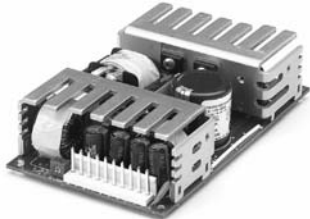


110 WATTS

DC2-110 SERIES DC-DC

FEATURES:

- RoHS Compliant
- 18-36 VDC Input
- Advanced SMT Design
- Compact 3" x 5" x 1.32" Size
- 2 Year Warranty
- One to Four Outputs
- 4242 VDC Reinforced Insulation
- Fits 1U Applications
- EN 60950-1 ITE Certification
- EN 60601-1 Medical Certification
- Size & Pin compatible with REL-110 Series
- Optional Chassis and Cover



OPEN FRAME



CHASSIS/COVER

SAFETY SPECIFICATIONS



Underwriters Laboratories
File E137708/E140259

UL 60950-1 2nd Edition
UL 60601-1 1st Edition



CB Certificate per IEC 60950-1:2005
2nd Edition +A1:2009 including all National Deviations
CB Certificate per IEC 60601-1 (1988)
2nd Edition A1, A2



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 with updates 1 and 2



TUV

EN 60950-1/A1:2010
EN 60601-1/A2:1995

MODEL LISTING

| MODEL | OUTPUT 1 ⁽⁸⁾ | OUTPUT 2 ⁽⁸⁾ | OUTPUT 3 ⁽⁷⁾ | OUTPUT 4 ⁽⁷⁾ |
|--------------|--------------------------|-------------------------|-------------------------|-------------------------|
| DC2-110-4001 | +3.3V/10A ⁽¹⁾ | +5V/6A | +12V/2A | -12V/2A |
| DC2-110-4002 | +5V/10A ⁽¹⁾ | +3.3V/6A | +12V/2A | -12V/2A |
| DC2-110-4003 | +5V/10A ⁽¹⁾ | +3.3V/6A | +15V/2A | -15V/2A |
| DC2-110-4004 | +5V/10A ⁽¹⁾ | -5V/6A | +12V/2A | -12V/2A |
| DC2-110-4005 | +5V/10A ⁽¹⁾ | -5V/6A | +15V/2A | -15V/2A |
| DC2-110-4006 | +5V/10A ⁽¹⁾ | +24V/2A | +12V/2A | -12V/2A |
| DC2-110-4007 | +5V/10A ⁽¹⁾ | +24V/2A | +15V/2A | -15V/2A |
| DC2-110-3001 | +5V/10A ⁽¹⁾ | +12V/3A | | -12V/3A |
| DC2-110-3002 | +5V/10A ⁽¹⁾ | +15V/2A | | -15V/2A |
| DC2-110-2001 | +3.3V/10A ⁽¹⁾ | +5V/6A | | |
| DC2-110-2002 | +5V/10A ⁽¹⁾ | +12V/5A | | |
| DC2-110-2003 | +5V/10A ⁽¹⁾ | +24V/3A | | |
| DC2-110-2004 | +12V/5A | -12V/4A | | |
| DC2-110-2005 | +15V/4A | -15V/3A | | |
| DC2-110-1001 | 2.5V/22A ⁽²⁾ | | | |
| DC2-110-1002 | 3.3V/22A ⁽²⁾ | | | |
| DC2-110-1003 | 5V/22A ⁽²⁾ | | | |
| DC2-110-1004 | 12V/9.2A | | | |
| DC2-110-1005 | 15V/7.3A | | | |
| DC2-110-1006 | 24V/4.6A | | | |
| DC2-110-1007 | 28V/3.9A | | | |
| DC2-110-1008 | 48V/2.3A | | | |

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, 110W unless otherwise stated, may vary by model and are subject to change without notice.
Specify optional chassis and cover, power good or reverse input protection when ordering.

OUTPUT SPECIFICATIONS

| | | |
|-------------------------------|--|---------------------------|
| Total Output Power at 50° C | 80W | Convection Cooled |
| | 110W | 300 LFM Forced Air |
| Output Voltage Centering | Output 1: ± 0.5% | (All outputs at 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) 6.0% | |
| | 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 | 500µS | |
| 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 | 5 Seconds | |

INPUT SPECIFICATIONS

| | |
|-----------------------------|--|
| Input Voltage Range | 18-36 VDC |
| Input Under-Voltage Lockout | |
| Turn-On Voltage | 14.5-17.5 VDC |
| Turn-Off Voltage | 14.0-17.0 VDC |
| Input Overvoltage Shutdown | 37.0-43.0 VDC |
| Maximum Input Current | 8.5 A |
| Reflected Ripple Current | 5 % |
| Efficiency | 82% Typ., Full Power, 24VDC, varies by model |

