

**70 WATTS****NO MINIMUM ORDER REQUIRED****DC4-70 SERIES****OUTPUT SPECIFICATIONS****Features**

- RoHS Compliant
- Advanced SMT Design
- 36-72 VDC Input Range
- 4242 VDC Reinforced Insulation
- 2 Year Warranty
- One to Four Outputs
- Fits 1U Applications
- Compact 2.5" x 4.5" x 1.2" Size
- Size and Pin compatible with REL-70 Series
- EN 60950-1 ITE Certification
- EN 60601-1 Medical Certification
- Optional Chassis and Cover

**OPEN FRAME****CHASSIS/COVER**

Total Output Power at 50°C	50W	Convection Cooled
	70W	300 LFM Forced Air
Output Voltage	Output 1:	+/-0.5%
Centering (50% load)	Output 2:	+/-5.0%
	Output 3:	+/-5.0%
	Output 4:	+/-5.0%
Output Voltage Adjust Range	Output 1:	95 - 105%
Load Regulation	Output 1:	0.5%
(10-100% load change)	Output 2:	5.0%
	(4001-5 Models)	8.0%
	(2001 Model)	8.0%
	Output 3:	5.0%
	Output 4:	5.0%
Source Regulation	Outputs 1 - 4: 0.5%	
Cross Regulation	Outputs 2 - 4: 5.0%	
Output Noise	Outputs 1 - 4: 1.0%	
Turn on Overshoot	None	
Transient Response	Outputs 1 - 4	
Voltage Deviation	5.0%	
Recovery Time	500MicroS	
Load Change	50% to 100%	
Output Overvoltage Protection	Output 1: 110% to 150%	
Output Overpower Protection	110-160% rated Pout, cycle on/off, auto recovery	
Start Up Time	4 Seconds	

**INPUT SPECIFICATIONS**

Input Voltage Range	36-72 VDC
Input Under-Voltage Lockout	
Turn-On Voltage	29.0-35.0 VDC
Turn-Off Voltage	28.0-34.0 VDC
Input Overvoltage Shutdown	77.0-85.0 VDC
Maximum Input Current	2.7 A
Reflected Ripple Current	5 %
Efficiency	78% Typ., Full Power, 48VDC, varies by model

**ENVIRONMENTAL SPECIFICATIONS**

Ambient Operating Temperature Range	0° C to + 70° C	Derating: See Power Rating Chart
Ambient Storage Temp. Range	- 40° C to + 85° C	
Temperature Coefficient	Outputs 1 - 4: 0.02% /°C	

## SAFETY SPECIFICATIONS

Underwriters Laboratories 60601-1 First Edition  
 File E137708/E140259  
 CB Report per IEC 60950-1(2001) First Edition All National Deviations CB Report per IEC 60601-1(1988) Second Edition A1, A2

UL Recognition Mark For Canada File E137708/E140259  
 CAN/CSA-C22.2 No. 60950-1-03  
 CAN/CSA-C22.2 No. 601-1-M90 updates 1 and 2 with

EN 60950-1:2001 EN 60601-1/A2:1995

### Notes

Consult factory for alternate output configuration. Consult factory for positive, negative or floating outputs.

Refer to Application Information for complete output power ratings.

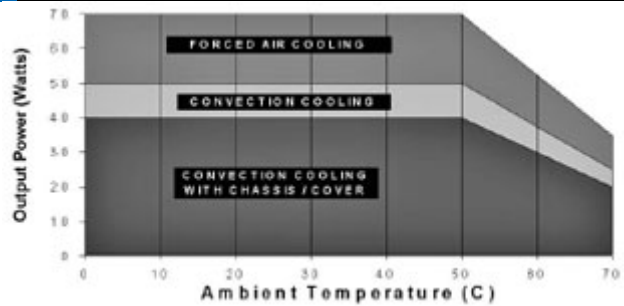
All specifications are maximum at 25C unless otherwise stated and are subjected to change without notice.

Specify optional chassis and cover, power good or reverse input protection when ordering.

