

Power Solutions for Today's Military

Power Systems from **COTS+**™ Building Blocks

VME/ATR SERIES

3PH / 400 Hz AC Input
Military Power Supplies

- ◆ Input three-phase, 400Hz MIL-STD-704 A-F steady state
- ◆ Multiple outputs/configurations up to 680 watts
- ◆ Output ripple <50mV_{p-p}
- ◆ External hold-up ready
- ◆ Rugged – MIL-STD-810 vibration, shock, humidity
- ◆ MIL-STD-461E compliant
CE102 CS101 CS114 CS115
CS116 RE102 RS103
- ◆ Operating Temperatures
Conduction Models:
-55°C to +65°C
(up to +85°C with reduced load)
Convection Models:
-55°C to +55°C
- ◆ Consult Rantec for Custom Configurations



The VME/ATR Series of high-power, multiple-output power supplies addresses the needs of today's military for plug-in applications. Our multiple-output power supplies are proven COTS products for the most demanding military airborne VME system applications. Operating on 3-phase/400Hz 200VAC_{L-L} aircraft power, these units can provide up to 5 outputs, generate up to 680 watts, and comply with MIL-STD-461E EMI requirements. Features include independently regulated, isolated outputs, with each output having an LED status indicator.

Rantec has produced a number of standard and custom models, offering a mix of up to five output voltages from 3.3 to 28 volts in either conduction or convection cooled configurations. Customization is achieved through the use of Rantec's COTS+ HDM DC-DC converter modules.

The System Designer's Choice



Rantec Power Systems Inc.

**Rantec Power Team Engineers
Offer Technical Assistance to:**
Evaluate Power System Requirements
Develop Power System Architecture
Reduce Time to Market

VME/ATR

3PH / 400 Hz AC Input Military Power Supplies

ELECTRICAL INPUT

Voltage / Frequency	200VAC _{L-L} 400Hz
Voltage Range	160VAC _{L-L} to 270VAC _{L-L}
Abnormal Operation	No damage to unit from MIL-STD-704 transients
Efficiency*	75%–80% typical; 70% minimum
Power Factor	>.90 (full load)
Loss of Input	Auto recovery after input returns

ELECTRICAL OUTPUT

Voltage / Current*	Model specific, see table.
Regulation Line / Load	±2%
Noise / Ripple	<50mV _{r,p}
Overvoltage Protection*	120% nominal
Current Limiting*	120% nominal
Maximum Power*	Up to 680 watts
Hold-up (external)*	See Application Note HDMA-112
Switching Frequency	Fixed - 300 KHz nominal
EMI	MIL-STD-461E; CS101; CS114; CS115; CS116; CE102; RE102; RS103
Isolation	Input–Case 10MΩ @ 500 VDC Input–Output 10MΩ @ 500 VDC Output–Case 10MΩ @ 50 VDC

MECHANICAL

Physical Format*	6U x 160mm IEEE Std 1101.2-1999 (modified)
Dimension - Conduction	6.184 x 9.182 x .70 inches
Dimension - Convection	6.184 x 9.182 x 1.60 inches
Input Connector**	9-pin D-Connector
Output Connectors**	ERNI DIN 41612 type M
Mounting Hardware*	Wedgelocks or screws, ejectors available
Weight - Conduction	<3.2 lbs.
Weight - Convection	<5.0 lbs.

*Model specific, consult factory for more information.

