Amphenol
MILITARY HIGH SPEED

# M2803 Series
## AC/DC POWER SUPPLY


### DESCRIPTION:
The M2803 military power supply is a rugged 3 phase AC to DC converter, accepts a 230VAC input range from 184 to 276VAC, L-N, 50/60Hz and provides a single DC output from 100V to 320V, up to 2500W, with custom outputs available. Designed to meet military standards, MIL-STD-810, MIL-STD-461.

### FEATURES

- Compact size
- High efficiency
- Wide input range
- Input / Output isolation
- Fixed switching frequency (approx. 400 kHz)
- Remote Inhibit (On/Off)
- EMI filters included
- Limited Inrush Current
- Indefinite short circuit protection with auto-recovery
- Over temperature shutdown with auto-recovery

Jared Sibrava | +1 (607) 643-1845 | jsibrava@amphenol-aao.com
amphenol-aerospace.com

## HOW TO ORDER

| Part number | Input | | Output | | Notes |
|---|---|---|---|---|---|
| | Voltage range | Frequency | Voltage | Current | |
| CF-02EM2803-1 | 3-phase, 207 to 253 VAC | 50/60 Hz | 270 VDC | 9.5 A | |
| CF-02EM2803-2 | 3-phase, 207 to 253 VAC | 50/60 Hz | 270 VDC | 9.5 A | Parallel operation via output voltage droop. Voltage regulation is ±2% |
| CF-02EM2803-3 | 3-phase, 207 to 253 VAC | 50/60 Hz | 270 VDC | 9.5 A | |
| CF-02EM2803-4 | 3-phase, 207 to 253 VAC | 50/60 Hz | 270 VDC | 9.5 A | Parallel operation via output voltage droop. Voltage regulation is ±2% |

## PRODUCT SPECIFICATIONS:

| | | |
|---|---|---|
| AC INPUT | Input Voltage Range: | 3-phase 230 VRMS,L-N ± 20% / 50 Hz |
| | Over-voltage lockout: | Above 300 VRMS,L-N |
| | Efficiency: | 86%, typical (270V variant, nominal input line, maximum load) |
| | Power Factor: | Minimum 0.8 from 50% load |
| | EMC: | Designed to meet* MIL-STD-461F: CS101, CS114, CS115, CS116, RE102, RS103 with external filter and shielded cable. |
| | Isolation: | 1000 VDC between Input and Output 1000 VDC between Input and Case |

## ENVIRONMENTAL CONDITIONS:

| Meets or exceeds MIL-STD-810G | |
|---|---|
| Temperature: | Operating –55°C to +85°C (at baseplate)<br>Storage –55°C to +125°C |

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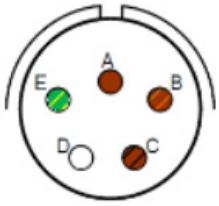
| | | |
|---|---|---|
| DC OUTPUT (floating from input) | Voltage Range: | 100 to 320 VDC |
| | Current Range: | 0 to 20 A |
| | Power Factor: | 0 to 2500 W |
| | Line/Load Regulation: | Less than ±1% (0 to 100% load, –55°C to +85°C and over input voltage range) |
| | Ripple and Noise: | 500 mVp-p, typical (Up to 1%) |
| | Overload / Short-Circuit Protection: | Current limit at moderated overload, hiccup at high overload to short circuit. |
| | Over-Voltage Protection: | Passive transorb on output. |
| | Over Temperature Protection: | Shutdown if baseplate temperature exceeds +105°C ± 5 °C; Automatic recovery on cool-down to below +95°C ± 5 °C |
| | Isolation: | 500 VDC between Output and Case. |

## CONNECTOR J1 (INPUT)

Connector type: D38999/20WD5PN or eq.
Mating connector: D38999/26WD5SN or eq.

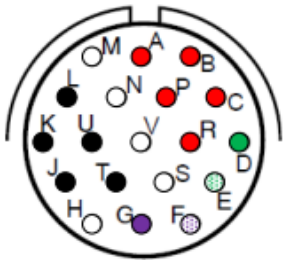
| Function | Pin No. | |
|---|---|---|
| PHASE A | A | |
| PHASE B | B | |
| PHASE C | C | |
| SPARE | D | |
| CHASSIS | E | |



## CONNECTOR J2 (OUTPUT)

Connector type: D38999/20WD19SN or eq.
Mating connector: D38999/26WD19PN or eq.

