

Rack PDU Marketing Playbook

Emerson Network Power Rack Power Distribution Unit (Rack PDU) Family

Emerson Network Power offers the industry's only complete portfolio of Adaptive, Managed and Basic rack PDU solutions with highest levels of availability, easy integration and the energy management, simplicity and savings that make the most sense for your customer's data center. The new rack PDU family of products from Emerson Network Power provides the strategic 'last' link in the power chain that delivers the business critical power to keep IT systems available. In addition, the rack PDUs from Emerson Network Power provide unique capabilities that position your customer to take advantage of the growing Data Center Infrastructure Management trends and address concerns:

- Access to rack level IT equipment
- Access to environmental information
- Ability to optimize and control power to IT equipment
- Manage capacity at the rack level

Positioning the Emerson Network Power rack PDUs:

Emerson Network Power rack PDUs have four key advantages, as follows. See the new [Market Brief](#) for a business-level explanation of how these can help your customers achieve their data center objectives.

1. Designed For High Availability

Emerson Network Power rack PDUs are designed specifically to accommodate higher power densities and be resistant to higher temperatures, commonly found in modern data center racks. Unit intelligence is designed to optimize basic power availability. They are easily upgradable to minimize downtime and carry manufacturer-provided support to ensure your own SLAs.

2. Optimized Energy And Capacity Management

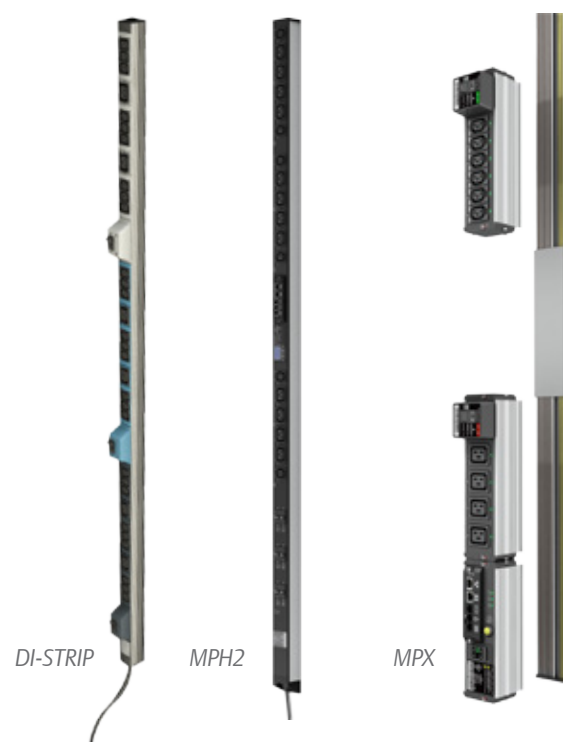
By providing highly accurate and comprehensive energy metering from the strip to receptacle levels, MPX™ and MPH2™ rack PDUs provide visibility to control energy usage by IT equipment, right-size your power infrastructure and eliminate unnecessary capital expense. These Rack PDUs also have the lowest energy consumption within their respective category.

3. Simplified Integration With Management Tools

MPX and MPH2 rack PDUs offer a simplified approach to implementation and change management that translates to real cost savings and operational advantages. They support all major industry-standard management, authentication and encryption standards and protocols, and they fully integrate into Emerson Network Power's industry-leading KVM, serial console and infrastructure management systems. Plus, they integrate rack level power and environmental monitoring information from the rack PDUs with higher level data center management software provided by Emerson or third parties.

4. Compatibility With Racks And Power Chain

Deployable in any rack, Emerson Network Power rack PDUs are simple to install and move. When Emerson racks are purchased, the rack PDUs may even be pre-installed to save time and cut costs. All major global voltage and amperage combinations typically used in a data center or remote site are available—an Emerson Network Power expert can assist in selecting the right rack PDU for your power chain needs.