**See application note VMEA-001.pdf for more information.

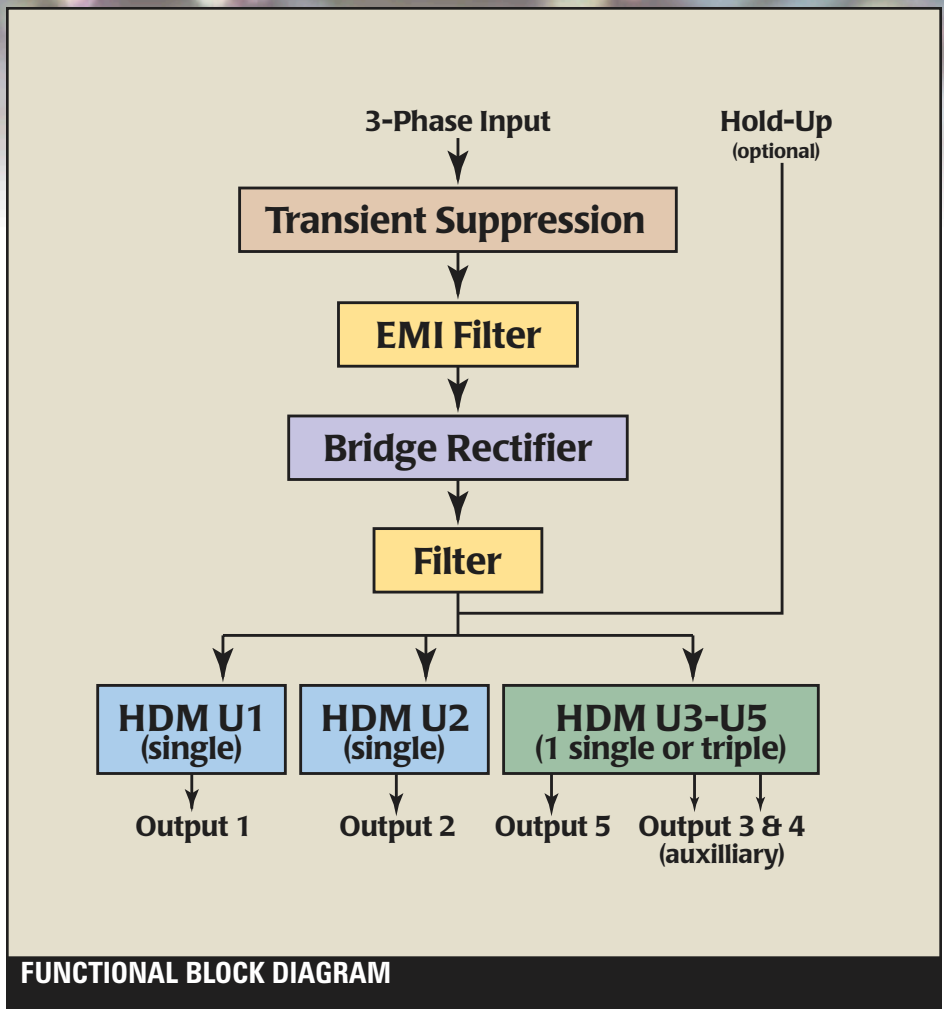
ENVIRONMENTAL

Operating Temperature	Conduction: –55°C to +65° (up to 85°C with reduced load, see Rantec's Thermal Analysis Report) Convection: –55°C to +55°C
Cooling - Conduction	Card Edge Guide
Cooling - Convection	Cooling Fins
Storage Temperature	–55°C to +125°C
Altitude	Up to 70,000 feet
Humidity	MIL-STD-810F, Meth 507 (5cycles/48 hrs, 60°C, 95% RH)
Vibration	MIL-STD-810F, Meth 514.5, Proc. 1, Cat. 12 modified: acceleration PSD .04 G ² /Hz from 20 to 2000 Hz.
Shock	MIL-STD-810C, Meth 516.2, Proc. 1, Figure 516.2-2 modified; 18 half-sine 20g. impact shocks (3 shocks each direction/axis)
MTBF*	30,500 hours 55°C, Aircraft Uninhabited Cargo per MIL-STD-217F, Note 2

