IT POWER SOLUTIONS

Innovative products for the IT infrastructure

BACHMANN

IT POWER SOLUTIONS

Passive PDUs

Intelligent PDUs

Intelligent distributors & retrofit solutions

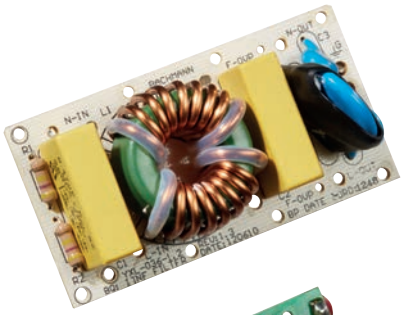
Accessories

World of opportunities

Function modules can be integrated ex factory

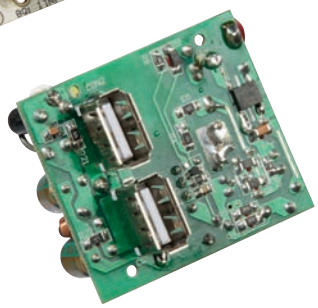
Overvoltage protection

These days the failure of electrical and electronic equipment is a real nightmare scenario. Protection against excess electric voltage is more important than ever for electrical and electronic equipment. "24/7 availability" is now essential for many users. Don't worry: the Bachmann strip with built-in overvoltage protection is the answer.



Mains and frequency filters

Mains and frequency filters ensure effective screening and smoothing of the input voltage. Only "clean" voltage gets through our mains and frequency filters. Voltage stabilisation and the filtering out of disturbance frequencies allows the connected device to run properly and smoothly.



USB charger

The USB charger component has 2 ports with max. 2.15 A.
Integrated in Bachmann products, the ability to charge mobile devices using the universal USB charger is very convenient and the integrated mains adaptor frees up socket outlets too.

Residual current circuit breaker / miniature circuit breaker

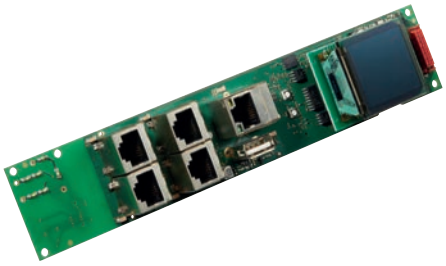
The residual current circuit breaker / miniature circuit breaker integrated in a Bachmann strip gives you peace of mind. The user can select between the two circuit breakers. But they can of course be combined too.

RCM

RCM is the abbreviation for Residual Current Monitor.
The use of an RCM allows drops in the level of insulation (creepage / leakage currents) of a power supply to be detected during operation before a high residual current causes protective devices to trip.

BlueNet BN3000

BlueNet BN3000 has an optimised shape factor, PDUs that can be cascaded via Modbus and a rotatable OLED display. The data centre's mains supply is monitored and remotely controlled from the comfort of your desk with BlueNet Network products. BlueNet increases data centre availability, minimises down times and cuts costs. BlueNet monitors current, voltage and power. This allows resources to be planned efficiently and alarms to be issued in the event of faults.

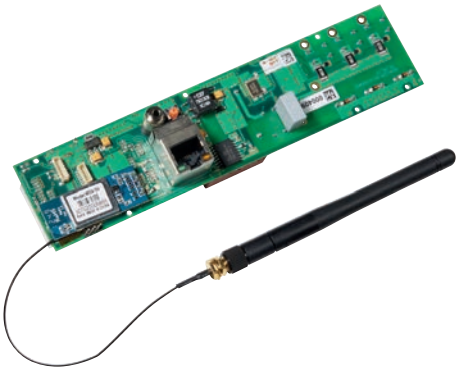


BlueNet BN2000

BlueNet BN2000 has a space-saving shape factor and state-of-the-art options for monitoring the data centre infrastructure. As well as measuring the current, voltage and power, external sensors can also be used to monitor temperature and air humidity. The values are either queried via an Ethernet interface on every PDU or via the Ethernet interface of the Power Line Concentrator. This is turn queries up to 500 PDUs using Power Line Communication. Savings are made in terms of wiring costs and Ethernet infrastructure.

WiFi module

The new BlueNet WiFi module provides three separate switching and measuring groups for extended power metering and temperature measuring, the switching of individual socket outlets and complete power strips. The management interface is integrated in the web server and is operated via the web browser in the network or with Dynamic DNS via the Internet.
The BlueNet WiFi app is available for mobile end devices. Switching can be performed both manually and automatically using load, temperature or time thresholds which can be set individually.



You can also use the product configurator at bachmann.com

Bachmann products provide solutions that are as individual as life itself.

IT POWER SOLUTIONS

Bachmann IT POWER SOLUTIONS

Systematic power distribution

40 years of experience in developing, manufacturing and distributing power distribution solutions. True to this history, Bachmann is synonymous with high-quality and innovative electronics and high measurement accuracy, packaged in extremely robust aluminium housings.
We provide solutions in IT energy distribution. Our intelligent and modular product range provides great peace of mind. The PDU Basic power distribution unit and Bachmann's BlueNet products meet all key requirements for future-proofed, highly efficient energy distribution, especially for data centres.

Bachmann power distribution provides various solutions for this sector:

- New and intelligent energy distribution systems
- Upgrading of existing energy distribution systems
- Combination of existing PDUs and Bachmann IT POWER SOLUTIONS products.

For more information, please visit www.bachmann.com

Bachmann - quality that connects

Research & development

· Company's sites in Germany and China
· Company's labs for running function and safety tests
· Certification in line with the strictest standards (e.g. DIN EN ISO 9001)
· Strong development network with external partners

Sales

SUBSIDIARIES:

· Bachmann Romania S.R.L., Medias / Romania
· Bachmann Hong Kong Ltd., Hong Kong / China
· Bachmann SARL Tremblay / France
· Bachmann Electrical Engineering Ltd. Milton, Keynes / UK
· Bachmann S.A., Barcelona / Spain

REPRESENTATIONS:

Spain / Portugal / Switzerland / Belgium / Luxembourg / Netherlands / Italy / France / Sweden / Norway / Denmark
Finland / United Kingdom / Ireland / Austria / Hungary / Russia / Czech Republic / Poland / Asia / Romania

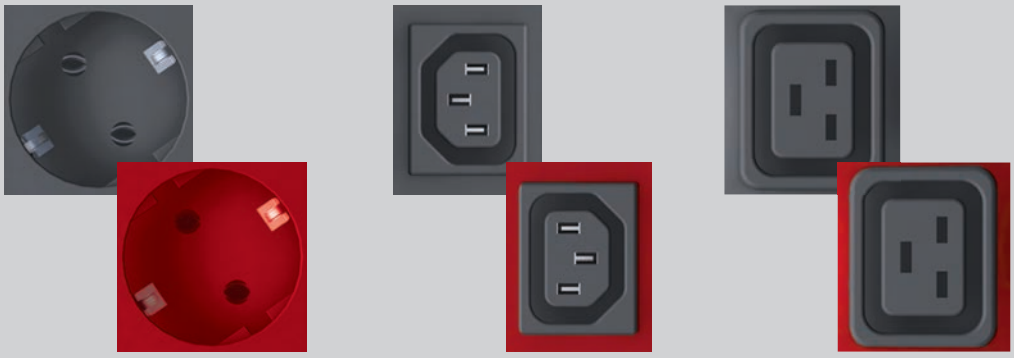
· Close partnership with electrical wholesalers
· Key account managers
· Customer-specific OEM solutions
· Individual project solutions

Production

· Production sites in Germany, Romania and China
· 100 % function testing in production

IT POWER SOLUTIONS

Modular PDU inserts



In our IEC320 C13 power strips, the C14 plugs can be reliably locked with a PVC clip.

Bachmann IT POWER SOLUTIONS

For future-proofed, highly efficient energy distribution in

- the data centre
- Server rack
- Network rack

The benefits at a glance

- Customised solutions in series quality possible
- Country-specific designs possible
- Certified and tested technology
- Extremely compact design
- Very high power density

Integration of devices installed in series

RCD (residual current protection device)

RCD is the abbreviation for Residual Current Protective Device.

If an insulation error causes a dangerous contact voltage, RCDs have the job of interrupting all the poles on operating equipment within 0.2 or 0.4s.

RCM (residual current monitor)

RCM is the abbreviation for Residual Current Monitor.

The use of an RCM allows drops in the level of insulation (creepage / leakage currents) of a power supply to be detected during operation before a high residual current causes protective devices to trip.

The benefits at a glance

- Customised solutions in series quality possible
- Integration of up to 2 HP (36 mm) wide devices installed in series
- Selective, extremely compact fusing in the rack possible
- Use of RCD systems (residual current circuit breakers) possible
- Use of RCM systems (residual current monitoring) possible
- Integration of pulsed current meter possible

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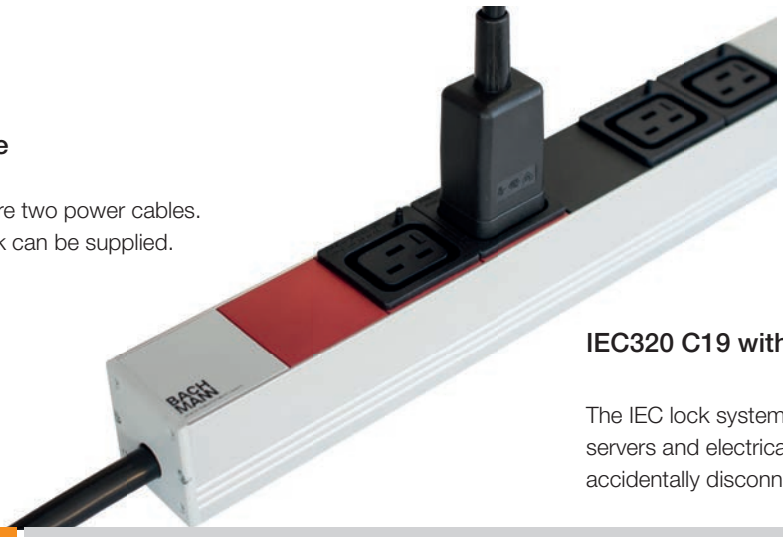
Bachmann IT Power Distribution
guarantees a safe connection

IEC320 C13 lockable

Two locking clips to secure two power cables.
IEC320 C13 with IEC lock can be supplied.



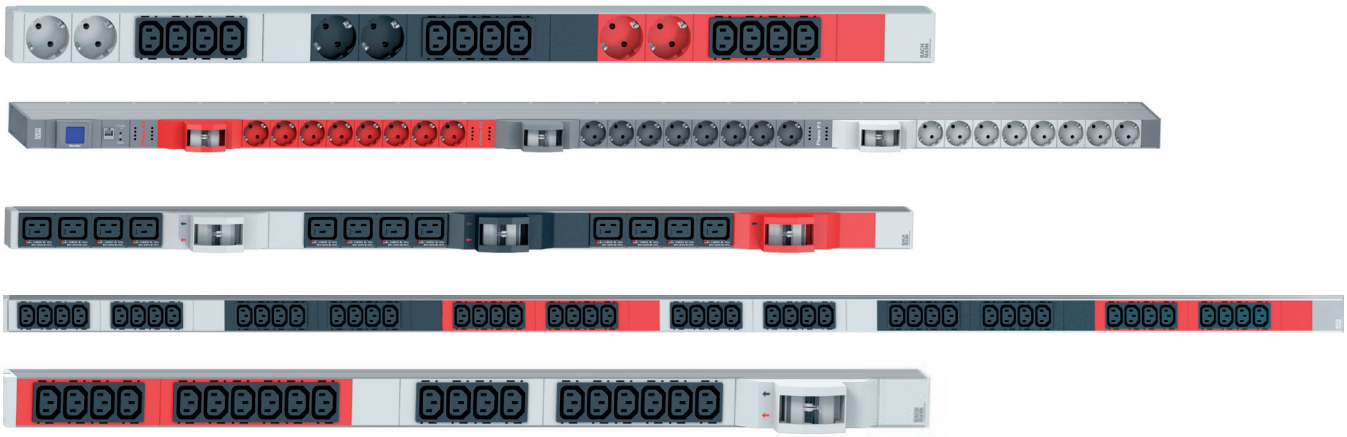
IEC320 C19 with IEC lock

The IEC lock system protects computers, as servers and electrical equipment can become accidentally disconnected due to vibrations.