Customer Pains and Key Features

High Availability, Optimized Energy Capacity Management, Easier Application & Appliance Integration, Easier Physical & Electrical Integration

	Customer Pains Solved	Key Features	Qualifying Questions
High Availability	Hung equipment can easily be restored by power cycling the equipment, but that often requires someone visiting the equipment to press the power button or pull the plug	MPH2 rack PDU series include models with remote switching capabilities which offer a remote method when cycling the power to the equipment.	<ul style="list-style-type: none"> Do you ever have to call someone to turn on/off IT equipment at remote locations? Have you ever had to travel off-site to power cycle equipment?
	High temperature in hot aisles can lead to unreliable operation of rack PDUs and downtime.	MPH2 rack PDUs are rated at 60°C and safely operate in all known environments.	<ul style="list-style-type: none"> What is the temperature at the back of the rack? Did you experience issues with overheated rack PDUs?
	Rack PDUs consume much energy and partly eat up the achieved energy savings.	The design of MPH2 ensures the lowest energy consumption of all switched rack PDUs in the industry: 3-5W only.	<ul style="list-style-type: none"> How much power do your rack PDUs need? Do you have sufficient power capacity?
	Intelligent rack PDUs add components and so could impact/reduce availability.	MPH2 rack PDUs enhance continuous power delivery by use of bistable relays. The rack PDUs communications module are hot swappable and allow replacement without service interruption.	<ul style="list-style-type: none"> Did you think about reliability of your rack PDUs? What happens if a PDU output loses power? How do you manage replacement of a rack PDU?
	Power cords are too loose and therefore can accidentally be unplugged, leading to power loss of critical systems.	All MPH2 rack PDU models have the capability to utilize lockable outlet cables.	
Optimized Energy Capacity Management	Lack of accurate capacity measurements can lead to overloaded circuits which can cause unplanned downtime. Lack of precise data prevents energy efficiency improvements and chargeback of energy cost.	Thresholds and alerts can be created to provide early notification. This helps the IT staff make changes to avoid future power problems. MPH2 provides a metering accuracy of +/- 1% and includes all relevant information such as power factor and crest factor.	<ul style="list-style-type: none"> Has anyone ever overloaded a circuit? What happened after it went down? How long did it take to recover? How precise should power data be to allow chargeback of energy cost and reduction of energy consumption? How do you justify replacement of old systems? Did you face issues with equipment harmonics?
	It often takes dedicated appliances to measure and monitor temperature and humidity down to the rack level.	MPH2 Rack PDUs support external sensors (up to 10 per PDU) to measure temperature, humidity or monitor dry contacts and create alarms when thresholds exceeded.	<ul style="list-style-type: none"> Do you currently use any tools for measuring temperature or humidity at the rack level? Have you had any issues with hot spots?
Easier Application & Appliance Integration	Gathering power consumption data is typically a manual process and only provides a snapshot of the power being used at the time it is gathered.	Data logging and centralized management software (RPM, Liebert SiteScan, <i>Trellis</i> TM platform) provide historical data and trends over a period of time, not just at a single moment.	<ul style="list-style-type: none"> How do you currently measure power capacity at each rack? Is it a manual process? How often is this data being collected?
	I am not able to get to my Rack PDU's remotely when my primary network is down	Out of band management capabilities through integration with Avocent MergePoint Unity, ACS and DSVIEW	<ul style="list-style-type: none"> How do you manage Rack PDU's today? What happens when your primary network goes down?
	Intelligent Rack PDU's create a lot of overhead in trying to manage them	Integration with higher level software allows data available from MPH2 to be consumed seamlessly. Support for all major authentication protocols and encryption capabilities enables seamless integration into enterprise networks.	<ul style="list-style-type: none"> How do you manage your Rack PDU's today? How do you use the data available from Intelligent Rack PDU's? What have been some of your pain points while managing Rack PDU's in the past?
Easier Physical & Electrical Integration	Sometimes there is not enough rack space to add intelligent rack PDUs or they would reduce airflow in the rack.	MPH2 have extremely small form factor (4.4 sq. in) and so maximize airflow and minimize interference with IT equipment.	<ul style="list-style-type: none"> How much rack space do you have to add PDUs? Have you thought about airflow when adding rack PDUs?
	Installing rack PDUs into the racks occupies resources and is not only time consuming but also cumbersome.	MPH2 can be ordered preinstalled into our racks, which minimizes time and effort to install. Tool-less mounting, flexible power cord entry and slim profile breakers simplify installation.	<ul style="list-style-type: none"> Do you have the resources to install the rack PDUs? How much time does it take you to install them? How much space do you have to install the rack PDUs?

