

# Rack PDUs

Liebert MPX™	2.4	to	2.11
Liebert MPH™	2.12	to	2.17
Knürr DI-STRIP®	2.18	to	2.57
Inline Metering (IMS)	2.58	to	2.64



## Safe, efficient and economical: Rack PDUs from Emerson Network Power

A reliable power supply is particularly important in a server rack! Emerson Network Power's "Power Distribution Units" (PDU) provide the highest possible level of **safety, security and availability** with their robust electro-mechanical setup.




The rack PDUs ensure a sound **economical benefit**. The Liebert MPX™'s modularity also enables requirements-oriented and constantly compatible expansion.

The rack PDUs provide the perfect economical solution for every specific requirement and exceptional efficiency with numerous technical features.



*Interacting with rack PDUs, rack monitoring systems and cooling systems, Liebert NFORM guarantees the monitoring and controlling of all relevant infrastructure parameters in server rooms and data centers, alarms as required, and even intercepts controlling to prevent damages.*

### PDU product series overview:

<b>BASIC</b>	 <p><b>Features:</b></p> <ul style="list-style-type: none"><li>■ High stability and torsional strength provided with closed sheet steel extrusions and ideal integration into Knürr rack systems.</li><li>■ Best possible conductivity: continuous brass busbars with many models.</li><li>■ Double spring contacts for shock hazard-proof and low contact resistance.</li></ul>
<b>MANAGED</b>	 <p><b>Additional features:</b></p> <ul style="list-style-type: none"><li>■ Highest possible safety, security and availability with an operating temperature of max. 55°C.</li><li>■ Extensive measurement functions (power, current, voltage and energy), with higher measurement accuracy of up to <math>\pm 1\%</math>.</li><li>■ Remote-switchable outputs with many models.</li><li>■ Same communication cards used as with Liebert MPX, which means same software interface as with administration.</li><li>■ Up to 4 Liebert MPX/MPH can be controlled via one IP.</li><li>■ External sensors and a display can also be connected.</li></ul>
<b>ADAPTIVE</b>	 <p><b>Additional features:</b></p> <ul style="list-style-type: none"><li>■ The Liebert MPX is a modular PDU; input and output modules can be flexibly equipped as required.</li><li>■ Additional wiring between the module is not required; a fixed databus is integrated on a continuous busbar.</li><li>■ Highest power density up to max. 3 x 63 A per bar possible.</li><li>■ Possible failures can be detected early on with additional monitoring (N-conductor, apparent power, crest factor and power factor).</li><li>■ Depending on the output module, measuring and remote switching is possible up to output level, which allows each server to be monitored.</li><li>■ The output modules can be changed during running operation; there are no downtimes.</li></ul>

# Emerson Network Power Rack PDUs Europe – product series overview

## Overview : Emerson Network Power Rack PDUs Europe

	Knürr DI-STRIP Basic Rack PDU®			Liebert MPH™ Managed Rack PDU		Liebert MPX™ Adaptive Rack PDU			
Features	Knürr DI-STRIP	Knürr DI-STRIP M	Knürr DI-STRIP RM	Liebert MPH Branch Monitored	Liebert MPH controlled	Liebert MPX Elementary	Liebert MPX Elementary Phase monitored	Liebert MPX Branch monitored	Liebert MPX Receptacle managed
Power distribution	●	●	●	●	●	●	●	●	●
Modular						●	●	●	●
Display		Fixed	Fixed	Modular	Modular		Modular	Modular	Modular
Remote interface			●	●	●		●	●	●
Measuring at input level		●	●	●	●		●	●	●
Measuring per group				●	●			●	●
Measuring per output									●
Switching per output					●				●
Measurement parameters		A	A	A,V,W,KWh, Hz	A,V,W,KWh, Hz		A,V,W,KWh, Hz	A,V,W,KWh, VA, Hz, power factor	A,V,W,KWh, VA, Hz, power factor, crest factor
Input power	1ph + 3ph max 32A	1ph + 3ph max 32A	1ph + 3ph max 32A	1ph + 3ph max 32A	1ph + 3ph max 32A	1ph + 3ph max 63A	1ph + 3ph max 63A	1ph + 3ph max 63A	1ph + 3ph max 63A
Outputs	IEC C13&C19 Schuko Switzerland France	IEC C13&C19 Schuko Switzerland France	IEC C13&C19 Schuko Switzerland France	IEC C13&C19	IEC C13&C19	IEC C13&C19 Schuko	IEC C13&C19 Schuko	IEC C13&C19 Schuko	IEC C13&C19 Schuko
Connection of different kinds of sensors				●	●		●	●	●

The Liebert MPX™ and Liebert MPH™ accessories are largely identical, which simplifies administration!

INFO

You will find further details and order numbers in our product catalog:

[www.EmersonNetworkPower.eu](http://www.EmersonNetworkPower.eu)

# Emerson Network Power Rack PDUs

## Emerson Network Power Rack PDUs

Liebert MPX™	2.4
Products	2.8
Liebert MPH™	2.12
Products	2.14
Knürr DI-STRIP®	2.18
Knürr DI-STRIP®	
DI-STRIP® RM	2.22
DI-STRIP® M	2.23
DI-STRIP HighPower®	2.24
TDI-STRIP® TriplePower®	2.26
DI-STRIP® BladePower®	2.28
DI-STRIP® PizzaPower®	2.29
DI-STRIP® Classic	2.29
DI-STRIP® Compact	2.30
DI-STRIP® Protector	2.31
DI-STRIP® Power Cleaner	2.33
DI-STRIP® Safety Basic	2.34
DI-STRIP® Safety Standard	2.35
DI-STRIP® Master-Slave	2.36
DI-STRIP® Combi	2.37
GST18, 1-phase	2.38
GST18, 3-phase	2.40
Knürr DI-STRIP®	
Euro Plug System	2.42
Knürr DI-STRIP®	
for France	2.45
Knürr DI-STRIP®	
for Switzerland	2.55
Inline Metering System (IMS)	
Knürr DI-STRIP® IMS	2.62
Liebert MPX™ IMS	2.63
Knürr Modular IMS	2.64



### INPUT POWER

- Configurable: 20 to 60 A (USA); 16 to 63 A (EU);
- Single-phase and three-phase
- Cable routing from above and below



### OUTPUT DISTRIBUTOR

- Scalable, combination-compatible and swappable during operation
- Single-phase NEMA 5-20R, IEC-C13, IEC-C19, Schuko
- Load balance



