

## CP2500AC54TE Compact Power Line High Efficiency Rectifier

Input: 100-120/200-277 Vac; Default Output:  $\pm 54$  Vdc @ 2500W; 5 Vdc @ 4W



### Features

- Efficiency 96.2%
- Compact 1RU form factor with 30 W/in<sup>3</sup> density
- Constant power from 52 – 58Vdc
- 2500W from nominal 200 – 277Vac
- 1200W from nominal 100 – 120Vac
- Output voltage programmable from 42V – 58Vdc
- PMBus compliant dual I<sup>2</sup>C and RS485 serial busses
- Isolated +5V Aux, signals and I<sup>2</sup>C communications
- Power factor correction (meets EN/IEC 61000-3-2 and EN 60555-2 requirements)
- Output overvoltage and overload protection
- AC Input overvoltage and undervoltage protection
- Over-temperature warning and protection
- Redundant, parallel operation with active load sharing
- Remote ON/OFF
- Hot insertion/removal (hot plug)
- Four front panel LED indicators
- UL\* Recognized to UL60950-1, CAN/ CSA† C22.2 No. 60950-1, and VDE‡ 0805-1 Licensed to IEC60950-1
- CE mark meets 2006/95/EC directive§
- Internally controlled Variable-speed fan
- RoHS 6 compliant

### Applications

- 48Vdc distributed power architectures
- Routers/Switches
- VoIP/Soft Switches
- LAN/WAN/MAN applications
- File servers
- Indoor wireless
- Telecommunications equipment
- Enterprise Networks
- SAN/NAS/iSCSI applications

### Description

The CP2500AC54TE Rectifier provides significant efficiency improvements in the Compact Power Line platform of Rectifiers. High-density front-to-back airflow is designed for minimal space utilization and is highly expandable for future growth. The standard product is provided with both RS485 and dual-redundant I<sup>2</sup>C communications busses that allow it to be used in a broad range of applications. These signals and the 5V auxiliary supply are isolated from the main output and frame ground. Feature set flexibility makes this rectifier an excellent choice for applications requiring modular ac-to-dc 48Vdc intermediate voltages, such as in distributed power.

\* UL is a registered trademark of Underwriters Laboratories, Inc.

† CSA is a registered trademark of Canadian Standards Association.

‡ VDE is a trademark of Verband Deutscher Elektrotechniker e.V.

§ This product is intended for integration into end-user equipment. All the required procedures for CE marking of end-user equipment should be followed. (The CE mark is placed on selected products.)

\*\* ISO is a registered trademark of the International Organization of Standards.



## CP2500AC54TE Rectifier

Input: 100-120/200-277 Vac; Default Output:  $\pm 54$  Vdc @ 2500W; 5 Vdc @ 4W

## Electrical Specifications

| Input  |           |                            |            |       |  |
|--|-----------|----------------------------|------------|-------|--|
| Parameter  | Min       | Typ                        | Max        | Units | Notes  |
| Startup Input Voltage<br>Low-line Operation<br>High-line Operation           |           |                            | 90<br>185  |       | <p>CP2000AC54 Line Deraing</p> <p>Equation for derating zone tolerance: <math>\pm 5\%</math></p> <p><math>y = 43.3V_{in} - 5078</math></p> |
| Operating Voltage Range<br>Low-line Configuration<br>High-line Configuration | 90<br>185 | 100, 110, 120<br>200 – 277 | 140<br>305 | Vac   |  |
| Input Voltage Swell (no damage)  | 305       |                            |            |       |  |
| Input Frequency  | 47        |                            | 66         | Hz    |  |
| Input Current  |           | 10.9<br>12                 |            | A     | At 110 Vac<br>At 240 Vac   |
| Inrush Transient   |           | 25                         | 30         | Apk   | Measured at 25°C for all line conditions; does not include X-Capacitors charging.  |
| Input Leakage Current  |           | 2.5                        | 3.5        | mA    | Measured at 265Vac, 60Hz   |
| Power Factor   | 0.96      | 0.98                       |            |       | From 50% to 100% load.   |
| Efficiency <sup>1</sup> 30 – 90% of FL                                       | 94.5      | 96.2                       |            | %     | With OR'ing function, aux 5V output, dual/redundant I <sup>2</sup> C and RS485 communications and POE isolation                            |
| Holdup Time  |           | 20<br>30                   |            | ms    | Measurement starts at zero crossing of the ac voltage, and voltage decayed to 40V.<br>For loads below 1200W.                               |
| Ride thru  | 1/2       | 1                          |            | cycle | Tested at nominal 115V and 230V. Complies to CISPR24 standards   |
| Power Fail Warning <sup>2</sup>  | 3         | 5                          |            | ms    | Alarm issued via PFW signal going LO 5 ms prior to the main output decaying below 40Vdc.   |