TARGET CONTACTS

Data Center Manager – Charged with aligning power cost with service delivered as well as aligning power delivered with SLA performance

Data Center Architect– Needs to manage data center risk as well as have a high level insight on power usage and site efficiency.

System Administrator– Charged with managing multiple applications and servers and training personnel

4 Reasons to Buy MPH2™ over Competitive Solutions

1- High Availability

Compared to the competition, the MPH2 offers superior availability for your business-critical functions, with:

- High temperature rating (60°C) – allows continuous operation under high heat conditions common in data center racks.
- Modular hot swappable controller card – separates power distribution and communications, enabling continuous distribution when a communications module fails or is replaced.
- 100% rated magnetic hydraulic circuit breakers – UL489 certified resettable breakers prevent nuisance tripping.
- Locking outlets – enables the equipment plugs to stay locked in place.
- Bi-stable/normally closed relays – allow for basic power distribution even when relays may not have power due to power supply issues. Bistable relays also allow customers to choose the state they prefer for the outlets after a power outage.

	Competitive Feature
APC/Schneider	<ul style="list-style-type: none"> • Max temperature of only 45°C - could be less reliable in hot aisles • No hot swappable communications module • No electronic overcurrent protection • No bi-stable or normally closed relays
ServerTech	<ul style="list-style-type: none"> • Only a few 60°C models. Other models could be less reliable in hot aisles • Several models use fuses and not Circuit breakers. Fuses cannot be reset and involve significant downtime when being replaced • No electronic overcurrent protection • Communications are embedded - not hot swappable • Locking outlets and locking power cords only available on select models
Raritan	<ul style="list-style-type: none"> • No electronic overcurrent protection • Communications are embedded - not hot swappable • Locking outlets and locking power cords only available on select models
Rittal	<ul style="list-style-type: none"> • Max temperature of only 45°C - could be less reliable in hot aisles • No electronic overcurrent protection • Communications are embedded - not hot swappable • Locking outlets and locking power cords not available

2- Optimized Energy Capacity Management

The MPH2 offers enhanced energy capacity management when compared to the competition, with:

- Metering of all electrical parameters with +/- 1% accuracy – enables better management to prevent overloads and to enable chargebacks.
- Lowest PDU power consumption amongst all switched rack PDUs (3-5W) – operates with high energy efficiency.
- Power and environmental trend reports through integration with Avocent® Rack Manager, Liebert Nform™ and the Trellis™ platform – improved monitoring, control, and reporting of trends.
- Crest factor measurement - provides detailed information on what specific piece of IT equipment might be creating harmonics (Available only on -R and -M models)

	Competitive Feature
APC/Schneider	Less accurate metering (+/- 3%)
ServerTech	Less accurate metering (+/- 2%)
Raritan	No crest factor measurement
Rittal	<ul style="list-style-type: none"> • Limited visibility into power factor, with no crest factor • Less accurate metering (+/- 2%)

4 Reasons to Buy MPH2™ over Competitive Solutions (Continued)

3- Application and Appliance Integration

The MPH2 makes integration with existing applications and appliances simpler and more cost-effective than competitive solutions, via:

- Up to four units sharing an IP address within a Power Array – reduces the expense and complexity of individual IP addresses.
- Integration with Avocent® ACS, Avocent MergePoint® Unity, Avocent Universal Management Gateway and Avocent DSView4™ – Rack PDUs are a part of an overall rack-level access and control solution. It also significantly simplifies association of rack PDU outlets to the IT gear they are connected to.
- IPv6 Support – future-proofs your investments. Also, a typical requirement for Federal govt. customers
- Support of remote authentication protocols (LDAP, Active Directory, Radius, Kerberos, TACACS+) and encryption – accurately maintain permissions for each rack PDU.