### MODULARITY

- Input modules
- Output modules
- External display
- External sensors



### MONITORING

- Various levels: Input level, module level, output level
- Temperature and humidity
- Door contacts and floating break input contacts



### REMOTE SOCKET CONTROL

- Socket level



### LOCAL MONITORING

- Display for user
- Can also be mounted outside the rack



### REMOTE MONITORING

- Secure web and SNMP interfaces
- Liebert Nform
- Avocent DSView



### OVERLOAD PROTECTION

- Physically and electrically insulated circuit breakers for every socket module



### RACK PDU ARRAY™

- One IP for up to 4 rack PDUs
- Liebert MPX™ and Liebert MPH™ in the same private network



### FORM FACTOR

- Vertical mounting (0 U)
- Fits into trade standard 23/42 U racks and/or 800 mm wide racks





## Liebert MPX™

# Adaptive Rack PDU: Respond requirements-oriented to every change!



reddot design award  
winner 2011

The Liebert MPX™ modular rack PDU system is particularly impressive with its maximum flexibility, highest possible availability and low operating costs. With the Liebert MPX™ user can quickly and specifically react to new requirements for power supply and rack management. The Liebert MPX™ gives users the ability to dimension their rack PDU system so that all current requirements are met first off. The system can be flexibly adjusted when requirements change later on. The Liebert MPX™ builds on a design that is based on a power supply/communication bus and on input/output modules.



### Status display (RPC-BDM)

Can be easily positioned at the optimum spot for the individual rack; also functions outside the rack. This connected display can be mounted just as the user wishes.

### ■ Highest possible security and availability with:

- Redundant control electronics power supply (with redundant tapping of various phase in the Power Entry Module).
- Fixed databus on the busbar (making cable breaks a thing of the past).
- With complete data tapping on the PEM (without any additional external monitoring devices).
- Additional neutral conductor measurement.
- Crest factor measurement (mains quality evaluation, allowing power supply failures to be identified early on).

### ■ Maximum flexibility and scalability with:

- Configuration of all modules according to their requirements (patented quick fixing for safe installation).
- One busbar for different networks and power levels – input module can be freely selected.
- All other components are "hot swappable" in running operation.
- Mobile display for reading all MPX™ data on the rack.
- Optical slot space display (easy server slot space identification at the push of a button).

### ■ Highest possible power levels in all areas with:

- Power illustration up to 28 kVA per bar and 55°C ambient temperature.
- Only one IP address for up to 4 bars with 24 modules.
- Plug&Play for numerous sensors.
- Extensive monitoring with a measuring accuracy of +/- 1% up to output level.
- Module and sensor autodetect function with operating software.
- Lowest possible MPX™ system power loss.

### ■ Perfect for blade servers and changing environments

Data centers work more and more with blade servers and require more processor power on low rack space; cabling must be simplified; power consumption must be reduced. With the Liebert MPX™ the data center can quickly react to changes, which is why our product is the right choice for you infrastructure's administration.

## Liebert MPX™: Four equipment models for different requirements

The Liebert MPX™ modular rack PDU consists of various modules. The foundation stone is a busbar, which is responsible for the power and communication distribution to the individual modules. The input power is routed via the Liebert MPX™ Power Entry Module (Liebert MPX™ PEM) to the Liebert MPX™ system. Different output modules (Liebert MPX™ Branch Receptacle Modules, Liebert MPX™ BRM) are available as required. Four different variants can be set up depending on the busbars' equipping:

### 1. Liebert MPX™ Elementary

Modular basic power distribution without measurement and control function. An upgrade to another equipment model is no problem!

### 2. Liebert MPX™ Elementary Phase monitored

Modular power distribution with measurement on the input per output module. An upgrade to the next line up is possible by equipping with the respective output modules.

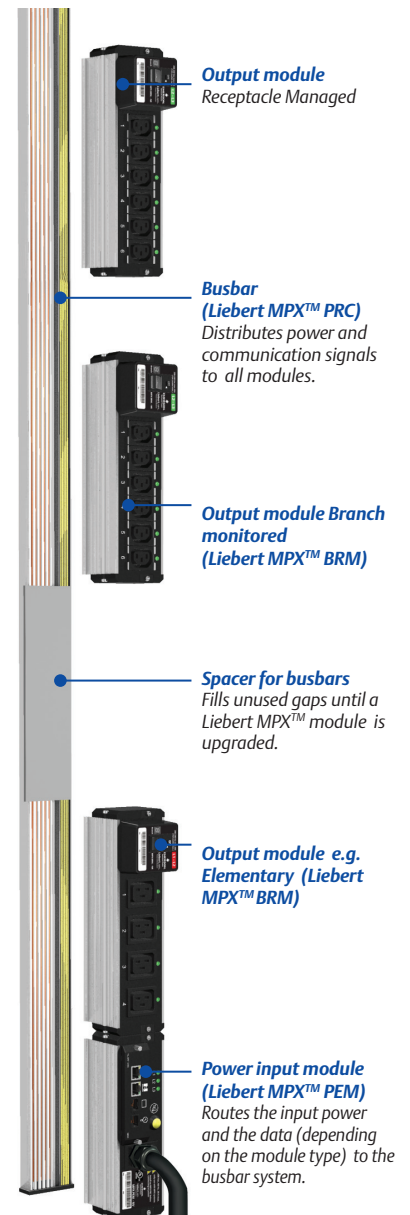
### 3. Liebert MPX™ Branch monitored

Modular power distribution with measurement on the input per output module. An upgrade or downgrade to another line is possible by equipping with the respective output modules.

### 4. Liebert MPX™ Receptacle managed

Modular power distribution with measurement on the input per output module and per output. The individual outputs can also be switched on and off remotely. A downgrade to another line is possible by equipping with the respective output modules.

A combination of the "Elementary Phase monitored", "Branch monitored" and "Receptacle managed" lines on a shared busbar is also possible and is one of the exceptional features of the Liebert MPX™. Interfaces for the network communication, the sensors and/or the local display are provided by the Liebert Rack PDU Card (Liebert RPC) in the Liebert MPX™ PEM. The Liebert RPC Card enables connection to an optional RPC Basic Display Module (RPC BDM) to display the local status and alarms.