| Main Output                     |                      |     |                          |       |  |
|---------------------------------|----------------------|-----|--------------------------|-------|--|
| Parameter                       | Min                  | Typ | Max                      | Units | Notes  |
| Output Power                    | 1200<br>2500<br>2000 |     |                          | W     | At low-line input from nominal 100-120Vac.<br>At high-line input from nominal 200-277Vac<br>At nominal 277Vac and $T_{amb} > 45^{\circ}\text{C}$ |
| Default Set point               |                      | 54  |                          | Vdc   | Output floats with respect to frame ground.  |
| Overall Regulation <sup>3</sup> | -1<br>-2             |     | +1<br>+2                 | %     | 0 – 45C, minimum load 2.5A<br>> 45C  |
| Output Voltage Set Range        | 44                   |     | 58                       | Vdc   | Analog margining.  |
|                                 | 42                   |     | 58                       | Vdc   | Set either by I <sup>2</sup> C, RS485  |
| Output current                  | 1<br>1<br>1          |     | 25<br>46.3/48<br>37/38.4 | A     | At 1200W, 54V @ 100-120Vac.<br>At 2500W, 54V/52V @ 200-240Vac.<br>At 2000W, 54V/52V @ 277Vac and $T_{amb} > 45^{\circ}\text{C}$ .                |

<sup>1</sup> At 240Vrms and 25°C. See efficiency curves at the end of this document.<sup>2</sup> Internal protection circuits may override the PFW signal and may trigger an immediate shutdown.<sup>3</sup> Includes all variations due to specified load range, drift, and environmental conditions.

## CP2500AC54TE CPL High Efficiency Rectifier

Input: 100-120/200-277 Vac; Default Output:  $\pm 54$  Vdc @ 2500W; 5 Vdc @ 4W

## Electrical Specifications (continued)

| Main Output (continued)   |   |  |   |   |   |  |
|---|---|--|---|---|---|--|
| Parameter   | Min   | Typ  | Max                                       | Units   | Notes   |  |
| Current Share   | -5  |  | 5   | %FL   | Compared to the average output current delivered by a set of rectifiers. Valid for loads > 50% of FL                              |  |
| Proportional Current Share  |   | <7   |   | %FL   | Among CP Rectifiers of different output capacities. Loads > 50%of FL  |  |
| Output Ripple<br>RMS (5Hz to 20MHz)<br>Peak-to-Peak (5Hz to 20MHz)<br>Psophometric Noise  |   |  | 100<br>250 <sup>4</sup><br>9 <sup>5</sup> | mVrms<br>mVp-p<br>mVrms                         | Measured with 20MHz scope bandwidth under any condition of loading. Minimum load is 1A.   |  |
| External Bulk Load Capacitance  | 0   |  | 5,000                                     | μF  | External capacitance can be increased but the rectifier may not meet its turn-ON rise time requirement.                           |  |
| Turn-On<br>Delay<br>Rise Time <sup>1</sup> - Standard (PMBus)<br>-Telecom (RS-485) <sup>6</sup><br>Overshoot                    |   | 5<br>100<br>5  |   | s<br>ms<br>s<br>%                               | Monotonic Turn_On from 30% to 100% of Vnom above -5°C operation. Monotonic Turn_On from 60% to 100% of Vnom below -5°C operation. |  |
| Load Step Response<br>ΔI<br>ΔV, V <sub>AC</sub> < 285 <sub>AC</sub><br>ΔV, V <sub>AC</sub> ≥ 285 <sub>AC</sub><br>Response Time |   |  | 50  | %FL<br>V <sub>DC</sub><br>V <sub>DC</sub><br>ms | di/dt (output current slew rate) 1A/μs. Settling time to within regulation requirements. Minimum load of 2.5 amperes required.    |  |
| Overload  | Power Limit – high line   | 2500   |   | W   | Down to 52Vdc   |  |
|   | Power limit – low line  | 1200   |   | W   |   |  |
|   | Current limit > 41.5V <sub>o</sub> <sup>7</sup> - HL                                | 51   |   | 55.7  | Adc   | Hiccup mode with a 10% duty cycle enabled below 39Vdc. Latched mode current limit optional. (FL = 48A @ 52V) |
|   | Current limit < 41.5V <sub>o</sub> <sup>5</sup> - HL                                | 36   |   |   | Adc   |  |
|   | Current limit - LL  | 26   |   |   | Adc   |  |
| System Power Up   |   | Units should be able to be plugged in one at a time and guarantee system start up. Units should stay in current limit for approximately 20 seconds to guarantee restart. |   |   |   |  |
| Over-voltage  | Delayed<br>Immediate Latchoff   |  |   | 60<br>65  | Vdc<br>Vdc  | 200msec delayed shutdown to be implemented. Instantaneous shutdown above this point.                         |
|   |   | Three restart attempts may be implemented within a one minute window prior to a latched shutdown   |   |   |   |  |
| Over-temperature<br>Warning   |   | 5  |   | °C  | Implemented prior to commencement of an OT shutdown<br>Below the maximum rating of the device being protected                     |  |
| Shutdown  |   | 20   |   | °C  |   |  |
| Auto-recoverable  | Temperature hysteresis of approximately 10°C provided between shutdown and restart. |  |   |   |   |  |