	Competitive Feature
APC/Schneider	<ul style="list-style-type: none"> • No shared IP addresses • Supports Radius authentication protocol only • No software dedicated to Centralized Rack PDU Management
ServerTech	<ul style="list-style-type: none"> • Only two rack PDUs can share an IP address
Raritan	<ul style="list-style-type: none"> • Supports Radius, LDAP, Active Directory authentication only
Rittal	<ul style="list-style-type: none"> • Supports Radius, LDAP, Active Directory authentication only • Redundant communications are only optional • Difficult to manage for LINUX/network administrators (no CLI with SSH support)

4- Easier Physical and Electrical Integration

The MPH2 is designed to be more easily deployed into your data center and electrical infrastructure, with:

- Ability to be preinstalled in Emerson Network Power rack solutions – save time and money on deployment.
- Slim profile circuit breakers – smaller form factor.
- Hardwired and pluggable models – selection of models to suit individual site needs.
- Integration into Smart Solutions
- Flexible Input Power Cord entry - minimizes challenges associated with power cable bend radius.

	Competitive Feature
APC/Schneider	<ul style="list-style-type: none"> • No rack pre-installation means more effort to deploy • No Hardwired models • Limited Outlet Level Metered and Switched configurations • No Outlet Level Metered only configurations • No flexible input power cord entry
ServerTech	<ul style="list-style-type: none"> • Larger form factors hinder air flow and take up more space • Flexible input power cord on select models only • No Integrated Smart Solutions offering
Raritan	<ul style="list-style-type: none"> • No rack pre-installation means more effort to deploy • Larger form factors hinder air flow and take up more space • No Integrated Smart Solutions offering • No flexible input power cord entry
Rittal	<ul style="list-style-type: none"> • No Integrated Smart Solutions offering

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Comparison of MPH2™ vs PM™ and MPH™

Seamless Manageability & Integration

Attribute	MPH	PM	MPH2	Benefit
4 units in a Power Array	✓	✓	✓	Reduce IP addresses for management of several PDUs
Management Modes	Web UI SNMP Telnet	Web UI CLI with SSH SNMP Telnet	Web UI CLI with SSH SNMP Telnet	Supports preferred modes of management used by Windows Administrators (GUI) as well as Linux Administrators (CLI). MPH2 provides Cisco like CLI which is the preferred choice
Remote Authentication & Encryption	✗	✓	✓	Seamless integration within enterprise security architecture
Display Options	Flexible (Option)	On-board (Std.)	On-board (Std.) Flexible (Option)	Flexible display that can be shared between 4 PDUs provides easy visibility and advanced diagnostics
IPv6 Support	✗	✓	✓	Seamless integration within federal government and enterprise networks
Sensor Integration	Temp., humidity, dry contact	Temp., humidity	Temp., humidity, dry contact	Consolidated rack level power and environmental monitoring
Integration with Avocent® ACS™, MergePoint® Unity & Universal Management Gateway	✗	✓	✓	Out of band management of PDUs, reduction of IP addresses used to manage several PDUs, consolidated management of all equipment in a rack
Integration with Emerson Network Power Software stack	✓	✓	✓	PDU is a part of complete IT access and control solution (DSView™); Comprehensive Facilities Monitoring Solution (Liebert® Nform™ & Liebert SiteScan); Comprehensive DCIM Solution (Trellis™ Platform)
Integration with Rack Power Manager	Ltd.	Full	Full	Consolidated centralized management of several PDUs