## GENERAL SPECIFICATIONS

Dielectric Strength  
 Reinforced Insulation 4242 VDC, Primary to Secondary, 1 Sec.  
 Basic Insulation 2121 VDC, Primary to Ground, 1 Sec.  
 Operational Insulation 707 VDC, Secondary to Ground, 1 Sec.  
 Power Good Signal Logic high with input voltage above Vin min.  
 Remote Sense (singles only) 250mV compensation of output cable losses.  
 Mean Time Between Failures 100,000 Hours min., MIL-HDBK-217F, 25°C, GB  
 Weight 1.00 Lbs. Chassis and Cover  
 0.60 Lbs. Open Frame

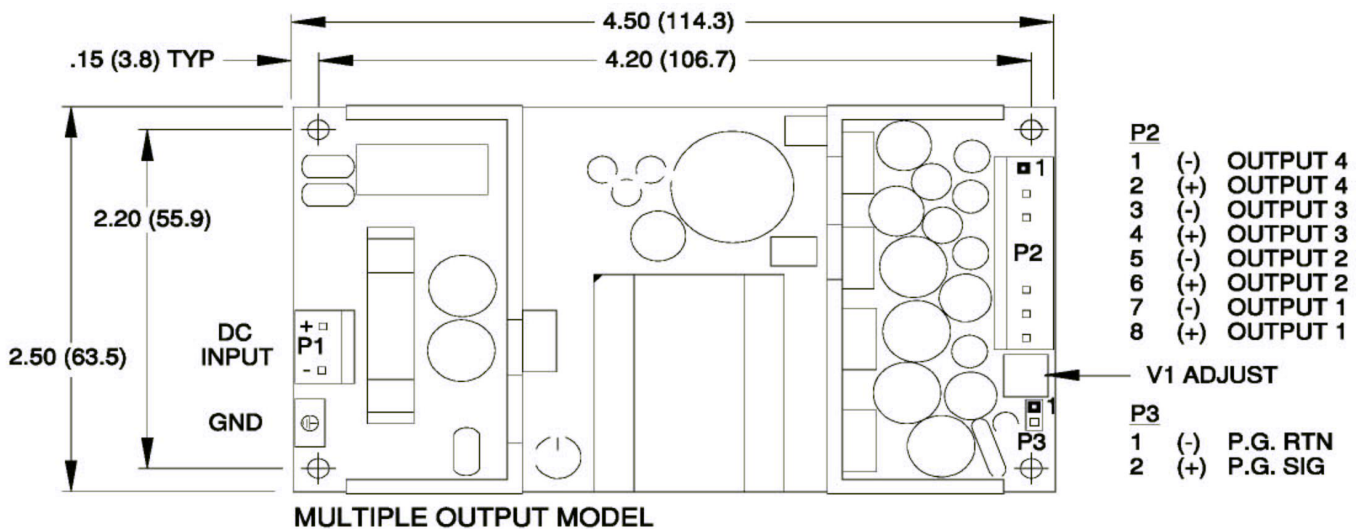
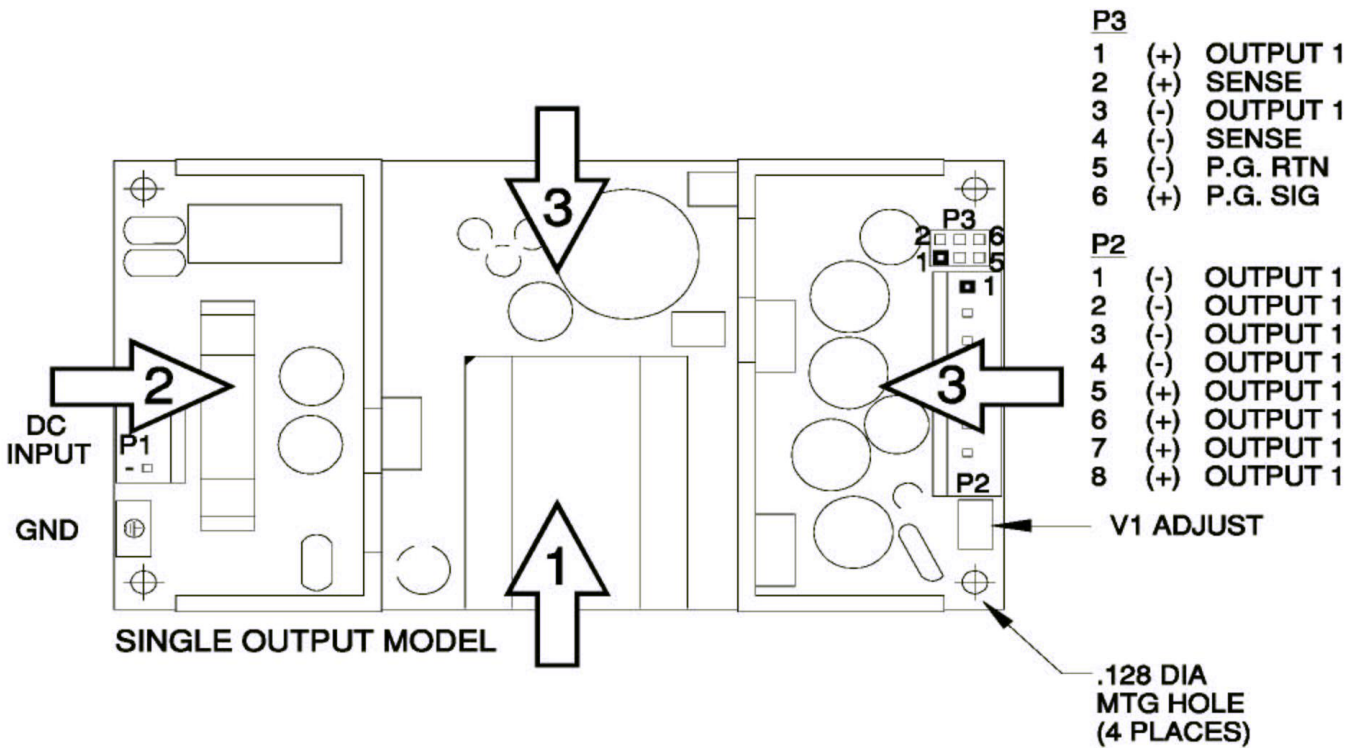
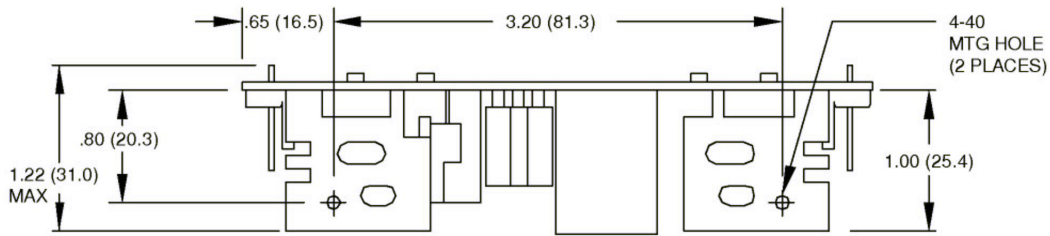
### Maximum Output Power vs. Ambient Temperature