The benefits at a glance

- Plugs locked using PVC clip or IEC lock.
- Costs cut through use of server connection cables supplied
- Maximum availability
- No unintentional disconnection of the power supply and therefore the best plug contacts

Bachmann IT Power Distribution
in high-quality aluminium housing



The benefits at a glance

- Space-saving integration of PDU in the server rack with scope for modular add-ons
- High-quality and very robust aluminium profile
- Extremely compact dimensions of 44 x 47 mm. This therefore provides plenty of space for
- data cabling and ventilation for cooling the server rack
- The IT PDUs can be linked together by a simple insertion mechanism, allowing various different plug versions to be combined with ease

IT PDU Basic 1 U

Power Distribution Units 230 V / 50 Hz

With its IT-PDU 1 U, Bachmann provides a huge choice of PDUs in a high-quality aluminium profile. With their extremely compact size of just 1 height unit, 44 mm in depth and 19" in width, the PDUs can be easily integrated in your IT rack.
Their multi-functional mounting brackets allow the units to be mounted in various ways (e.g. inwardly recessed). Our high quality standards ensure that the contact is reliable.

- Torsionally rigid 1 U aluminium profile, 19" format
- Up to 9 x socket inserts in the 19" format
- Flexible positioning and universal attachment options
- The modular platform allows individual solutions to be project planned

Versions available:

- Anodised profiles in black or grey
- End caps rivetted or rewireable
- Earthing contact and IEC320 socket outlets
- Various country versions
- Illuminated 2-pole switch
- Interlocking of IEC320 plugs
- 3-way and 12-way variants (no 19" format)
- Overvoltage protection 6.5 KA
- Mains and frequency filters
- Protection with miniature fuse
- 30 mA residual current device
- Miniature circuit breaker
- Master + slave function
- Socket inserts set at 35°

19" IT PDU Basic (230 V / 50 Hz)

Art. no.	Version	Colour (plastic / profile)	
19" IT PDU Basic			
Without switch, 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact			
333.401	· 9 x socket outlet with earthing contact light grey	light grey / silver	
333.506	· 9 x socket outlet with earthing contact black	black / black	
333.539	· 9 x IEC320 non-heating appliance socket C13 black	light grey / silver	
333.616	· 12 x IEC320 non-heating appliance socket C13 black	black / black	V
Without switch, 2.0 m H05VV-F 3G 1.50 mm², black, with IEC320 C20 plug			
333.815	· 8 x IEC320 non-heating appliance socket C19 black	light grey / silver	
Without switch, without supply cable, rewireable with terminal block			
333.416	· 8 x socket outlet with earthing contact light grey	light grey / silver	
333.830	· 12 x IEC320 non-heating appliance socket C13 black	black / black	V
With switch, 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact			
333.400	· 8 x socket outlet with earthing contact light grey	light grey / silver	
333.505	· 8 x socket outlet with earthing contact black	black / black	

available from stock

19" IT PDU overvoltage protection (230 V / 50 Hz)

Art. no.	Version	Colour (plastic / profile)
19" IT PDU Basic with overvoltage protection		
Without switch, 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact		
333.404	· 8 x socket outlet with earthing contact grey	light grey / silver
333.534	· 8 x socket outlet with earthing contact black	black / black
With switch, 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact		
333.405	· 7 x socket outlet with earthing contact light grey	light grey / silver
333.535	· 7 x socket outlet with earthing contact black	black / black
19" IT PDU Basic with overvoltage protection + mains and frequency filters		
Without switch, 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact		
333.402	· 6 x socket outlet with earthing contact light grey	light grey / silver
333.536	· 6 x socket outlet with earthing contact black	black / black
With switch, 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact		
333.403	· 5 x socket outlet with earthing contact light grey	light grey / silver
333.537	· 5 x socket outlet with earthing contact black	black / black
19" IT PDU Basic mains and frequency filters		
Without switch, 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact		
333.406	· 7 x socket outlet with earthing contact light grey	light grey / silver

available from stock

19" IT PDU Protection (230 V / 50 Hz)

Art. no.	Version	Colour (plastic / profile)
19" IT PDU Basic with fusing		
10 A miniature fuse, 2.0 m H05VV-F 3G 1.50 mm², black, with IEC320 C14 plug		
333.410	· 8 x socket outlet with earthing contact red	light grey / silver
333.538	· 8 x socket outlet with earthing contact red	black / black
10 A miniature fuse, 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact		
333.408	· 8 x IEC320 non-heating appliance socket C13 black	light grey / silver
10 A miniature fuse, 2.0 m H05VV-F 3G 1.00 mm², black, with IEC320 C14 plug		
333.540	· 8 x IEC320 non-heating appliance socket C13 black	light grey / silver
1 x residual current device, tripping current 30 mA		
333.411	· 6 x socket outlet with earthing contact light grey	light grey / silver
1 x MCB 16 A type B		
333.412	· 6 x socket outlet with earthing contact light grey	light grey / silver

V Lockable socket outlets

IT PDU Basic (230 V / 50 Hz)

Art. no.	Version	Colour (plastic / profile)
IT PDU Basic		
Without switch, 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact		
333.413	· 12 x socket outlet with earthing contact light grey	light grey / silver

10" IT PDU Basic (230 V / 50 Hz)

Art. no.	Version	Colour (plastic / profile)
IT PDU Basic		
10 ", 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact		
333.417	· 3 x socket outlet with earthing contact light grey	light grey / silver
333.0122	· 4 x socket outlet with earthing contact light grey	light grey / silver

19" IT PDU master + slave (230 V / 50 Hz)

- Once master device is shut down/switched off, automatically isolates this and all slave devices from supply
- Automatically switches on master device and all slave devices once master device has been switched on
- Integral LED indicates switching status

Art. no.	Version	Colour (plastic / profile)
19" IT PDU master + slave		
2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact		
333.407	· 1 + 4 socket outlets with earthing contact, light grey	light grey / silver

19" fuse box (32 A / 400 V / 50 Hz)

- Space-saving option of splitting a 32 A / 400 V infeed between two 16 A / 400 V infeeds
- 6 x 16 A miniature circuit breaker, characteristic C

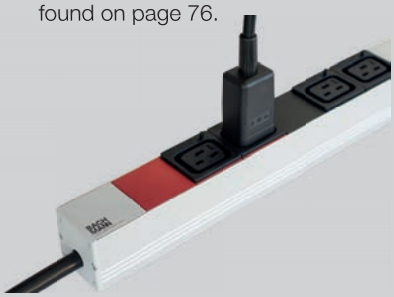
Art. no.	Version
19" IT PDU fuse box	
Input: 32 A / 400 V CEE plug outlet: 2 x 16 A / 400 V coupling	
800.0120	· 6 x 16 A miniature circuit breaker, characteristic C

V

IEC320 C13 lockable

Two locking clips to secure two power cables. Optimum interlocking only provided with Bachmann power cables.

Connecting cables and locking clips can be found on page 76.



IEC320 C19 with IEC lock

The IEC lock system protects computers, as servers and electrical equipment can become accidentally disconnected due to vibrations.

IT PDU Basic Switzerland

Art. no.	Version	Colour	Supply cable
19" IT PDU Basic Switzerland			
Without switch			
800.1259	8 x CH type 13 90°	black	2.0 m H05VV-F 3G 1.0mm², with CH plug type 12
800.1262	8 x CH type 23 90°	black	3.0 m H05VV-F 3G 1.5mm², with CH plug type 23
With switch			
800.1263	7 x CH type 13 90°	black	2.0 m H05VV-F 3G 1.0mm² with CH plug type 12
800.1264	7 x CH type 23 90°	black	3.0 m H05VV-F 3G 1.5mm² with CH plug type 23
19" IT PDU Basic overvoltage protection Switzerland			
Without switch			
800.1260	7 x CH type 13 90°	black	2.0 m H05VV-F 3G 1.0mm² with CH plug type 12
800.1258	7 x CH type 23 90°	black	3.0 m H05VV-F 3G 1.5mm² with CH plug type 23
19" IT PDU Basic overvoltage protection + mains and frequency filters Switzerland			
Without switch			
800.1261	5 x CH type 13 90°	black	2.0 m H05VV-F 3G 1.0mm² with CH plug type 12
800.1265	5 x CH type 23 90°	black	3.0 m H05VV-F 3G 1.5mm² with CH plug type 23

available on request

IT PDU Basic UK

Art. no.	Version	Colour
19" IT PDU Basic UK		
Without switch, 2.0 m, H05VV-F 3G 1.5 mm² with UK plug		
333.804	7 x UK 90° shuttered	grey
With switch, 2.0 m, H05VV-F 3G 1.5 mm² with UK plug		
333.805	6 x UK 90° shuttered	grey

available on request

IT PDU Basic France

Art. no.	Version	Colour
19" IT PDU Basic France		
Without switch, 2.0 m, H05VV-F 3G 1.5 mm², with right angle plug with earthing contact		
333.418	9 x UTE socket outlet	grey
Without switch, rewireable with terminal block		
333.819	8 x UTE socket outlet	grey
With switch		
333.419	8 x UTE socket outlet + switch	grey
19" IT PDU Basic overvoltage protection France		
Without switch, 2.0 m, H05VV-F 3G 1.5 mm², with right angle plug with earthing contact		
333.4061	8 x UTE socket outlet	grey
With switch, 2.0 m, H05VV-F 3G 1.5 mm², with right angle plug with earthing contact		
333.838	7 x UTE socket outlet	grey
19" IT PDU Basic overvoltage protection + mains and frequency filters France		
Without switch, 2.0 m, H05VV-F 3G 1.5 mm², with right angle plug with earthing contact		
333.4063	6 x UTE socket outlet	grey
With switch, 2,0 m H05VV-F 3G1,5mm² with right angle plug with earthing contact		
333.840	5 x UTE socket outlet	grey
19" IT PDU Basic with fuse France		
1 x residual current device, tripping current 30 mA 2.0 m, H05VV-F 3G 1.5 mm², with right angle plug with earthing contact		
333.4065	6 x UTE socket outlet	grey
1 x MCB 16 A type B, 2,0 m H05VV-F 3G 1,5 mm² with right angle plug with earthing contact		
333.4066	6 x UTE socket outlet	grey

available on request

PDUs > 1 U ALU

Power distribution units

- Torsionally rigid profile > 1 U (52 mm), profile depth 44 mm
- Modular socket outlet design
- Standard socket colour white; other colours black, yellow, red, brown, blue and green also available
- Optionally includes illuminated 2-pole switch
- High-quality electronics components built in, e.g. overvoltage protection, mains and frequency filters
- Mounting brackets included

End caps riveted and do not open

Power input: 2.0 m, H05VV-F 3G 1.50 mm², grey, with moulded right angle plug with earthing contact with double earthing contact system, socket outlets white, set at 35°, including mounting brackets

Art. no.	Version
19", 8 x earthing contact	**Length: 440 mm**
333.001	· 8 x socket outlet with earthing contact, white
19", 7 x earthing contact	**Length: 440 mm**
1 x switch, green	
333.000	· 7 x socket outlet with earthing contact, white · Switch, green
19", 7 x earthing contact	**Length: 440 mm**
1 x overvoltage protection	
333.004	· 7 socket outlets with earthing contact, white · Overvoltage protection
19", 6 x earthing contact	**Length: 440 mm**
1 x overvoltage protection, 1 x switch, green	
333.005	· 6 x socket outlet with earthing contact, white · Switch, green · Overvoltage protection
19", 5 x earthing contact	**Length: 440 mm**
1 x overvoltage protection + mains and frequency filters	
333.002	· 5 x socket outlet with earthing contact, white · Overvoltage protection + mains and frequency filters
19", 4 x earthing contact	**Length: 440 mm**
1 x overvoltage protection + mains and frequency filters, 1 x switch, green	
331.0202	· 4 x socket outlet with earthing contact, white · Switch, green · Overvoltage protection + mains and frequency filters

available from stock

PDUs > 1 U PVC
Power distribution units

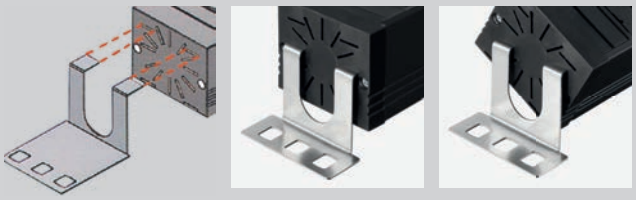
· Torsionally rigid profile > 1 U (52 mm) in high-quality PVC, profile depth 44 mm
· Optionally includes illuminated 2-pole switch
· High-quality electronics components built in, e.g. overvoltage protection, mains and frequency filters
· Mounting brackets included

