



PRODUCT OVERVIEW

The C1U-W-1200 is a 1200 Watt universal AC input, power-factor-corrected (PFC) front-end power supply for general applications. The main output is 48V and standby output of either 5V, 3.3V, or 12V. Packaged in U low profile, it is designed to deliver reliable bulk power to servers, workstations, storage systems or any 48V distributed power architecture systems requiring high power density. The highly efficient electrical and thermal design with internal cooling fans supports reliable operation conditions. The C1U-W-1200 is designed to auto-recover from over-temperature faults.

FEATURES

- RoHS compliant
- 1200W (110/220Vac) Output power
- 48V Main output, 3.3V or 5V standby output
- Dimensions: 1.67" x 5.5" x 14.2"
- 9.2 Watts per cubic inch density
- N+1 redundancy capable,
- Active current sharing on main output
- Over-voltage, over-current, over-temperature protection
- Internal cooling fans

SELECTION GUIDE

| Part Number | Power Output Universal Line | Main Output | Standby Output | Airflow |
|--------------------|-----------------------------|-------------|----------------|---------------|
| C1U-W-1200-48-TA1C | 1200W | 48V | 5V | Front to back |
| C1U-W-1200-48-TC1C | 1200W | 48V | 3.3V | Front to back |
| C1U-W-1200-48-TA2C | 1200W | 48V | 5V | Back to front |
| C1U-W-1200-48-TC2C | 1200W | 48V | 3.3V | Back to front |
| C1U-W-1200-48-TB1C | 1200W | 48V | 12V | Front to back |
| C1U-W-1200-48-TB2C | 1200W | 48V | 12V | Back to front |

INPUT CHARACTERISTICS

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-------------------------------|------------------|------|------|------|-------|
| Input Voltage Operating Range | | 90 | | 264 | Vac |
| Input Frequency | | 47 | 55 | 63 | Hz |
| Turn-on Input Voltage | Ramp up | 78.5 | | 86.5 | Vac |
| Turn-off Input Voltage | Ramp down | 70.5 | | 78 | |
| Maximum Input Current | | | | 15 | Arms |
| Inrush Current | | | | 90 | Apk |
| Power Factor | Output load >90% | 95% | | | |
| | Output load >50% | 75% | | | |

OUTPUT VOLTAGE CHARACTERISTICS

| Output Voltage | Parameter | Conditions | Min. | Typ. | Max. | Units |
|----------------|-------------------------------------|-----------------|-------|------|-------|--------|
| 12V | Voltage Set Point Accuracy | | | 48 | | Vdc |
| | Line and Load Regulation | | 46.54 | | 49.44 | |
| | Ripple Voltage & Noise ¹ | 20MHz Bandwidth | | | 480 | mV p-p |
| | Output Current | | 2 | | 24.6 | A |
| | Load Capacitance | | | | 10000 | µF |
| 3.3Vsb | Voltage Set Point Accuracy | | | 3.3 | | Vdc |
| | Line and Load Regulation | | 3.2 | | 3.4 | |
| | Ripple Voltage & Noise ¹ | | | | 50 | mV p-p |
| | Operating Range | | 0 | | 4.5 | A |
| | Load Capacitance | | | | 1530 | µF |
| 5Vsb | Voltage Set Point Accuracy | | | 5 | | Vdc |
| | Line and Load Regulation | | 4.85 | | 5.15 | |
| | Ripple Voltage & Noise ¹ | | | | 50 | mV p-p |
| | Operating Range | | 0 | | 4 | A |
| | Load Capacitance | | | | 1530 | µF |
| 12Vsb | Voltage Set Point Accuracy | | | 12 | | Vdc |
| | Line and Load Regulation | | 11.2 | | 12.4 | |
| | Ripple Voltage & Noise ¹ | | | | 120 | mV p-p |
| | Operating Range | | 0 | | 1.7 | A |
| | Load Capacitance | | | | 1530 | µF |

¹ Ripple and noise are measured with 0.1 µF of ceramic capacitance and 10 µF of tantalum capacitance on each of the power supply outputs. The output noise requirements apply over a 0 Hz to 20 MHz bandwidth. A short coaxial cable with 50ohm scope termination is used.



