
6	+ OUT	17	+ OUT	28	- OUT	39	- OUT
7	+ OUT	18	+ OUT	29	- OUT	40	- OUT
8	+ OUT	19	+ OUT	30	- OUT	41	- OUT
9	- OUT	20	+ OUT	31	N.C	42	- OUT
10	- OUT	21	+ OUT	32	+ OUT	43	- OUT
11	- OUT	22	+ OUT	33	+ OUT	44	- OUT

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

**M167 SERIES 3-PHASE AC/DC POWER SUPPLY**

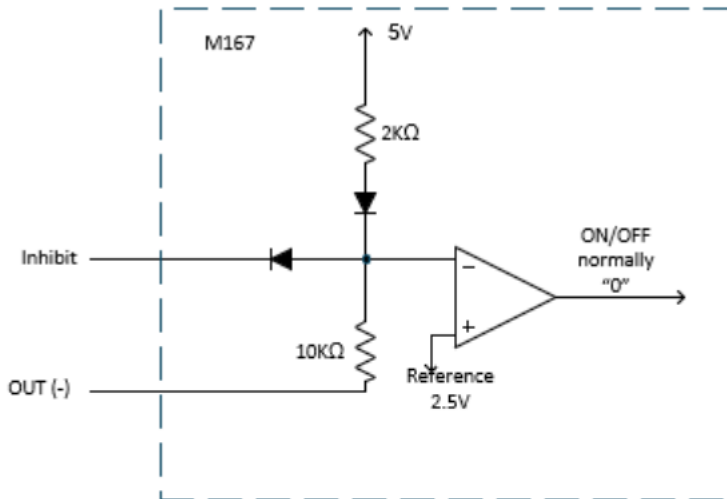
*Functions and Signals for Type A*

**INHIBIT signal**

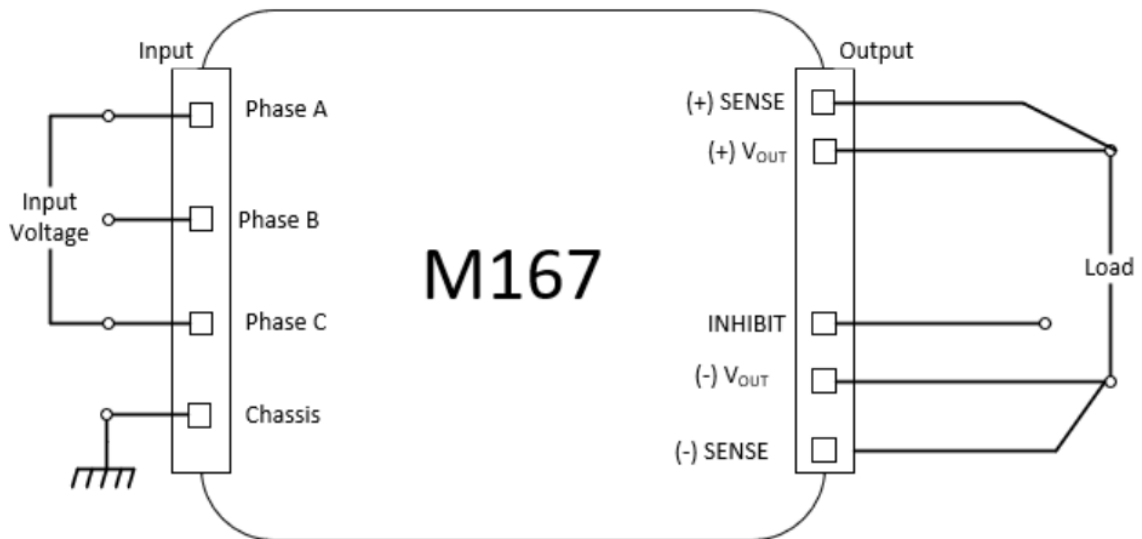
The INHIBIT signal is used to turn the power supply ON and OFF.

OPEN or 5V – will turn on the power supply.

SHORT – between pin 2 and -OUT (output connector) will turn off the power supply.



