Product brochure

Cyberex® RPP power distribution
Remote power panel

Power and productivity
for a better world™

Cyberex® – power distribution Remote power panel (RPP)

With constantly evolving demands and the increasing need to store critical information, data center systems continue to be pushed to their limits. Industry dependence on the continuity of service dictates heightened electrical system requirements kept online by multiple sources of conditioned power. The method for power distribution and circuit protection within a data center must also be taken into consideration as a key factor in system uptime.

The RPP

Cyberex, an innovative leader in critical power switching and distribution, provides its customers with the most advanced RPP lineup in the industry. Cyberex RPPs utilize technology leading circuit protection components and a wide array of advanced circuit management options. Cabinet configurations are customizable to fit the footprint and access parameters for your data center needs.

The Cyberex family of remote power panels (RPPs) provides power distribution solutions designed to manage the most mission critical of applications. Inherent design benefits including: Current Limitation, Selective Coordination, Safety, and Reliability have become the standard in Cyberex RPPs and should be demanded as a standard in all your critical distribution systems.

Power distribution – RPP series

Product features

– Panelboard options: Up to 480V, Up to 400A, up to 168 circuits – Panelboards by ABB, Bussmann and Square D
– Input connections: main lug only, main circuit breaker, main switch
– Top or bottom entry/exit
– Multiple input capability and traditional configurations – up to 4 sources, 4 panelboards and 4 main circuit breakers
– Multiple footprint options – sizing as small as a 2' x 2' square raised floor tile
– Circuit management system provides enhanced power data collection
– Remote monitoring interface to building management system
– Welded frame door, door-in-door hinged dead front
– Seismic construction available
– Integrated IR port solutions to identify potential system issues

Product specifications

Electrical		
Input/output	3-phase, 4-wire + ground	
Input/output voltage	208/120V, 415/240V, 480/277V	
Input amperage	150/225/400A	
Panelboards	ABB, Square-D, Bussmann	
	Up to (4) 42 circuit output panelboards	
Source breakers	Up to 4	
Neutral rating	200%	
Dimensions/weight		
RPP	Width	24 in (61 cm)
	Depth	26 in (66.04 cm) or 38 in (96.5 cm)
	Height	77.75 in (197.484 cm)
	Weight	500-550 lbs (227–249 kg)
HPP	Width	30 in (76.2 cm)
	Depth	38 in (96.5 cm)
	Height	86 in (218.4 cm)
	Weight	850-900 lbs (363–408 kg)
General		
Natural convection cooled		
Hinged dead-front panel – split panel		
Single point ground		
Communications		
Modbus RTU (RS-485)		
Modbus TCP (with display)		
BACNET (optional)		
SNMP trap alarms		
Webserver		
Options		
Current limiting circuit breakers or fuses		
Local high resolution display		
Branch circuit monitoring		
Main feed circuit management		
Surge protective devices		
Plug-in or bolt-on branch circuit breakers		
Plug-in or fixed mount front source breakers		
Input junction boxes		
Isolated ground		
IR ports		
Standards		
NEMA (all applicable standards)		
ETL listed to UL 508A		
FCC compliant (part 15)		
ANSI C62.41		

Flexibility – reliability – safety

Cyberex FaultGuard™ RPP with ABB ProLine panelboards

The FaultGuard™ RPP with ABB ProLine panelboard provides a flexible, reliable, and safe solution for electrical distribution on the data center floor. The RPP's integral panelboard features touch safe, plug-in branch circuit breakers, designed for the most mission critical applications.

The ABB PL700 circuit breakers are among the industry's first UL current limiting branch breakers and provide the highest level of protection for sensitive downstream IT loads and the mitigation of arc flash hazard for workers. Along with providing superior short circuit current protection, these current limiting breakers are easily coordinated with upstream ABB circuit breakers, helping to eliminate the risk of cascading faults and unnecessary outages to critical loads.

Flexibility and future proofing are also inherent benefits of the FaultGuard™ RPP. The panel's touch safe plug in breakers allow for quick changes or replacement with minimal impact to the rest of the system. The FaultGuard™ RPP allows system owners to design in provisions to replace branch breakers and increase protection as their power demands increase on the rack. Proper foresight may allow system designers and data center owners to build in electrical infrastructure to support IT refreshes without the need for extended downtime.