# Liebert MPX™, equipment models in Europe

			Four equipment models			
		Order number	Liebert MPX™ Elementary	Liebert MPX™ Elementary Phase monitored	Liebert MPX™ Branch monitored	Liebert MPX™ Receptacle managed
<b>Busbar</b>	Length 1035	MPXPRC-V1035XXX	x	x	x	x
	Length 1880	MPXPRC-V1880XXX	x	x	x	x
<b>Input modules</b>	1ph 32A fixed*	MPXPPEM-EHAEXQ30	x			
		MPXPPEM-EHAAXQ30		x	x	x
	3ph 16A fixed	MPXPPEM-EHAEXT30	x			
		MPXPPEM-EHAAXT30		x	x	x
	3ph 32A fixed	MPXPPEM-EHAEXR30	x			
		MPXPPEM-EHAAXR30		x	x	x
	3ph 63A fixed	MPXPPEM-EHBEXZ30	x			
		MPXPPEM-EHBAXZ30		x	x	x
<b>Output modules Elementary</b>	IEC-C13 L1	MPXB RM-EEBC7N1N	x	x		
	IEC-C13 L2	MPXB RM-EEBC7N2N	x	x		
	IEC-C13 L3	MPXB RM-EEBC7N3N	x	x		
	IEC-C19 L1	MPXB RM-EEBC4O1N	x	x		
	IEC-C19 L2	MPXB RM-EEBC4O2N	x	x		
	IEC-C19 L3	MPXB RM-EEBC4O3N	x	x		
	Schuko L1	MPXB RM-EEBC3P1N	x	x		
	Schuko L2	MPXB RM-EEBC3P2N	x	x		
<b>Output modules Branch monitored</b>	IEC-C13 L1	MPXB RM-EBBC6N1N			x	
	IEC-C13 L2	MPXB RM-EBBC6N2N			x	
	IEC-C13 L3	MPXB RM-EBBC6N3N			x	
	IEC-C19 L1	MPXB RM-EBBC4O1N			x	
	IEC-C19 L2	MPXB RM-EBBC4O2N			x	
	IEC-C19 L3	MPXB RM-EBBC4O3N			x	
	Schuko L1	MPXB RM-EBBC3P1N			x	
	Schuko L2	MPXB RM-EBBC3P2N			x	
<b>Output modules Receptacle managed</b>	IEC-C13 L1	MPXB RM-ERBC6N1N				x
	IEC-C13 L2	MPXB RM-ERBC6N2N				x
	IEC-C13 L3	MPXB RM-ERBC6N3N				x
	IEC-C19 L1	MPXB RM-ERBC4O1N				x
	IEC-C19 L2	MPXB RM-ERBC4O2N				x
	IEC-C19 L3	MPXB RM-ERBC4O3N				x
	Schuko L1	MPXB RM-ERBC3P1N				x
	Schuko L2	MPXB RM-ERBC3P2N				x
<b>Sensors</b>	1xTemp.	SN-Z01		x	x	x
	3xTemp.	SN-Z02		x	x	x
	3xT. + 1xHum	SN-Z03		x	x	x
	1xTemp. Mod.	SN-T		x	x	x
	Temp/Hum Mod.	SN-TH		x	x	x
	2xDoor Mod.	SN-2D		x	x	x
	3xInput Mod.	SN-3C		x	x	x
<b>Display ext.</b>		RPCBDM-1000		x	x	x

Upgrade possible!

Different combinations possible!

\*When using 1ph input modules then only L1 output modules can be equipped.



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## Liebert MPX™ - Input Module/Power Supply

### Elementary and Monitored type:

- The MPX PEM is fixed on the MPX PRC and provides the connection to the power supply.
- Cable is connected fixed, 3 m long
- With IEC60309 plug, 1Ph/N/PE 6h blue, 3Ph/N/PE 6h red

### Monitored type:

- The MPX PEM provides the connection to the databus for the data communication.
- Integrated Liebert RPC-1000 communication card enables remote monitoring and maintenance of MPH units.
- Provides the following measured values of the phase inputs: effective power, current, voltage, frequency and consumption.
- Power alarm functions for the individual phases and their operating status are also supported.
- Further important features: Three displays inform the user about the current status of each individual input.  
An acoustic alarm is activated with specific overload conditions.
- The communication card centralizes the Liebert MPX's local and remote administration.
- There is administration via web and SNMP for systems connected to the Ethernet.
- Also serves as the connection point for versatile support options and devices, such as the display module (RPC BDM), various sensors and connection to other Liebert MPX or Liebert MPH systems, for example.
- Has RJ-45 ports for all connections and does not require any special cabling.
- Supports 10 and 100 MBit Ethernet and provides on-site firmware upgrade.

### Technical data Interfaces:

- RJ-45 LAN port (10/100 MBit) – for connecting to the local network (LAN) via an Ethernet cable.

- Expansion/administration port for local configuration using a computer/laptop, for setting up a link-up of several PDUs (Liebert MPX or MPH).
- Display port for connecting the RPC BDM (display module).
- External sensor port for connecting optional sensors.

### Supported technologies:

- Web support, provides Liebert MPX control and management. Authorized users can view status information via their network.
- SNMP support, provides Liebert MPX SNMP management.
- Easy integration in Liebert Nform, Avocent DSView and Nagios.

### Material/finish

Housing: Aluminum  
Cover: Sheet steel  
Power contacts: Silvered  
Databus contacts: Gilded (only Monitored type)

### Dimensions

Width: 75 mm  
Height: 65 mm  
Cable: 3 m

### Color

Housing: Aluminum/RAL7021 dark gray

### Approvals

- CE label in accordance with Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC
- BV GS

### Supply schedule

1 MPX PEM power input module  
incl. connection cable  
incl. RPC-1000 communication card  
(only Monitored type)

L	W	H	U	Feed	Load rating	Type	Order no.	UP
220	75	65		Fixed	230VAC, max 32A	Elementary	MPXPPEM-EHAEXQ30	1 unit
220	75	65		Fixed	230/400VAC, max 16A	Elementary	MPXPPEM-EHAEXT30	1 unit
220	75	65		Fixed	230/400VAC, max 32A	Elementary	MPXPPEM-EHAEXR30	1 unit
266	75	65		Fixed	230/400VAC, max 63A	Elementary	MPXPPEM-EHBEXZ30	1 unit
220	75	65		Fixed	230VAC, max 32A	Monitored	MPXPPEM-EHAAXQ30	1 unit
220	75	65		Fixed	230/400VAC, max 16A	Monitored	MPXPPEM-EHAAXT30	1 unit
220	75	65		Fixed	230/400VAC, max 32A	Monitored	MPXPPEM-EHAAXR30	1 unit
266	75	65		Fixed	230/400VAC, max 63A	Monitored	MPXPPEM-EHBAXZ30	1 unit