Easier Physical & Electrical Integration

Attribute	MPH	PM	MPH2	Benefit
Preinstalled in Emerson Network Power racks	✓	✓	✓	Minimizes time and effort required to install several rack PDU units
Cross sectional area	5.9 sq. in	6.9 sq. in	4.4 sq. in	Lower interference with airflow and IT equipment
Slim profile breakers	✗	✗	✓	Lower interference with airflow and IT equipment
Input Power	Pluggable	Pluggable	Pluggable, Hardwired	Minimizes installation cost involved with higher amperage circuits and with busway systems
Flexible Input Power Cord Entry	✗	✗	✓	Simplifies electrical installation of higher amperage units by minimizing bend radius of power cords
Preinstalled toolless mounting buttons	✓	✓	✓	Simplifies installation time and effort
North American Voltages Supported	120V 1P 208V 1P 208V 3P 208/120V 3P 415V 3P	120V 1P 208V 1P 208V 3P	120V 1P 208V 1P 208V 3P 208/120V 3P 415V 3P	Fits into any electrical infrastructure, allows customers to standardize across one vendor
Outlet Types Supported	NEMA 5-20 C13 & C19	C13 & C19	NEMA 5-20 C13 & C19	
Max C19 in 1 PDU	12 (0U) 0 (1U)	3 (0U) 6 (1U)	12(0U) 6 (1U)	Improved support for higher power densities
Max Outlets – Strip Metered	27	24	42	

Comparison of MPH2™ vs PM™ and MPH™ (Continued)

Optimized Energy & Capacity Management

Attribute	MPH™	PM™	MPH2™	Benefit
Metering Accuracy (V/A)	+/- 1%	+/- 5%	+ / - 1%	Enables chargebacks and regulatory credits
PDU Ideal Power Consumption Switched PDU	10W	25W	5W	Lower operating costs
Branch & Strip Level Metering	✓	✓	✓	Availability of power to all equipment on a branch
Outlet Level Metering with Grouping	✗	✓	✓	Visibility into IT Equipment power consumption
Metering Parameters	V, A, kW, kWh, PF	V, A, kW, kWh, PF	V, A, kW, kWh, PF, Crest Factor	Full visibility into power consumption at the rack level that ultimately helps reduce IT equipment energy consumption
Embedded Data Log	✗	✓	✓	Prevents accidental unplugging
Unbalanced Phase Notification	✗	✗	✓	Balanced loads across all phases for optimum utilization of electrical infrastructure
Power and environmental trend reports through integration with Rack Power Manager, Liebert® Nform™ and Trellis™ Platform	✓	✓	✓	Historical information makes it easy to take appropriate decisions regarding optimizing to reduce energy costs, make optimum utilization of upstream electrical infrastructure and ensure high availability

Focus on High Availability

Attribute	MPH	PM	MPH2	Benefit
High Operating Temp. Rating (°C/°F)	55/131	45/113	60/140	Higher reliability in hot aisles
Modular Communications	✓	✗	✓	Seamless upgradability and serviceability
Relay Architecture for Switched Units	NC	NO	Bistable	Bistable relays provide continued basic power distribution in the event of a relay failure while maintaining Sequential startup
Locking Outlets	✗	✗	✓	Prevents accidental unplugging of equipment
Current Metering	CT's	Sensors	CT's	CT's provide metering without being in path of power distribution
100% Rated Magnetic Hydraulic breakers	✓	✗	✓	Minimize nuisance tripping due to temp. changes or minor overloads; Easy reset
Integrated Environmental Monitoring	✓	✓	✓	Preemptive notification of rack level environmental issues
Thresholds & Alarming	✓	✓	✓	Preemptive notification before problems occur
Redundant Serial Communication path	✗	✓	✓	Secondary way of communication when primary network path is not available

Be the trusted advisor to your customers and help them improve availability, increase their power knowledge, achieve greater efficiency and simplify rack installations.

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