<sup>4</sup> 500mVp-p above 280Vrms<sup>1</sup> Complies with GR947 which calls for a minimum rise time proportional to output load.<sup>2</sup> Complies with ANSI TL523-2001 section 4.9.2 emissions max limit of 20mV flat unweighted wideband noise limits<sup>6</sup> Below -5°C, the rise time is approximately 5 minutes to protect the bulk capacitors.<sup>7</sup> Above 275V input, the current limit point changes at 45V. There is a 30 second delay prior to shifting to the lower limit.

## CP2500AC54TE CPL High Efficiency Rectifier

Input: 100-120/200-277 Vac; Default Output:  $\pm 54$  Vdc @ 2500W; 5 Vdc @ 4W

| Electrical Specifications (continued) |       |     |      |         |  |
|---------------------------------------|-------|-----|------|---------|--|
| Auxiliary Output                      |       |     |      |         |  |
| Parameter                             | Min   | Typ | Max  | Units   | Notes                                    |
| Output Voltage Setpoint               |       | 5   |      | Vdc     |  |
| Output Current                        | 0.005 |     | 0.75 | A       |  |
| Overall Regulation                    | -10   |     | +5   | %       | Within $\pm 5\%$ when load is $< 0.5A$ . |
| Ripple and Noise                      |       | 50  | 100  | mVpk-pk | 20MHz bandwidth                          |
| Over-voltage Clamp                    |       |     | 7    | Vdc     |  |
| Over-current Limit                    | 110   |     | 175  | %FL     |  |
|                                       |       |     |      |         |  |
|                                       |       |     |      |         |  |