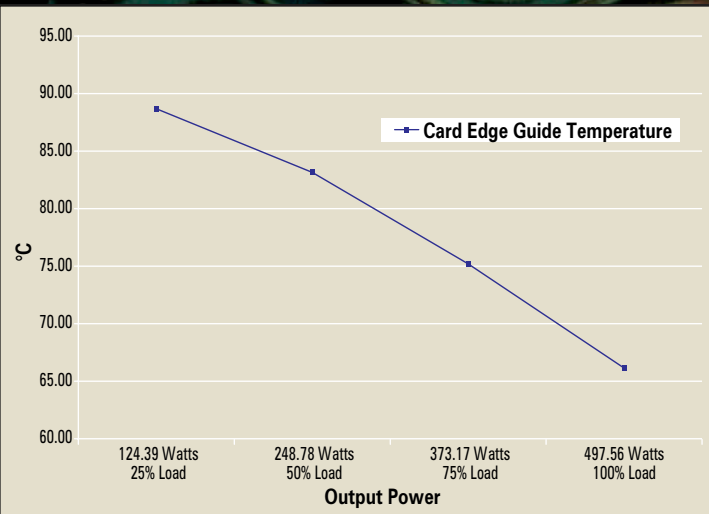
MODELS

Output 1		Output 2		Output 5		Auxiliary Outputs 3 & 4		Total Power
VOLTS	AMPS	VOLTS	AMPS	VOLTS	AMPS	+/- VOLTS	AMPS EA.	WATTS
3.3	40	5.0	40	12.0	19			560
5.0	40	5.0	40	5.0	40			600
5.0	40	12.0	19	12.0	19			656
12.0	19	12.0	19	12.0	19			684
3.3	40	5.0	40	5.0	19	12.0	2.8	494
3.3	40	5.0	40	5.0	19	15.0	2.8	511

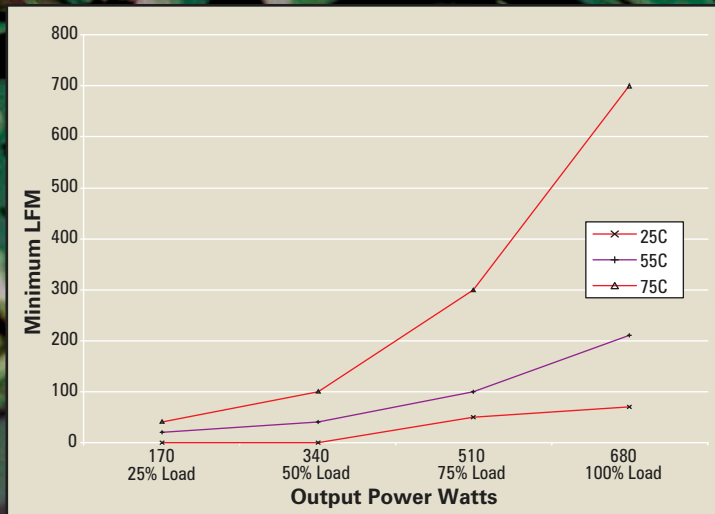
Outputs 1, 2, & 5 available 3 to 28 volts using Rantec's HDM+ Modules
Output 3 & 4 are auxiliary outputs using a 3.3 or 5 volt HDM triple module for output 5
(Note: 3A minimum load required on output 5 with use of auxiliaries)