End caps riveted and do not open

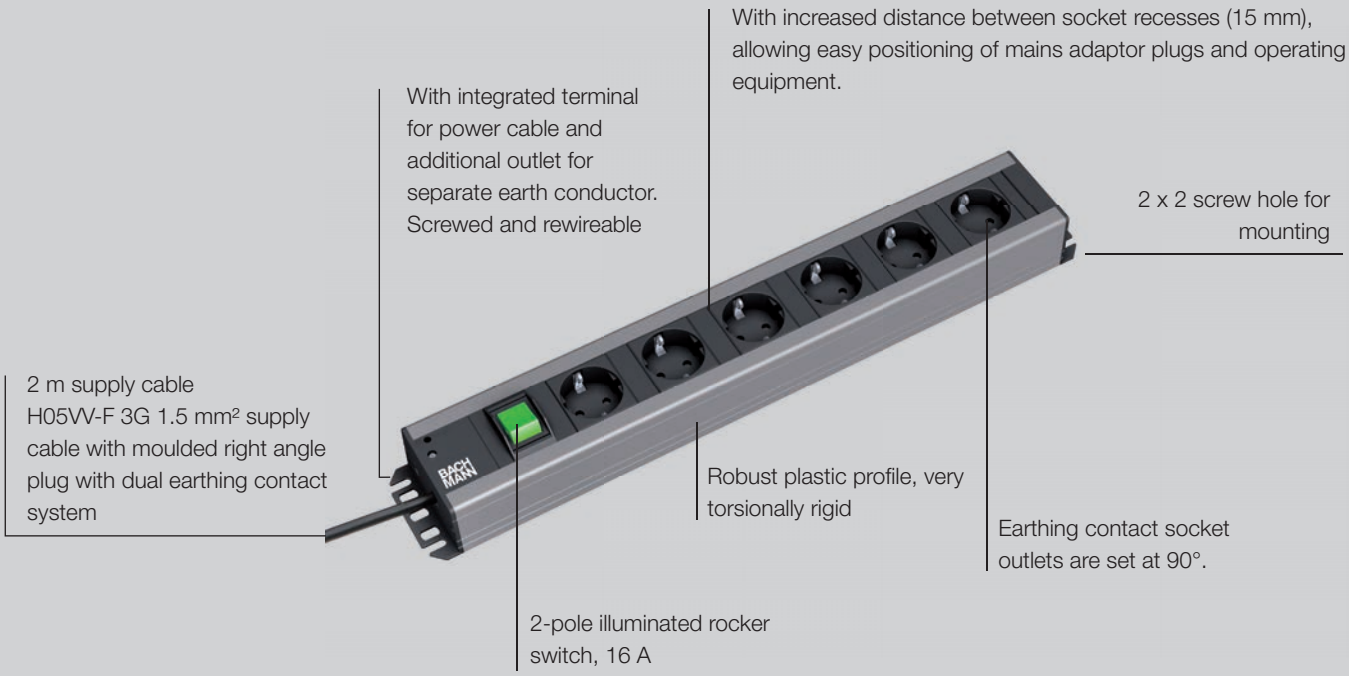
Power input: 2.0 m, H05VV-F 3G 1.50 mm², grey, with moulded right angle plug with earthing contact with dual earthing contact system, light grey RAL7035 socket outlets set at 35°, including mounting brackets

Art. no.	Version
19", 8 x earthing contact	**Length: 440 mm**
333.601	· 8 x socket outlet with earthing contact
19", 7 x earthing contact	**Length: 440 mm**
1 x switch, green	
333.600	· 7 socket outlets with earthing contact · Switch, green
19", 7 x earthing contact	**Length: 440 mm**
1 x overvoltage protection	
333.604	· 7 x socket outlet with earthing contact · Overvoltage protection
19", 6 x earthing contact	**Length: 440 mm**
1 x overvoltage protection, 1 x switch, green	
333.605	· 6 x socket outlet with earthing contact · Switch, green · Overvoltage protection
19", 5 x earthing contact	**Length: 440 mm**
1 x overvoltage protection + mains and frequency filters	
333.602	· 5 x socket outlet with earthing contact · Overvoltage protection + mains and frequency filters

available from stock



Stainless steel mounting bracket:
Fitted at various heights and angles by fastening in the slots of the end cap.



PDU 2 U

Power distribution units

With increased distance between socket recesses, allowing easy positioning of mains adaptor plugs and operating equipment.

The benefits at a glance

- End caps with additional screw holes for mounting in data racks
- Additional earth conductor can be connected without opening the housing
- PDUs in 19" dimensions available
- Modern, technical design

2 U PDU set at 90°

· Supply cable: 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact
· Socket inserts, black, 15 mm spacing between sockets

Art. no.	Version	Dimensions: (L x W x H)
Power strip 90°		19"
Without switch		
300.000	· 6 x socket outlet with earthing contact	approx. 445 x 74 x 45 mm
300.001	· 9 x socket outlet with earthing contact	approx. 617 x 74 x 45 mm
300.002	· 12 x socket outlet with earthing contact	approx. 790 x 74 x 45 mm

1 x rocker switch, green		19"
300.003	· 6 x socket outlet with earthing contact	approx. 445 x 74 x 45 mm
300.004	· 9 x socket outlet with earthing contact	approx. 617 x 74 x 45 mm
300.005	· 12 x socket outlet with earthing contact	approx. 790 x 74 x 45 mm

1 x overvoltage protection, 1 x rocker switch, green		
300.011	· 6 x socket outlet with earthing contact	approx. 490 x 74 x 45 mm
1 x overvoltage protection + mains and frequency filters, 1 x rocker switch, green		
300.012	· 6 x socket outlet with earthing contact	approx. 575 x 74 x 45 mm

available from stock

Overvoltage protection with filter

Overvoltage protection - conforms to EN 61643-1:2005, EN 61643-11:2002 + A11:2007, type 3, discharge current 6.5 kA, response time < 25 nS. Suitable for 16 A (miniature fuse on request) with varistors, temperature fuse, gas discharge arrester, visual LED function and failure indicator (acoustic signalling also available on request).
Mains and frequency filters conforming to VDE 0565-3:05-2006, damping diagram on data sheet.

2 U PDU set at 35°

· Supply cable: 2.0 m H05VV-F 3G 1.50 mm², black
· Screwing dimension 465 mm, socket outlets set at 35°

Art. no.	Version	Dimensions: (L x W x H)
Power strip 35°		19"
Without switch		
300.006	· 8 x socket outlet with earthing contact	approx. 482.6 x 74 x 45 mm

1 x rocker switch, green		19"
300.007	· 7 x socket outlet with earthing contact	approx. 482.6 x 74 x 45 mm

available from stock

19" Available in 19" dimensions

Basic PDU Vertical

Power distribution units 230 - 400 V / 50 Hz

Development of the IT PDU focused on space-saving PDU integration in the server rack with scope for modular expansion. The high-quality and very robust aluminium profile measures a compact 44 x 47 mm. The space-saving design therefore provides space for data cabling and ventilation for cooling the server rack.
The IT PDUs can be linked together by a simple insertion mechanism, allowing various different plug versions to be combined.

The benefits at a glance

- Very high packing density (96 A per side)
- Very good MTTR (mean time to repair)
- Space-saving (depth: 47 mm)
- Maximum availability thanks to total physical and electric separation
- Lockable C13 and C19 sockets
- Phases identified by colour

Sample rack configuration

Sample system for 4 x 3 x 16 A / 400 V = 44 KW (11 KW per Basic PDU)

IT PDU Basic 1 U
12 x IEC C320 C13 with interlock
6 x socket outlet with earthing contact
Split into 3 phases
Art. no. 800.0109
(See page 24)

IT PDU Basic 1 U
18 x IEC C320 C13 with interlock
3 x IEC C320 C19 with interlock
Split into 3 phases
Art. no. 800.0104
(See page 24)

Supply A
2 x 16 A / 400 V / 50 Hz

IT PDU Basic 1 U
12 x IEC C320 C13 with interlock
6 x socket outlet with earthing contact
Split into 3 phases
Art. no. 800.0109
(See page 24)

IT PDU Basic 1 U
18 x IEC C320 C13 with interlock
3 x IEC C320 C19 with interlock
Split into 3 phases
Art. no. 800.0104
(See page 24)

Supply B
2 x 16 A / 400 V / 50 Hz

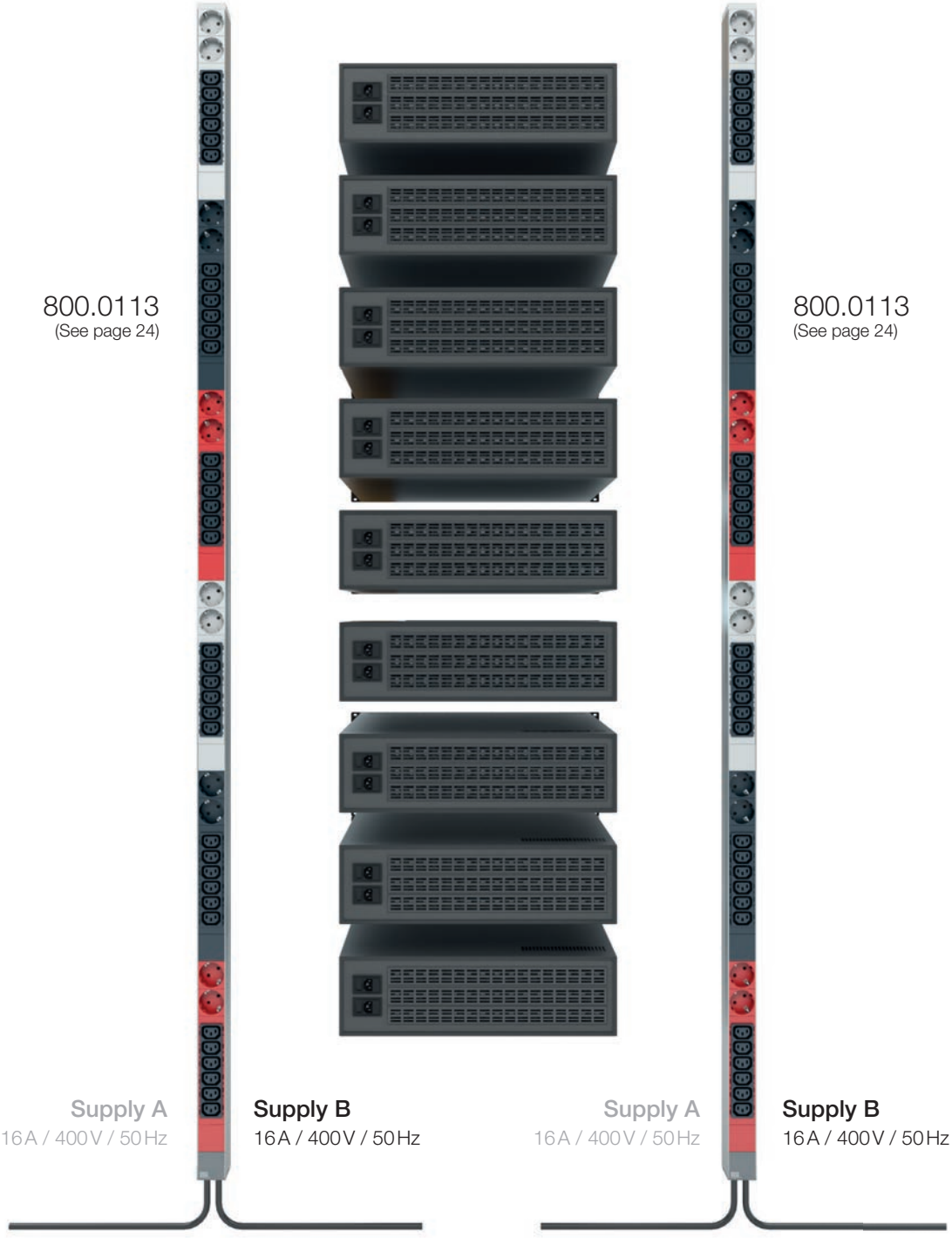
Robust and compact fixing of two PDUs with vertical link.
(Art. no. 800.0053)

You can also use the product configurator at bachmann.com

High density rack

Sample system for 4 x 3 x 16 A / 400 V = 44 kW (11 kW per feeder unit)
Basic PDU 16 A / 400 V / 50 Hz

800.0113
(See page 24)



800.0113
(See page 24)

