

M8727 SERIES

DC/DC POWER SUPPLY



DESCRIPTION

The M8727 military power supply is a rugged dual output DC to DC converter which accepts an 18 - 48VDC input voltage range and provides DC outputs from 3.3 to 50V at up to 80W. Custom outputs available upon request and the unit is Designed to meet military standards, MIL-STD-704, MIL-STD-1275, MIL-STD-810, MIL-STD-461.

FEATURES

- DC/DC Triple outputs power supply up to 80W
- 18 to 48VDC Standard Input version
- Miniature size
- High efficiency
- Wide input range
- Up to 20W/in³
- Input / Output isolation
- Fixed switching frequency (250kHz)
- TTL logic enable
- EMI filters included
- Indefinite short circuit protection with auto recovery
- Input over-voltage shutdown with auto-recovery
- Over temperature shutdown with auto-recovery

HOW TO ORDER

Part number	INPUT		OUTPUT 1		OUTPUT 2	
	VOLTAGE RANGE	OUTPUT POWER	VOLTAGE	CURRENT	VOLTAGE	CURRENT
CF-02EM8727-1	18VDC-48VDC	73W	3.3VDC	10A	5VDC	8A
CF-02EM8727-2	18VDC-48VDC	76W	5VDC	8A	12VDC	3A
CF-02EM8727-3	18VDC-48VDC	69W	12VDC	3A	3.3VDC	10A
CF-02EM8727-4	18VDC-48VDC	79.2W	28VDC	1.4A	5VDC	8A
CF-02EM8727-5	18VDC-48VDC	78.4W	48VDC	0.8A	5VDC	8A
CF-02EM8727-6	18VDC-48VDC	40W	5VDC	5A	5VDC	3A

ELECTRICAL SPECIFICATIONS:

DC INPUT:

Voltage Range:

DC Input range: 18 to 48VDC
For extended input version -
Please contact factory for more
details

Isolation:

200VDC between Input and
Output
200VDC between Input and
Case

Input transient:

Input transient protection:
All models withstand surges (no
operation, no damage) IAW MIL-
STD- 1275A (100V for 50ms)
and MIL-STD-704A/D (80V for
0.1s)

DC OUTPUT:

Voltage Regulation:

Better than or equal to $\pm 1\%$
(low to high line voltage, no load
to full load, -55°C to $+85^{\circ}\text{C}$ at
baseplate)

Ripple & Noise:

50mVp-p, typical (up to 1%)
Current limiting (Foldback):
Continuous protection for unlim-
ited time

Over Temp:

Protection
Over temperature protection:
Shutdown if baseplate tempera-
ture exceeds.
 $+105^{\circ}\text{C} \pm 5^{\circ}\text{C}$. Automatic recov-
ery at baseplate temperature
lower than $+95^{\circ}\text{C} \pm 5^{\circ}\text{C}$.

Current Limit:

& Overload
Continuous protection for unlim-
ited time
Overload/short-circuit

Overvoltage:

Protection
Over voltage protection:
Passive transorb on output at
 $+120^{\circ}\text{C} \pm 5^{\circ}\text{C}$

Efficiency:

Efficiency: Up to 82%

Line/Load regulation:

Up to $\pm 1\%$ (Low to high line
voltage, no load to full load,
 -55°C to $+85^{\circ}\text{C}$)

Isolation:

100VDC between Output and
Case

SPECIFICATIONS (CONT.):

Control & Indication	INHIBIT Input	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 Signal RTN – Power supply inhibited (output turned off). If this function is not required, leave this pin unconnected.
	SIGNAL RTN	INHIBIT and SYNC signals are referenced to this pin. This pin is referenced to IN RTN
	SYNC IN signal	The SYNC IN signal is used to allow the power supply frequency to sync with the system frequency. The system frequency should be 250 kHz ± 10 kHz. When not connected the power supply will work with internal sync at 250 kHz ± 10 kHz. This signal is referenced to the SIGNAL RTN pin
Environment Designed to meet MILSTD-810F	Temperature	Operating -55°C to +85°C (baseplate) Storage -55°C to +125°C
	Humidity	Method 507.4 Up to 95% RH
	Salt-fog	Method 509.4
	Altitude	Method 500.4
	Mechanical Shock	Method 516.5
	Vibration	Method 514.5
	Fungus	Does not support fungus growth, in accordance with the guidelines of MIL-STD-454, Requirement 4
EMI	MIL-STD-461F	Designed to meet* MIL-STD-461F* CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103
Reliability	150,000 hours, calculated per MIL-STD-217F at +85°C baseplate, ground fixed	
Cooling Requirements	The M8727 is a baseplate cooled unit. The base of the M8727 should be thermally attached to a suitable heatsink that maintains it below +85 °C	
Form factor	2.6” wide, 3.75” high and 0.5” deep.	
Weight	6.35oz (180gr)	

OUTPUTS RANGE:

Output #	Voltage Range	Current Range	Output Regulation	Power Range
1	1.5 to 70 V _{DC}	0 to 10 A	±1%	0 to 40 W
2	1.5 to 70 V _{DC}	0 to 10 A	±1%	0 to 40 W
Total				0 to 80 W

PIN ASSIGNMENT:

Connector type: Airborne RM272-040-312-2900 or eq.