Dimensions in mm: L = Length, W = Width, S = Switch,  
n = Number of sockets, F1 = Standard side, F2 = Design side, 19" = Suitable for 19" installation, Safe = Child-safe, U = Standard height unit, UP = Unit of packaging,

= Express item

Conversion: 1 mm = 0.03937 inch    1 kg = 2.2046 pound

Replace **x** with the number of your color combination:  
.1 = RAL 7035, .6 = RAL 7035/RAL 2003





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## Liebert MPX™ BRM - Output Module

- The MPX BRM takes care of the power distribution to the individual consumers.
- Each module taps a phase; this is color-identified on the module.
- All modules are protected against overload with a 20A circuit breaker.
- Changing the modules during operation enables a user-defined installation, without having to shut down the Liebert MPX.
- Up to 3 BRM output modules can be installed on a 1,035 mm PRC busbar; up to 6 BRM output modules can be installed on a 1,880 mm PRC busbar.
- The MPX BRMs have an LED-ID indicator, which clearly identifies every module with a number.
- The modules are administered in the software
- Provides the following measured values: power, current, voltage, apparent power, kWh, frequency, power factor and crest factor
- Power alarm functions and the operating status are supported
- The individual outputs can be switched on and off remotely

### Type E - Elementary:

- Module for power distribution via respective outputs

### Type B – Branch monitored:

- Module for power distribution via respective outputs with measuring function on module level
- The MPX BRMs have an LED-ID indicator, which clearly identifies every module with a number.
- The modules are administered in the software
- Provides the following measured values: power, current, voltage, apparent power, kWh and power factor
- Power alarm functions and the operating status are supported

### Type R – Receptacle managed:

- Module for power distribution via respective outputs with measuring function on module level and output level

### Material/finish

- Housing: Aluminum
- Cover: Sheet steel
- Power contacts: Silvered
- Databus contacts: Gilded (only type B and R)

### Dimensions

- Width: 75 mm
- Height: 65 mm

### Color

- Housing: Aluminum/RAL7021 dark gray

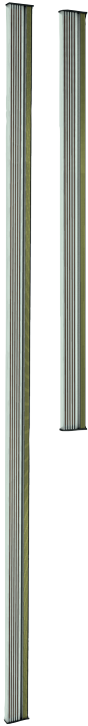
### Approvals

- CE label in accordance with Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC
- Innova GS

### Supply schedule

- 1 MPX BRM Output Module
- Operating instructions

L	n	Outputs	Load rating per output	Phase tapping	Type	Order no.	UP
266	7	IEC320 C 13	10A	L1	E	MPXBRM-EEBC7N1N	1 unit
266	7	IEC320 C 13	10A	L2	E	MPXBRM-EEBC7N2N	1 unit
266	7	IEC320 C 13	10A	L3	E	MPXBRM-EEBC7N3N	1 unit
266	4	IEC320 C 19	16A	L1	E	MPXBRM-EEBC4O1N	1 unit
266	4	IEC320 C 19	16A	L2	E	MPXBRM-EEBC4O2N	1 unit
266	4	IEC320 C 19	16A	L3	E	MPXBRM-EEBC4O3N	1 unit
266	3	Schuko CEE 7/4	16A	L1	E	MPXBRM-EEBC3P1N	1 unit
266	3	Schuko CEE 7/4	16A	L2	E	MPXBRM-EEBC3P2N	1 unit
266	3	Schuko CEE 7/4	16A	L3	E	MPXBRM-EEBC3P3N	1 unit
266	6	IEC320 C 13	10A	L1	B	MPXBRM-EBBC6N1N	1 unit
266	6	IEC320 C 13	10A	L2	B	MPXBRM-EBBC6N2N	1 unit
266	6	IEC320 C 13	10A	L3	B	MPXBRM-EBBC6N3N	1 unit
266	4	IEC320 C 19	16A	L1	B	MPXBRM-EBBC4O1N	1 unit
266	4	IEC320 C 19	16A	L2	B	MPXBRM-EBBC4O2N	1 unit
266	4	IEC320 C 19	16A	L3	B	MPXBRM-EBBC4O3N	1 unit
266	3	Schuko CEE 7/4	16A	L1	B	MPXBRM-EBBC3P1N	1 unit
266	3	Schuko CEE 7/4	16A	L2	B	MPXBRM-EBBC3P2N	1 unit
266	3	Schuko CEE 7/4	16A	L3	B	MPXBRM-EBBC3P3N	1 unit
266	6	IEC320 C 13	10A	L1	R	MPXBRM-ERBC6N1N	1 unit
266	6	IEC320 C 13	10A	L2	R	MPXBRM-ERBC6N2N	1 unit
266	6	IEC320 C 13	10A	L3	R	MPXBRM-ERBC6N3N	1 unit
266	4	IEC320 C 19	16A	L1	R	MPXBRM-ERBC4O1N	1 unit
266	4	IEC320 C 19	16A	L2	R	MPXBRM-ERBC4O2N	1 unit
266	4	IEC320 C 19	16A	L3	R	MPXBRM-ERBC4O3N	1 unit
266	3	Schuko CEE 7/4	16A	L1	R	MPXBRM-ERBC3P1N	1 unit
266	3	Schuko CEE 7/4	16A	L2	R	MPXBRM-ERBC3P2N	1 unit
266	3	Schuko CEE 7/4	16A	L3	R	MPXBRM-ERBC3P3N	1 unit



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## Liebert MPX™ PRC - Power Distribution Unit/Communication Bus

- The MPX PRC is the foundation stone of the Liebert MPX PDU.
- Power and data transfer buses are integrated fixed over the entire length of the MPX PRC.
- The MPX BRMs (output modules) and the MPX PEM (Power Entry Module) are fixed on the MPX PRC and depending on the type take care of the modules' power feed, output, monitoring and management.