Supply A
16 A / 400 V / 50 Hz

Supply B
16 A / 400 V / 50 Hz

Supply A
16 A / 400 V / 50 Hz

Supply B
16 A / 400 V / 50 Hz

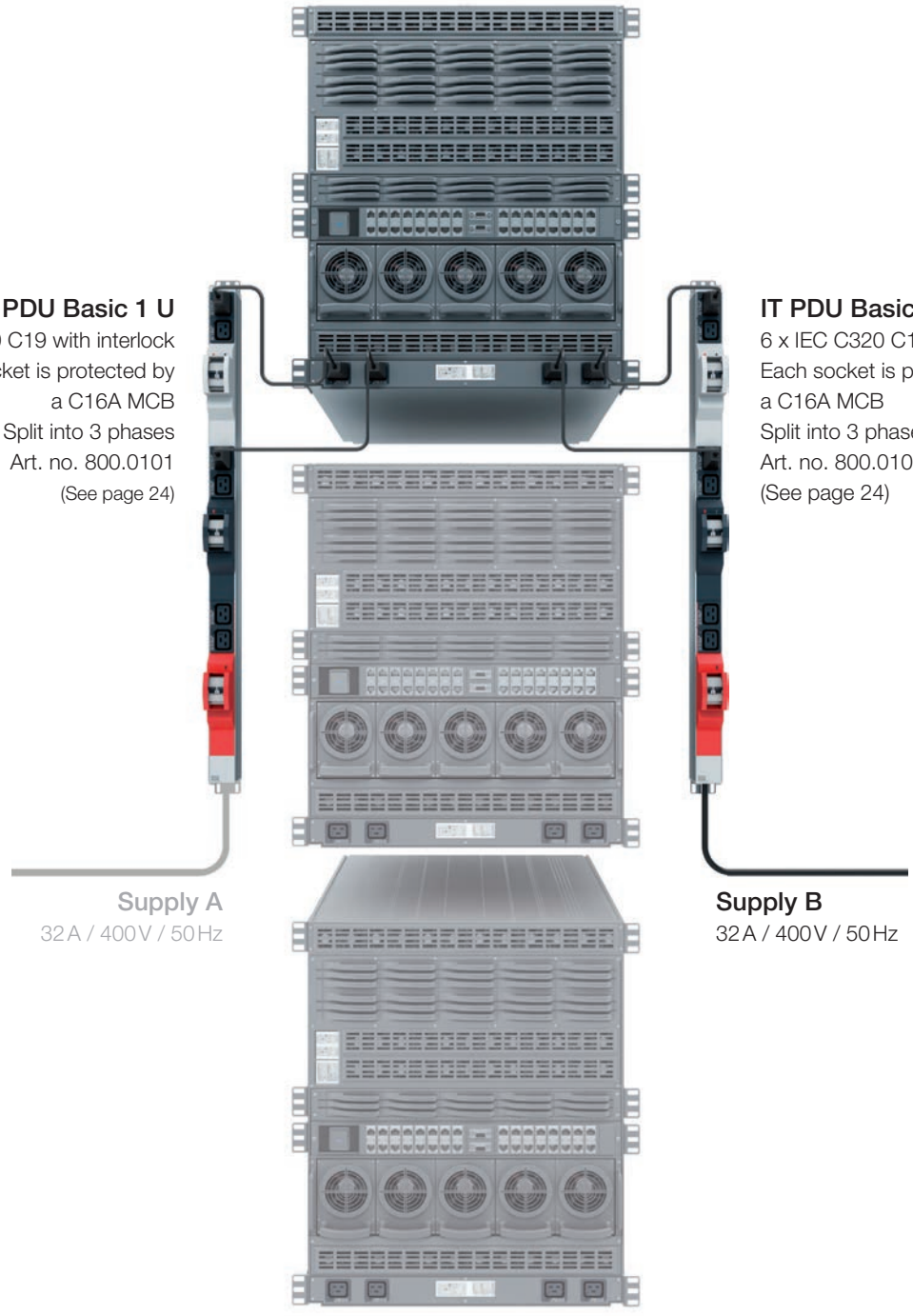
The benefits at a glance

- PDU with double infeed to increase performance or map redundancies.
- 2 galvanically isolated infeeds (16 - 32 A / 230 - 400 V)

Blade center rack

Sample system for 2 x 3 x 32 A/400 V = 44 kW (22 kW per Basic PDU)
Basic PDU 32 A / 400 V / 50 Hz

IT PDU Basic 1 U
6 x IEC C320 C19 with interlock
Each socket is protected by
a C16A MCB
Split into 3 phases
Art. no. 800.0101
(See page 24)



IT PDU Basic 1 U
6 x IEC C320 C19 with interlock
Each socket is protected by
a C16A MCB
Split into 3 phases
Art. no. 800.0101
(See page 24)

Supply A
32 A / 400 V / 50 Hz

Supply B
32 A / 400 V / 50 Hz

The benefits at a glance

- Little wiring work
- Rack with protection against accidental switching
- Selective protection structure
- Redundant power supply, specially for high ratings (22 kW / PDU)
- Compact PDU construction

Basic PDU Vertical

Power distribution units 230 - 400 V / 50 Hz

	Article number	Cable type H05VV-F-	Length (m)	Plug	Phases	Rated voltage (V)	Current per phase in A	C16A miniature circuit breaker	C13	C19 IEC lock	SOEC*	Outlets in total	Dimensions (WxHxD) in mm
	19" IT PDU Basic 3 x (16 A / 400 V / 50 Hz)												
	800.0111	5G 2.5 mm²	3	CEE	3	400	16			6		6	482.6 x 44 x 47
	IT PDU Basic (16 A / 230 V / 50 Hz)												
V	800.1657	3G 2.5 mm²	3	CEE	1	230	16		24	3		27	1075 x 44 x 47
	IT PDU Basic (32 A / 230 V / 50 Hz)												
V	800.0119	5G 4 mm²	3	CEE	1	230	32	2	20			20	778 x 44 x 47
	IT PDU Basic 3 x (16 A / 400 V / 50 Hz)												
V	800.0104	5G 2.5 mm²	3	CEE	3	400	16		18	3		21	821 x 44 x 47
V	800.0105	5G 2.5 mm²	3	CEE	3	400	16		18			18	821 x 44 x 47
	800.0107	5G 2.5 mm²	3	CEE	3	400	16				15	15	821 x 44 x 47
V	800.0109	5G 2.5 mm²	3	CEE	3	400	16		12		6	18	821 x 44 x 47

V	800.1656	5G 2.5 mm²	3	CEE	3	400	16		24	3		27	1075 x 44 x 47
V	800.0113	2 x 5G 2.5 mm²	2 x 3	2 x ES	6	400	16		36		12	48	1840 x 44 x 47
V	800.0114	2 x 5G 2.5 mm²	2 x 3	2 x ES	6	400	16		48			48	1840 x 44 x 47
	IT PDU Basic 3 x (32 A / 400 V / 50 Hz)												
	800.0100	5G 4 mm²	3	CEE	3	400	32	6		12		12	1075 x 44 x 47
	800.0101	5G 4 mm²	3	CEE	3	400	32	6		6		6	820 x 44 x 47
V	800.0102	5G 4 mm²	3	CEE	3	400	32	6	36			36	1586 x 44 x 47

available from stock

*ES=end sleeves

V Lockable socket outlets

Accessories

Mounting kits for IT PDUs

· Power strip is fixed by insertion into the profile groove provided
· No additional screws required

Art. no.	Version
1 U mounting brackets	
940.143	· Mounting brackets left and right
1 U link	
800.0053	· For connecting 2 vertically fitted PDUs
Locking clips	
940.103	· Red locking clip for IEC 320 non-heating appliance sockets C13, supplied in packs of 12.

Connecting cables for power supply

Cable cross-section mm²	Cable length (m)	Plug	Coupling	Art. no.	Cable colour
1.0	0.50	C14	C13	356.119	black
1.0	0.75	C14	C13	356.169	black
1.0	1.00	C14	C13	356.120	black
1.0	1.50	C14	C13	356.127	black
1.0	2.00	C14	C13	356.171	black
1.5	0.50	ECP*	C13	356.172	black
1.5	0.75	ECP*	C13	356.1721	black
1.5	1.00	ECP*	C13	356.1722	black
1.5	1.50	ECP*	C13	356.1723	black
1.5	2.00	ECP*	C13	354.127	black
1.5	0.50	C20	C19	356.1731	black
1.5	0.75	C20	C19	356.1732	black
1.5	1.00	C20	C19	356.1733	black
1.5	1.50	C20	C19	356.183	black
1.5	2.00	C20	C19	356.1735	black
1.5	0.50	ECP*	C19	356.1971	black
1.5	0.75	ECP*	C19	356.1972	black
1.5	1.00	ECP*	C19	356.1973	black
1.5	1.50	ECP*	C19	356.1974	black
1.5	2.00	ECP*	C19	356.1975	black

Art. no.	Cable colour
356.900	grey
356.901	grey
356.902	grey
356.903	grey
356.904	grey
356.905	grey
356.906	grey
356.907	grey
356.908	grey
356.909	grey
356.910	grey
356.911	grey
356.918	grey
356.935	grey
356.936	grey
356.937	grey
356.938	grey
356.939	grey
356.940	grey
356.941	grey

*ECP=earthing contact plug **SOEC=socket outlet with earthing contact

BlueNet

The intelligent, modular energy management system

BlueNet offers a total solution for structuring, controlling and monitoring IT power networks. It captures consumption and output data and provides the user with relevant data and control options for modern power management.

BlueNet

Efficient Power Management

Energy management

Monitor energy costs with BlueNet. All data, such as current, voltage, power, is depicted by the software and display.
Loads can then be distributed such that failures due to circuit overloads no longer occur.
Messages can be triggered automatically by means of adjustable threshold valves. Restarts controlled by web link further increase availability and flexibility.

The BlueNet technology can be easily integrated in superordinate infrastructure software solutions using extensive, integrated interfaces.

Safety

Every Bachmann PDU is tested and documented one port at a time using a computer-based test program during production.
Electronic components are continually subjected to stress tests to guarantee consistent quality.
BlueNet is only integrated in compact, very robust, yet weight-optimised aluminium housings.
Most of the requirements in relevant standards and guidelines are exceeded.

Energy efficiency

Bachmann BlueNet PDUs save energy. The technology used has some of the lowest operating consumption levels for intelligent measurement systems in the world.
The modular structure of the BlueNet PDUs guarantees maximum packing density. The tiny amount of space needed by the PDUs leaves room for cabling and air conditioning in the rack. The BlueNet Basic Monitored series is one of the most compact power metering solutions with integrated network and sensor interface anywhere in the world.

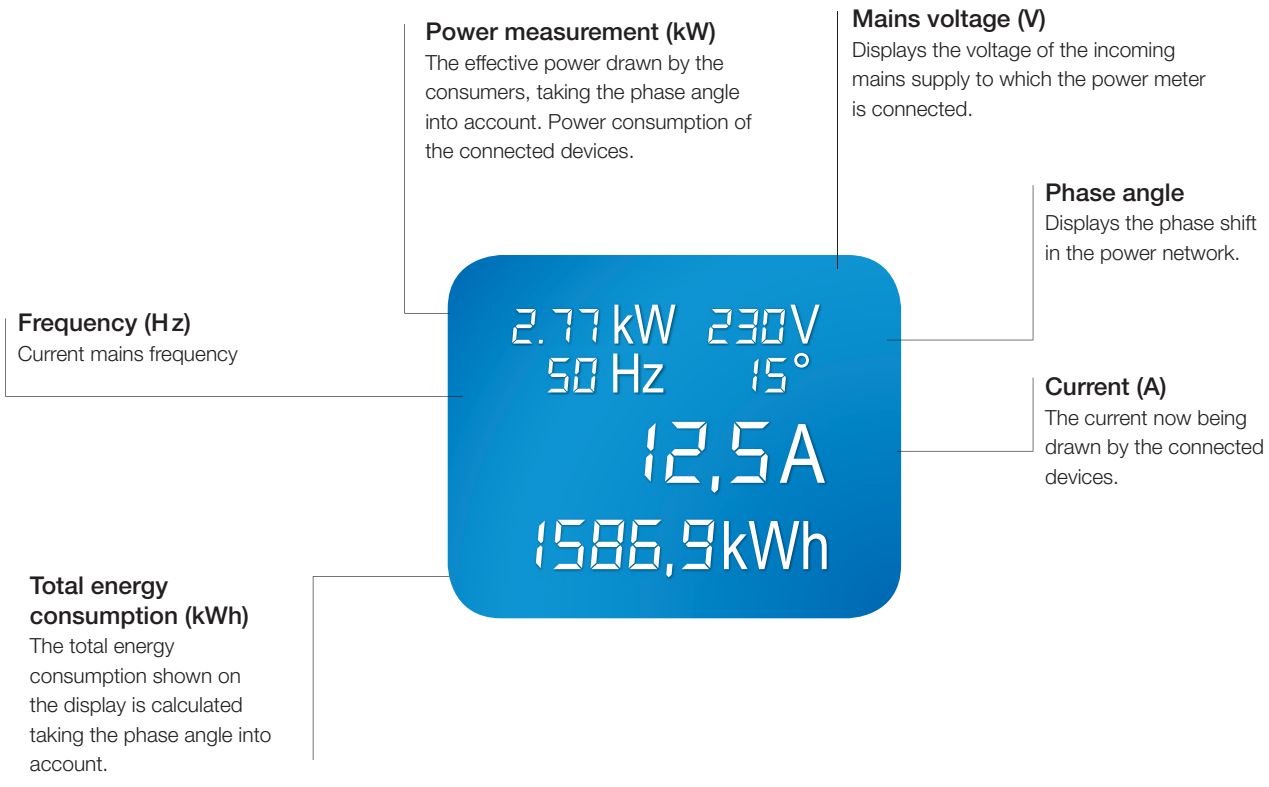
BlueNet product matrix

	BN0500	BN1000	BN2000	BN2000 PLC	BN2000 Inline	BN2000 Inline PLC	BN3000	Switched	Managed	Power unit
MEASUREMENT										
Current	x	x	x	x	x	x	x		x	x
Voltage	x	x	x	x	x	x	x		x	x
Phase angle	x	x	x	x	x	x	x		x	x
Frequency	x	x	x	x	x	x	x		x	x
Effective power	x	x	x	x	x	x	x		x	x
Reactive power		x	x	x	x	x	x		x	x
Apparent power		x	x	x	x	x	x		x	x
Energy meter	x	x	x	x	x	x	x		x	x
Power factor		x	x	x	x	x	x		x	x
Neutral conductor monitoring			x	x	x	x	x		x	x
Measurement per phase	x	x	x	x	x	x	x		x	x
Optional residual current measurement							x			
Measurement accuracy	1%	1%	1%	1%	1%	1%	1%		1%	1%
DISPLAY										
Type	LCD	–	TFT	TFT	TFT	TFT	OLED		LCD	LCD
Display can be rotated using software			x	x	x	x	x			
SENSORS										
Connections for external sensors		1	2	2	2	2	2			
Socket outlets can be switched		x						x	x	
Switching status check								x	x	

