

CP2725AC54TE Compact Power Line High Efficiency Rectifier

Input: 100-120/200-277 Vac; Default Output: ± 54 Vdc @ 2725W; 5 Vdc @ 4W



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
- Advanced workstations

Features

- Efficiency approaching 97.5%
- Compact 1RU form factor providing 30 W/in³
- Constant power from 52 – 58Vdc
- 2725W from nominal 200 – 277Vac
- 1200W from nominal 100 – 120Vac
- Output voltage programmable from 42V – 58Vdc; output defaulted to 54V
- PMBus compliant dual I²C and RS485 serial bus 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 and redundant +5V Aux power
- 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

Description

The CP2725AC54TE Front-End Power Supply provides significant efficiency improvements in the Compact Power Line platform of Rectifiers. The high-density, front-to-back airflow Rectifier is designed for minimal space utilization and is highly expandable for future growth. It is provided with RS485 and dual-redundant I²C communications busses that allow it to be used in a broad range of applications. The flexible feature set makes this front-end power supply 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.



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CP2725AC54TE CPL High Efficiency Rectifier

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Electrical Specifications

Input					
Parameter	Min	Typ	Max	Units	Notes
Startup Input Voltage Low-line Operation High-line Operation			90 185		
Operating Voltage Range Low-line Configuration High-line Configuration	90 185	100, 110, 120 200 - 277	140 305	Vac	
Surges (no damage)	305				
Input Frequency	47		66	Hz	
Input Current		11.9 13.1		A	At 110 Vac 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 ¹	20 - 90% of FL	94.7	97.5	%	With or'ing function, aux 5V output, dual/redundant I ² C and RS485 communications and POE isolation
Holdup Time		20 30		ms	Measurement starts at zero crossing of the ac voltage, and voltage decayed to 40V. For loads below 1200W.
Ride thru	1/2	1		cycle	Tested at nominal 115V and 230V. Complies to CISPR24 standards
Power Fail Warning ²	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 2725 2000			W	At low-line input from nominal 100-120Vac. At high-line input from nominal 200-277Vac At nominal 277Vac and T _{amb} > 45°C
Default Set point		54		Vdc	Output floats with respect to frame ground.
Overall Regulation ³	-1 -2		+1 +2	%	0 - 45C, minimum load 2.5A > 45C
Output Voltage Set Range	44		58	Vdc	Analog margining.
	42		58	Vdc	Set either by I ² C, RS485
Output current	1 1 1		25 50.5/52.4 37/38.4	A	At 1200W, 54V @ 100-120Vac. At 2725W, 54V/52V @ 200-240Vac. At 2000W, 54V/52V @ 277Vac and T _{amb} > 45°C.

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