**Material/finish**  
 Busbars housing: Aluminum  
 Busbars: Copper  
 Databus: Gilded

**Dimensions**  
 Width: 68 mm  
 Height: 24 mm

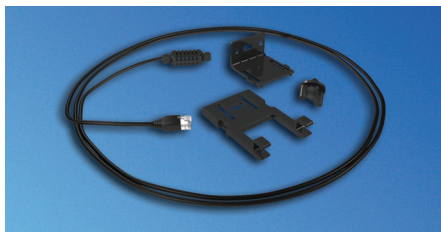
**Color**  
 Housing: Aluminum

**Approvals**  
 - CE label in accordance with Low Voltage Directive 2006/95/EC  
 - EMC Directive 2004/108/EC  
 - BV GS

**Load rating**  
 Max. current intensity: 3 x 63 A  
 Nominal voltage (L-N / L-L): 230 / 400 VAC

**Supply schedule**  
 1 MPX™ PRC - Power Distribution Unit/  
 Communication Bus  
 1 mounting set

L	W	H	U	Model	Order no.	UP
1035	68	24	23	1 PEM (220 mm) + 3 BRM	<b>MPXPRC-V1035XXX</b>	1 unit
1880	68	24	42	1 PEM (220/266 mm) + 6 BRM	<b>MPXPRC-V1880XXX</b>	1 unit



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## Liebert MPX™/MPH™ Sensors

- The sensors are designed for tool-less installation in a Knürr Miracel Rack, but they can also be installed in any other rack.
- "Fixed" type sensors are fixed to a cable.
- "Modular" type sensors can be connected with the delivered cable.
- Are affixed to the RPC-1000 communication card
- Several sensors can be connected in rows (max. length: 20m)
- Are automatically displayed in the Liebert MPX/MPH software
- Temperature measuring range: 5-55°C

- Accuracy: +/- 0.5°C
- Humidity measuring range: 10 – 95%
- Accuracy: +/- 3.5%

**Note**  
 The sensors are not required for operating the Liebert MPX or MPH, but they require the Liebert RPC-1000 (communication card)

**Supply schedule**  
 1 sensor with connection cable  
 Operating instructions

Cable length	Type	Model	Order no.	UP
3660	Fixed	Single temp. sensor	SN-Z01	1 unit
5180	Fixed	Triple temp. sensor	SN-Z02	1 unit
5180	Fixed	Triple temp. sensor + single humidity	SN-Z03	1 unit
2000	Modular	Single temp. sensor	SN-T	1 unit
2000	Modular	Triple temp. sensor + single humidity	SN-TH	1 unit
2000	Modular	2 x door contact - input module*	SN-2D	1 unit
2000	Modular	3 x digital input	SN-3C	1 unit

\* Suitable door contact switch: Order no.: 06.108.115.9



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## Liebert RPC BDM - 1000 Display Module

- Provides the local display of the monitored data for all connected Liebert MPX and Liebert MPH systems.
- Operated with the aid of a navigation switch.
- Connected via a cable with the Liebert RPC, which provides the user the option of placing the displays where they can be easily read in accordance with the local space conditions.
- An individual display can be used for up to four Liebert MPX or Liebert MPH PDUs, which are connected to a PDU array.

### Note

The Display Module is not required for operating the Liebert MPX or MPH, but it itself requires the Liebert RPC-1000 (communication card)

### Supply schedule

1 RPCBDM-1000 Display Module  
1 connection cable, 2 m  
1 mounting set

L	W	H	U	Model	Order no.	UP
					<b>RPCBDM-1000</b>	1 unit



## Liebert Power distribution BRM Elementary Safety bracket

- Safety brackets are available for strain relief for network equipment power supply cords.
- Safety brackets are sold in kits of 3 pieces.

### Supply schedule

3 safety brackets  
Mounting material

### How supplied

flat-packed kit

### Please note

Suitable for MPXBRM-EEBC7NxN (x=1,2,3)

L	W	H	U	Model	Order no.	UP
					<b>03.910.219.9</b>	1 unit



## Liebert Power distribution BRM Cable Restraints kit

- Cable restraints are available for strain relief for network equipment power supply cords.
- Cable restraints support most IEC C13 plug types with grip edge around the plug body (application confirmation required).
- Cable restraints are sold in kits of 18 pieces.

### Supply schedule

1 cable restraints kit (18 pieces).

### How supplied

Flat-packed kit

### Please note

Optimum locking function only with connection cable 04.000.051.9.  
Suitable only for MPXBRM-EBBC6NxN and MPXBRM-ERBC6NxN (x=1,2,3).

L	W	H	U	Model	Order no.	UP
					<b>03.910.216.9</b>	1 unit

# Liebert MPH™ Managed Rack-PDU Systems monitoring and control

The Liebert MPH™ Managed Rack PDU is a power supply system with monitoring and control functions. The housing consists of a robust sheet steel enclosure, so that the PDU can be easily installed in a Knürr rack, or even into other enclosure systems. The Liebert MPH™ can be installed vertically or horizontally (19"), depending on the type. The PDU is delivered pre-installed with the same communication card (RPC-1000) as the Liebert MPX™. All Liebert MPX™ external modules can therefore be connected (e.g. sensors, display module). Up to four Liebert MPX™/MPH™ can be connected as rack PDU array to consolidate the user's IP connection and the device monitoring.

The Liebert MPH™ is available in two equipment models:

### ■ 1. Liebert MPH™ Type RM

The Liebert MPH™ Type RM is a monitored PDU that monitors the phase inputs. Measured per phase are: power, current, voltage and consumption. The power is also monitored per group (only 32A model). Different threshold values enable detailed alarm signals.

### ■ 2. Liebert MPH™ Type C

The Liebert MPH™ Type C can also switch the individual outputs on and off remotely.

### ■ Highest possible security and availability with:

- Power illustration up to 22 kVA per PDU and 55°C ambient temperature
- N-conductor current display with 3-phase feed, which prevents feed cable overload.
- Overload protection can be extended per group with all 32A models; minimizes danger with cascaded PDU overload.
- Setting alarm threshold values, which means possible failures are detected early on.

### ■ Flexibility with:

- Connection option for an external display, which is easy to mount and can also be combined with the Liebert MPX™.
- Connection option for external sensors, which means temperatures and humidity can be monitored.
- Doors and alarm contacts can also be monitored and displayed via external input contacts.

- Versatile installation in the rack as 19" or space-saving vertical installation.
- Same, compatible monitoring platform for Liebert MPH™ and Liebert MPX™.

### ■ Low operating costs with:

- Rack PDU array setup, which means up to 4 MPH/MPX can be controlled with one IP address; installation becomes quicker and easier.
- Extensive energy and current measurement, which provides data required for maximizing the power and cooling infrastructure.
- Special switching technology of the individual sockets, which reduces the rack PDU's power loss.
- Data interface with http and https protocol; no external software required for configuration and monitoring. The PDU can, however, also be integrated via SNMP into other management platforms.





