

M167 SERIES 3-PHASE AC/DC POWER SUPPLY

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

Applications Military (Airborne, ground-fix, shipboard), Ruggedized, Telecom, Industrial		
Special Features • High efficiency • Wide input range • Input / Output isolation • Limited Inrush Current • <u>Fixed</u> switching frequency • <u>EMI</u> filters included • Indefinite short circuit protection with auto-recovery • Over-voltage shutdown with auto-recovery • Over temperature shutdown with auto-recovery		
Electrical Specifications <u>AC Input Range:</u> 103-127V/400 Hz (320-520Hz), 3-phase. <u>DC Output:</u> Voltage: 3.3V to 50V Current: Up to 55A Power: Up to 1.6kW <u>Isolation:</u> 500V between Input and Output 500V between Input and Case 100V between Output and Case <u>Transients:</u> No damage when exposed to 80 and 180Vac transients IAW MIL-STD-704 Please consult factory for details. <u>Line/Load regulation:</u> Less than 1% (no load to full load, -40°C to +71°C). <u>Efficiency:</u> 85% - minimum (full load, room temperature) <u>EMC:</u> Designed to meet MIL-STD-461F at 45A: CE102, CS101, CS114, CS115, CS106, RE101, RE102, RS101, RS103 <u>Ripple and Noise:</u> 100÷150mV_{p-p}, typical (max. 1%) without external capacitance. When connected to system capacitance ripple drops significantly. <u>Turn on Transient</u> No Voltage over shoot during power on.		
Protections * <u>Input</u> • Inrush Current Limiter peak value of 6 x I_{IN} <u>Output</u> • Passive transorb on outputs 20% above nominal voltage. • Current limiting Continuous protection (10-30% above maximum current) for unlimited time. <u>General</u> • Over temperature protection: Shutdown at base plate temperature of +105°C (±5°C) Automatic recovery at base plate temperature lower than +95°C (±5°C)		

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

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Environmental

Designed to meet MIL-STD-810E

Temperature:

Operating: -40°C to $+71^{\circ}\text{C}$ (at base plate)

Storage: -55°C to $+125^{\circ}\text{C}$

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 $+70^{\circ}\text{C}$ 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.**

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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.

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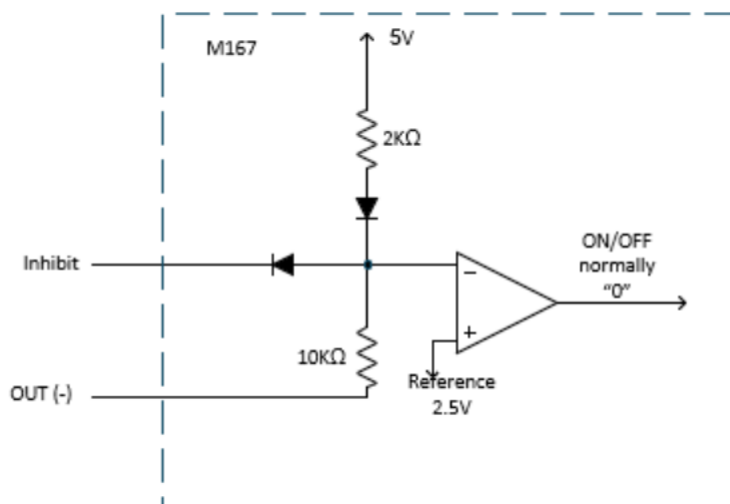
Functions and Signals for Type A

INHIBIT signal

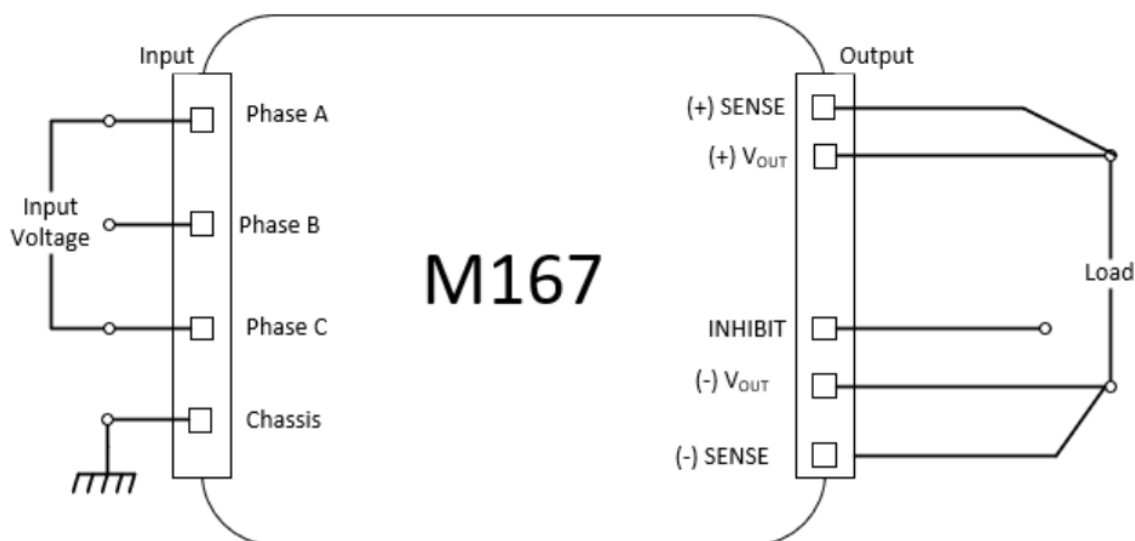
The INHIBIT signal is used to turn the power supply ON and OFF.

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:



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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.