For full details go to www.murata-ps.com/rohs

| OUTPUT CHARACTERISTICS | | | | | |
|--|--|------|------|------|-------|
| Parameter | Conditions | Min. | Typ. | Max. | Units |
| Remote Sense | | | 120 | | mV |
| Efficiency | 220Vac | | 90.6 | | % |
| Output Rise Monotonicity | Overshoot less than 10% for all outputs, no voltage negative between 10% to 95% during ramp up | | | | |
| Start-up Time | AC ramp up | | 1.5 | | s |
| | PS_On activated | | 150 | | ms |
| Transient Response | 48V Ramp 1A/μs | | | ±600 | mV |
| | 3.3Vsb Ramp 1A/μs | | | ±165 | |
| | 5Vsb Ramp 1A/μs | | | ±250 | |
| | 12Vsb Ramp 1A/μs | | | | |
| Current sharing accuracy (up to 3 in parallel) | At 100% load | | | ±10 | % |
| Hold-up Time | | 20 | | | ms |

| GENERAL CHARACTERISTICS | | | | | |
|-----------------------------|--|------|------|------|---------|
| Parameter | Conditions | Min. | Typ. | Max. | Units |
| Storage Temperature Range | Non-condensing | -40 | | 70 | °C |
| Operating Temperature Range | | 0 | | 50 | |
| Operating Humidity | Non-condensing | 10 | | 90 | % |
| Storage Humidity | | 5 | | 90 | |
| Shock | 30G non operating | | | | |
| Sinusoidal Vibration | 0.5G, 5 – 500 Hz | | | | |
| MTBF | Calculated per Bellcore at Ta=30°C | 200 | | | Khrs |
| | Demonstrated | 200 | | | Khrs |
| Acoustic | ISO 7779-1999 | | | 60 | dB LpAm |
| Safety Approvals | c-CSA-us (CSA 60950-1-03/UL 60950-1, First Edition) TUV approval (Bauart) EN 60950-1:2001 | | | | |
| Input Fuse | Power Supply has internal 20A/250V fast blow fuse on the AC line input | | | | |
| Material Flammability | UL 94V-0 | | | | |
| Switching Frequency | 90KHz for Boost PFC Converter 165KHz for Main Output Converter 200KHz for Standby Output Converter | | | | |
| Weight | 2.6kg | | | | |

| PROTECTION CHARACTERISTICS | | | | | | |
|----------------------------|------------------|--------------|------|------|------|-------|
| Output Voltage | Parameter | Conditions | Min. | Typ. | Max. | Units |
| 12V | Over-temperature | Auto-restart | 55 | | 65 | °C |
| | Over Voltage | Latching | 13 | | 14 | V |
| | Over Current | Latching | 107 | | 122 | A |
| 3.3Vsb | Over Voltage | Latching | 3.57 | | 4.02 | V |
| | Over Current | Latching | 6.5 | | 8 | A |
| 5Vsb | Over Voltage | Latching | 5.6 | | 6 | V |
| | Over Current | Latching | 5 | | 7 | A |

| ISOLATION CHARACTERISTICS | | | | | |
|---|---|------|------|------|-------|
| Parameter | Conditions | Min. | Typ. | Max. | Units |
| Insulation Safety Rating / Test Voltage | Input to Output - Reinforced | 3000 | | | Vrms |
| | Input to Chassis - Basic | 1500 | | | Vrms |
| Isolation | Output to Chassis | | | | |
| | Output to Output | | | | |
| Material Flammability | UL 94V-0 | | | | |
| Grounding | Main Output Return and Standby Output Return are connected internally. 100kΩ resistor parallel with 100nF capacitor is connected between Return and power supply chassis. Main Output Return should be connected to the System Chassis. | | | | |

