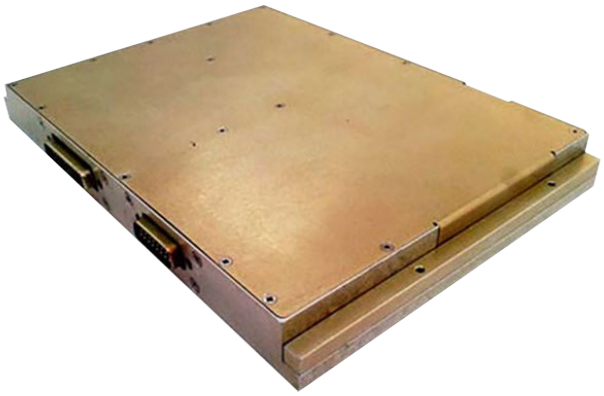
ENERCON
TECHNOLOGIES LTD

FIELD-PROVEN COTS, MOTS AND CUSTOM MILITARY POWER SOLUTIONS

M1457 SERIES

AC+DC/DC POWER SUPPLY



PRODUCT HIGHLIGHTS

- **DUAL OUTPUT**
- **HEX OUTPUT**
- **WIDE INPUT RANGE**
- **HIGH DENSITY**
- **AC + DC/DC POWER SUPPLY**
- **UP TO 125 W**

NON ITAR

AS9100D CERTIFIED ISO 9001

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Applications

Military (Airborne, ground mobile, shipboard), Ruggedized, Telecom, Industrial

Special Features

- Six (6) DC Outputs
- High efficiency
- Wide input range
- Input / Output isolation
- Fixed switching frequency (200 kHz)
- EMI/RFI filters included
- Indefinite short circuit protection with auto-recovery
- Over-voltage protection
- Over temperature shutdown with auto-recovery

Electrical Specifications

AC Input
AC Input range: 85 to 122V_{AC}, 400 Hz, Single-Phase
Power Factor 0.98

DC Input
DC Input range: 18 to 70 V_{DC}

DC Output
Voltage range: 3.3 to 48V
Output power: Up to 125W

Isolation
AC Input to Output: 1000V_{DC}
AC Input to Case: 1000V_{DC}
DC Input to Output: 200V_{DC}
DC Input to Case: 200V_{DC}
Outputs to Case: 100V_{DC}

Line/Load regulation
Less than ±1% (no load to full load, –40°C to +85°C)

Efficiency
At 28V_{DC} input – 80.7%
At 115V_{AC} input – 74.5%
(typical, full load, room temperature)

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

Ripple and Noise
50mV_{p-p}, typical (max. 1%), measured across a 1µF capacitor

Load Transient Overshoot and undershoot
Current change from 50%-100% output voltage changes less than 0.5V within 200-300µSec

Turn on Transient
Voltage overshoot at during power on is less than 3% nominal voltage

* Compliance achieved with shielded harness and static resistive load. Depending on actual configuration, an external filter may be required for full compliance.

*Protections **

AC Input

- **Inrush Current Limiter**
  Peak value of up to 5 x I_{in} for less than 50µSec
- **Under Voltage Lock-Out**
  Unit shuts down below $75V_{AC}$

DC Input

- **Reverse Polarity Protection**
- **Under Voltage Lock-Out**
  Unit shuts down below $14.5V_{DC} \pm 1V_{DC}$
- **Over Voltage Lock-Out**
  Unit shuts down above $77.5V_{DC} \pm 2.5V_{DC}$

Output

- **Active Over-Voltage Protection**
  Output shuts down if voltage exceeds 110% ± 5% of nominal.
- **Passive Over-Voltage Protection**
  Transorbs on outputs, 20% ± 5% above nominal voltage.
- **Current Limiting (Hiccup)**
  Shut down (min. 15% above max. current) and recycle for unlimited time, until overload/short circuit removal

General

- **Over temperature protection**
  Shutdown at base plate temperature of +105 ± 5°C. Automatic recovery at base plate temperature of +95 ± 5°C.

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

Environmental

Design to Meet MIL-STD-810F

Temperature:
Operating: -40°C to +90°C (base plate)
Storage: -55°C to +125°C

Altitude:
Method 500.4, Procedure I & II, 40,000 ft. and 70,000 ft. Operational

Salt Fog:
Method 509-4

Vibration and Shock:
Shock - Saw-tooth, 20g peak, 11mS.
Vibration - Figure 514.5C-17. General minimum integrity exposure. (1 hour per axis)

Humidity:
Method 507.4 - Up to 95%.

Reliability
150,000 hours, calculated per MIL-STD-217F at +85°C base plate, Ground fixed

Environmental Stress Screening (ESS)

Including random vibration and thermal cycles is also available. ***Please consult factory for details.***

Pin Assignment

Output connector J2

Connector Type: M24308/23-15F or eq.

Mates with: M24308/4-3F or eq.