*Connection Diagram for Type A:*



## M167 SERIES 3-PHASE AC/DC POWER SUPPLY

### Pin Assignment (Input Connector) for Type B

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

### Pin Assignment (Output Connector) Type B

Pin No.	Function	Pin No.	Function	Pin No.	Function	Pin No.	Function
1	- OUT	12	- OUT	23	+ OUT	34	+ OUT
2	N.C	13	- OUT	24	- OUT	35	+ OUT
3	+ OUT	14	- OUT	25	- OUT	36	+ OUT
4	+ OUT	15	- OUT	26	- OUT	37	+ OUT
5	+ OUT	16	+ OUT	27	- OUT	38	+ OUT
6	+ OUT	17	+ OUT	28	- OUT	39	- OUT
7	+ OUT	18	+ OUT	29	- OUT	40	- OUT
8	+ OUT	19	+ OUT	30	- OUT	41	- OUT
9	- OUT	20	+ OUT	31	N.C	42	- OUT
10	- OUT	21	+ OUT	32	+ OUT	43	- OUT
11	- OUT	22	+ OUT	33	+ OUT	44	- OUT

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

## M167 SERIES 3-PHASE AC/DC POWER SUPPLY

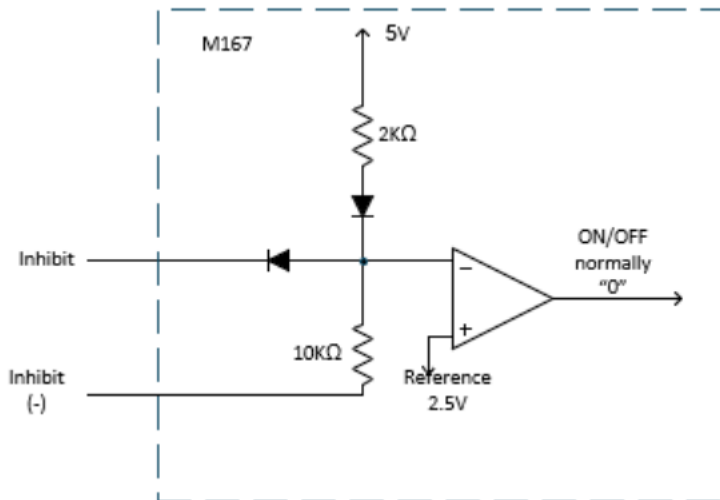
### Functions and Signals for Type B

#### **INHIBIT signal**

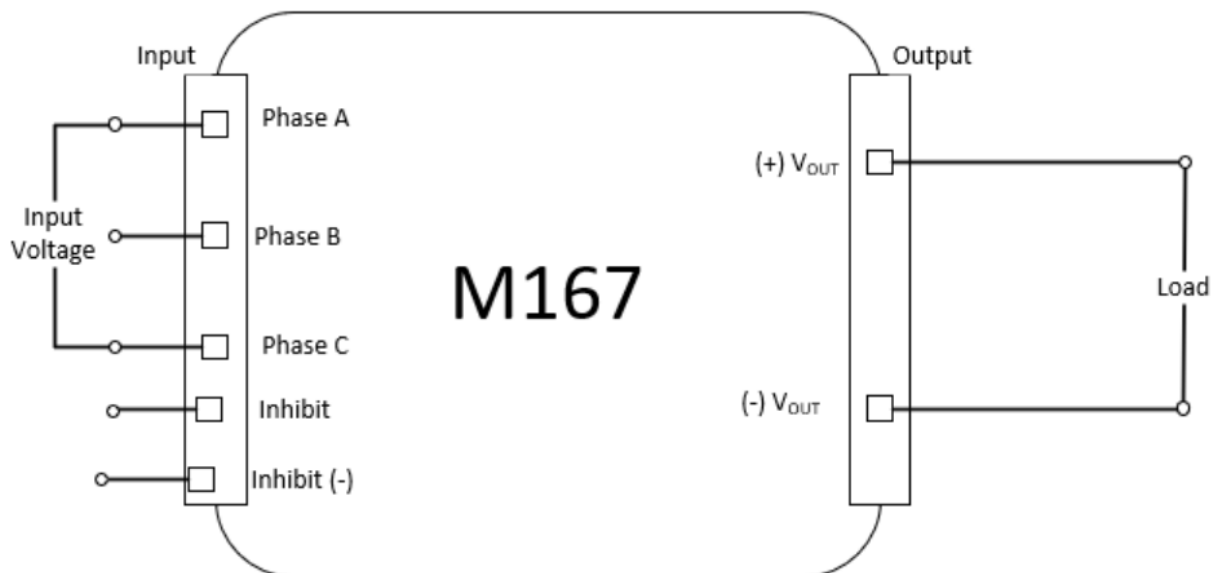
The INHIBIT signal is used to turn the power supply ON and OFF.