## INPUT POWER

- 20 to 30 A (USA);
- 16 to 32 A (EU);
- Single-phase and three-phase



## OUTPUT DISTRIBUTOR

- NEMA 5-20R single-phase,
- IEC-C13 and IEC-C19;
- Combination systems



## MODULARITY

- Communication card
- External display
- External sensors



## MONITORING

- Input level
- Group level depending on type
- Temperature and humidity
- Door contacts and floating break input contacts



## REMOTE SOCKET CONTROL

- Socket level



## LOCAL MONITORING

- Display for user
- Can also be mounted outside the rack



## REMOTE MONITORING

- Secure web and SNMP interfaces
- Liebert Nform
- Avocent DSView



## OVERLOAD PROTECTION

- Circuit breakers for every group



## RACK PDU ARRAY™

- One IP for up to 4 rack PDUs
- Liebert MPX™ and Liebert MPH™ in the same private network



## FORM FACTOR

- Vertical mounting (0 U)
- Rack installation
- Slimline 0 U form factor for positioning two PDUs in just one rack





DOS20153

## Liebert MPH™ Rack PDU

- The Liebert MPH® Type RM is a monitored power distribution unit that monitors the phase inputs. Measured per phase are: power, current, voltage and consumption. The power is also monitored per group (only 32A model).
- The Liebert MPH® Type C can also switch the individual outputs on and off remotely.
- Integrated Liebert RPC 1000 communication card enables remote monitoring and maintenance of MPH units.
- The RPC-1000 enables the interconnection of several MPH or MPX units and the connection of Liebert MPH® with the Liebert MPX® units for monitoring and administration.
- The Liebert MPH® can be monitored directly on-site with the RPC BDM-1000, an optional display module that is connected directly with the communication card. The monitoring unit can be flexibly mounted on the rack.

### Material/finish

Housing: Sheet steel extrusion

### Dimensions

Width: 50 mm (vertical), 178 mm (19")  
 Height: 80 mm (vertical), 44 mm (19")  
 Cable Length: 3 m

### Color

Housing: RAL 7021 dark gray

### Approvals

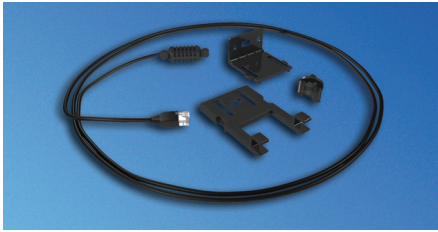
- CE label in accordance with Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC
- GS

### Supply schedule

- 1 Liebert MPH® Socket Strip (PDU)
- 1 mounting brackets
- Operating instructions

L	Type	Input values	Input plug	Outputs IEC320	Order no.	UP
438*	RM	230Vac, 16A	IEC320 Sheet I	9xC 13	MPH-EBR09NXXO30	1 unit
438*	RM	230Vac, 32A	IEC60309 1ph/N/PE 6h	9xC 13	MPH-EBR09NXXQ30	1 unit
1730	RM	230Vac, 16A	IEC320 Sheet I	27xC 13	MPH-EBV27NXXO30	1 unit
1730	RM	230Vac, 16A	IEC320 Sheet I	21xC 13/6xC 19	MPH-EBV27NOXO30	1 unit
1730	RM	230Vac, 32A	IEC60309 1ph/N/PE 6h	21xC 13/6xC 19	MPH-EBV27NOXQ30	1 unit
1730	RM	230Vac, 32A	IEC60309 1ph/N/PE 6h	27xC 13	MPH-EBV27NXXQ30	1 unit
1730	RM	230/400Vac, 16A	IEC60309 3ph/N/PE 6h	27xC 13	MPH-EBV27NXXT30	1 unit
1730	RM	230/400Vac, 16A	IEC60309 3ph/N/PE 6h	21xC 13/6xC 19	MPH-EBV27NOXT30	1 unit
1730	RM	230/400Vac, 32A	IEC60309 3ph/N/PE 6h	27xC 13	MPH-EBV27NXXR30	1 unit
1730	RM	230/400Vac, 32A	IEC60309 3ph/N/PE 6h	21xC 13/6xC 19	MPH-EBV27NOXR30	1 unit
438*	C	230Vac, 16A	IEC320 Sheet I	9xC 13	MPH-ECR09NXXO30	1 unit
438*	C	230Vac, 32A	IEC60309 1ph/N/PE 6h	9xC 13	MPH-ECR09NXXQ30	1 unit
1730	C	230Vac, 16A	IEC320 Sheet I	27xC 13	MPH-ECV27NXXO30	1 unit
1730	C	230Vac, 16A	IEC320 Sheet I	21xC 13/6xC 19	MPH-ECV27NOXO30	1 unit
1730	C	230Vac, 32A	IEC60309 1ph/N/PE 6h	21xC 13/6xC 19	MPH-ECV27NOXQ30	1 unit
1730	C	230Vac, 32A	IEC60309 1ph/N/PE 6h	27xC 13	MPH-ECV27NXXQ30	1 unit
1730	C	230/400Vac, 16A	IEC60309 3ph/N/PE 6h	27xC 13	MPH-ECV27NXXT30	1 unit
1730	C	230/400Vac, 16A	IEC60309 3ph/N/PE 6h	21xC 13/ 6xC 19	MPH-ECV27NOXT30	1 unit
1730	C	230/400Vac, 32A	IEC60309 3ph/N/PE 6h	27xC 13	MPH-ECV27NXXR30	1 unit
1730	C	230/400Vac, 32A	IEC60309 3ph/N/PE 6h	21xC 13/ 6xC 19	MPH-ECV27NOXR30	1 unit

\*(19")



DOS20153

## Liebert MPX™/MPH™ Sensors

- The sensors are designed for tool-less installation in a Knürr Miracel Rack, but they can also be installed in any other rack.
- "Fixed" type sensors are fixed to a cable.
- "Modular" type sensors can be connected with the delivered cable.
- Are affixed to the RPC-1000 communication card.
- Several sensors can be connected in rows (max. length: 20m).
- Are automatically displayed in the Liebert MPX/MPH software.
- Temperature measuring range: 5-55°C
- Accuracy: +/- 0.5°C
- Humidity measuring range: 10 – 95%
- Accuracy: +/- 3.5%

### Note

The sensors are not required for operating the Liebert MPX or MPH, but they require the Liebert RPC-1000 (communication card).