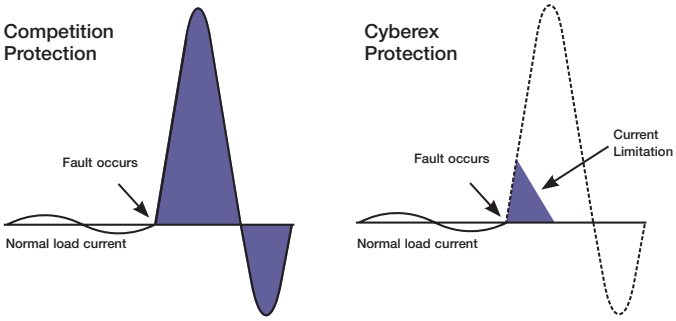
FaultGuard™ RPP features

– UL listed current limiting main and branch circuit breakers
– Touch safe
– Voltage ratings: 208/120V, 415/240V, 480/277V
– Current ratings: 225A, 400A
– 1 to 100A branch breakers at 208V
– 1 to 25A branch breakers at 480V
– Interrupting ratings: 35kA at 208V, 14kA at 480V
– Main/branch breaker coordination up to 35kA at 208V, 14kA at 480V
– Insulating resin encased bus
– Pluggable breaker with non-energized bolt on screw

Demand performance

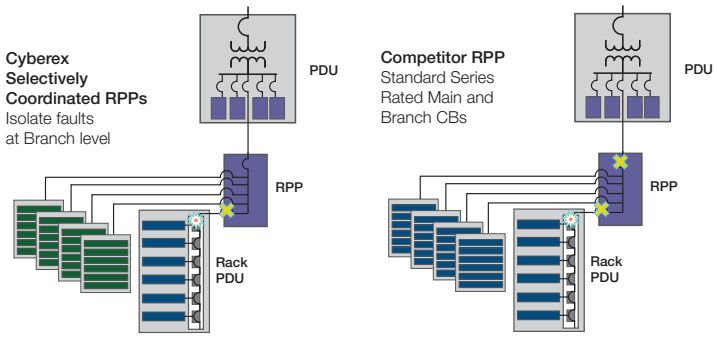
Current limitation

Cyberex's utilization of current limiting circuit breakers brings a whole new level of protection and peace of mind to the distribution of electrical power on the data center floor. Two of the most notable benefits of current limitation are increased protection for downstream system components and the mitigation of arc flash hazard for workers. Both mechanical and thermal forces are drastically reduced through current limitation, which in a data center, means less potential damage or strain on the sensitive and expensive IT equipment. This heightened protection helps remove worries of extended downtime due to repairs or replacing of damaged equipment. Current limitation is also the driving factor to reducing the energy released during an arc flash event.



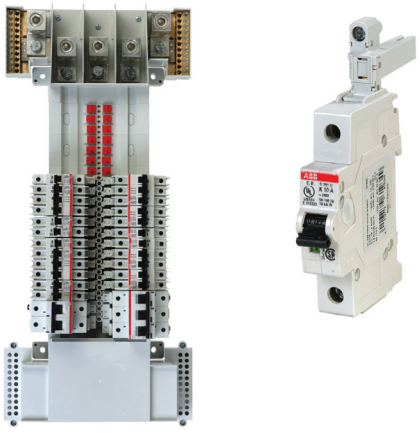
Selective coordination

Selective coordination defines a system's ability to isolate a fault and increase system reliability. If a fault was to occur in a selectively coordinated system *(Figure A)* the overcurrent protective device closest to the fault will clear the fault and leave the rest of the system undisturbed. If the system was not selectively coordinated, *(Figure B)* like the majority of standard RPPs, the breaker closest to the fault may or may not clear the fault before upstream breakers start to open causing unnecessary loss of power to critical loads.



Safety

Working on live electrical equipment is never recommended, however sometimes becomes a 'necessary' task due to the criticality of system loads in a data center. Cyberex RPPs significantly enhance worker safety due to its touch safe panelboard chassis and plug in current limiting branch breakers. Along with drastically reducing the shock hazard, the use of current limiting breakers significantly reduces the arc flash potential to which a worker could be exposed. Both benefits help users comply with NPFA 70E guidelines and OSHA standards.



High density solutions

Cyberex offers the complete current limiting, selectively coordinating solution for your high power, high efficiency data center

The industry demand to increase data center efficiency and push the limits of power density at the rack has introduced new design trends. While one proposed solution, raising the distribution voltage in the whitespace, helps meet these demands, data center systems designed at higher voltages (415V, 480V) provide system owners and designers with a new set of challenges and concerns to overcome. Selective coordination, increased arc flash potential, protecting sensitive IT equipment and complying with SCCR and IR code requirements take center stage. These heightened concerns are mainly driven by the removal of a transformer and the potential increase in available fault current when compared to traditional 208V designs. With the high available fault currents, average main and branch breaker combinations will not allow branch breakers to trip independently of the main, forcing the shutdown of an entire panelboard to clear an overcurrent on a branch circuit. This lack of coordination will in turn cause unnecessary downtime to critical server loads.

