

M183 Series

AC/DC POWER SUPPLY



DESCRIPTION:

The M183 military power supply is a rugged 3 phase AC to DC converter, accepts a 115 AC input range from 103 to 127VAC, L-N, 50/60/400Hz and provides a single DC output from 5V to 50V, up to 1000W, with custom outputs available. Designed to meet military standards, MIL-STD-704, MIL-STD-810, MIL-STD-461.

FEATURES

- Miniature size
- High efficiency
- Wide input range
- Input / Output isolation
- Limited Inrush Current
- External On/Off Inhibit
- Fixed switching freq. (400 kHz)
- External sync. capability
- EMI filters included
- Up to 28 W/in³
- Power Factor 85%-90% at 75-100% load.
- Indefinite short circuit protection with auto-recovery
- Over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

HOW TO ORDER

Part Number	Input		Output	
	Voltage range	Frequency	Voltage	Current
CF-02EM183-1	103VAC -127VAC / 3-phase	50/60/400Hz	5VDC	40A
CF-02EM183-2	103VAC -127VAC / 3-phase	50/60/400Hz	12VDC	40A
CF-02EM183-3	103VAC -127VAC / 3-phase	50/60/400Hz	15VDC	40A
CF-02EM183-4	103VAC -127VAC / 3-phase	50/60/400Hz	24VDC	40A
CF-02EM183-5	103VAC -127VAC / 3-phase	50/60/400Hz	28VDC	36A
CF-02EM183-6	103VAC -127VAC / 3-phase	50/60/400Hz	48VDC	20A

PRODUCT SPECIFICATIONS:

ELECTRICAL SPECIFICATIONS		
Input Voltage Range	AC Input range:	103 -127VAC, 50/60/400Hz, 3- phase.
	Optional:	Can be configured for continuous work during 80 VAC transient IAW MIL-STD-704F.
Line/Load regulation	Less than 1% (Low line to high line, no load to full load, -55°C to +85°C).	
Ripple and Noise	100-150mVp-p, typical (max. 1%) without external capacitance.	
DC Output	Voltage range:	5V to 50V
	Output power:	Up to 1000W
	Output current:	Up to 42A
Efficiency	90% typical (full load, nominal line voltage, room temperature)	
Turn on Transient	No Voltage over shoot during power on.	
Isolation	Input to Output:	500VDC
	Input to Case:	500VDC
	Output to Case:	100VDC
EMC	Designed to meet MIL-STD-461F: CE102, CS101, CS114, CS115, CS116, RE102, RS101, RS103	

PROTECTIONS:

Input	Inrush Current Limiter Peak value of 6 x Inom for inrush currents lasting over 50μs.
Output	Passive Over-Voltage Protection Transorb on outputs, chosen at 120% ± 10% of nominal voltage.
	Overload / Short-circuit Continuous protection (10 to 30% above maximum current) for unlimited time.
General	Over Temperature Protection Shutdown if baseplate temperature rises above +105°C ± 5°C. Automatic recovery upon cool down when baseplate temperature drops below +95°C ± 5°C.

ENVIRONMENTAL CONDITIONS:

Designed to meet MIL-STD-810F		
Temperature	Operating:	-55°C to +85°C (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	
Salt and Dust	Method 510, Procedure I	
Salt Fog	Method 509	
Fungus Resistance	Method 508	
Vibration and Shock	Shock:	Saw-tooth, 20g peak, 11ms.
	Vibration:	Figure 514.5C-17. General minimum integrity exposure, 1 hour per axis.
<p style="margin: 0;">Reliability 150,000 hours, calculated IAW MIL-HDBK-217F Notice 2 at +85°C (at baseplate) Ground Fix conditions.</p>		

PIN ASSIGNMENT:

Connector Input

Connector type: M24308/24-38F or eq.

Mating connector: M24308/2-2F or eq.

Pin No.	Pin Function
1	N.C.
2	PHASE C
3	N.C.
4	PHASE B
5	PHASE B
6	N.C.
7	PHASE A
8	N.C.