| Function | Pin No. | Polarity | |
|---|---|---|---|
| $V_{OUT}$ | A, B, C, P, R | + | ● |
| $V_{OUT}$ RTN | J, K, L, T, U | – | ● |
| INHIBIT | G | + | ● |
| INHIBIT RTN | F | – | ⊕ |
| PWR GOOD | D | + | ● |
| PWR GOOD RTN | E | – | ⊕ |
| SPARE | H, M, N, S, V | | |

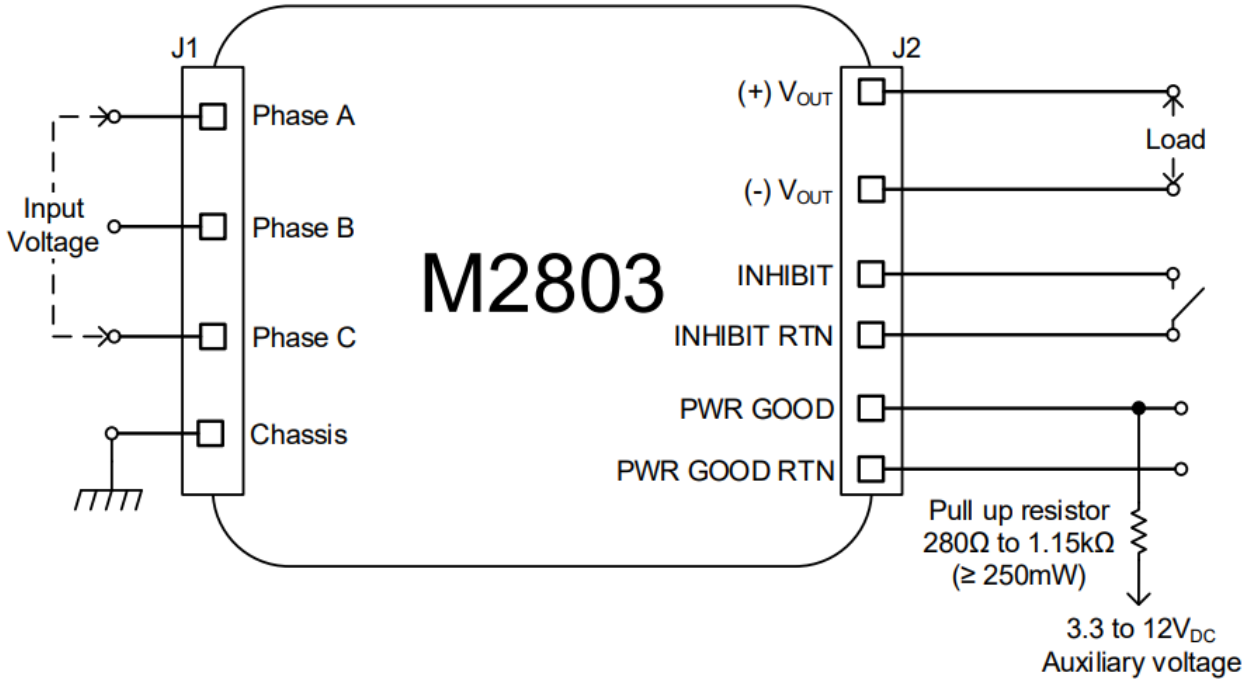


## FUNCTIONS AND SIGNALS:

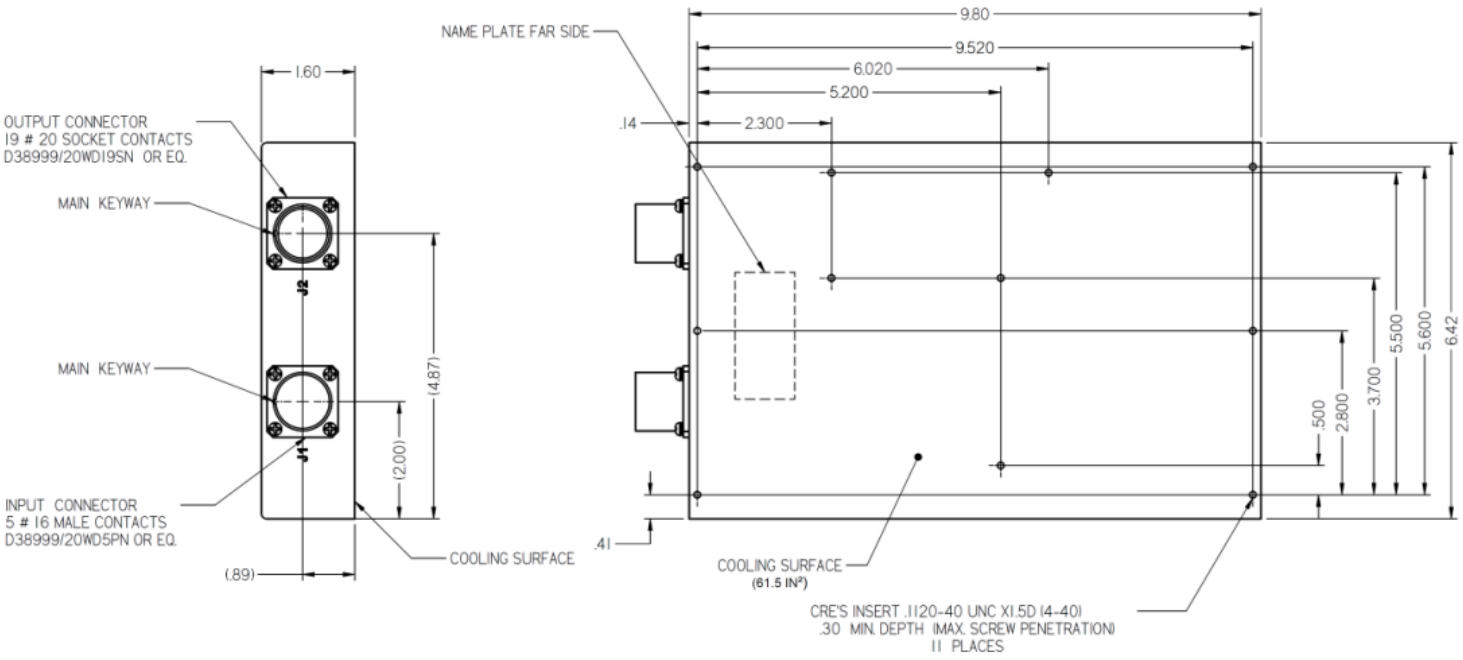
**INHIBIT signal (connector J2, pin G)**
The **INHIBIT** signal is used to turn the power supply ON and OFF.
To turn the power supply ON, leave pin G open.
To turn the power supply OFF, short pin G to pin F.
If not used, leave pin G unconnected.
This signal is referenced to **INHIBIT RTN (connector J2, pin F)**

**PWR GOOD signal (connector J2, pin D)**
The **PWR GOOD** signal indicates the status of the output voltage.