Pin #	Function	P
1	OUT #3 RTN	–
2	OUT #2 RTN	–
3	OUT #2	+
4	OUT #1 RTN	–
5	OUT #1	+
6	OUT #6	+
7	OUT #6	+
8	OUT #6 RTN	–
9	OUT #6 RTN	–

Pin #	Function	P
10	OUT #5	+
11	OUT #5	+
12	OUT #5 RTN	–
13	OUT #5 RTN	–
14	OUT #3	+
15	OUT #4	+
16	OUT #4 RTN	–
17	BIT	+
18	OUT #6	+

Pin #	Function	P
19	OUT #6	+
20	OUT #6 RTN	–
21	OUT #6 RTN	–
22	OUT #5	–
23	OUT #5	+
24	OUT #5 RTN	–
25	OUT #5 RTN	–

Input connector J1

Connector Type: M24308/24-14F or eq.

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

Pin #	Function	P
1	DC INPUT RTN	–
2	DC INPUT RTN	–
3	DC INPUT	+
4	DC INPUT	+
5	N/C	
6	AC INPUT NEUTRAL	
7	N/C	
8	AC INPUT PHASE	

Pin #	Function	P
9	DC INPUT RTN	–
10	DC INPUT RTN	–
11	DC INPUT	+
12	DC INPUT	+
13	N/C	
14	N/C	
15	N/C	

Function and Signals

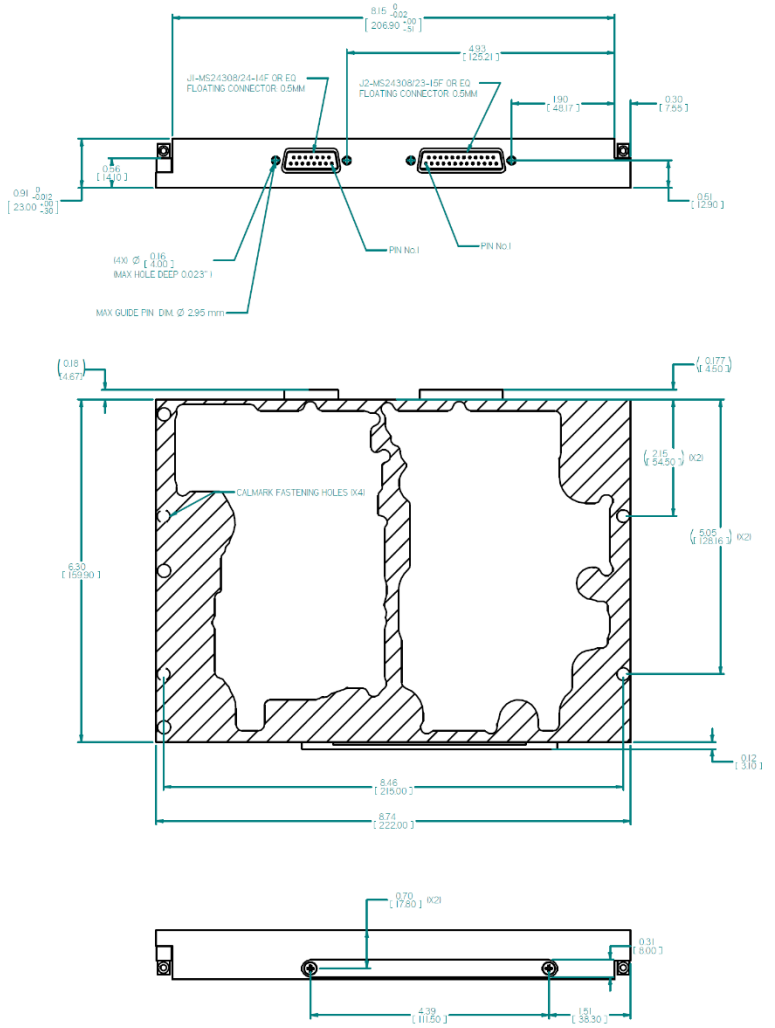
BIT

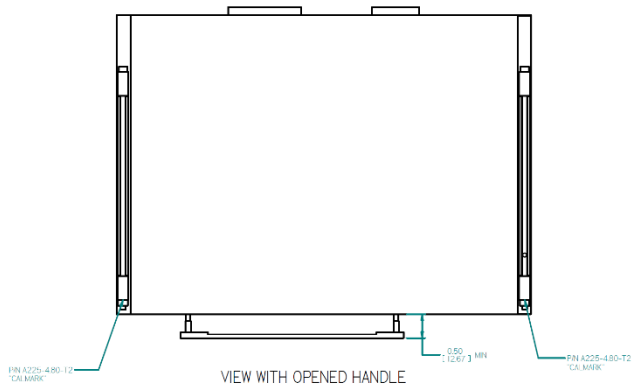
Description: This signal shows which input is being used (AC or DC).

Interface: When AC input voltage is used, the signal is high (when unloaded it will have the same voltage as that of OUT #5).
When DC input is used, the signal will be low (shorted to OUT #5 RTN).

Referenced to: OUT #5 RTN.

Outline Drawing





Notes

1. Dimensions are in Inches [mm]
2. Tolerance is:
   .XX ±0.01 IN
   .XXX ±0.005 IN
3. Weight: Approx. 44.45 oz (1,260 g)

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