| Environmental, EMC, Reliability Specifications |   |         |                 |         |  |
|--|---|---------|-----------------|---------|--|
| Environmental                                  |   |         |                 |         |  |
| Parameter                                      | Min   | Typ     | Max             | Units   | Notes  |
| Ambient Temperature                            |   |         |                 |         |  |
| Operating                                      | -40 <sup>8</sup>  |         | 55 <sup>9</sup> | °C      | Air inlet from sea level to 5,000 feet.  |
| Derating                                       |   | 1       | 2               | °C      | Per 1,000 feet above 5,000 feet.   |
| Extended Operating Temperature                 | 55  |         | 75              | °C      | With 2%/°C power derating above 55°C.  |
| Storage Temperature                            | -40   |         | 85              | °C      |  |
| Humidity                                       | 5   |         | 95              | %       | Relative humidity, non-condensing  |
| Altitude                                       | -60<br>-200   |         | 4000<br>13000   | m<br>ft | For operation above 2500m (5000 ft.), maximum operating temperature is derated by 2°C per 305m (1000 ft.).                         |
| Shock and Vibration                            |   |         |                 |         | IPC9592 sections 5.2.8 – 5.2.13  |
| Earthquake Rating                              | 4   |         |                 | Zone    | Per Telcordia GR-63-CORE, all floors, when installed in CP Shelf.  |
| Acoustic Noise                                 |   | 55      |                 | dba     | Noise is proportional to fan speed, load and ambient temperature.  |
| Harmonic Emissions                             | Per EN/IEC61000-3-2   |         |                 |         |  |
| Radiated Emissions <sup>10</sup>               | Exceeds FCC and CISPR22 (EN55022) - Class A   |         |                 |         |  |
| Conducted Emissions - ac                       | Exceeds FCC and CISPR22 (EN55022) Class A<br>Telcordia GR-1089-CORE - Class A by a 3dB margin   |         |                 |         |  |
| ESD  | Error free per EN/IEC 61000-4-2 Level 3 (6 kV contact discharge, 8 kV air discharge).   |         |                 |         |  |
| Radiated Immunity                              | Error free per EN/IEC 61000-4-3 Level 3 (10 V/m).   |         |                 |         |  |
| Electrical Fast Transient Burst                | Error free per EN/IEC 61000-4-4 Level 3 (2 kV, 5 kHz repetition rate)   |         |                 |         |  |
| Lightning Surge, Error Free<br>Damage Free     | EN/IEC61000-4-5 Level 4 (4 kV common mode, 2 kV differential mode).<br>ANSI C62.41 Level A3 (6 kV common and differential mode)   |         |                 |         |  |
| Line sags and interruptions                    | IPC9592A issued May 2010 ; 1 cycle interruption or 25% sag (115V, 230V – nominal for UUT) for 2 seconds the output shall stay above 40Vdc at full load. [Note: An input sag below 80V may cause an immediate shutdown.] |         |                 |         |  |
| Conducted Immunity                             | Error free per EN/IEC 61000-4-6 Level 3 (10Vrms).   |         |                 |         |  |
| Reliability (calculated)                       |   | 450,000 |                 | Hours   | At ambient of 25°C at full load per Telcordia SR-332, issue 2, Reliability Prediction for Electronic Equipment, Method I Case III. |
| Isolation                                      |   |         |                 |         |  |
| Input-Chassis/Signals                          | 1500  |         |                 | Vrms    | Per EN60950.   |
| Input - Output                                 | 3000  |         |                 | Vrms    | Consult factory for testing to this requirement  |
| Output-Chassis                                 | 500   |         |                 | Vdc     | Internal Lineage standard, GR_947  |
| Output-Chassis/Signals                         | 2250  |         |                 | Vdc     | POE compliant Rectifier, Per IEEE802.3.  |

<sup>8</sup> Designed to start and work at an ambient as low as -40°C, but may not meet operational limits until above -5°C<sup>9</sup> Output power is derated to 2kW for temperatures higher than 45°C and input voltages higher than 285Vrms.<sup>10</sup> Radiated emissions compliance was met using a Lineage Power shelf. This shelf includes output common and differential mode capacitors that assist in meeting compliance.

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|              |  |    |       |   |
|--------------|--|----|-------|---|
| Service Life |  | 10 | Years | 25°C ambient, full load excluding fans. |
|--------------|--|----|-------|---|

### Status and Control

The Rectifier provides two means for monitor/control: analog or I<sup>2</sup>C.

Details of analog controls are provided in this data sheet under Signal Definitions. GE Energy will provide separate application notes on the I<sup>2</sup>C protocol for users to interface to the CPL RECTIFIERS. Contact your local GE Energy representative for details.

### Hot Plug

When rapidly extracting and reinserting modules care should be taken to allow for discharging the internal bias supply so that a predictable restart could be achieved. The way to ensure that the circuit sufficiently discharges is to observe the spinning of the fans after an extraction. The unit should not be reinserted until the fans stop spinning.

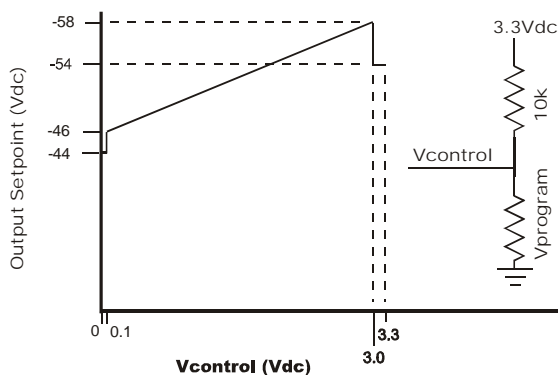
Without bleeding down internal bias the module may remember its last assigned address and may not configure itself properly if reinserted into another slot.

### Control Definitions

All signals are referenced to Logic\_GRD unless otherwise noted. See the Signal Definitions Table at the end of this document for further description of all the signals.