When output voltage rises above 95% ± 5% of its nominal value, pin 10 will be pulled down to pin 13 through a
49.9Ω ± 1% resistor and a phototransistor.
When output voltage falls below 90% ± 5% of its nominal value, pin 10 will be in high impedance mode.
If not used, leave the signal unconnected.
This signal is referenced to **PWR GOOD RTN (connector J2, pin E)**
Both pins 10 and 13 are isolated from all other parts of the circuitry.

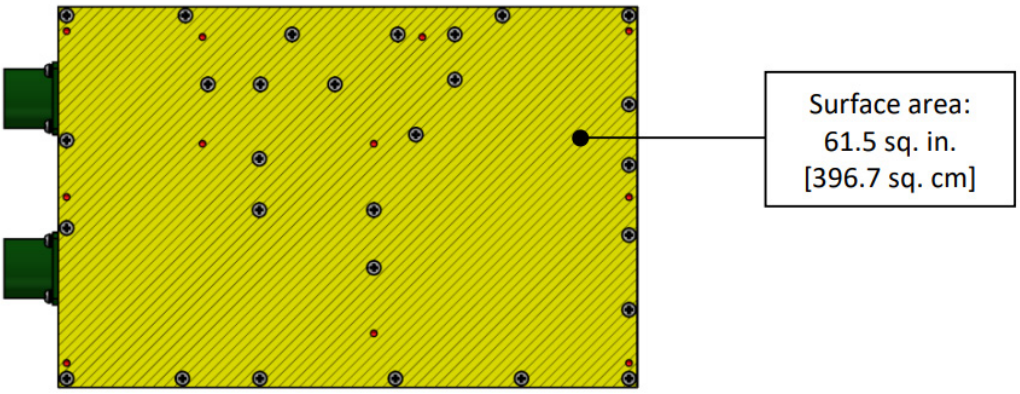
## TYPICAL CONNECTION DIAGRAM:



## OUTLINE DRAWING:




## HEAT DISSIPATION SURFACE AREA




Notes
1. Dimensions are in Inches
2. Tolerance is:
   .XX ± .025 in
   .XXX ± .010 in
3. Weight: Approx. TBD lbs. [TBDkg]



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40-60 Delaware Avenue
Sidney, NY 13838
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