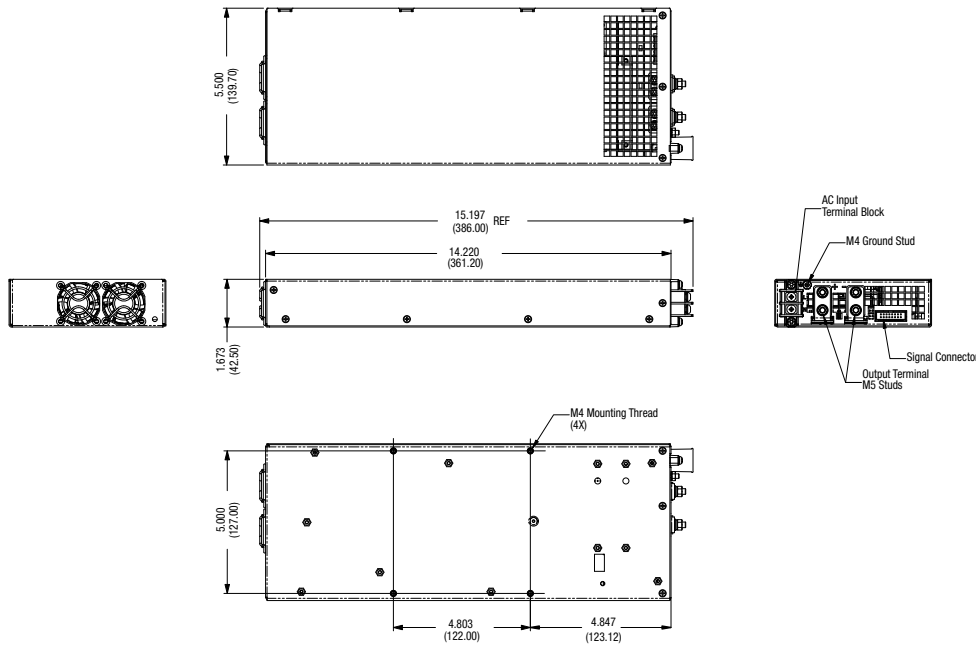
CONTROL SIGNALS

| Status | Conditions | Description |
|--------|-----------------|-----------------------|
| LED | Off | No AC input to all PS |
| | Flashing Yellow | Power Supply Failure |
| | Flashing Green | Main Output Absent |
| | Green | Power Supply Good |

EMISSIONS AND IMMUNITY

| Characteristic | Description | Criteria |
|----------------------------------|--------------------------------------|---|
| Harmonics | IEC/EN 61000-3-2 | |
| Voltage Fluctuation and Flicker | IEC/EN 61000-3-3 | |
| Emission Conducted | FCC 47 CFR Parts 15/CISPR 22/EN55022 | Class A, 6dB margin |
| Emission Radiated | FCC 47 CFR Parts 15/CISPR 22/EN55022 | Class A, 6dB margin |
| ESD | IEC/EN 61000-4-2 | 4kV contact discharge |
| | | 8kV operational air discharge |
| | | 15kV non-operational air discharge |
| Electromagnetic Field | IEC/EN 61000-4-3 | |
| Electrical Fast Transients/Burst | IEC/EN 61000-4-4 | |
| Surge | IEC/EN 61000-4-5 | 1kV/2kV, Performance Criteria B |
| RF Conducted Immunity | IEC/EN 61000-4-6 | 3 Vac, 80% AM, 1kHz, Performance Criteria A |
| Magnetic Immunity | IEC/EN 61000-4-8 | 3 A/m |
| Voltage dips, interruptions | IEC/EN 61000-4-11 | |

MECHANICAL DIMENSIONS



CONNECTORS

Signal 16 pin connector details, Type: Molex:
39-28-5164 Mating part Molex: 39-51-2164

| Pin | Signal |
|-----|---------|
| 1 | AC_OK |
| 2 | P_GOOD |
| 3 | PS_ON |
| 4 | BLANK |
| 5 | I_SHARE |
| 6 | BLANK |
| 7 | SENSE+ |
| 8 | SENSE- |
| 9 | V_SB |
| 10 | V_SB |
| 11 | V_SB |
| 12 | V_SB |
| 13 | GND |
| 14 | GND |
| 15 | GND |
| 16 | GND |

2-Pole terminal Block for AC Line and Neutral
Stud on Chassis for earth

| | |
|---|------------|
| + | 12V Main |
| - | Output GND |

Dimensions: 1.67" x 5.5" x 14.2"