### Input Signals

**Margining:** Set point of the Rectifier can be changed via this input pin. Programming can be either a voltage source or a resistance divider. The margining pin is connected to 3.3Vdc via a 10k $\Omega$  resistor inside the Rectifier. See graphs below.



An open circuit on this pin reverts the voltage level back to the original setting.

Software commanded margining overrides the hardware set point indefinitely or until the default setting is reinstated for example if input power and bias power have been removed from the module.

**Module Present Signal:** This signal has dual functionality. It can be used to alert the system when a module is inserted. A 500 $\Omega$  resistor is present in series between this signal and Logic\_GRD. An external pull-up should not raise the voltage on the pin above 0.25Vdc. Above 1Vdc, the write\_protect feature of the EEPROM is enabled.

**Protocol Select:** Establishes the communications mode of the rectifier, between analog/I<sup>2</sup>C and RS485 modes. For RS485, connect 10k $\Omega$  pull-down resistor to 54\_OUT(-DC).

**Enable:** On/Off control when I<sup>2</sup>C communications are utilized as configured by the Protocol pin. This pin must be pulled low to turn **ON** the rectifier. The rectifier will turn **OFF** if either the **Enable** or the **ON/OFF** pin is released. This signal is referenced to Logic\_GRD.

**ON/OFF:** This is a short pin utilized for hot-plug applications to ensure that the rectifier turns **OFF** before the power pins are disengaged. It also ensures that the rectifier turns **ON** only after the power pins have been engaged. Must be connected to V\_OUT (-DC).

### Output Signals

**Power\_OK:** This signal is HI when the main output is present and goes LO when the main output is not present.

**I\_limit:** This signal is HI when the main output is not in current limit and goes LO when current limit has activated.

**Alert #:** I<sup>2</sup>C interrupt signal.

**Fault:** This signal goes LO for any failure that requires Rectifier replacement. Some of these faults may be due to:

- Fan failure
- Over-temperature condition
- Over-temperature shutdown
- Over-voltage shutdown
- Internal Rectifier Fault

## CP2500AC54TE CPL High Efficiency Rectifier

Input: 100-120/200-277 Vac; Default Output:  $\pm 54$  Vdc @ 2500W; 5 Vdc @ 4W

### Alarm Table

| Condition                                      | Power Supply LED State |                |                  |              | Monitoring Signals<br>(Referenced to Logic_GRD) |     |                 |                 |
|--|------------------------|----------------|------------------|--------------|---|-----|-----------------|-----------------|
|  | AC OK<br>Green         | DC OK<br>Green | Service<br>Amber | Fault<br>Red | Fault   | OTW | PFW             | Module Present  |
| OK   | 1                      | 1              | 0                | 0            | HI  | HI  | HI              | LO              |
| Thermal Alarm<br>(5C before shutdown)          | 1                      | 1              | 1                | 0            | HI  | LO  | HI              | LO              |
| Thermal Shutdown                               | 1                      | 0              | 1                | 1            | LO  | LO  | LO              | LO              |
| Defective Fan                                  | 1                      | 0              | 0                | 1            | LO  | HI  | LO              | LO              |
| Blown AC Fuse in Unit                          | 1                      | 0              | 0                | 1            | LO  | HI  | LO              | LO              |
| No AC <15mS (single unit)                      | 0                      | 1              | 0                | 0            | HI  | HI  | LO <sup>3</sup> | LO              |
| AC Present but not within limits               | Blinks                 | 0              | 0                | 0            | HI  | HI  | LO              | LO              |
| AC not present <sup>1</sup>                    | 0                      | 0              | 0                | 0            | HI  | HI  | LO              | LO              |
| Boost Stage Failure                            | 1                      | 0              | 0                | 1            | LO  | HI  | LO              | LO              |
| Over Voltage Latched Shutdown                  | 1                      | 0              | 0                | 1            | LO  | HI  | LO              | LO              |
| Over Current                                   | 1                      | Blinks         | 0                | 0            | HI  | HI  | LO              | LO              |
| Non-catastrophic Internal Failure <sup>2</sup> | 1                      | 1              | 0                | 1            | LO  | HI  | HI              | LO              |
| 1 Missing Module                               |                        |                |                  |              |   |     |                 | HI <sup>4</sup> |
| Standby (remote)                               | 1                      | 0              | 0                | 0            | HI  | HI  | LO              | LO              |
| Service Request (PMBus mode)                   | 1                      | 1              | Blinks           | 0            | HI  | HI  | HI              | LO              |
| Communications Fault (RS485 mode)              | 1                      | 1              | 0                | Blinks       | HI  | HI  | HI              | LO              |

<sup>1</sup> This signal is correct if the Rectifier is back biased from other Rectifiers in the shelf.

