POWER

CNS650-M Series

650 Watt AC-DC Power Supplies

Data Sheet

Total Power: 650 Watts
Input Voltage: 90 - 264 V
# of Outputs: Single

SPECIAL FEATURES

- Designed for forced air and natural convection cooling
- Medical and ITE safety approvals, 2x MOPP
- PMBus™ interface
- Active current share with OR-ing FET
- Dual fused
- Type BF ready
- Active Power Factor Correction, 61000-3-2 compliant
- Built-in Class B EMI filter
- Less than 1U high
- 4" x 6" U-channel construction (open-frame or end-fan variants available for 12 V)
- <500 mW no-load power consumption
- Three-year warranty (consult factory for extended terms)

SAFETY

- UL/CSA: ES60601-1/C22.2 No. 60601-1
  UL 60950-1/C22.2 No. 60950-1
- TÜV: EN 60601-1
- DEMKO: EN 60950-1
- CB: IEC 60950-1/IEC 60601-1
- CCC: GB4943.1/GB9254; GB17625.1
- CE: LVD, RoHS

Electrical Specifications

Input	
Input voltage range	90 - 264 Vrms
Frequency	47 - 63 Hz (360 - 440 Hz with higher leakage)
Inrush current	50 Apk, cold start
Leakage current	<300 µA
No load power	< 500 mW
Output	
Maximum power	650 W, forced-air cooling (750 W peak) 400 W, free-air natural convection cooling (650 W peak)
Adjustment range	-0% / +15%
Holdup time	20 ms @ 400 W
Fan output	12 V @ 1.0 A (forced air) 12 V @ 0.5 A (natural convection)
Standby output	5 V @ 2.0 A (forced air) 5 V @ 1.0 A (natural convection)

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Electrical Specifications (continued)

Control and Protection	
Serial bus interface	PMBus™
Current share	Active
Remote sense	2-wire (+ and -)
Remote inhibit	Pull inhibit low = main & fan output OFF (5 V standby is ON) Pull inhibit high (or floating) = all outputs ON
AC OK	Active high when normal AC input is present (with internal 10k ohm pull up to 3.3 Vdc)
DC OK	Active high when main O/P is within regulation (with internal 10k ohm pull up to 3.3 Vdc)
Smart fan control	Monitor, control and override
Overvoltage protection	Latching / AC recyle or inhibit toggle required for PSU restart
Overload protection	Auto-recovery (CC to 50% output)
Overtemperature protection	Auto-recovery with hysteresis

Environmental Specifications

Operating temperature	-20 °C to +80 °C (derate at 50 °C), startup at -40 °C
Storage temperature	-40 °C to +85 °C
Operating humidity	5% to 95% (non-condensing)
Non-operating humidity	5% to 95% (non-condensing)
Maximum altitude	5000 m (3000 m for medical), derating may apply

Other Specifications

Isolation	4000 Vac (input to output) 1500 Vac (input to PE; output to PE)
Line harmonics	61000-3-2, Class A
ESD immunity	61000-4-2; ±15kV (air)/±8kV (contact); Criterion A
Conducted EMI	Level B, CISPR 22 and FCC Part 15
Radiated EMI	Level B, CISPR 22 and FCC Part 15 (with cover)
Surge immunity	61000-4-5, Level 3 - Criterion A; Level 4 - Criterion C
Medical EMC	60601-1-2, Edition 4 (cover maybe required for some tests)
MTBF **(Telcordia, Issue 3, Method 1, Case 3)**	> 950 KHrs, 25 °C, 410 W natural convection > 1.3 MHrs, 25 °C, 650 W forced air