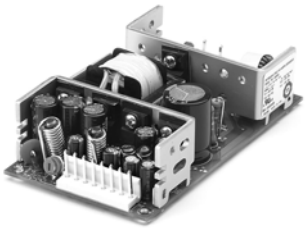
70 WATTS

DC4-70 SERIES DC-DC

FEATURES:

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



OPEN FRAME

CHASSIS/COVER

SAFETY SPECIFICATIONS

c UL us	Underwriters Laboratories File E137708/E140259	UL 60950-1 2nd Edition, 2007 UL 60601-1 1st Edition, 2006 AAMI/ANSI ES6060-1, 2005
IECEE CB SCHEME		CB Reports/Certificates (including all National and Group Deviations) IEC 60950-1/A1:2009, Second Edition IEC 60601-1:1988 +A1:1991 +A2:1995 IEC 60601-1:2005 Third Edition
c UL us	UL Recognition Mark for Canada File E137708/E140259	CAN/CSA-C22.2 No. 60950-1-07, 2nd Edition CAN/CSA-C22.2 No. 601-1-M90, 2005 CAN/CSA-C22.2 No. 60601-1:2008
TUV	TUV	EN 60950-1/A12:2011 EN 60601-1/A2:1995 EN 60601-1:2006
CE		RoHS Directive (Recast) (2011/65/EU of June 2011)

MODEL LISTING

MODEL	OUTPUT 1	OUTPUT 2	OUTPUT 3	OUTPUT 4
DC4-70-4001	+3.3V/6A	+5V/5A	+12V/2A(2)	-12V/2A(2)
DC4-70-4002	+5V/6A	+3.3V/5A	+12V/2A(2)	-12V/2A(2)
DC4-70-4003	+5V/6A	+3.3V/5A	+15V/2A(2)	-15V/2A(2)
DC4-70-4004	+5V/6A	-5V/5A	+12V/2A(2)	-12V/2A(2)
DC4-70-4005	+5V/6A	-5V/5A	+15V/2A(2)	-15V/2A(2)
DC4-70-4006	+5V/6A	+24V/2A	+12V/2A(2)	-12V/2A(2)
DC4-70-4007	+5V/6A	+24V/2A	+15V/2A(2)	-15V/2A(2)
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(1)			
DC4-70-1002	3.3V/14A(1)			
DC4-70-1003	5V/14A(1)			
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			

ORDERING INFORMATION

Please specify the following optional features when ordering:

CH - Chassis
CO - Cover
I/O - Isolated outputs
TS - Terminal Strip

OUTPUT SPECIFICATIONS

Total Output Power at 50°C	50W 70W	Convection Cooled 300 LFM Forced Air
Output Voltage Centering	Output 1: Output 2: Output 3: Output 4:	± 0.5% (All outputs ± 5.0% at 50% load) ± 5.0% ± 5.0%
Output Voltage Adjust Range	Output 1:	95 - 105%
Load Regulation	Output 1: Output 2: (4001-5 Models) (2001 Model) Output 3: Output 4:	0.5% (10-100% 5.0% load change) 8.0% 8.0% 5.0% 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 Voltage Deviation Recovery Time Load Change	Outputs 1 – 4 5.0% 500µS 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 Turn-Off Voltage	 29.0-35.0 VDC 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

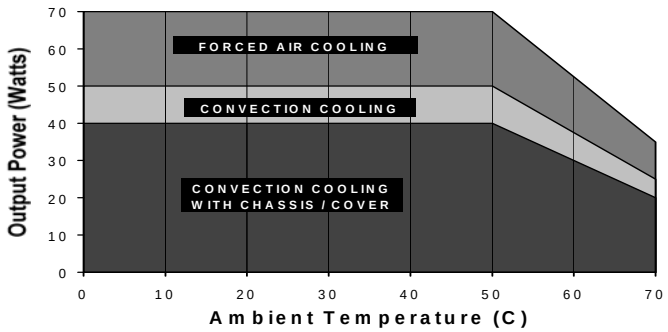
ENVIRONMENTAL SPECIFICATIONS

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

GENERAL SPECIFICATIONS

Means of Protection Primary to Secondary Primary to Ground Secondary to Ground	 2MOOP (Means of Operator Protection) 1MOOP (Means of Operator Protection) Operational Insulation(Consult factory for 1MOOP or 1MOPP)
Dielectric Strength(14) Reinforced Insulation Basic Insulation Operational Insulation	 4242 VDC, Primary to Secondary, 1 Sec. 2121 VDC, Primary to Ground, 1 Sec. 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	0.60 Lbs. Open Frame 1.00 Lbs. Chassis and Cover

