

GUEST AUTHORS

Modern Power Panels Bring Simplicity, Capacity and Intelligence



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No matter the chosen solution to meet the needs of a broadband network, there is always a common denominator — power. Whether one is considering the latest FTTX, or simply an extension of a time-proven coaxial network, the equipment bays require a solid, reliable power scheme.

When planning a new power supply for a single bay, or many bays, there are several key areas that should be considered. These are:

- Density
- System intelligence
- Ease of installation
- Capacity
- Simplicity

How a power solution addresses these challenges is key to maximizing the successful deployment of new, revenue producing services.

Density — maximize revenue producing rack space

With network latency pushing technology farther out into the network, the space needed to place such equipment is at a premium. Each rack unit (RU) therefore is highly valuable and must be maximized. Rack space that is unavailable due to “cable crowding” is wasted.

Power panels that are connectorized and route cables straight out from the back of the equipment minimize lost rack space. This approach makes a true 1 RU solution. In other words, the rack space directly below a well-designed power panel may be used for revenue-producing equipment.

System intelligence

As equipment is deployed deeper in networks, exponential growth of equipment locations naturally occurs. Each network element must have the ability to identify potential problems and notify technical support before a failure occurs. Like all other critical equipment, power panels should have such intelligence and capability.

Depending on local practice, power panels should have the ability to deliver simple alarm information via output contacts or, alternatively, real time intelligent information that serves to predict problems before they occur. Further, the ability to “daisy chain” multiple panels over a serial cabling scheme or integrated intelligence

in each panel that utilizes a single network connection to transmit critical data back to an operations center will simplify monitoring of multiple bays of equipment.

Intelligent power panels should monitor current at the individual circuit level, providing detailed information that is simply not available with feed-level monitoring. By measuring parameters such as current and voltage per input feed, individual output circuits and temperature probes, personnel will have access to a much more complete data picture. This allows operations to determine actual current usage, perform trend analysis, and gain critical insight into equipment performance.

Ease of installation

Connectorized cables will simplify the installation of a new power panel. The best design will incorporate many of the same tools, such as crimpers, that are typically used with standard lugs. Because screw terminations are eliminated, connectors can more quickly plug into the panel, meaning installation and upgrades are fast. The best designed connectors may be disassembled and reassembled in the field, incorporate a polarity-oriented plug, and should utilize a dual-locking retainer to ensure that they are not inadvertently disconnected.

Capacity

New panels should have the capability to handle multiple different combinations of circuit protection without the need to order a specific panel to accommodate a certain breaker or fuse. For example, a single 1 RU panel should be able to handle high current input 8x8 circuit breaker or TPA fuses, mid-current TPA/circuit breaker/GMT combinations, and low current 10x10 GMT and 15x15 GMT variations.

Simplicity

Panels should have alarm cards that facilitate easy field servicing. No matter the makeup of the breaker/fuse combination the best-designed power panel shares a common alarm card making the inventory of spares simpler to manage.

When considering new 1 RU DC power products, focusing on density, system intelligence, ease of installation, capacity and simplicity will help to get the most out of the new equipment deployment.