OPEN or 5V – will turn on the power supply.

SHORT – between pin 8 and pin 1 (input connector) will turn off the power supply.

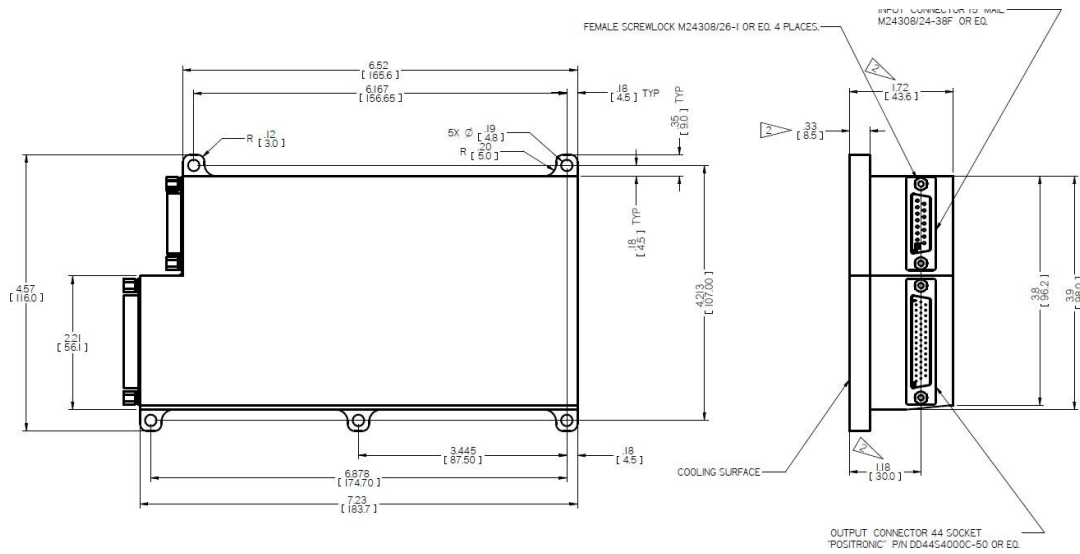


### Connection Diagram for Type B:



**M167 SERIES 3-PHASE AC/DC POWER SUPPLY**

**Outline Drawing**



- Dimensions are in Inches [mm]
- Tolerance is:  
 XX ±.02 IN  
 .XXX ±.01 IN
- Weight: 1,600gr (preliminary)
- Parasolid 3D module is available

# M167 SERIES 3-PHASE AC/DC POWER SUPPLY

## Standard Configurations

Part number	Input		Output		Type	
	Voltage range	Frequency	Voltage	Current	A	B
M167-100	3-phase, 103 to 127 V <sub>AC</sub>	400 Hz	5 V <sub>DC</sub>	55 A	V	
M167-101	3-phase, 103 to 127 V <sub>AC</sub>	400 Hz	12 V <sub>DC</sub>	55 A	V	
M167-102	3-phase, 103 to 127 V <sub>AC</sub>	400 Hz	15 V <sub>DC</sub>	55 A	V	
M167-103	3-phase, 103 to 127 V <sub>AC</sub>	400 Hz	24 V <sub>DC</sub>	55 A	V	
M167-104	3-phase, 103 to 127 V <sub>AC</sub>	400 Hz	28 V <sub>DC</sub>	55 A	V	
M167-105	3-phase, 103 to 127 V <sub>AC</sub>	400 Hz	48 V <sub>DC</sub>	32 A		V

- Specifications are subject to change without prior notice by the manufacturer