Pin No.	Pin Function
9	PHASE C
10	PHASE C
11	N.C.
12	PHASE B
13	N.C.
14	PHASE A
15	PHASE A

Connector Output

Connector type: M24308/23-39F or eq.

Mating connector: M24308/4-3F or eq.

Pin No.	Pin Function
1	SENSE
2	SENSE RTN
3	INHIBIT
4	OUT (+)
5	OUT (+)
6	OUT (+)
7	OUT (+)
8	OUT (+)
9	OUT RTN (-)

Pin No.	Pin Function
10	OUT RTN (-)
11	OUT RTN (-)
12	OUT RTN (-)
13	OUT RTN (-)
14	OUT (+)
15	OUT (+)
16	OUT (+)
17	OUT (+)
18	OUT (+)

Pin No.	Pin Function
19	OUT (+)
20	OUT RTN (-)
21	OUT RTN (-)
22	OUT RTN (-)
23	OUT RTN (-)
24	OUT RTN (-)
25	OUT RTN (-)

FUNCTIONS AND SIGNALS:

INHIBIT signal

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

TTL "1" or OPEN – Power supply active (output turned on).

TTL "0" or SHORT to Output RTN – Power supply inhibited (output turned off).

If this function is not required, leave this pin unconnected.

SENSE

The SENSE line is used to achieve accurate voltage regulation at load terminals.

To use this feature, connect this pin directly to load's positive terminal.

If this function is not required, short SENSE pin to OUTPUT pins as close as possible to the unit.

SENSE RTN

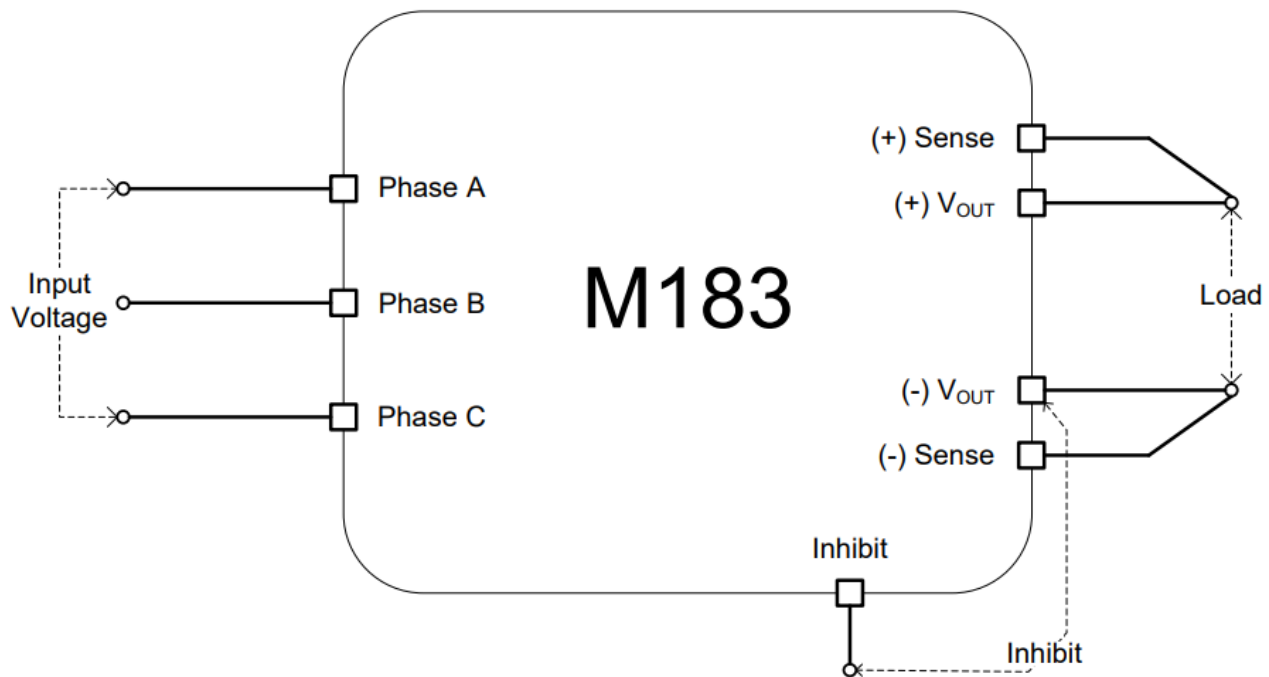
The SENSE RTN line is used to achieve accurate voltage regulation at load terminals.