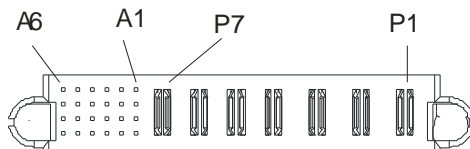
<sup>2</sup> Any detectable fault condition that does not result in the power supply shutting down. For example, ORing FET failure, boost section out of regulation, etc.

<sup>3</sup> Signal transition from HI to LO is output load dependent

<sup>4</sup> Signal must be pulled HI external to the module

### Output Connector

**Mating Connector:** right angle PWB mate – all pins: AMP 6450572-1, right angle PWB mate except pass-thru input power: AMP 6450378-1



**Manufacturer part numbers: FCI 51939-568**

|   | SIGNAL |          |          |           |         |            | OUTPUT POWER |       |       |       | INPUT POWER |                  |              |
|---|--------|----------|----------|-----------|---------|------------|--------------|-------|-------|-------|-------------|------------------|--------------|
|   | 6      | 5        | 4        | 3         | 2       | 1          | P7           | P6    | P5    | P4    | P3          | P2               | P1           |
| A | SCL_0  | MOD_PRES | PFW      | LOGIC_GRD | RS_485+ | UNIT_ADDR  |              |       |       |       |             |                  |              |
| B | SCL_1  | OTW      | Alert#_0 | Alert#_1  | RS_485- | 8V_INT     | V_OUT        | V_OUT | V_OUT | V_OUT | EARTH (GND) | LINE-2 (Neutral) | LINE-1 (HOT) |
| C | SDA_0  | Margin   | Enable   | Reset     | Ishare  | Protocol   | (-)          | (+)   | (+)   | (-)   |             |                  |              |
| D | SDA_1  | Fault    | 5VA      | Power_Cap | ON/OFF  | SHELF_ADDR |              |       |       |       |             |                  |              |

Note: Connector is viewed from the rear positioned inside the rectifier

Signal pins columns 1 and 2 are referenced to V\_OUT (-)

Signal pins columns 3 through 6 are referenced to Logic GRD

Earth Last to make-first to break shortest pin

Earth First make-last to break longest pin implemented in the mating connector

## CP2500AC54TE CPL High Efficiency Rectifier

Input: 100-120/200-277 Vac; Default Output:  $\pm 54$  Vdc @ 2500W; 5 Vdc @ 4W

### Signal Definitions

All hardware alarm signals (Fault, PFW, OTW, Power Capacity) are open drain FETs. These signals should be pulled HI to either 3.3V or 5V. Maximum sink current 5mA. An active LO signal (< 0.4Vdc) state. All signals are referenced to Logic GRD unless otherwise stated. Contact your Lineage Power representative for more details.