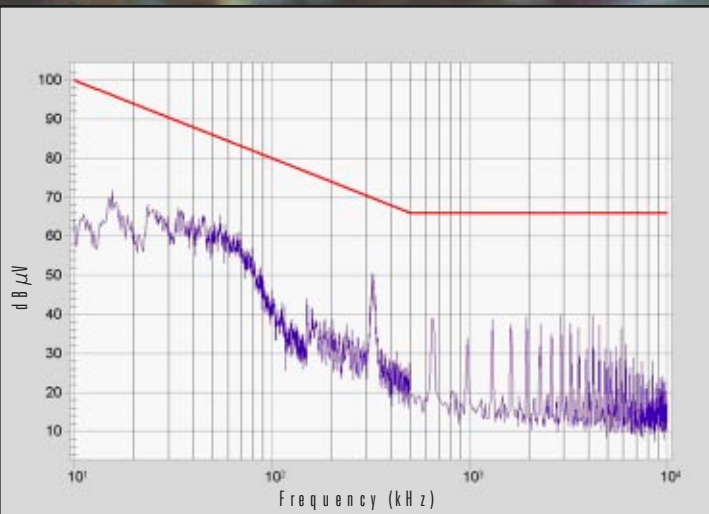
The System Designer's Choice



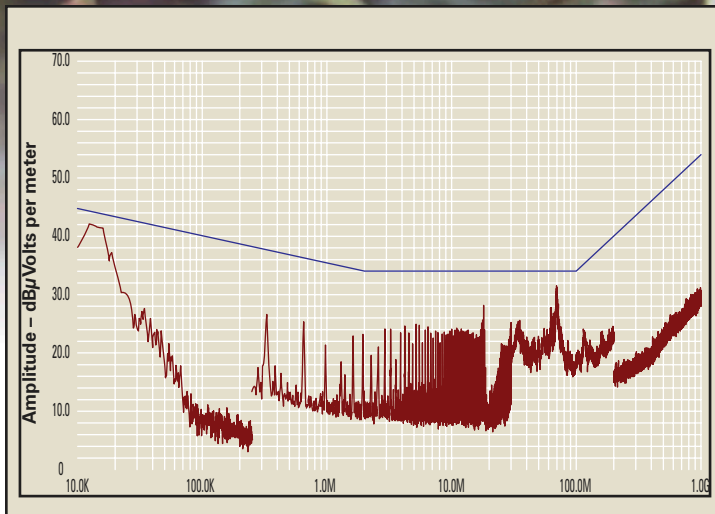
CONDUCTION COOLED



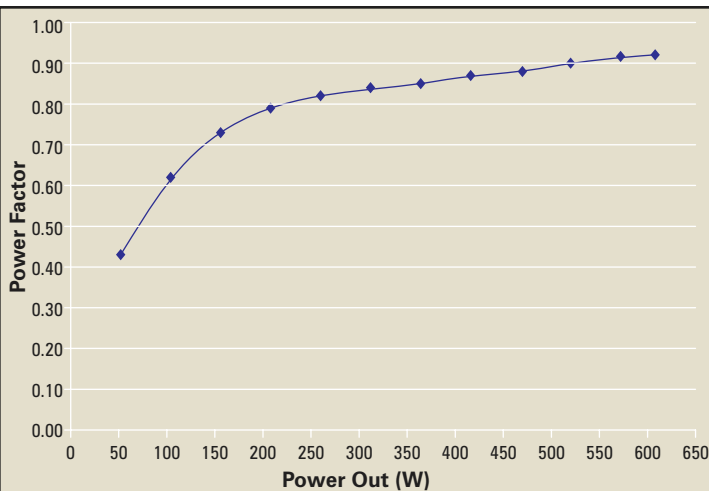
CONVECTION COOLED



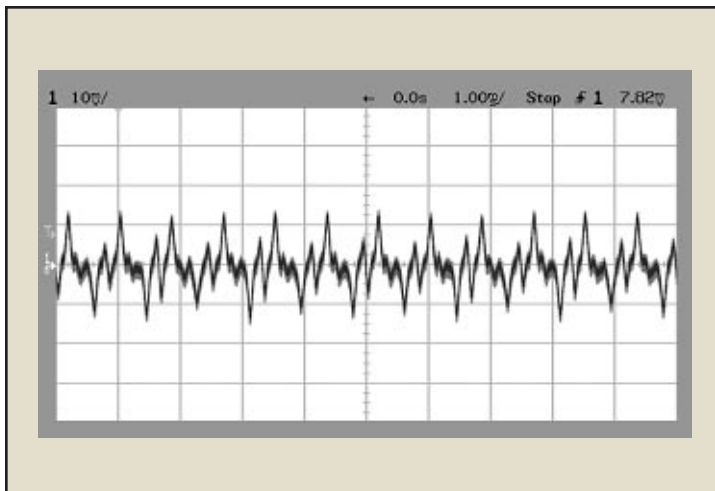
CE102



RE102



POWER FACTOR



CS116

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STANDARD PINOUTS

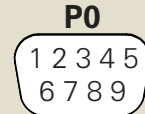
Input Connector P0 (all models)

PIN	CONNECTION	PIN	CONNECTION
1	115V AC 400Hz Phase A	6	Hold up + (optional)
2	N/C	7	Hold up - (optional)
3	115V AC 400Hz Phase B	8	Chassis Ground
4	N/C	9	Chassis Ground
5	115V AC 400Hz Phase C		

