

# 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
- 80 PLUS® certified (-ME model)
- Three-year warranty (consult factory for extended terms)

### 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 $\mu$ A
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)

### 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  
IEC 62368-1
- CCC GB4943.1/GB9254;  
GB17625.1
- CE LVD, RoHS

### 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 (Constant current mode down to 50% Vout)
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