| Function                   | Label                | Type      | Description   |
|----------------------------|----------------------|-----------|---|
| Output Enable              | Enable               | Input     | If shorted to LOGIC_GRD, the Rectifier output is enabled when using I <sup>2</sup> C mode of operation. May also be toggled to reset a latched OFF Rectifier. Function not available in RS485 mode.                             |
| Power Fail Warning         | PFW                  | Output    | An open drain FET; normally HI, indicating output power is present. Changes to LO at least 5msec before the output voltage decays below 40Vdc.  |
| I <sup>2</sup> C Interrupt | Alert#_0<br>Alert#_1 | Output    | Interrupt signal via I <sup>2</sup> C lines indicating that service is requested from the host controller. This signal pin is pulled up to 3.3V via a 10k $\Omega$ resistor and switches to active LO when an interrupt occurs. |
| Rectifier Fault            | Fault                | Output    | Indicates that an internal fault exists. An open drain FET; normally HI, changes to LO.   |
| Module Present             | MOD_PRES             | Output    | Short pin, see Status and Control description for further information on this signal.   |
| ON/OFF                     | ON/OFF               | Input     | Short pin, connects last and breaks first; used to activate and deactivate output during hot-insertion and extraction, respectively. Ref: Vout ( - )  |
| Protocol select            | Protocol             | Input     | See Status and Control description for further information on this signal. Ref: Vout ( - ).   |
| Margining                  | Margin               | Input     | Allows changing of output voltage through an analog voltage input or via resistor divider.  |
| Over-Temperature Warning   | OTW                  | Output    | An open drain FET; normally HI, changes to LO approximately 5°C prior to thermal shutdown.  |
| Power Capacity             | POWER_CAP            | Output    | Open drain FET; Used to indicate Rectifier operation mode; HI indicates 2500W operation and LO indicates 1200W operation.   |
| Rectifier address          | Unit_addr            | Input     | Voltage level addressing of Rectifiers within a single shelf. Ref: Vout ( - ).  |
| Shelf Address              | Shelf_addr           | Input     | Voltage level addressing of Rectifiers within multiple shelves. Ref: Vout ( - ).  |
| Back bias                  | 8V_INT               | Bi-direct | Diode OR'ed 8Vdc drain; used to back bias microprocessors and DSP of failed Rectifier from operating Rectifiers. Ref: Vout ( - ).   |
| Mux Reset                  | Reset                | Input     | Resets the I <sup>2</sup> C lines to I <sup>2</sup> C line 0.   |
| Standby power              | 5VA                  | Output    | 5V at 0.75A provided for external use by either adjacent power supplies or the using system.  |
| Current Share              | Ishare               | Bi-direct | A single wire interface between each of the power unit forces them to share the load current. Ref: Vout ( - ).  |
| I <sup>2</sup> C Line 0    | SCL_0, SDA_0         | Input     | I <sup>2</sup> C line 0.  |
| I <sup>2</sup> C Line 1    | SCL_1, SDA_1         | Input     | I <sup>2</sup> C line 1.  |
| I <sup>2</sup> C Interrupt | Alert#               | Output    | Goes active LO  |
| RS485 Line                 | RS_485+<br>RS_485-   | Bi-direct | RS485 line.   |

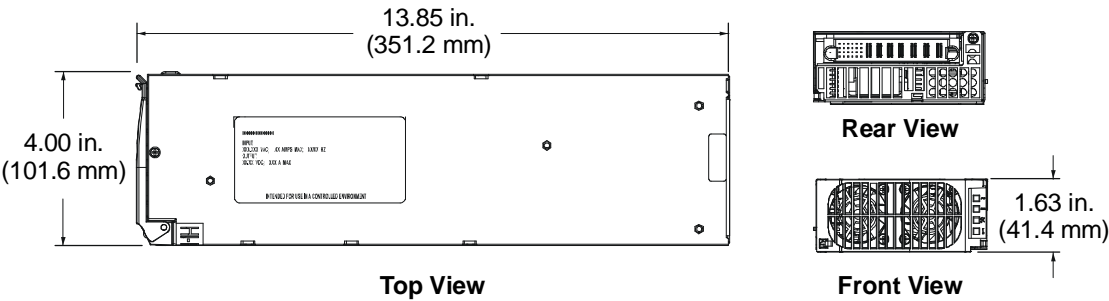
CP2500AC54TE CPL High Efficiency Rectifier

Input: 100-120/200-277 Vac; Default Output: ±54 Vdc @ 2500W; 5 Vdc @ 4W

Front Panel LEDs

|                            | Analog Mode                  | I <sup>2</sup> C Mode                             | RS485 Mode                               |
|----------------------------|------------------------------|---|--|
| <input type="checkbox"/> ~ | ←                            | ON: Input ok<br>Blinking: Input out of limits     | →  |
| <input type="checkbox"/> ≡ | ←                            | ON: Output ok<br>Blinking: Overload               | →  |
| <input type="checkbox"/> ✖ | ON: Over-temperature Warning | ON: Over-temperature Warning<br>Blinking: Service | ON: Over-temperature Warning             |
| <input type="checkbox"/> ! | ← ON: Fault →                |   | ON: Fault<br>Blinking: Not communicating |

Dimensions



Physical

|                 |   |
|-----------------|---|
| Packaged weight | 5.4/2.45 lbs/kgs  |
| Unpacked weight | 4.8/2.18 lbs/kgs  |
| Heat release    | 100 Watts or 341 BTUs @ 80% load<br>153 Watts or 522 BTUs @ 100% load |