To use this feature, connect this pin directly to load's negative terminal.

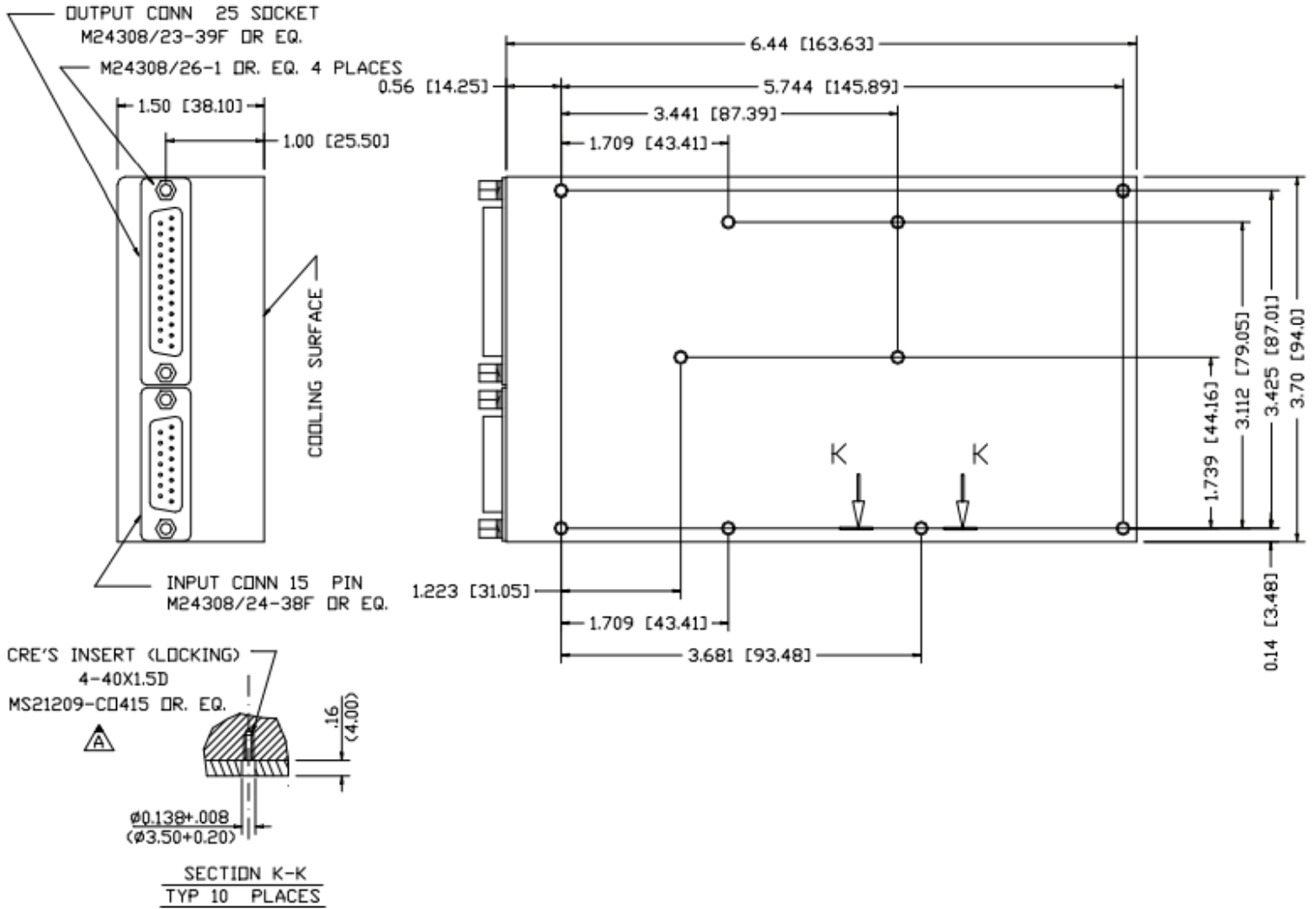
If this function is not required, short SENSE RTN pin to OUTPUT RTN pins as close as possible to the unit.