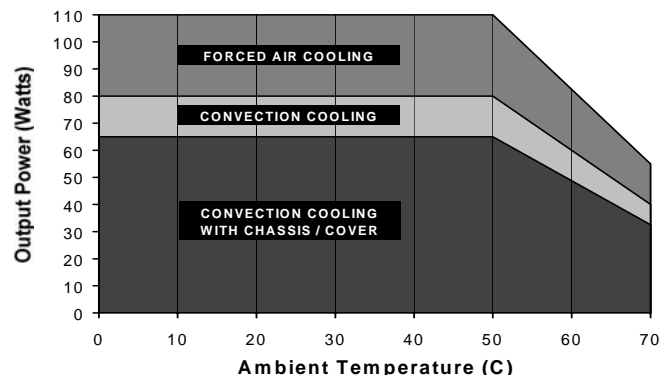
ENVIRONMENTAL SPECIFICATIONS

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

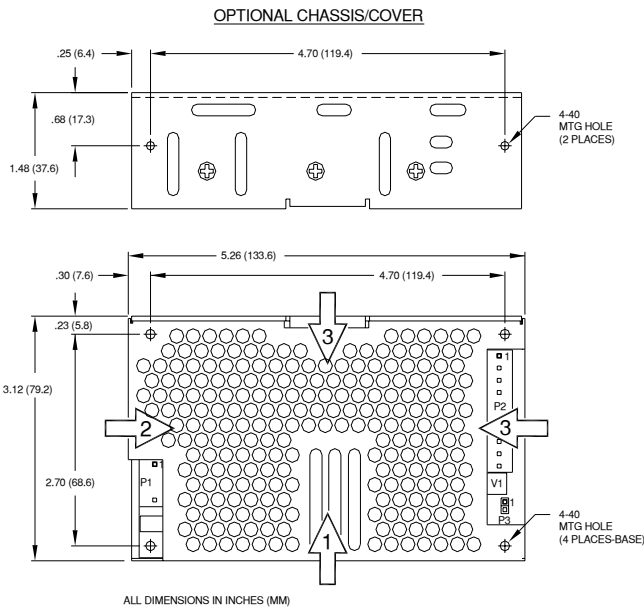
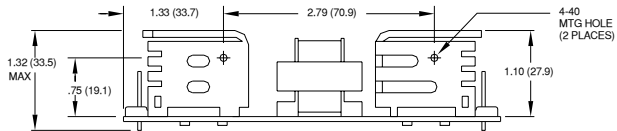
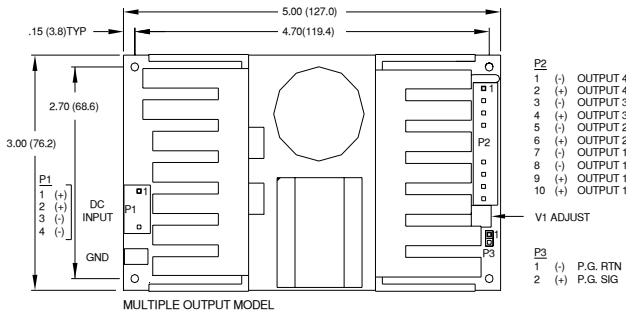
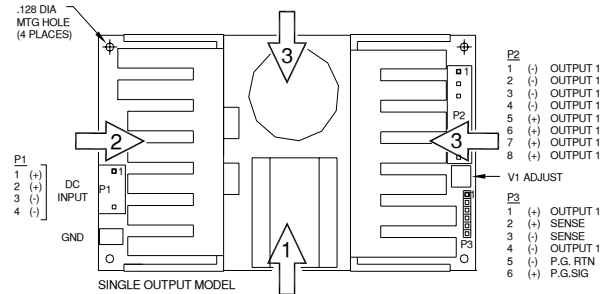
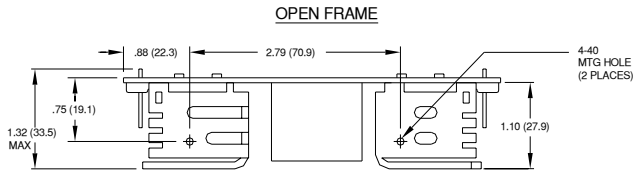
GENERAL SPECIFICATIONS

| | |
|-------------------------------------|---|
| Dielectric Strength ⁽¹⁸⁾ | |
| 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 | 0.65 Lbs. Open Frame 1.15 Lbs. Chassis and Cover |

MAXIMUM OUTPUT POWER VS. AMBIENT TEMPERATURE



DC2-110 SERIES MECHANICAL SPECIFICATIONS



ALL DIMENSIONS IN INCHES (MM)

APPLICATIONS INFORMATION

- Rated 8A maximum with convection cooling.
- Rated 16A maximum with convection cooling.
- Total power must not exceed 80 watts with convection cooling on open frame models except where noted.
- Total power must not exceed 110 watts with 300 LFM forced air cooling on open frame models.
- Total power must not exceed 65 watts with convection cooling and chassis/cover option.
- Total power must not exceed 110 watts with 300 LFM forced air cooling and chassis/cover option.
- Total current from Outputs 3 & 4 must not exceed 3 amps with convection cooling.
- Total current from Outputs 1 & 2 must not exceed 12 amps with convection cooling.
- Semiconductor case temperatures must not exceed 110°C.
- Each output can deliver its rated current but total output power must not exceed maximum power as determined by the cooling method stated above.
- Sufficient area must be provided around convection cooled power supplies to allow natural movement of air to develop.
- 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.
- This product is intended for use as a professionally installed component within information technology and medical equipment.
- A minimum load of 10% is required on output one to ensure proper regulation of remaining outputs.
- 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.
- 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.
- This product was type tested and safety certified using 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 that the voltage applied to a reinforced insulation does not overstress 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.
- 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.
- Maximum screw penetration into bottom chassis mounting holes is .100 inches.
- Maximum screw penetration into side chassis mounting holes is .250 inches.
- 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 1-770849-10 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 50-57-9006 or equivalent crimp terminal housing with Molex type 71851 or equivalent crimp terminal. |
| P3 | P.G. (Multiple) | .100 breakaway header mates with Molex 50-57-9002 or equivalent crimp terminal housing with Molex type 71851 or equivalent crimp terminal. |