

Driving Innovation in Telecom and Datacenter Infrastructure

How AE's Modular AC-DC Bricks Empower Next-Generation Optical Networks

INDUSTRY

Telecom and Datacenter infrastructure

SOLUTION

AIF & AIF500-CASE-KIT

APPLICATION

Optical Network

CHALLENGE

In the rapidly evolving world of telecom and datacenter infrastructure, new innovations in power conversion are key to meeting increasingly complex requirements. Reliable and adaptable solutions are key to supporting next-generation optical networks.

In this case, the customer faced the challenge of broadening their product range to accommodate applications requiring AC-input power, especially where traditional battery-backed 48 VDC sources were unavailable. Their new solution needed to be a “set-and-

forget” product—compact, robust, and maintenance-free, with no room for failed power supplies or fan trays. The pursuit of a small form factor introduced additional design complexities, including thermal management, EMI/EMC compliance, and optimal layout of external components.

Critical Requirements

- Modular conduction cooling
- Low-profile design
- Current sharing capability
- N+1 redundancy
- 10 ms hold-up time

SOLUTION

Advanced Energy responded swiftly—being the first supplier to offer a solution—with the AIF42BAC-01NT and AIF500-CASE-KIT, modular AC-DC power bricks designed for high reliability and maximum flexibility. These innovative power solutions provided a feature-rich platform, surpassing competitors with PMBus communication, active current sharing, internal in-rush limiting, and a user-friendly graphical interface.



RESULTS AND CONCLUSION

Advanced Energy's expertise and innovative solutions delivered significant value to both the customer and the industry:

- Early engagement positioned AE as a trusted, knowledgeable partner.
- The modular AC-DC bricks provided unmatched performance and flexibility for the customers optical network equipment.
- Outstanding technical and business unit support ensured a smooth deployment and customer confidence.
- AES's expanding portfolio enabled the customer to extend this robust power architecture to future programs and applications.

This collaboration exemplifies how AE's proactive support and feature-rich solutions drive innovation within fast-paced industries. By overcoming technical and operational hurdles, AE empowered the customer to deliver reliable, next-generation networking infrastructure to customers worldwide—setting a new benchmark for telecom and datacenter power solutions.



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