Note: The use of remote sense has a limit of voltage dropout between the converter's output and the load's terminals of approximately 5% of nominal output voltage.

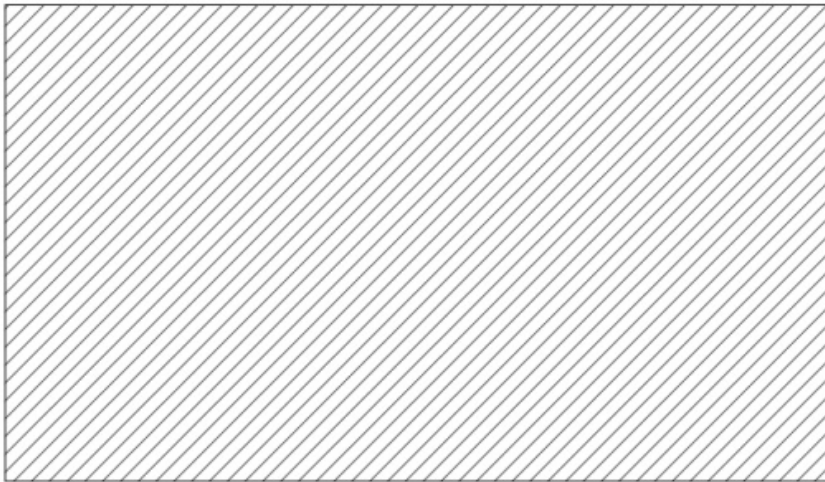
TYPICAL CONNECTION:



OUTLINE DRAWING:

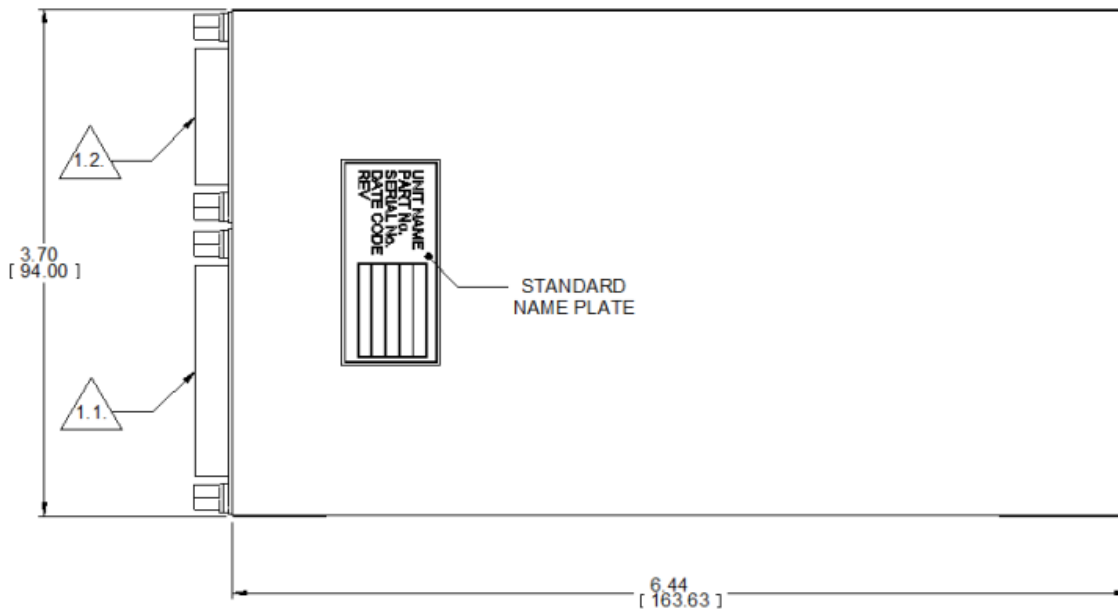


HEAT DISSIPATION SURFACE:



Dissipation Area
23.84 in²
(15380 mm²)

LABEL LOCATION:



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