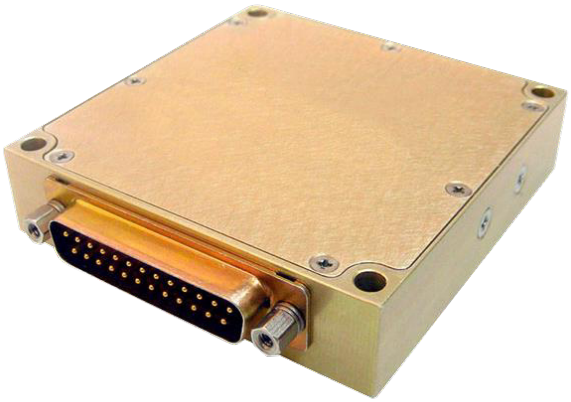
M712 SERIES

DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- MINIATURE, HIGH DENSITY
- DUAL OUTPUT
- UP TO 60 W
- DC/DC POWER SUPPLY

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Amphenol
MILITARY HIGH SPEED

M712 Series– DC/DC Power Supply

Applications

Military, Ruggedized, Telecom, Industrial Power Supply

Special Features

- Miniature size
- High efficiency
- Wide input range
- Up to 9.9 W/in^3
- Input / Output isolation
- Fixed switching frequency (250 kHz)
- 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

Environmental Conditions

Designed to meet MIL-STD-810D

Temperature:
Operating: –55 °C to +85 °C (at baseplate)
Storage: –55 °C to +125 °C

Reliability

150,000 hours, calculated IAW MIL-HDBK-217F Notice 2 at +85 °C baseplate, Ground Fix conditions.

Electrical Specifications

DC INPUT

DC Input range: 18 to 48 V_{DC} Input

transient protection:
All models meet or exceed (no damage)
MIL-STD-1275A (100 V for 50 ms) and
MIL-STD-704A, MIL-STD-704D (80 V for 0.1 s)

Over-voltage shutdown with auto-recovery

Efficiency: Up to 82%

EMC:
Designed to meet MIL-STD-461F*
CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103

Isolation:
Input to Output: 200 V_{DC}
Input to Case: 200 V_{DC}

DC OUTPUT (floating)

Line/Load regulation:
Less than 2% (no load to full load, –55 °C to +85 °C)

Ripple and Noise: 50 mV_{p-p}, typical (max. 1%)
Current limiting (Hiccup):
Continuous protection for unlimited time

Over-voltage protection:
Passive transorb on output.

Over-temperature protection:
Shutdown if baseplate temperature rises above +100 °C ± 5 °C. Automatic recovery when baseplate cools down to below +90 °C ± 5 °C.

Isolation:
Output to Case: 100 V_{DC}

***EMC compliance when tested with 5 H LISNs, shielded harness and static resistive load.**

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Functions and Signals

INHIBIT

The ***INHIBIT*** signal is used to turn the power supply ON and OFF.
TTL "1"or OPEN – Power supply is ON (For normal operation, leave this pin unconnected.) TTL "0" or SHORT to ***SIGNAL RTN*** – Power supply is OFF.

SYNC

The ***SYNC*** signal is used to allow the power supply's switching frequency to sync with the system clock. The external clock's frequency can be 250 kHz ± 10 kHz.
When this pin is left open (unconnected) the power supply will synchronize to its internal clock, set at 250 kHz ± 10 kHz

SIGNAL RTN

The ***SIGNAL RTN*** is used as a return path for the ***SYNC*** and ***INHIBIT*** signals. This pin is referenced to ***VIN RTN***.

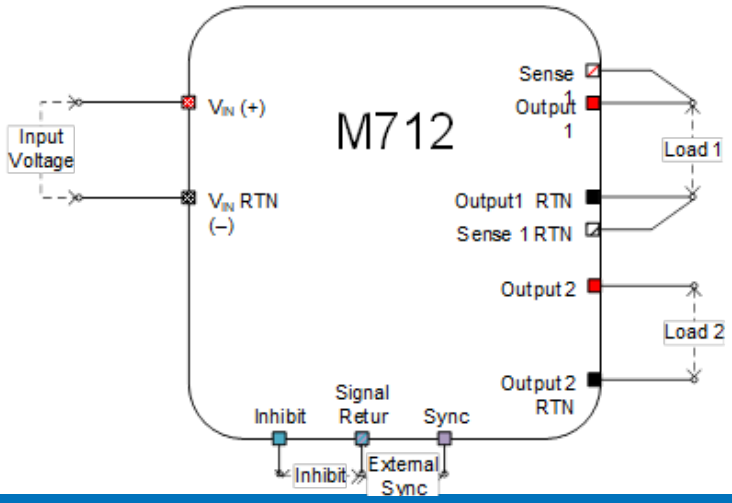
SENSE

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. The use of remote sense has limit of voltage dropout between converter's output and load terminals of typical 5% or 0.5v the lesser of the two.
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. The use of remote sense has limit of voltage dropout between converter's output and load terminals of typical 5% or 0.5v the lesser of the two. If this function is not required, short ***SENSE RTN*** pin to ***OUTPUT RTN*** pins as close as possible to the unit.