	BN0500	BN1000	BN2000	BN2000 PLC	BN2000 Inline	BN2000 Inline PLC	BN3000	Switched	Managed	Power unit
SWITCH										
Timer function		x								
Threshold value switching function		x								
COMMUNICATION										
Ethernet (10/100 Mbit/s)		x	x	x	x	x	x	x	x	x
WiFi 802.11 b/g/n		x								
PowerLine communication				x		x				
ModBus TCP							x	x	x	x
HTTP		x	x	x	x	x	x	x	x	x
HTTPS		x					x	x	x	x
SSH							x	x	x	x
DHCP		x	x	x	x	x	x	x	x	x
SMTP		x					x	x	x	x
SNMPv2			x	x	x	x	x	x	x	x
SNMPv3							x			
SNMP Trap							x	x	x	x
Syslog			x	x	x	x	x	x	x	x
NTP		x	x	x	x	x	x	x	x	x
OPERATION										
Web browser		x	x	x	x	x	x	x	x	x
Mobile app		x								
Local			x	x	x	x	x			

BlueNet BN0500

Current and power metering via local display



Power measurement (kW)
The effective power drawn by the consumers, taking the phase angle into account. Power consumption of the connected devices.

Mains voltage (V)
Displays the voltage of the incoming mains supply to which the power meter is connected.

Phase angle
Displays the phase shift in the power network.

Frequency (Hz)
Current mains frequency

Current (A)
The current now being drawn by the connected devices.

Total energy consumption (kWh)
The total energy consumption shown on the display is calculated taking the phase angle into account.

The benefits at a glance

- Current measurement
- Voltage measurement
- Phase angle measurement
- Effective power measurement taking phase angle into account
- Frequency measurement
- BlueNet display
- Accuracy class 1

BlueNet BN0500 (16 A / 230 V / 50 Hz)

Integrated measurement of:

- current, effective power, voltage, frequency, phase angle and energy
- Indication on illuminated LCD
- Energy meter which can be reset (value is stored even if there is no power supply)
- Accuracy of measurement +/- 1 %
- End caps riveted and do not open
- Includes mounting brackets and screws
- Plastic black, aluminium profile silver

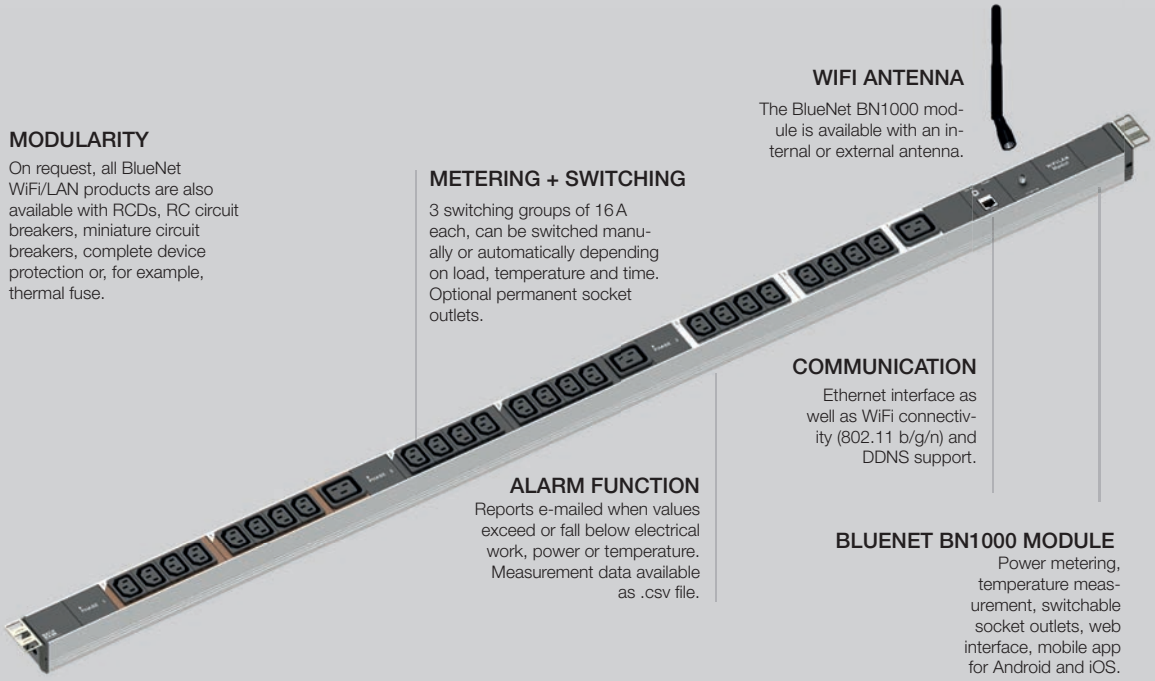
Art. no.	Version	Dimensions (L x W x H)	
BlueNet BN0500			
integrated power metering, 2.0 m H05VV-F 3G 1.5 mm², black, with right angle plug with earthing contact			
800.2054	· 8 x socket outlet with earthing contact	approx. 482.6 x 44 x 44	
800.2055	· 12 x IEC320 non-heating appliance socket C13	approx. 482.6 x 44 x 44	V
integrated power metering, 2.0 m H05VV-F 3G 1.5 mm², black, with CH T13 plug			
800.2063	· 7 x CH T13 socket outlet incl. 10 A fuse	approx. 482.6 x 44 x 44	
integrated power metering, 2.0 m H05VV-F 3G 1.5 mm², black, with CH T23 plug			
800.2065	· 7 x CH T23 socket outlet	approx. 482.6 x 44 x 44	
integrated power metering, 2.0 m H05VV-F 3G 1.5 mm², black, with right angle plug with earthing contact			
800.2067	· 8 x French / UTE socket outlet	approx. 482.6 x 44 x 44	
integrated power metering, 2.0 m H05VV-F 3G 1.5 mm², black, with UK plug			
800.2068	· 6 x UK socket outlet	approx. 482.6 x 44 x 44	
BlueNet BN0500 (16 A / 400 V / 50 Hz)			
integrated power metering, 3.0 m H05VV-F 5G 2.5 mm², black, with CEE-plug			
800.2134	· 24 x IEC320 C13; 3 x IEC320 C19 with IEC-Lock	ca. 1276 x 44 x 44	
BlueNet BN0500 (16 A / 230 V / 50 Hz)			
integrated power metering, 2.0 m H05VV-F 3G 1.5 mm², black, with CEE-plug			
800.2135	· 24 x IEC320 C13; 4 x IEC320 C19 with IEC-Lock	ca. 958 x 44 x 44	

800.2135

800.2134

You can also use the product configurator at bachmann.com

V Lockable socket outlets



BlueNet BN1000

BlueNet
Efficient Power Management

The complete solution for small and mid-sized IT network applications

The new BlueNet BN1000 module provides three separate switching and measuring groups for extended power metering and temperature measuring, and the switching of individual socket outlets and complete power strips.
The management interface is integrated in the web server and is operated via the web browser in the network or with Dynamic DNS via the Internet. The BlueNet WiFi app is available for mobile end devices.
The maximum switching capacity is a full 16 A per switching group. Switching can be performed both manually and automatically using load, temperature or time thresholds which can be set individually.
The BlueNet BN1000 module can be integrated in virtually all Bachmann products.
External temperature sensors are available as accessories in lengths of 3, 10 and 20m.
An external RP-SMA antenna connection is provided for all Bachmann's IT BN1000 products. External WiFi antennas are also available as accessories.
Thanks to its compact design, the BN1000 module can be integrated in the modular Bachmann system and

The benefits at a glance

- Three switching groups of 16 A each
- Temperature measurement and power metering
- Load management and cost control
- Management via web interface and smartphone app
- Remote online access via Dynamic DNS
- WiFi (802.11 b/g/n) and Ethernet connectivity
- Ethernet (LAN) connectivity

combined with connector systems, basic products and other components.

Manual switching

The WiFi/LAN module is accessed by Internet browser or mobile app. A static or dynamic IP address of the local network is assigned to the WiFi/LAN module. A dynamic DNS is fully supported and allows access (including remote access) to connected WiFi/LAN products with all functions, such as switching the switching outputs and monitoring of temperature and power data at any time. Depending on product variant, can also be switched using local buttons.

Time-controlled switching

The BN1000 module provides convenient programming of the timer via the web browser. Only the time is entered during daily switching (on/off). The socket outlet's system time can be automatically synchronised via the Internet on a daily basis. The days of the week can be set for weekly switching processes. The switching actions (on/off) are selected individually for each time. All settings are saved in an individual profile. Up to four profiles can be created with the BN1000 module.

Temperature monitoring, threshold value alarms and temperature-dependent switching

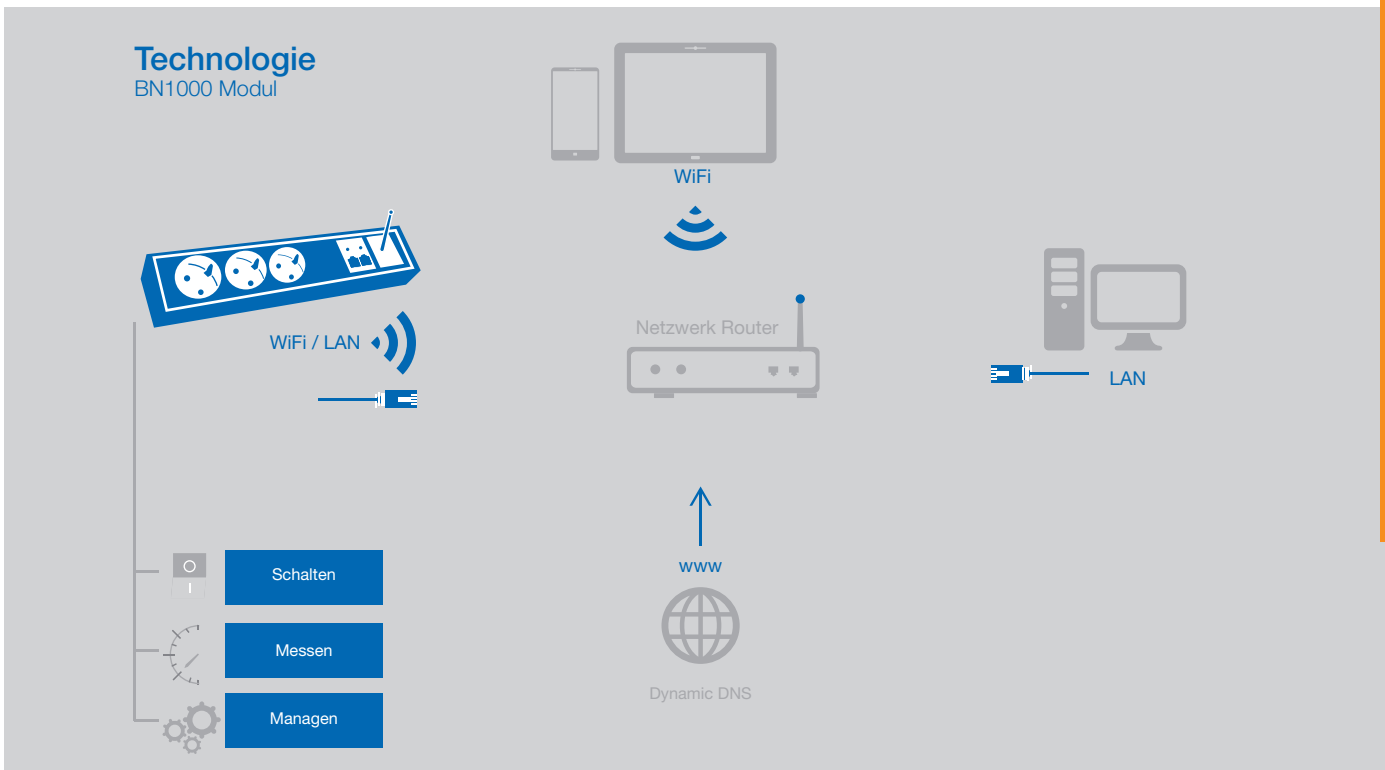
The ambient temperature is measured using the connected temperature sensor and displayed directly in the web browser and app. If values exceed or fall below personally defined threshold values, e-mails are sent automatically. Limit values, at which the selected switching groups are switched automatically, allow e.g. an air conditioning device or a heating fan to function in a particular temperature range with the aid of BN1000 technology.