Cyberex FaultGuard™ RPP with ABB ProLine panelboards

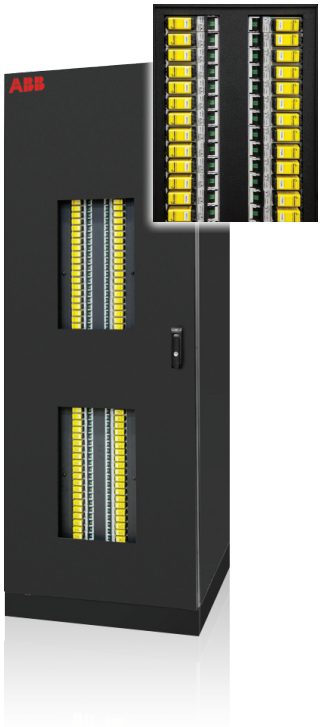
The Cyberex FaultGuard™ RPP helps remove the electrical concerns that come along with high density data centers. As voltage increases on the data center floor so does the potential for electrical dangers. Cyberex's RPP with current limiting branch circuit breakers, helps mitigate the risk of arc flash and provides the highest level of protection for IT equipment. The resin encased bus design and touch safe plug in branch breakers reduce shock hazard and increase flexibility after installation. Inherent coordination up to moderate fault levels reduces risk of cascading faults keeping power to critical loads.

- UL listed current limiting main and branch circuit breakers
- Touch safe
- Voltage ratings: 208/120V, 415/240V, 480/277V
- Current rating: 225A, 400A
- 1 to 25A branch breakers at 480V
- Interrupting rating: 14kA
- Main/branch breaker coordination up to 14kA at 480V

Cyberex HPP with fused switch panelboards

The Cyberex Fused HPP with fused switch branch panelboards delivers a worry free solution for systems with high fault currents assuring current limiting protection and full coordination in data centers for up to 200kA at up to 600V. Build in electrical infrastructure for multiple IT refreshes, increasing protection as your load grows without interruption or downtime. The finger safe design allows users to adjust protection as load requirements change by simply replacing an individual branch circuit fuse to the new required amp size without de-energizing panel main.

- Current limiting fuses
- Finger safe
- Voltage ratings: 208/120V, 415/240V, 480/277V
- Current ratings: 225A, 400A
- Branch circuit size: 1–100A
- Interrupting rating: 200kA at 600V
- Main/Branch device coordination up to 200kA at 600V
- Fuse rejection features allow adjustment of fuse ampacity up to the switch rating providing unparalleled flexibility as load requirements change.



Circuit management

Designed for performance, flexibility and usability

Take your RPP to the next level by managing your critical loads at the individual branch circuit level. Rely on Cyberex's circuit management solutions to monitor and alert your staff of potential problems before they occur. Understanding load profiles is the key to proactively managing your data center distribution system and avoiding unnecessary downtime.

– Branch circuit management – Up to four (4) 42 circuit panel boards (168 poles)
– Sub feed circuit management – Up to thirty two (32), 3-wire or twenty four (24), 4-wire sub feed breakers
– Main feed circuit management – Up to four (4) sources in multi-fed RPPs can be monitored: phases, neutral and ground

Advanced communication

– Communicate valuable system data to building management systems (BMS) or local display
– Protocols available: Modbus RTU, Modbus TCP, BACNET, SNMP Trap Alarms, Web Server

Monitor system parameters including:

– Voltage-current (RMS)
– MIN current
– MAX current
– kW (power)
– kVA-load
– Power factor (PF)
– Total harmonic distribution (THD)

Configure system warnings and alarms including:

– Over/under current
– Over/under voltage
– Over kW
– Over THD
– Low PF
– Phase Loss

Ethernet Gateway

A single local display can concentrate data from 16 Cyberex circuit management systems and send it to remote monitoring systems via modbus TCP or the web server. Connects to your building management system or a standard web browser.

Services

Minimize downtime and ensure optimal performance

Service your Cyberex equipment with T&B Power Solutions' superior service solutions

Signature services

– Extended warranty
– Preventative maintenance plans
– Break fix plan
– Spare parts replenishment
– Guaranteed response times (24, 8, 4 hr)
– 24 x 7 x 365 emergency support

Professional services

– Start up and commissioning services
– Reliability enhancements
– Branch circuit monitoring (retrofit)
– Project management
– On-site training power academy

Learn about Cyberex® advancements in thermal scanning technology **tnbpowersolutions.com/ir_port**

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