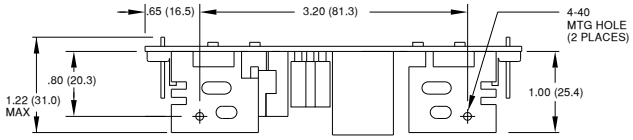
MAXIMUM OUTPUT POWER VS. AMBIENT TEMPERATURE

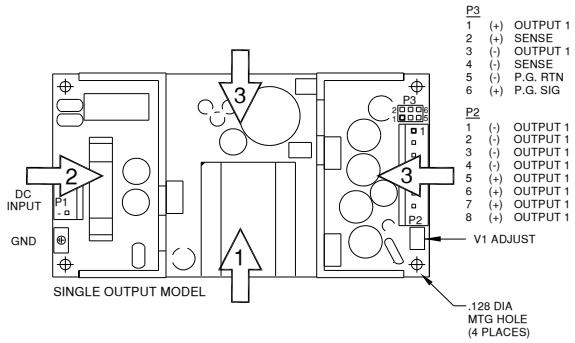


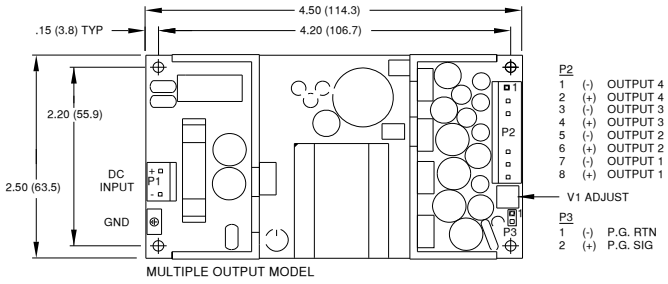
INTEGRATED POWER DESIGNS 300 Stewart Road ■ Wilkes-Barre, PA 18706 ■ Phone: (570) 824-4666 ■ Fax: (570) 824-4843 ■ Email: sales@ipdpower.com ■ Web: www.ipdpower.com

DC4-70 SERIES MECHANICAL SPECIFICATIONS

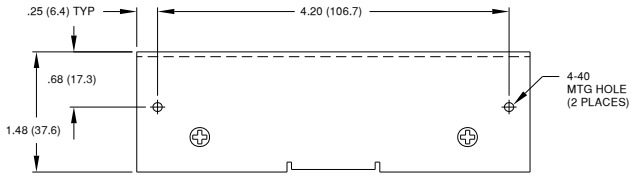
OPEN FRAME

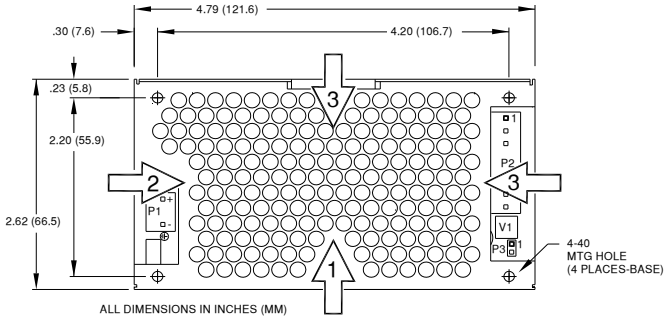






OPTIONAL CHASSIS/COVER





APPLICATIONS INFORMATION

1. Rated 10A maximum 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 except where noted.
4. Total power must not exceed 70 watts with 300 LFM 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 300 LFM 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 stated above.
8. Sufficient area must be provided around convection cooled power supplies to allow natural movement of air to 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. This product is intended for use as a professionally installed component within information technology and medical equipment.
11. A minimum load of 10% is required on output one to ensure proper regulation of remaining outputs.
12. Remote sense terminals may be used to compensate for cable losses up to 250mV (single output models only). The use of a twisted pair is recommended as well as a decoupling capacitor (0.1 - 10μF) and a capacitor of 100μF/amp connected across the load side.
13. 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.
14. This product was type tested and safety certified using the dielectric strength test voltages listed in Table 6 of IEC 60601-1:2005. In consideration of Clause 8.8.3, care must be taken to insure that the voltage applied to a reinforced insulation does not overstress different types and levels of insulation. Primary and secondary to ground capacitors may need to be disconnected prior to performing a dielectric strength test on the power supply or the end product. It is highly recommended that the DC test voltages listed in DVB.1, Annex DVB of UL 60601-1 1st Edition are not exceeded during a production-line dielectric strength test of the assembled end product. Please consult factory for further information.
15. This power supply has been safety approved and final tested using a DC dielectric strength test. Please consult factory before performing an 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 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 Tyco 640250-3 or equivalent crimp terminal housing with Tyco 3-640706-1 or equivalent crimp terminal.
P2	DC Output (Single)	.156 friction lock header mates with Tyco 770849-8 or equivalent crimp terminal housing with Tyco 3-640707-1 or equivalent crimp terminal.
P2	DC Output (Multiple)	.156 friction lock header mates with Tyco 770849-8 or equivalent crimp terminal housing with Tyco 3-640707-1 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 (Multiple)	.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

NOTES

Consult factory for alternate output configurations.
Consult factory for positive, negative or floating outputs.
Refer to Applications Information for complete output power ratings.
All specifications are maximum at 25° C, 70W unless otherwise stated, may vary by model and are subject to change without notice.

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