Power metering, issuing of threshold value alarms and load-dependent switching

Within the BN1000 module, the present electrical power of the three switching groups is measured and visualised via a web interface or app. Again automatic switching is possible following a freely definable effective power threshold value per switching group. E-mails can also be sent automatically if values exceed or fall below the measured power or electrical work.

Key facts

- Measurement of: Temperature, voltage (V), current (A), cos Φ, effective power (W), apparent power (VA), work (kWh) and costs (€)
- Switching function: manual, by power, temperature or time; 3 switching groups of 16 A each
- Communication: WiFi (802.11 b/g/n, Ethernet 10/100), supports DDNS
- SSL-encrypted e-mail messages when values exceed or fall below threshold values
- Integrated web server with graphic management interface
- Client applications for Android and iOS
- With internal or external antenna as an option
- Accuracy of measurement +/- 1%

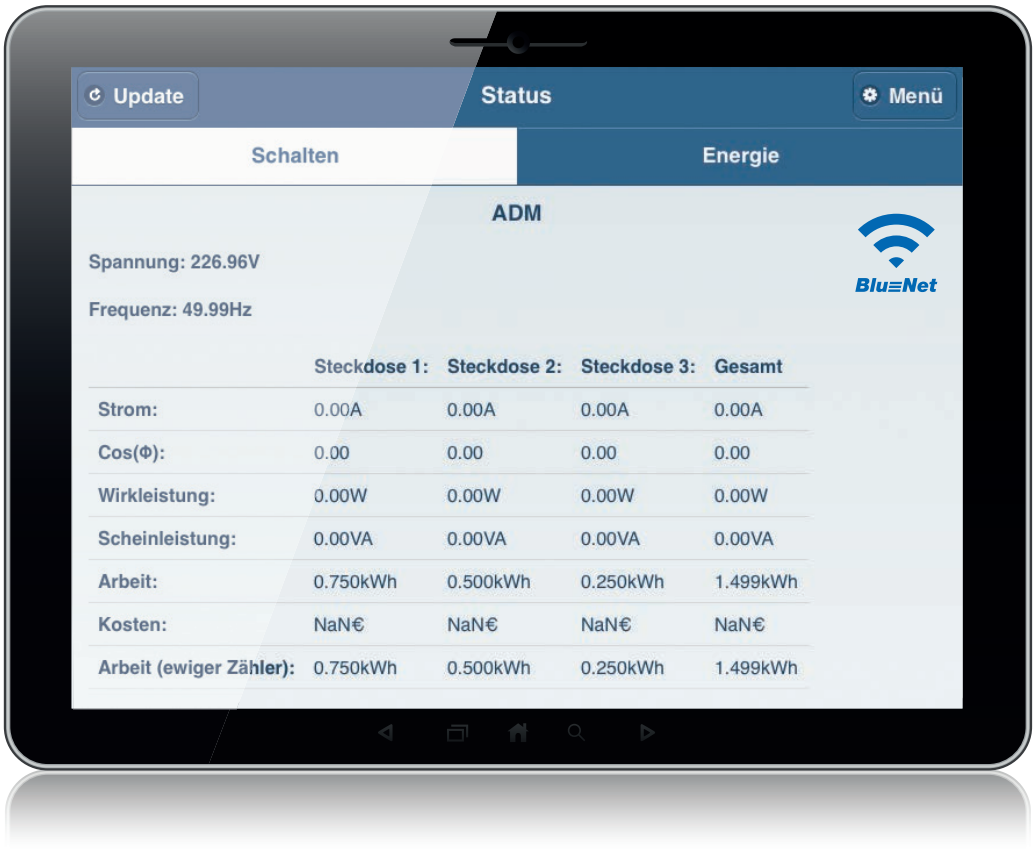


App for smartphones or tablet PCs

The app is available from the Play Store (for Android) or the App Store (for iOS) by searching for BlueNet WiFi. The present temperature, current switching statuses and current power metering data are displayed. The socket outlets can be switched on and off. If a Dynamic DNS address is entered, this entire functional scope can be accessed remotely via 3G or 4G.

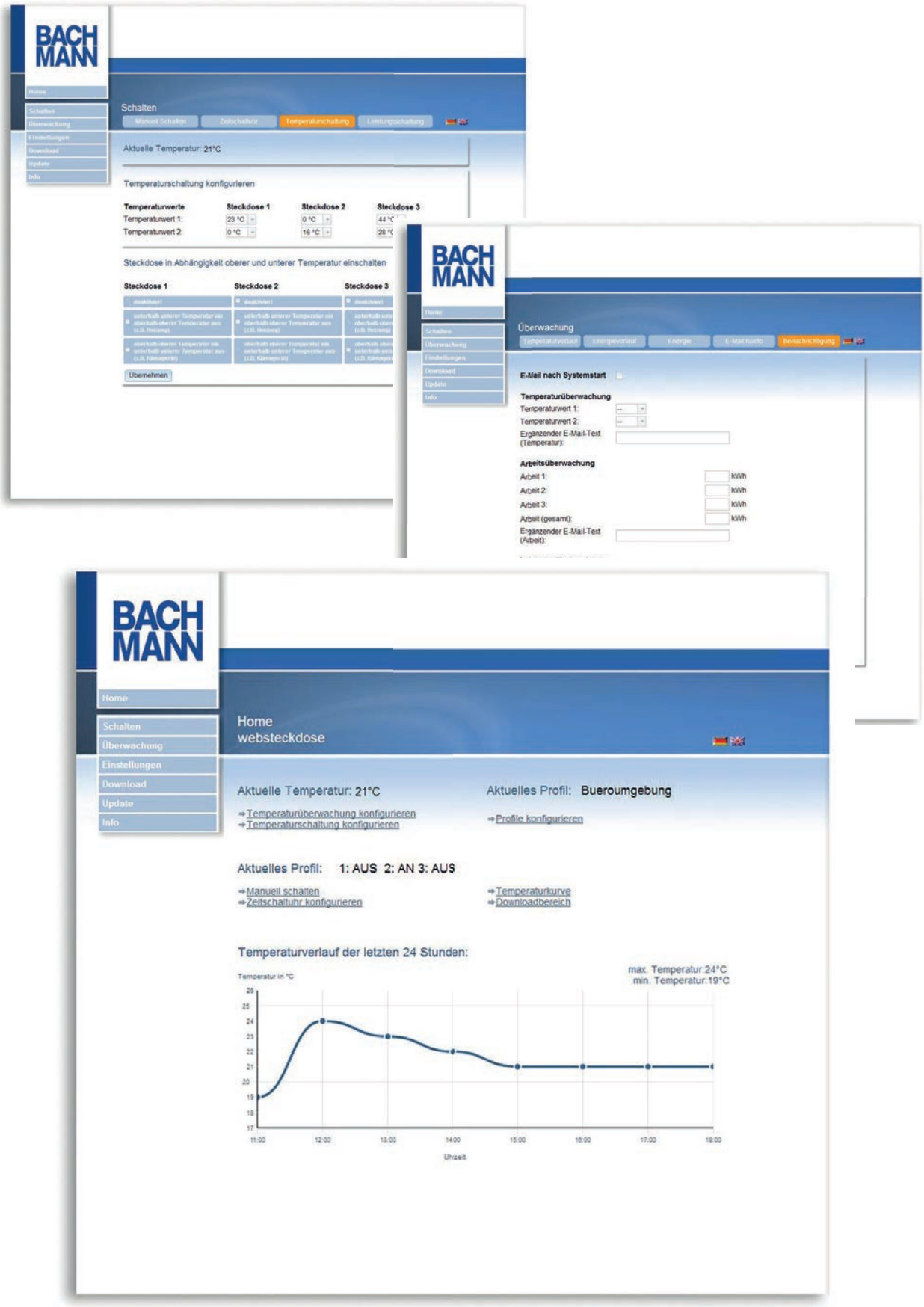
Smartphone interface

Tablet interface



	Steckdose 1:	Steckdose 2:	Steckdose 3:	Gesamt
Strom:	0.00A	0.00A	0.00A	0.00A
Cos(Φ):	0.00	0.00	0.00	0.00
Wirkleistung:	0.00W	0.00W	0.00W	0.00W
Scheinleistung:	0.00VA	0.00VA	0.00VA	0.00VA
Arbeit:	0.750kWh	0.500kWh	0.250kWh	1.499kWh
Kosten:	NaN€	NaN€	NaN€	NaN€
Arbeit (ewiger Zähler):	0.750kWh	0.500kWh	0.250kWh	1.499kWh

Website interface



Power metering & switching (BlueNet BN1000)

- Power metering
- Temperature monitoring
- Issuing of threshold value alarms
- Remote switching
- Time-controlled switching
- Temperature-dependent switching

For more information, see page 32

Article number	Cable type	Cable cross-section mm^2	Cable length (m)	Plug	Phase(s)	Rated voltage (V)	Current (A)	Max power in kVA	SKD**	UTE	T13	C13	C19	Outlets in total	Dimensions (L x W x D)
820.028	H05VV-F	3G1,5	2	SKS*	1	230	16	3,7	3					3	437 x 44,4 x 46,2
820.030	H05VV-F	3G1,5	2	SKS*	1	230	16	3,7		3				3	522 x 44,4 x 46,2
820.032	H05VV-F	3G1,5	2	T12	1	230	16	3,7			3			3	437 x 44,4 x 46,2
820.029	H05VV-F	3G1,5	2	SKS*	1	230	16	3,7	6					6	522 x 44,4 x 46,2
820.031	H05VV-F	3G1,5	2	SKS*	1	230	16	3,7		6				6	607 x 44,4 x 46,2
820.033	H05VV-F	3G1,5	2	T12	1	230	16	3,7			9			9	522 x 44,4 x 46,2
820.044	H05VV-F	3G1,5	2	CEE16A	1	230	16	3,7				24	3	27	1160 x 44,4 x 46,2

BN1000 accessories

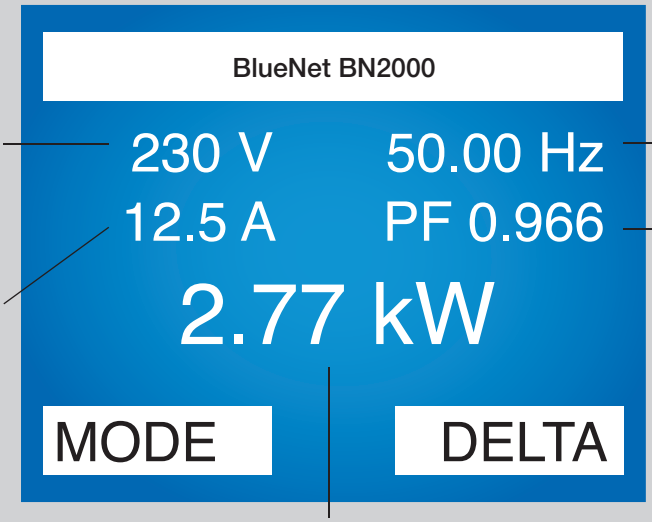
Art. no.	Description
BlueNet BN1000 accessories	
820.045	· External temperature sensor 3.0 m; jack plug 2.5 mm; measuring range of sensor max. -50 °C to 110 °C
820.046	· External temperature sensor 10 m; jack plug 2.5 mm; measuring range of sensor max. -50 °C to 110 °C; water-tight IP88
820.047	· External temperature sensor 20 m; jack plug 2.5 mm; measuring range of sensor max. -50 °C to 110 °C; water-tight IP88
820.048	· RP-SMA WiFi antenna; with pivoted joint; 802.11 b/g/n; boosting 2dBi
820.049	· RP-SMA WiFi antenna; with pivoted joint; 802.11 b/g/n; boosting 5dBi