### Supply schedule

1 sensor with connection cable  
Operating instructions

Cable length	Type	Model	Order no.	UP
3660	Fixed	Single temp. sensor	SN-Z01	1 unit
5180	Fixed	Triple temp. sensor	SN-Z02	1 unit
5180	Fixed	Triple temp. sensor + single humidity	SN-Z03	1 unit
2000	Modular	Single temp. sensor	SN-T	1 unit
2000	Modular	Triple temp. sensor + single humidity	SN-TH	1 unit
2000	Modular	2 x door contact - input module*	SN-2D	1 unit
2000	Modular	3 x digital input	SN-3C	1 unit

\* Suitable door contact switch: Order no.: 06.108.115.9



DOS20153

## Liebert RPC BDM - 1000 Display Module

- Provides the local display of the monitored data for all connected Liebert MPX and Liebert MPH systems.
- Operated with the aid of a navigation switch.
- Connected via a cable with the Liebert RPC, which provides the user the option of placing the displays where they can be easily read in accordance with the local space conditions.
- An individual display can be used for up to four Liebert MPX or Liebert MPH PDUs, which are connected to a PDU array.

### Note

The Display Module is not required for operating the Liebert MPX or MPH, but it itself requires the Liebert RPC-1000 (communication card).

### Supply schedule

1 RPCBDM-1000 Display Module  
1 connection cable, 2 m  
1 mounting set

L	W	H	U	Model	Order no.	UP
					<b>RPCBDM-1000</b>	1 unit

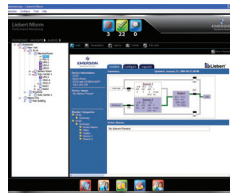
# Accessories and software application, Liebert MPX™ and Liebert MPH™

## Infrastructure management



### Secure web and SNMP interfaces

- User-configured alarm threshold (3 threshold values per measuring point).
- Socket status and delayed switching.
- Electrical measurement: V, A, kW and kW/h, crest factor, Hz, power factor.
- Rack PDU array: Device consolidation.
- PDU Explorer: intuitive hierarchical interface.
- PDU status display according to strip or socket.
- Device Explorer: search according to user-defined device names.
- Environment monitoring: temperature and humidity, floating contacts.



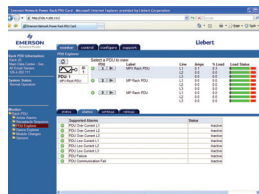
### Liebert Nform

- Control technology for Liebert devices in the LAN.
- E-mail alarm and local notifications.
- Scalable software solution for IT environment.



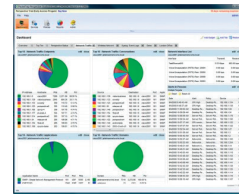
### Avocent Rack Power Manager

- Alarm and incident administration of all equipment at the site.
- Control technology in real-time.
- Individually adjustable user interface.
- Trend and alarm reports.



### Web-based monitoring

- PDU parameters monitoring via web browser.
- No application-specific software required.
- Simultaneous display of up to 4 PDUs.



### Network management system

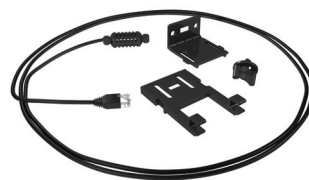
- Open standard solution.
- For all SNMP devices.
- Scalable software solution for all company sizes.

## Optional hardware



### Local display module – RPC-BDM

- Electrical and ambient parameters.
- 1 RPC BDM for up to 4 PDUs in the array.
- PDU Explorer.
- Device Explorer:



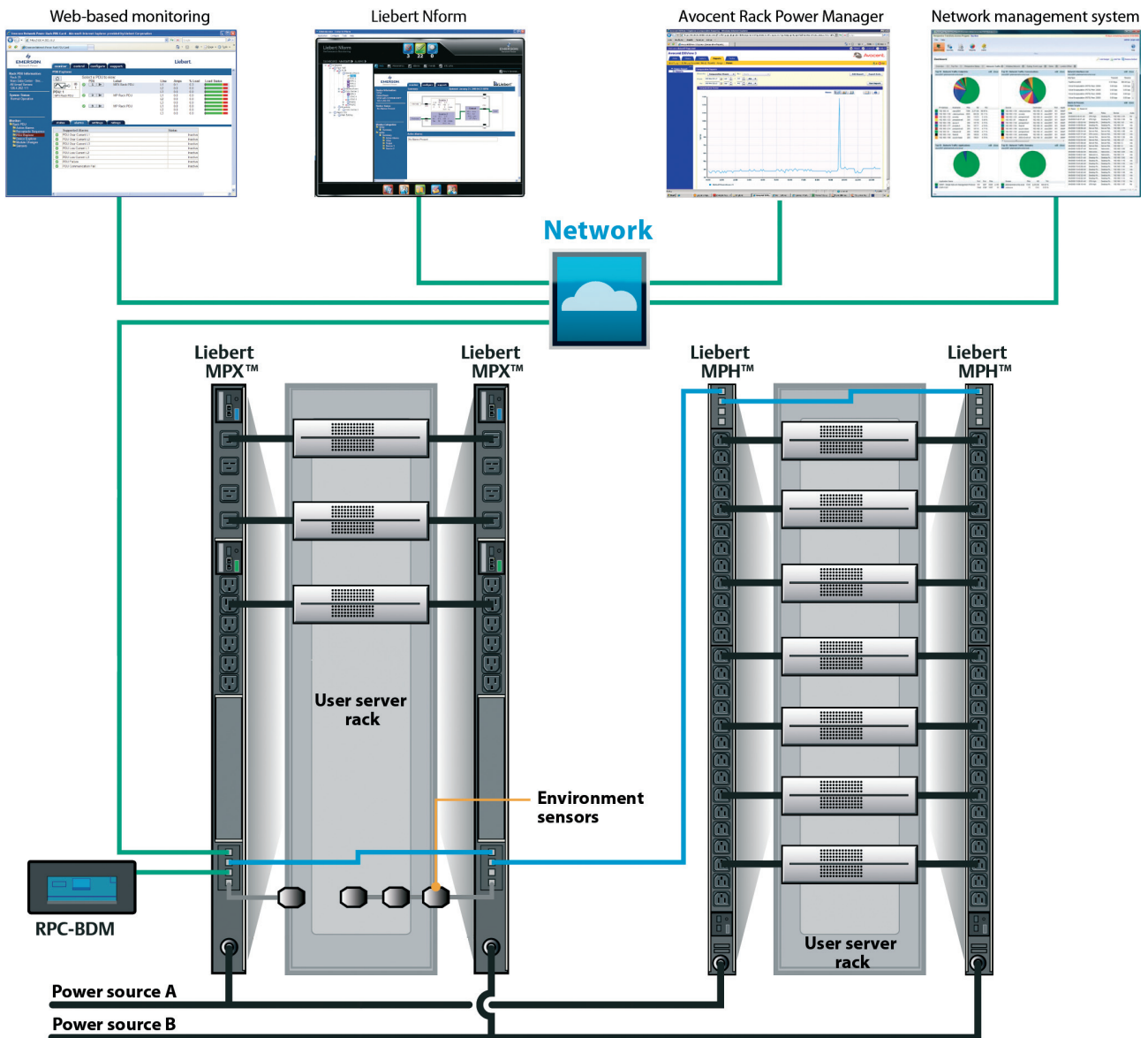
### Liebert SN product family: Rack Sensors

- Temperature measurement with single or multiple sensors.
- Temperature and humidity measurement with multiple sensors.
- Door contact sensors and floating input contacts.