Typical Connection Diagram



Outputs Range

Output #	Voltage Range	Current Range	Power Range
1	1.8 to 50 V_{DC}	0 to 5 A	0 to 30 W
2	1.8 to 50 V_{DC}	0 to 5 A	0 to 30 W
Total			0 to 60 W

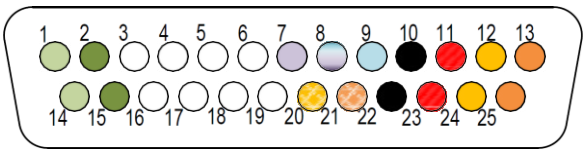
Pin Assignment

Connector type: M24308/24-39F or eq.

Mates with: M24308/2-3F or eq.

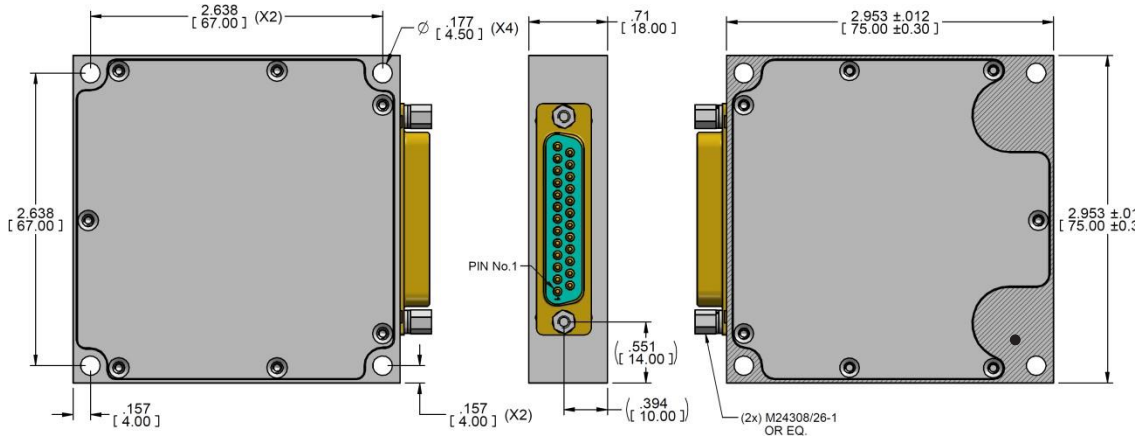
Pin No.	Function	P	
1	OUT 2	+	
2	OUT 2 RTN	–	
3	N/C		
4	N/C		
5	N/C		
6	N/C		
7	SYNC IN	+	
8	SIGNAL RTN	–	
9	INHIBIT	+	
10	VIN RTN	–	
11	VIN	+	
12	OUT 1	+	
13	OUT 1 RTN	–	

Pin No.	Function	P	
14	OUT 2	+	
15	OUT 2 RTN	–	
16	N/C		
17	N/C		
18	N/C		
19	N/C		
20	SENSE 1	+	
21	SENSE 1 RTN	–	
22	VIN RTN	–	
23	VIN	+	
24	OUT 1	+	
25	OUT 1 RTN	–	



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Outline Drawing



Notes

1. Dimensions are in mm
2. Tolerance is:
   .X ± .5 mm.XX ± .25 mm
3. Weight: Approx. 150 g [5.3 oz]

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Standard Models List (for other voltages – consult factory)

Part number	Input	Output #1		Output #2	
		Voltage	Current	Voltage	Current
M712100	18-48VDC	3.3 V_{DC}	5 A	5 V_{DC}	5 A
M712101	18-48VDC	5 V_{DC}	5 A	12 V_{DC}	2.5 A
M712102	18-48VDC	12 V_{DC}	2.5 A	3.3 V_{DC}	5 A
M712103	18-48VDC	28 V_{DC}	1 A	5 V_{DC}	5 A
M712104	18-48VDC	48 V_{DC}	0.6 A	5 V_{DC}	5 A
M712105	18-48VDC	15 V_{DC}	2 A	15 V_{DC}	2 A

- Additional standard configurations available. **Contact factory for more details.**
- All of our products can be configured to comply with EU REACH regulations. **Contact factory for more details.**

Note: Specifications are subject to change without prior notice by the manufacturer

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