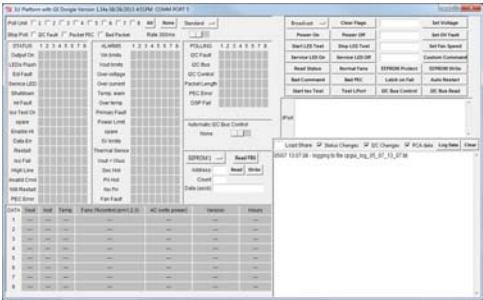


## CP2500AC54TE CPL High Efficiency Rectifier

Input: 100-120/200-277 Vac; Default Output:  $\pm 54$  Vdc @ 2500W; 5 Vdc @ 4W

### Ordering Information

| Item            | Description                          | Comcode     |
|-----------------|--------------------------------------|-------------|
| CP2500AC54TEZ   | 54Vdc @ 50A, 5Vdc @ 0.75A, RoHS 6/6  | CC109172680 |
| CP2500AC54TEZ-B | Same as above with a black faceplate | 150037800   |

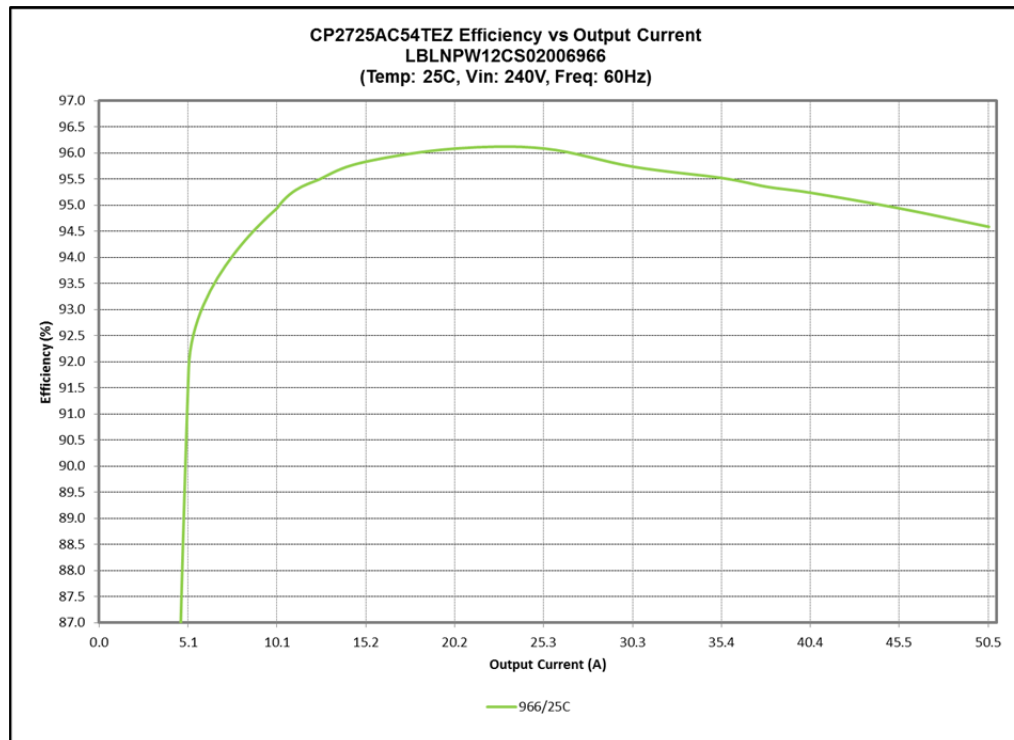
### Accessories

| Item  | Description  | Comcode   |
|---|--|-----------|
|    | Power supply interface board   | 150037482 |
|    | Isolated Interface Adapter Kit – interface between a USB port and the I <sup>2</sup> C connector on the power supply interface board   | 150036482 |
|  | <p>Graphical User Interface download demonstrating the redundant I<sup>2</sup>C capabilities of the power supply. The site below downloads the GE Digital Power Insight™ software tools, including the cpgui_1. When the download is complete, icons for the various utilities will appear on the desktop. Click on cpgui_1.exe  to start the program after the download is complete.</p> <p><a href="http://apps.geindustrial.com/publibrary/checkout/Software%7CCPSW-DPI%7Cgeneric">http://apps.geindustrial.com/publibrary/checkout/Software%7CCPSW-DPI%7Cgeneric</a></p> |           |
|   | <p>Graphical User Interface Manual; The GUI download created a directory</p> <p> In that directory start the DPI_manual.pdf file.</p>  |           |

## CP2500AC54TE CPL High Efficiency Rectifier

Input: 100-120/200-277 Vac; Default Output:  $\pm 54$  Vdc @ 2500W; 5 Vdc @ 4W

### Typical Efficiency



## Contact Us

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Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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