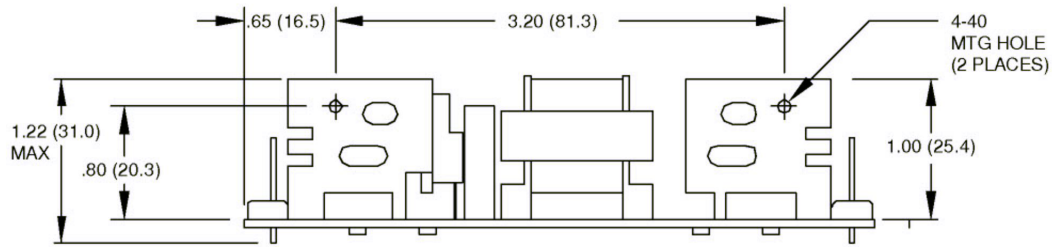


## MODEL LISTING

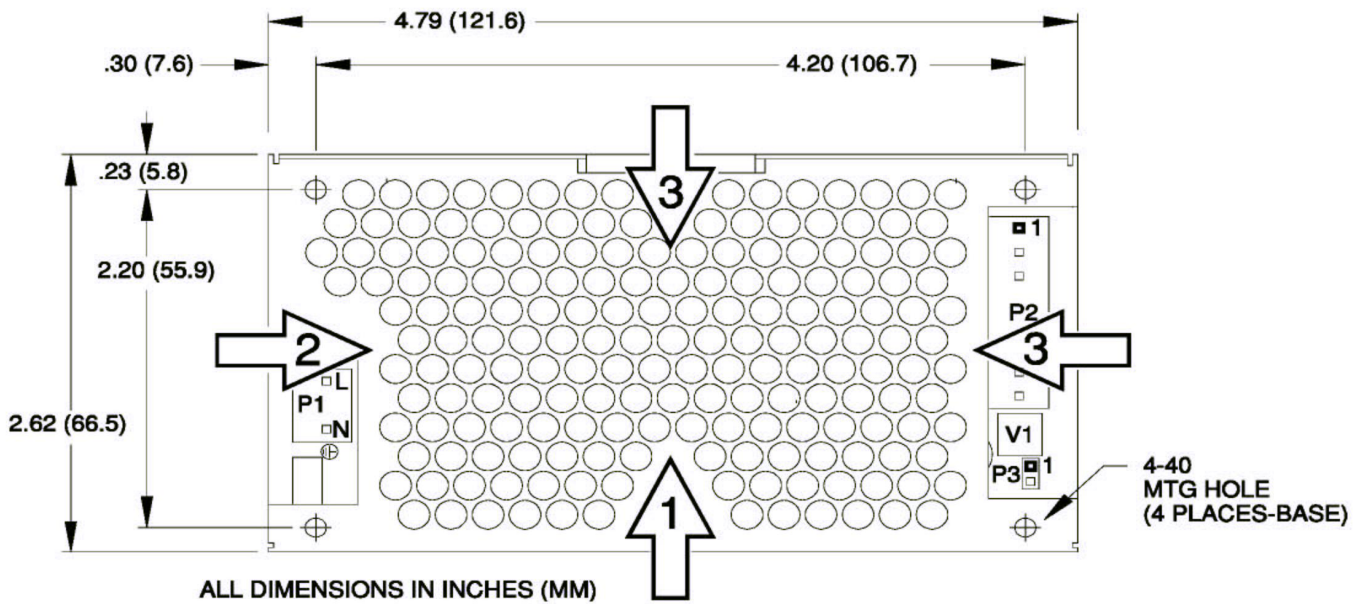
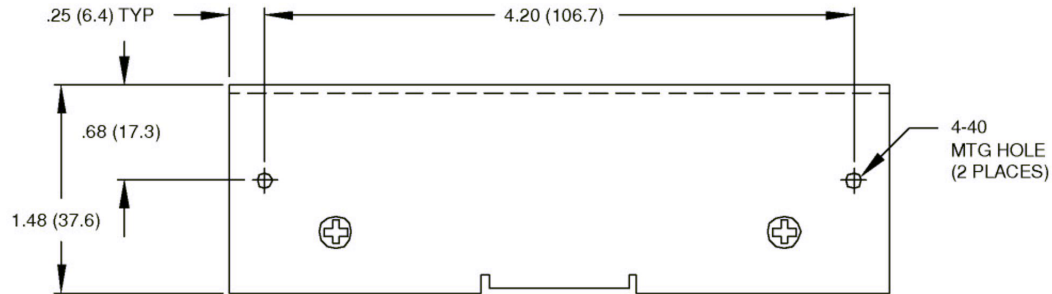
MODEL	OUTPUT	OUTPUT	OUTPUT	OUTPUT
DC4-70-4001	+3.3V/6A	+5V/5A	+12V/2A <sub>(2)</sub>	-12V/2A <sub>(2)</sub>
DC4-70-4002	+5V/6A	+3.3V/5A	+12V/2A <sub>(2)</sub>	-12V/2A <sub>(2)</sub>
DC4-70-4003	+5V/6A	+3.3V/5A	+15V/2A <sub>(2)</sub>	-15V/2A <sub>(2)</sub>
DC4-70-4004	+5V/6A	-5V/5A	+12V/2A <sub>(2)</sub>	-12V/2A <sub>(2)</sub>
DC4-70-4005	+5V/6A	-5V/5A	+15V/2A <sub>(2)</sub>	-15V/2A <sub>(2)</sub>
DC4-70-4006	+5V/6A	+24V/2A	+12V/2A <sub>(2)</sub>	-12V/2A <sub>(2)</sub>
DC4-70-4007	+5V/6A	+24V/2A	+15V/2A <sub>(2)</sub>	-15V/2A <sub>(2)</sub>
DC4-70-3001	+5V/6A	+12V/2A		-12V/2A
DC4-70-3002	+5V/6A	+15V/2A		-15V/2A
DC4-70-2001	+3.3V/6A	+5V/5A		
DC4-70-2002	+5V/6A	+12V/4A		
DC4-70-2003	+5V/6A	+24V/2A		
DC4-70-2004	+12V/3A	-12V/3A		
DC4-70-2005	+15V/3A	-15V/2A		
DC4-70-1001	2.5V/14A			
DC4-70-1002	3.3V/14A			
DC4-70-1003	5V/14A			
DC4-70-1004	12V/5.8A			
DC4-70-1005	15V/4.7A			
DC4-70-1006	24V/2.9A			
DC4-70-1007	28V/2.5A			
DC4-70-1008	48V/1.5A			