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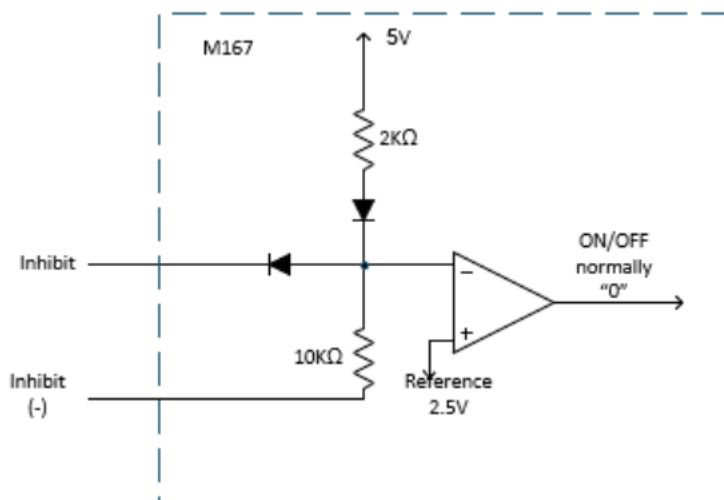
Functions and Signals for Type B

INHIBIT signal

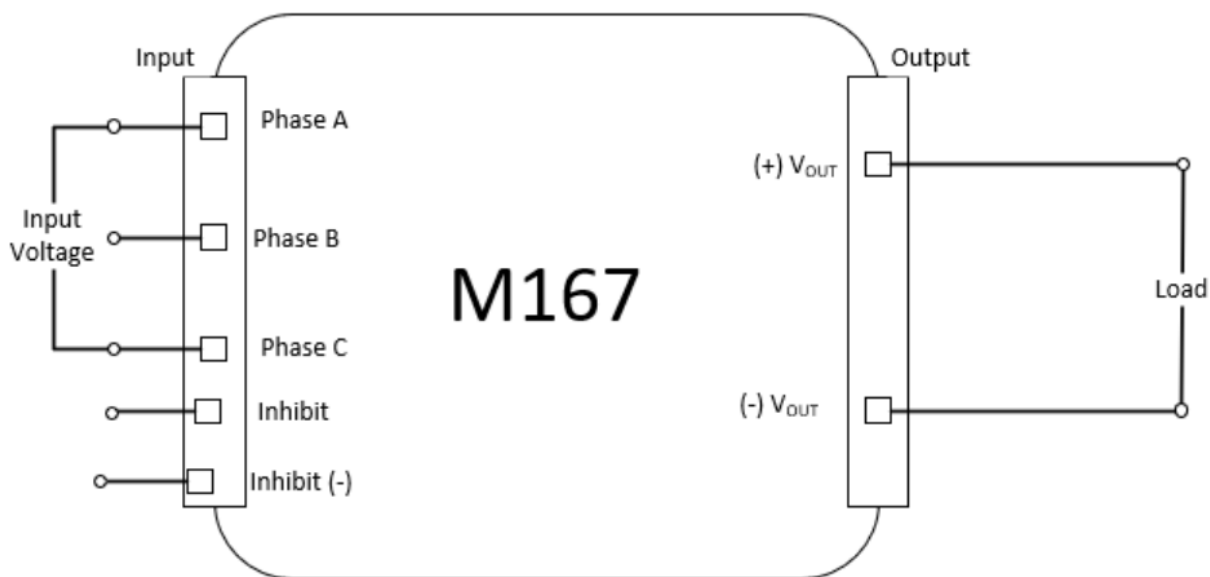
The INHIBIT signal is used to turn the power supply ON and OFF.

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

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

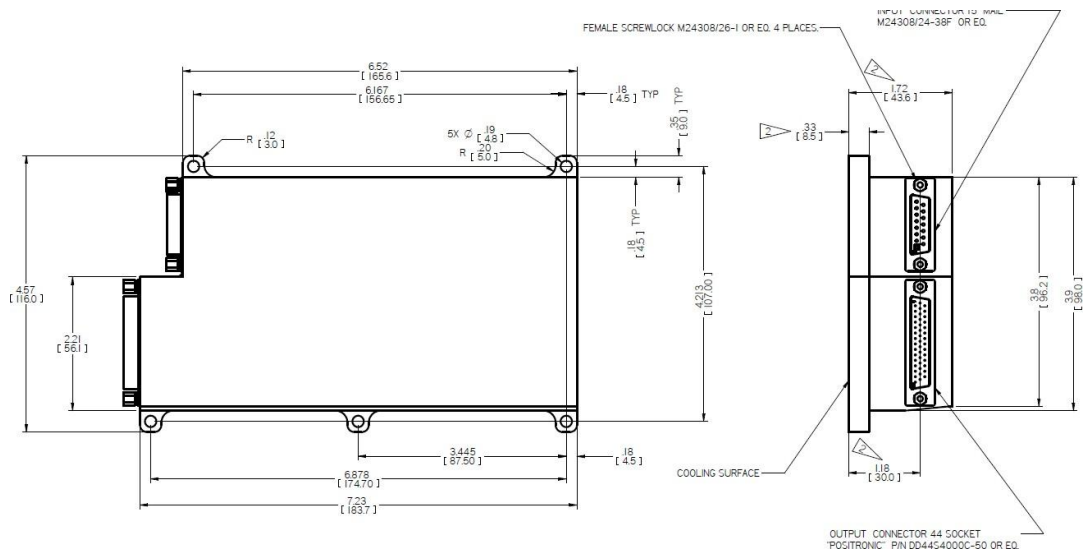


Connection Diagram for Type B:



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Outline Drawing



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

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Standard Configurations

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

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