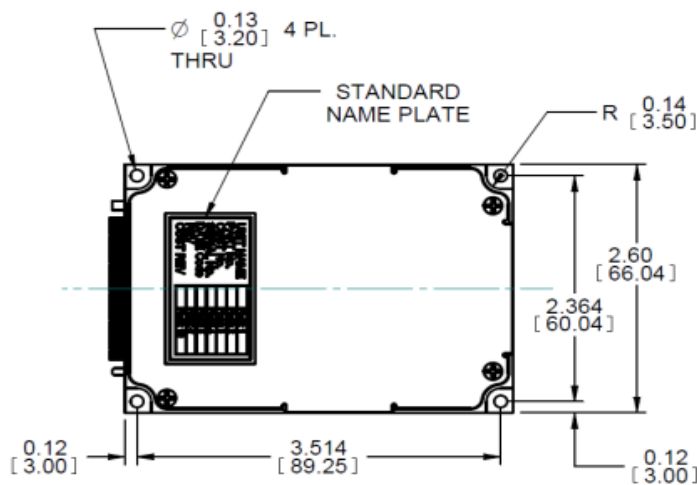
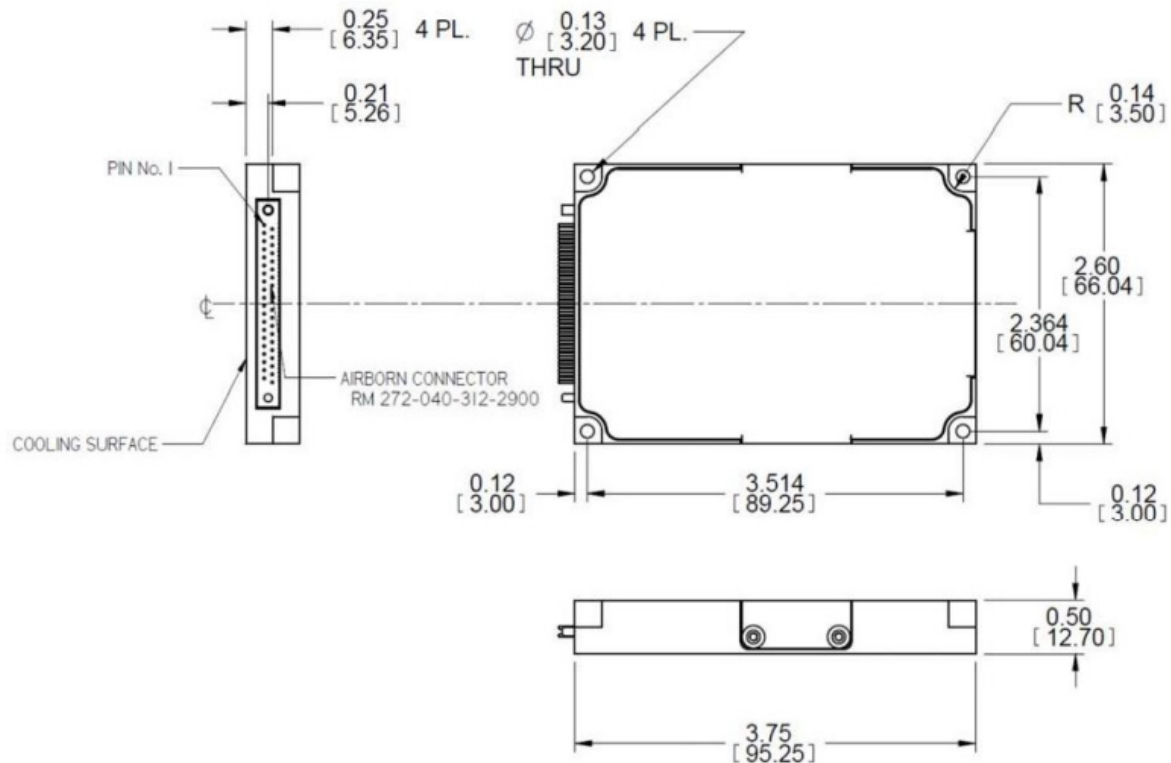
Mates with: Airborne RM242-040-571-5900 (crimp removable pins) or RM242-040-241-5900 (solder cup pins).

Pin No.	Function	Pin No.	Function	Pin No.	Function
18, 19, 20, 38, 39	VOUT 1 (+)	6, 7, 25, 26, 27	VOUT 2 RTN (-)	15	SENSE 1 RTN (-)
16, 17, 35, 36, 37	VOUT 1 RTN (-)	1	SYNC	2	SENSE 2 (+)
12, 13, 32, 33	VIN (+)	21	SIGNAL RTN	8	SENSE 2 RTN (-)
10, 11, 29, 30	VIN RTN (-)	22	INHIBIT	14	CHASSIS
3, 4, 5, 23, 24	VOUT 2 (+)	40	SENSE 1 (+)	9, 28, 31, 34	N.C.

Notes:

1. SIGNAL RTN is the reference line for INHIBIT and SYNC signals.
2. For optimal performance, connect all pins with identical function/designation together.
3. Always connect the sense lines to either the respective load terminals or their respective output pins – do not leave the sense lines open!

OUTLINE DRAWING:



Notes:

1. Dimensions are in Inches[mm]
2. Tolerance is:
XX ± 0.01 IN
XXX ± 0.005 IN
3. Weight: Approx. 6.35 oz (180g)

Notice: Specifications are subject to change without notice. Contact your nearest Amphenol Corporation Sales Office for the latest specifications. All statements, information and data given herein are believed to be accurate and reliable but are presented without guarantee, warranty, or responsibility of any kind, expressed or implied. Statements or suggestions concerning possible use of our products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should assume that all safety measures are indicated or that other measures may not be required. Specifications are typical and may not apply to all connectors.

AMPHENOL is a registered trademark of Amphenol Corporation.
PRELIMINARY

©2023 Amphenol Corporation REV:



40-60 Delaware Avenue
Sidney, NY 13838
amphenol-aerospace.com | amphenolmao.com