



PFE3000-12-069RA

3000 W AC-DC Front-End Power Supply

The **PFE3000-12-069RA** is a 3000 Watt AC/DC power-factor-corrected (PFC) and DC-DC power supply that converts standard AC mains power or high voltage DC bus voltages into a main output of 12 VDC for powering intermediate bus architectures (IBA) in high performance and reliability servers, routers, and network switches.

The PFE3000-12-069RA meets international safety standards and displays the CE-Mark for the European Low Voltage Directive (LVD).



Key Features & Benefits

- Best-in-class, Platinum efficiency
- Wide input voltage range: 90-300 VAC
- AC input with power factor correction
- DC input voltage range: 192-400 VDC
- Hot-plug capable
- Parallel operation with active current sharing thru analog bus
- Full digital controls for improved performance
- High density design: 30.5 W/in³
- Small form factor: 69 x 42 x 555 mm
- I2C communication interface with PMBus® protocol for monitoring, control, and firmware update via bootloader
- Overtemperature, output overvoltage and overcurrent protection
- RoHS Compliant
- 2 Status LEDs: AC OK and DC OK with fault signaling
- Safety-approved to IEC/EN 60950-1 and UL/CSA 60950-1 2nd ed.
- US Patent Pending

Applications

- High Performance Servers
- Routers
- Switches

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1. ORDERING INFORMATION

PFE	3000	-	12	-	069	R	A	Option Code
Product Family	Power Level	Dash	V1 Output	Dash	Width	Airflow	Input	Blank: Standard model S366: Screw for Key-in feature is installed.
PFE Front-Ends	3000 W		12 V		69 mm	R: Reversed ¹	A: AC	

¹ Front to Rear

2. OVERVIEW

The PFE3000-12-069RA is a fully DSP controlled, highly efficient front-end power supply. It incorporates resonant-soft-switching technology and interleaved power trains to reduce component stresses, providing increased system reliability and very high efficiency. With a wide input operating voltage range and minimal linear derating of output power with respect to ambient temperature, the PFE3000-12-069RA maximizes power availability in demanding server, switch, and router applications. The power supply is fan cooled and ideally suited for server integration with a matching airflow path.

The PFC stage is digitally controlled using a state-of-the-art digital signal processing algorithm to guarantee best efficiency and unity power factor over a wide operating range.

The DC-DC stage uses soft switching resonant techniques in conjunction with synchronous rectification. An active OR-ing device on the output ensures no reverse load current and renders the supply ideally suited for operation in redundant power systems. The always-on +12V standby output provides power to external power distribution and management controllers. Its protection with an active OR-ing device provides for maximum reliability.

Status information is provided with front-panel LEDs. In addition, the power supply can be monitored and controlled (i.e. fan speed setpoint) via I²C communication interface with PMBus® protocol. It allows full monitoring of the supply, including input and output voltage, current, power, and inside temperatures. The same I²C bus supports the bootloader to allow field update of the firmware in the DSP controllers.

Cooling is managed by a fan, controlled by the DSP controller. The fan speed is adjusted automatically depending on the actual power demand and supply temperature and can be overridden through the I²C bus.

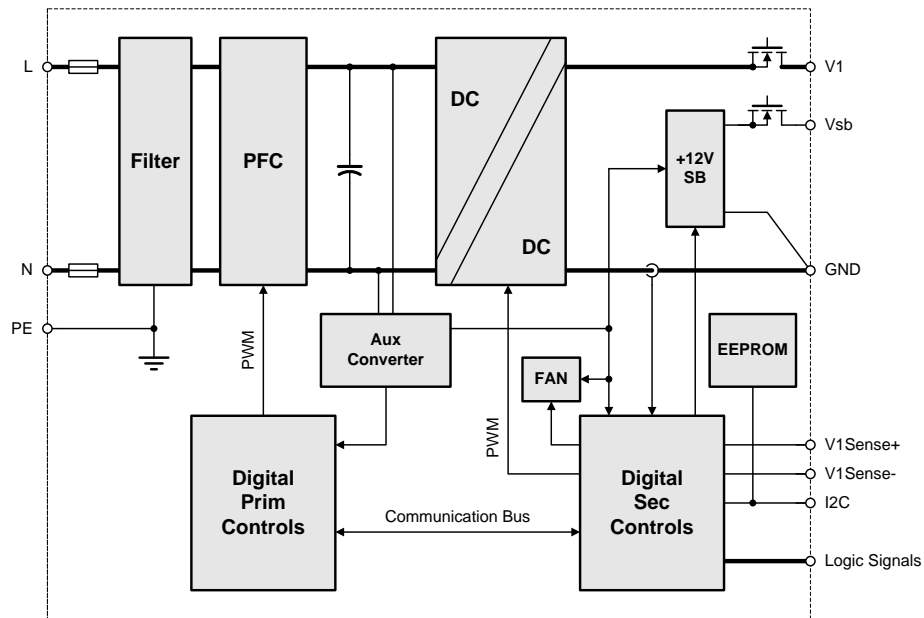


Figure 1 - PFE3000-12-069RA Block Diagram