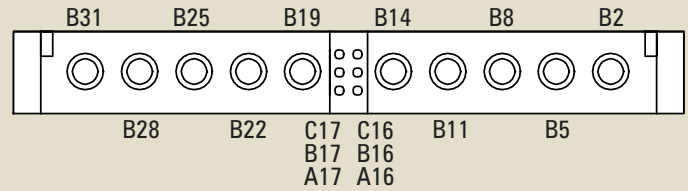
Output Connector P1 (most models)

Output Connector P2 (most models)

B5	Output 3 (auxiliary)	B5	Output 1 return
B8	Output 3 & 4 return	B11	Output 1
B11	Output 4 (auxiliary)	B22	Output 2 return
B22	Output 5 return	B28	Output 2
B28	Output 5		

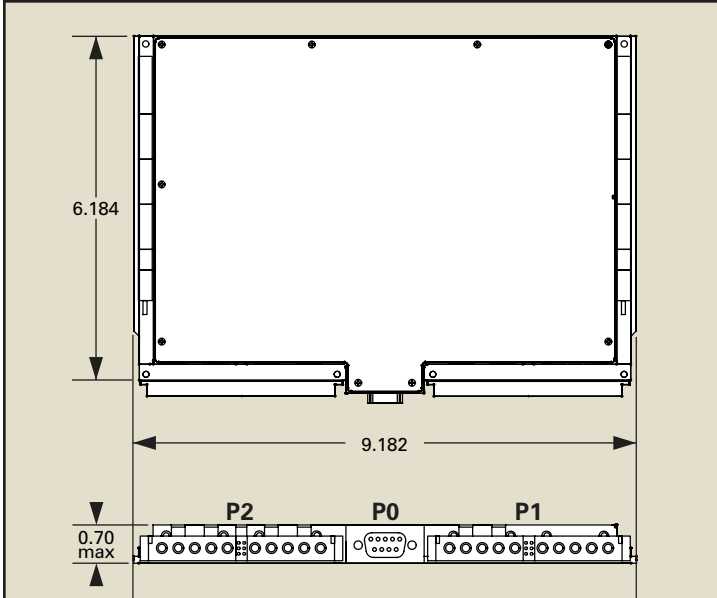


P1 & P2



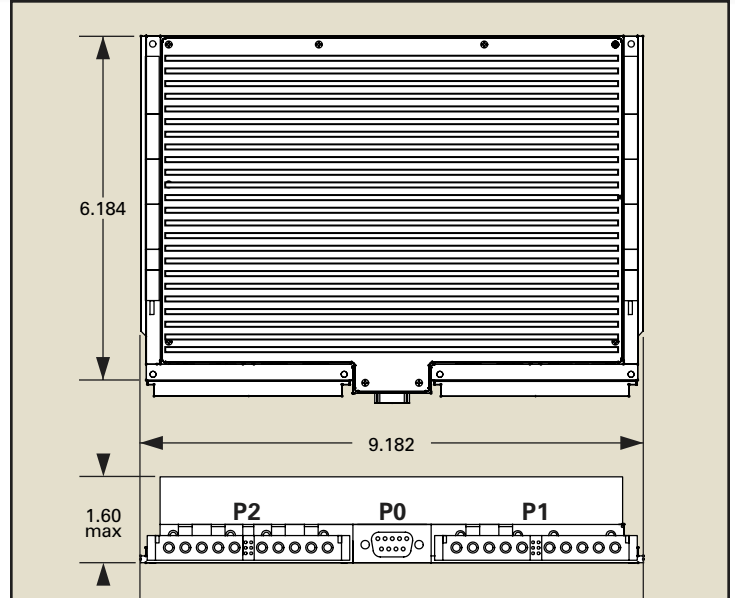
PINOUTS

Refer to table at left



OUTLINE & MOUNTING – CONDUCTION-COOLED

Dimensions in inches, for reference only



OUTLINE & MOUNTING – CONVECTION-COOLED

Dimensions in inches, for reference only

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