Connecting cables for power supply

Cable cross-section mm²	Cable length (m)	Plug	Coupling	Art. no.	Cable colour
1.0	0.50	C14	C13	356.119	black
1.0	0.75	C14	C13	356.169	black
1.0	1.00	C14	C13	356.120	black
1.0	1.50	C14	C13	356.127	black
1.0	2.00	C14	C13	356.171	black
1.5	0.50	ECP*	C13	356.172	black
1.5	0.75	ECP*	C13	356.1721	black
1.5	1.00	ECP*	C13	356.1722	black
1.5	1.50	ECP*	C13	356.1723	black
1.5	2.00	ECP*	C13	354.127	black
1.5	0.50	C20	C19	356.1731	black
1.5	0.75	C20	C19	356.1732	black
1.5	1.00	C20	C19	356.1733	black
1.5	1.50	C20	C19	356.183	black
1.5	2.00	C20	C19	356.1735	black
1.5	0.50	ECP*	C19	356.1971	black
1.5	0.75	ECP*	C19	356.1972	black
1.5	1.00	ECP*	C19	356.1973	black
1.5	1.50	ECP*	C19	356.1974	black
1.5	2.00	ECP*	C19	356.1975	black

Art. no.	Cable colour
356.900	grey
356.901	grey
356.902	grey
356.903	grey
356.904	grey
356.905	grey
356.906	grey
356.907	grey
356.908	grey
356.909	grey
356.910	grey
356.911	grey
356.918	grey
356.935	grey
356.936	grey
356.937	grey
356.938	grey
356.939	grey
356.940	grey
356.941	grey

OR = on request



Mains voltage (V)
Displays the voltage of the incoming mains supply to which the power meter is connected.

Current (A)
The current now being drawn by the connected devices.

Frequency (Hz)
Current mains frequency

Power factor
Displays the power factor.

Power measurement (kW)
The effective power drawn by the consumers, taking the phase angle into account. Power consumption of the connected devices.

BlueNet BN2000

16 - 32 A / 230 - 400 V / 50 Hz

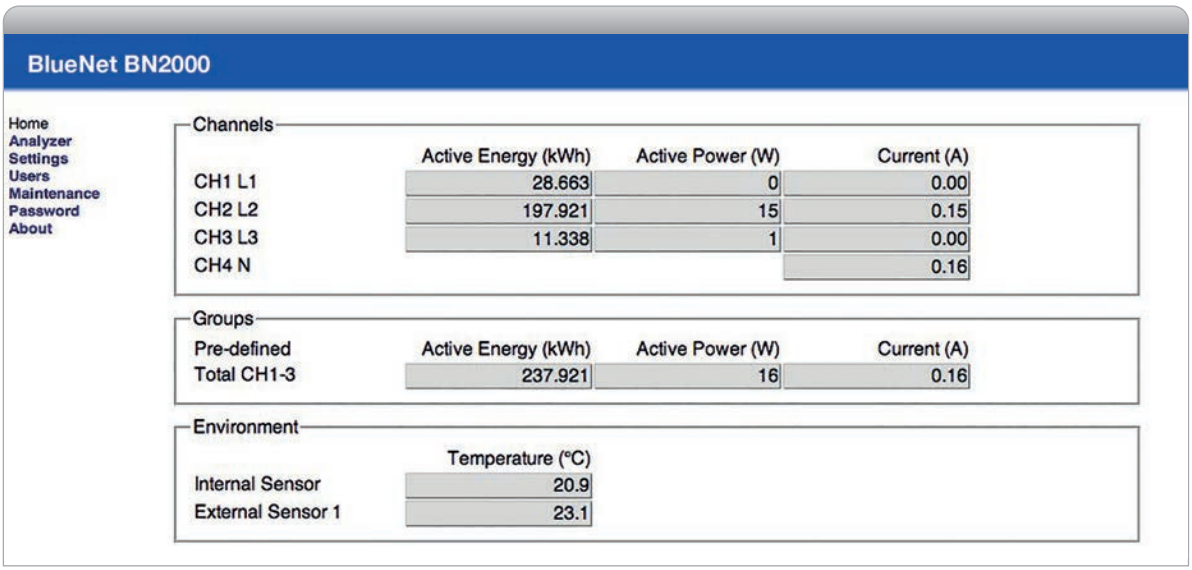
BlueNet
Efficient Power Management

The benefits at a glance

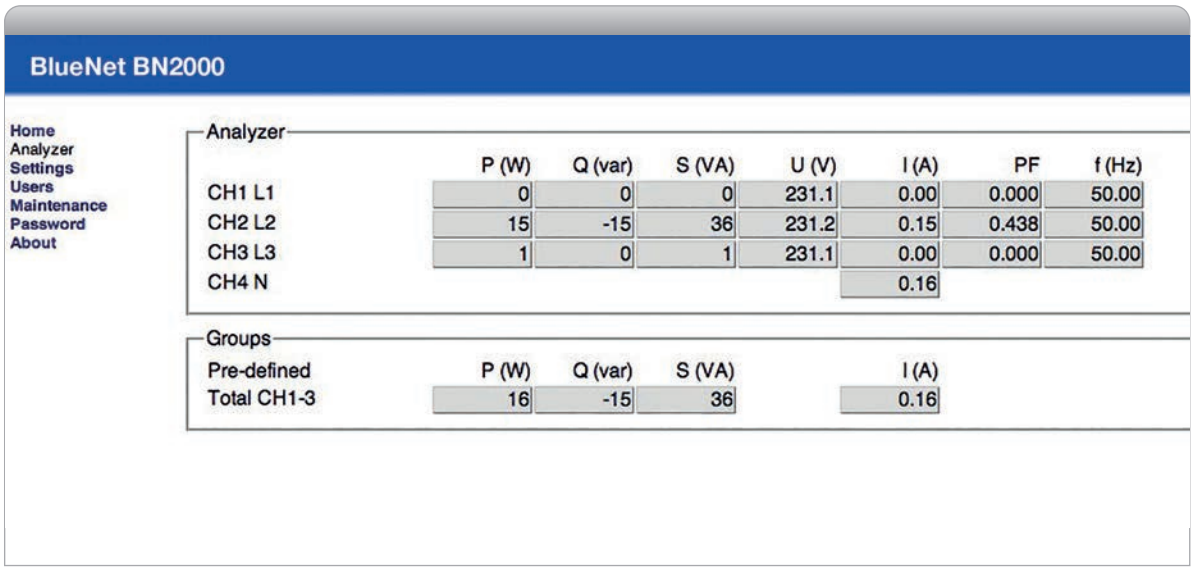
- Robust aluminium housing
- 1-phase and 3-phase versions
- 3.6 kW - 22 kW power range
- Extremely compact PDU power metering in 1 U profile (44 mm x 47 mm)
- Coloured phase assignment of socket outlet with earthing contact and IEC 320 socket inserts
- Measurement of: current per phase & in total, power per phase & in total (effective, apparent and reactive power)
- energy consumption, voltage, frequency, power factor, N conductor, current
- Integrated temperature sensor also for self-monitoring
- 2 more sensors (temp./humidity) can be connected. If combi sensor is connected, up to an extra 2 x temp. + 2 x humidity measurement possible
- Operated locally or using web browser via Ethernet port
- Protocols: HTTP, SNMP, Ethernet 10/100 MBit/s, DHCP, NTP
- High-resolution 2" TFT display, display can be rotated
- Accuracy of measurement +/- 1 %
- Internal consumption < 1 W

Combined temperature and air humidity sensor which can be easily secured to the rack using the integrated magnet.

BlueNet BN2000 as 19" variant for monitoring the network and distributor racks



· Overview of the system
· Display of effective energy meter, load and current
· Display of internal and external environmental sensors



· Detailed view of the 3 phases and neutral conductor
· Display of effective, apparent and reactive power, voltage, current, power factor and frequency

BlueNet BN2000 PDU

	Article number	Cable type	Cable cross-section mm²	Cable length (m)	Plug	Phase(s)	Rated voltage (V)	Current (A)	Max power in kVA	C13	C19 IEC LOCk	SOEC*	C19	C16A miniature circuit-breaker	Outlets in total	Length (mm)
V	329.3009	H05VV-F	1.5	2	ECP*	1	230	16	3.7			6			6	438.5
V	329.3010	H05VV-F	1.5	2	ECP*	1	230	16	3.7	8					8	438.5
V	329.3012	H05VV-F	1.5	3	CEE	3	400	16	11.0	36		6			42	1757.7
V	329.3013	H05VV-F	1.5	3	CEE	3	400	16	11.0	36			6		42	1757.7
V	329.3056	H05VV-F	4	3	CEE	1	230	32	7.4	24	4			2	28	1330.7
V	329.3057	H05VV-F	2.5	3	CEE	1	230	16	3.7	24	3				27	1032.6
V	329.3058	H05VV-F	4	3	CEE	3	400	32	22.1	24	6			3	30	1883
V	329.3059	H05VV-F	2.5	3	CEE	3	400	16	11.0	24	6				30	1373

available from stock

BlueNet BN2000 accessories

Art. no.	Description
BlueNet BN2000 accessories	
329.3104	· Combined temperature and humidity sensor 2.0 m cable

V Lockable socket outlets

Accessories

Mounting kits for IT PDUs

· Power strip is fixed by insertion into the profile groove provided
· No additional screws required

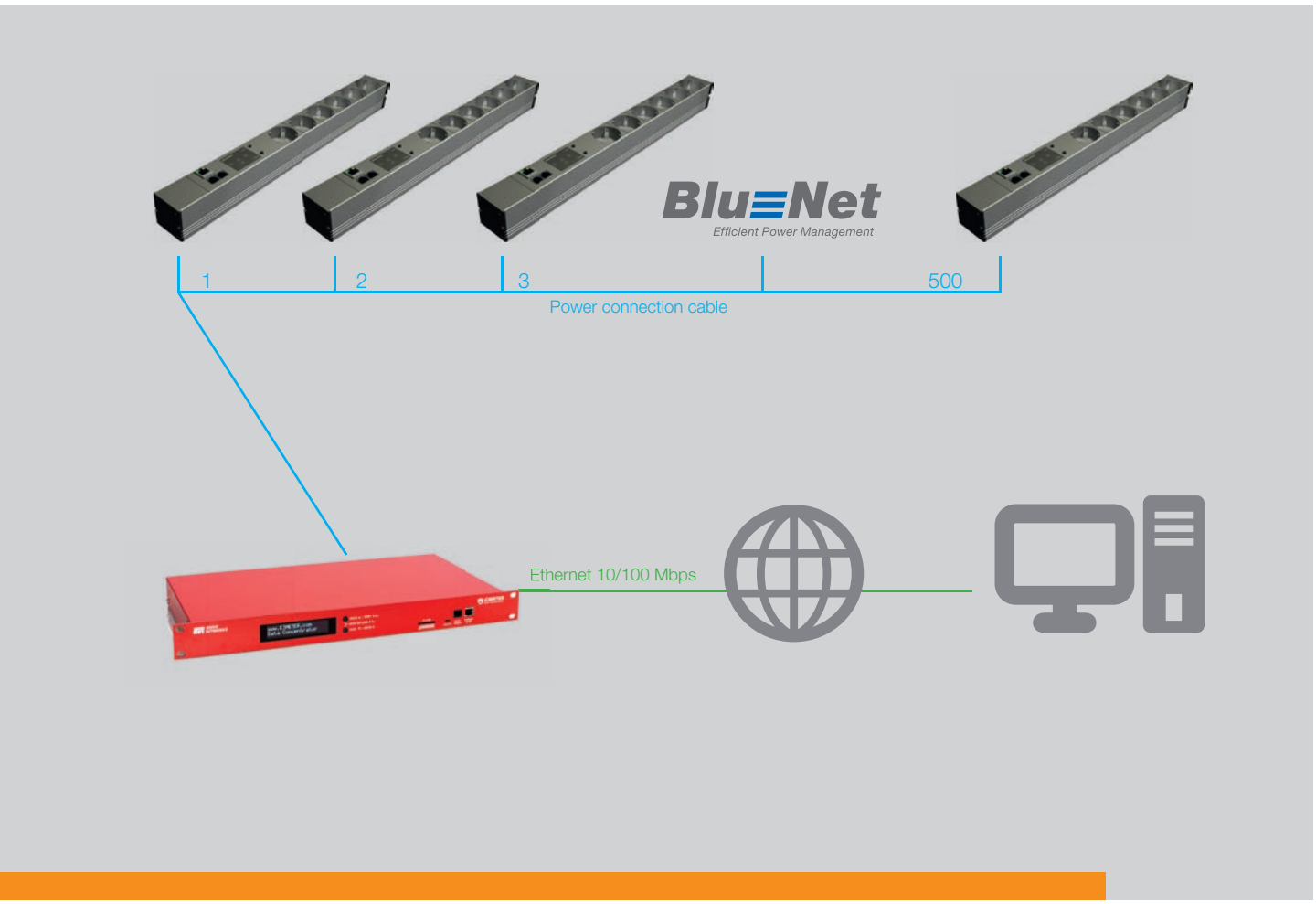
Art. no.	Version
1 U mounting brackets	
940.143	· Mounting brackets left and right
1 U link	
800.0053	· For connecting 2 vertically fitted PDUs
Locking clips	
940.103	· Red locking clip for IEC 320 non-heating appliance sockets C13, supplied in packs of 12.