**OPEN FRAME**





OPTIONAL CHASSIS/COVER



## APPLICATIONS INFORMATION

1. Rated 10A with convection cooling.
2. Rated 1.5A maximum with convection cooling.
3. Total power must not exceed 50 watts with convection cooling on open frame models.
4. Total power must not exceed 70 watts with 300LFM forced air cooling on open frame models.
5. Total power must not exceed 40 watts with convection cooling and chassis/cover option.
6. Total power must not exceed 70 watts with 300LFM forced air cooling and chassis/cover option.
7. Each output can deliver its rated current but total output power must not exceed maximum power as determined by the cooling method state above.
8. Sufficient area must be provided around convection cooled power supplies to allow natural movement of air develop.
9. 300 linear feet per minute of airflow must be maintained one inch above any point of the heatsink in the direction shown when forced air cooling is required.
10. A minimum load of 10% is required on output one to insure proper regulation of remaining outputs.
11. Peak to peak output ripple and noise is measured directly at the output terminals of the power supply, without the use of the probe ground lead or retractable tip, 20 MHz bandwidth.
12. This product was type tested and safety certificated using the the dielectric strength test voltages listed in Table V of UL 60601-1. In consideration of clause 20.4g, care must be taken to insure the voltage applied to a reinforced insulation does not over stress basic insulation. Secondary to ground capacitors may need to be removed prior to performing a dielectric strength type test on the end product. It is highly recommended that the DC test voltages listed in DVB.1. Annex DVB are not exceeded during a production-line dielectric strength test of the assembled end product. Please consult factory for further information.
13. This product is intended for use as a professionally installed component within information technology and medical equipment.
14. Remote sense terminals may be used to compensate for cable losses up to 250mV. The use of a twisted pair is recommended as well as a decoupling capacitor (0.1 0 10MicroF) and a capacitor of 100MicroF/amp connected across the load.
15. This power supply has been safety approved and final tested using a DC dielectric strength test. Please consult factory before performing AC dielectric strength test.
16. Maximum screw penetration into bottom chassis mounting holes is .100 inches.
17. Maximum screw penetration into side chassis mounting holes is .250 inches.
18. To meet emissions specifications, all four mounting hole ground pads must be electrically connected to a common metal chassis. Chassis/cover option recommended.

## CONNECTOR SPECIFICATIONS

P1 DC Input	.156 friction lock header mates with Molex 09-50-3031 or equivalent crimp terminal housing with Molex 2478 or equivalent crimp terminal.
P2 DC Output(Single)	.156 friction lock header mates with Molex 09-50-3081 or equivalent crimp terminal housing with Molex 2478 or equivalent crimp terminal.
P2 DC Output(Multiple)	.156 friction lock header mates with Molex 09-50-3081 or equivalent crimp terminal housing with Molex 2478 or equivalent crimp terminal.
G Ground	.187 quick disconnect terminal.
P3 P.G./Sense(Single)	.100 breakaway header mates with Molex 22-55-2061 or equivalent crimp terminal housing with Molex type 71851 or equivalent crimp terminal.
P3 Power Good	.100 breakaway header mates with Molex 50-57-9002 or equivalent crimp terminal housing with Molex type 71851 or equivalent crimp terminal.

## RECOMMENDED AIR FLOW DIRECTION

- 1.Optimum 2.Good 3.Fair