# Flexible power distribution

Easy integration of the rack PDUs into new or existing management platforms



Rack PDU array (up to four systems)

# Emerson Network Power Rack PDUs

## Emerson Network Power Rack PDUs

### Knürr DI-STRIP®

DI-STRIP® RM	2.22
DI-STRIP® M	2.23
DI-STRIP HighPower®	2.24
TDI-STRIP® TriplePower®	2.26
DI-STRIP® BladePower®	2.28
DI-STRIP® PizzaPower®	2.29

DI-STRIP® Classic	2.29
DI-STRIP® Compact	2.30
DI-STRIP® Protector	2.31
DI-STRIP® Power Cleaner	2.33
DI-STRIP® Safety Basic	2.34
DI-STRIP® Safety Standard	2.35
DI-STRIP® Master-Slave	2.36
DI-STRIP® Combi	2.37
GST18, 1-phase	2.38
GST18, 3-phase	2.40

### Knürr DI-STRIP®

Euro Plug System	2.42
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### Knürr DI-STRIP®

for France	2.45
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### Knürr DI-STRIP®

for Switzerland	2.55
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#### INPUT POWER

- Single-phase or three-phase
- Up to 22 kVa
- Easy input supply



#### OUTPUT DISTRIBUTOR

- NEMA 5-20R single-phase, IEC-C13 and C19, combination systems
- Schuko, France, Switzerland



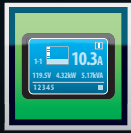
#### MODULARITY

- More connectivity with expansion unit for Basic Rack PDU GST18-PDUs



#### FORM FACTOR

- Vertical mounting (0 U)
- Rack installation



#### LOCAL MONITORING

- Fixed display



#### REMOTE MONITORING

- Secure web and SNMP interfaces
- Liebert Nform



#### OVERLOAD PROTECTION

- Circuit breakers/fuses per branching cable/output as required



## Knürr DI-STRIP®

### Basic Rack PDU: Robust PDUs with helpful equipment features

Knürr's Basic Rack PDUs are the solution for every data center looking for robust, economical and flexible rack concepts.

For power distribution the Knürr DI-STRIP® product family meets the requirements of numerous IT applications and other areas. Specially configured for the growing number of electronic components in network switching racks of server racks. Available with different accessories, such as circuit breakers, overvoltage (surge) protection, mains filter, master-slave function, emergency off button, fault current circuit breaker, local and remote power measurement, for example.



All DI-STRIP M / RM with display rotation for better reading.

#### ■ Highest possible safety, security and availability with:

- Closed sheet steel extrusion, which means high stability and torsional strength.
- Extensive certification in acc. with international standard.
- Double spring contacts for shock hazard-proof and low contact resistance.
- Unbalanced load monitoring with 3-phase feed prevents feed cable overload (only DI-STRIP versions M and RM).
- Optimum load monitoring with servers' installation (only DI-STRIP versions M and RM).
- Individual outputs backup with DI-STRIP BladePower and Pizza Power.

#### ■ Maximum flexibility with:

- Configurations and options with international compatibility

- 2.5 m or 4 m power cable for more spatial flexibility.
- Rotating display in 90° steps (only DI-STRIP versions M and RM).
- Tool-less installation, which means quick and easy extension in the rack (only DI-STRIP HighPower).

#### ■ Extremely low operating costs with:

- Quick and easy installation on the rack requires minimum space and shorter installation time.
- Automatic background light reduction extends the display's service life and reduces the rack PDU power loss (only DI-STRIP models M and RM).
- Especially flat housing extrusion, providing full accessibility to the 19" level with 600 mm wide server racks.

## Knürr DI-STRIP®: Three equipment models for precisely your requirements

**Knürr DI-STRIP® Elementary:**  
Basic Rack PDU, Knürr DI-Strip Elementary® for simple power distribution requirements. The PDUs are available in different structures, depending on the rack installation requirements. Additional functions such as overvoltage (surge), mains filter, master-slave function, emergency off button and fault current circuit breaker are also



*All DI-STRIP HighPower are equipped with especially flat housing extrusions and side cable entry. This enables installation without any loss of usable height units and cable entry from above and below. Full accessibility to the 19" level with 600 mm wide server racks is also a given.*

**Knürr DI-STRIP M® – local metered:**  
Basic Rack PDU Knürr DI-STRIP M® for simple power distribution requirements and local power measurement for your data center. Available in single and three-phase versions up to 22 kVa, with and without power measurement.

#### Local power measurement features:

- M = power measurement (local)
- Tried, tested and proven DI-STRIP® PDU with integrated local power measurement module.
- Large transparent LCD display.
- Meets the strictest EMC requirements with radiation and irradiation interference.
- Integrated unbalanced load monitoring with three-phase feed.
- Rotatable displays in 90° steps.
- Automatic background light reduction.
- Optimum load monitoring with servers' installation.

**Knürr DI-STRIP RM® – remote metered:**  
Basic Rack PDU Knürr DI-STRIP RMRM® for simple power distribution requirements and remote power measurement for your data center. Available in single and three-phase versions up to 22 kVa, with local and remote power measurement. Knürr DI-STRIP RM® provides safe and reliable power supply in a robust, extruded enclosure.

#### Remote power measurement module features:

- RM = power measurement (remote)
- Tried, tested and proven DI-STRIP® PDU with integrated local power measurement module.
- Large transparent LCD display.
- Meets the strictest EMC requirements with radiation and irradiation interference.
- Can be set for up to 3 threshold values and unbalanced load monitoring.
- Rotatable displays in 90° steps.
- Automatic background light reduction.
- Protocols: HTTP, SNMP, Syslog.