Connecting cables for power supply

Cable cross-section mm²	Cable length (m)	Plug	Coupling	Art. no.	Cable colour
1.0	0.50	C14	C13	356.119	black
1.0	0.75	C14	C13	356.169	black
1.0	1.00	C14	C13	356.120	black
1.0	1.50	C14	C13	356.127	black
1.0	2.00	C14	C13	356.171	black
1.5	0.50	ECP*	C13	356.172	black
1.5	0.75	ECP*	C13	356.1721	black
1.5	1.00	ECP*	C13	356.1722	black
1.5	1.50	ECP*	C13	356.1723	black
1.5	2.00	ECP*	C13	354.127	black
1.5	0.50	C20	C19	356.1731	black
1.5	0.75	C20	C19	356.1732	black
1.5	1.00	C20	C19	356.1733	black
1.5	1.50	C20	C19	356.183	black
1.5	2.00	C20	C19	356.1735	black
1.5	0.50	ECP*	C19	356.1971	black
1.5	0.75	ECP*	C19	356.1972	black
1.5	1.00	ECP*	C19	356.1973	black
1.5	1.50	ECP*	C19	356.1974	black
1.5	2.00	ECP*	C19	356.1975	black

Art. no.	Cable colour
356.900	grey
356.901	grey
356.902	grey
356.903	grey
356.904	grey
356.905	grey
356.906	grey
356.907	grey
356.908	grey
356.909	grey
356.910	grey
356.911	grey
356.918	grey
356.935	grey
356.936	grey
356.937	grey
356.938	grey
356.939	grey
356.940	grey
356.941	grey

*ECP=earthing contact plug



BlueNet BN2000 PLC

(PowerLine communication)

16 - 32 A / 230 - 400 V / 50 Hz

BlueNet
Efficient Power Management

The benefits at a glance

- Robust aluminium housing
- 1-phase and 3-phase versions
- 3.6 kW - 22 kW power range
- Extremely compact PDU power metering in 1 U profile (44 mm x 47 mm)
- Coloured phase assignment of socket outlet with earthing contact and IEC320 socket inserts
- Measurement of: current per phase & in total, power per phase & in total
- (effective, apparent and reactive power),
- energy consumption, voltage, frequency, power factor, N conductor, current
- Integrated temperature sensor also for self-monitoring
- 2 more sensors (temp./humidity) can be connected. If combi sensor is connected, up to an extra 2 x temp. + 2 x humidity measurement possible
- Operated locally or using web browser via Ethernet port
- Protocols: HTTP; SNMP, Ethernet 10/100 MBit/s, DHCP, NTP
- High-resolution 2" TFT display, display can be rotated
- Accuracy of measurement +/- 1 %
- Internal consumption < 1 W
- Transmission of all data via Ethernet and PowerLine (SNMP protocol)

Benefits of PowerLine technology

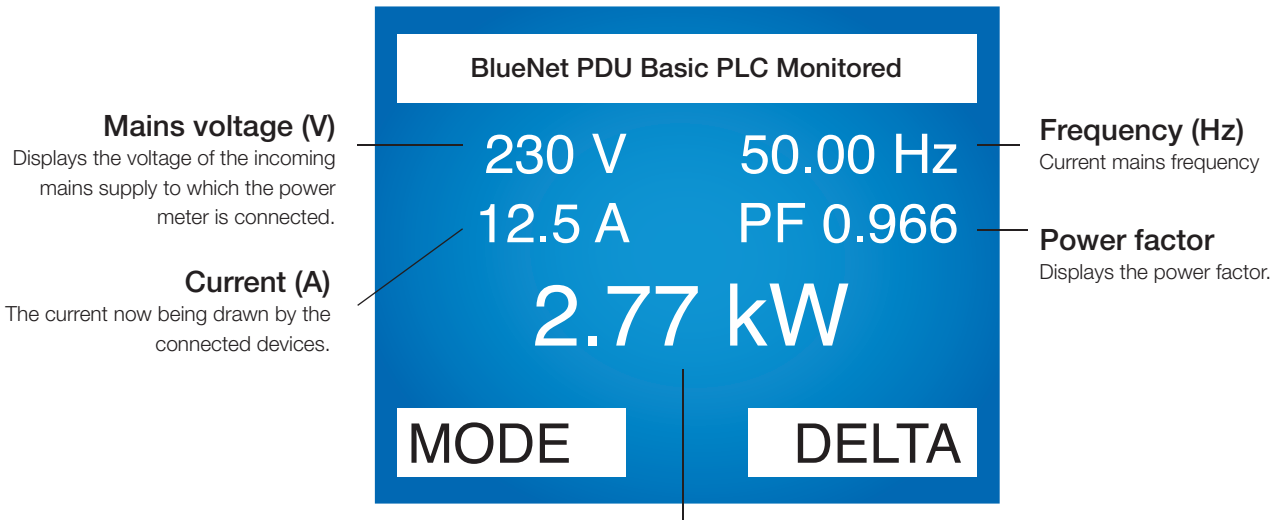
- The PLC module can be combined with all BlueNet BN2000 products
- Narrowband PowerLine Communication (PLC) with high availability and not susceptible to disturbances
- Data from any number of PDUs is managed centrally using a concentrator
- Optimisation of investment and operating costs through reduction in network cabling, patch cabling, IP addresses and switch ports
- No additional space needed in the PDU for the PLC module
- No cable-lined radiation / disturbances in the network
- 95 - 125 Khz according to Cenelec B
- Internal consumption 0.2 W

BlueNet BN2000 modules with PLC

- Keep an eye on costs with monitored power consumption and power factor
- Each device has a unique serial number, which appears in the SNMP tree via a central unit
- Connection and disconnection without interrupting data communication
- Each unit has a unique serial number
- 1 PDUs are queried per second
- Around 250 PDUs a minute can be queried in parallel with one central unit
- The data concentrator is equipped with 2 galvanically isolated three-phase connections for each network A and B, which allows optimal communication
- Alarms are issued in real time. Individual nodes can be selected and therefore queried every second.

PLC Concentrator

- Compact PowerLine concentrator in 19" housing
- All data is recorded centrally by the data concentrator (3 phases) and therefore managed centrally too
- All SNMP-capable management software can read the data from the data concentrator
- No moving parts (no fans, has passive cooling, industrial-strength Flash memory)
- Serial connection for maintenance and updates
- 10/100 Mbps Ethernet interface
- Status LEDs



Mains voltage (V)
Displays the voltage of the incoming mains supply to which the power meter is connected.

Current (A)
The current now being drawn by the connected devices.

Frequency (Hz)
Current mains frequency

Power factor
Displays the power factor.

Power measurement (kW)
The effective power drawn by the consumers, taking the phase angle into account. Power consumption of the connected devices.

BlueNet BN2000 PLC

16 - 32 A / 230 - 400 V / 50 Hz

	Article number	Cable type	Cable cross-section mm²	Cable length (m)	Plug	Phase(s)	Rated voltage (V)	Current (A)	Max power in kVA	C13	C19 IEC LOCK	C16A miniature circuit-breaker	Outlets in total	on request	Length (mm)
V															
	329.3111	H05VV-F	2.5	3	CEE	3	400	16	11.0	36			36	x	1458
	329.3112	H05VV-F	4	3	CEE	1	230	32	7.4	24	4	2	28	x	1330.7
	329.3113	H05VV-F	2.5	3	CEE	1	230	16	3.7	24	3		27	x	1032.6
	329.3114	H05VV-F	4	3	CEE	3	400	32	22.1	24	6	6	30	x	1883
	329.3115	H05VV-F	2.5	3	CEE	3	400	16	11.0	24	6		30	x	13.773

BlueNet PowerLine Concentrator

The BlueNet PowerLine Concentrator collects the data from the PowerLine PDUs and supplies it to the network via the Ethernet interface.

Art. no.	Version
BlueNet Concentrator with PowerLine communications module	
19" housing	
329.3117	· 2 x 3 phase / 400 V

BlueNet BN2000 accessories

Art. no.	Description
BlueNet BN2000 accessories	
329.3104	· Combined temperature and humidity sensor 2.0 m cable

V Lockable socket outlets

Accessories

Mounting kits for IT PDUs

- Power strip is fixed by insertion into the profile groove provided.
- No additional screws required

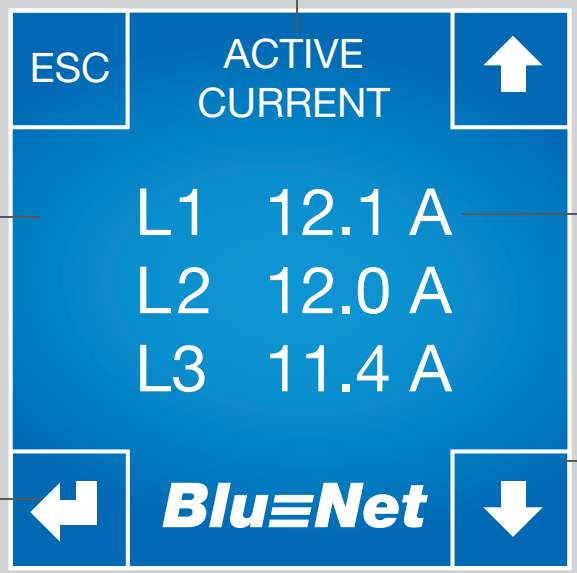
Art. no.	Version
1 U mounting brackets	
Zero U Space	
940.143	· Mounting brackets left and right
1 U link	
Zero U Space	
800.0053	· For connecting two vertically fitted PDUs
Locking clips	
940.103	· Red locking clip for IEC 320 non-heating appliance sockets C13, supplied in packs of 12.

Connecting cables for power supply

Cable cross-section mm²	Cable length (m)	Plug	Coupling	Art. no.	Cable colour
1.0	0.50	C14	C13	356.119	black
1.0	0.75	C14	C13	356.169	black
1.0	1.00	C14	C13	356.120	black
1.0	1.50	C14	C13	356.127	black
1.0	2.00	C14	C13	356.171	black
1.5	0.50	ECP*	C13	356.172	black
1.5	0.75	ECP*	C13	356.1721	black
1.5	1.00	ECP*	C13	356.1722	black
1.5	1.50	ECP*	C13	356.1723	black
1.5	2.00	ECP*	C13	354.127	black
1.5	0.50	C20	C19	356.1731	black
1.5	0.75	C20	C19	356.1732	black
1.5	1.00	C20	C19	356.1733	black
1.5	1.50	C20	C19	356.183	black
1.5	2.00	C20	C19	356.1735	black
1.5	0.50	ECP*	C19	356.1971	black
1.5	0.75	ECP*	C19	356.1972	black
1.5	1.00	ECP*	C19	356.1973	black
1.5	1.50	ECP*	C19	356.1974	black
1.5	2.00	ECP*	C19	356.1975	black

Art. no.	Cable colour
356.900	grey
356.901	grey
356.902	grey
356.903	grey
356.904	grey
356.905	grey
356.906	grey
356.907	grey
356.908	grey
356.909	grey
356.910	grey
356.911	grey
356.918	grey
356.935	grey
356.936	grey
356.937	grey
356.938	grey
356.939	grey
356.940	grey
356.941	grey

*ECP=earthing contact plug



Measurement
Current, power (effective, apparent and reactive power), energy consumption, voltage, frequency, power factor, N conductor

Integrated display
The most important measured values at rack level at a glance.

Overview
Shows the measured values of all phases in an overview.

Display can be rotated
The display can be rotated in 90° steps so it is easier to read.

Scrolling
The keys on the front can be used to scroll through the various measured values.

BlueNet BN3000 master / slave
16 - 32 A / 230 - 400 V / 50 Hz

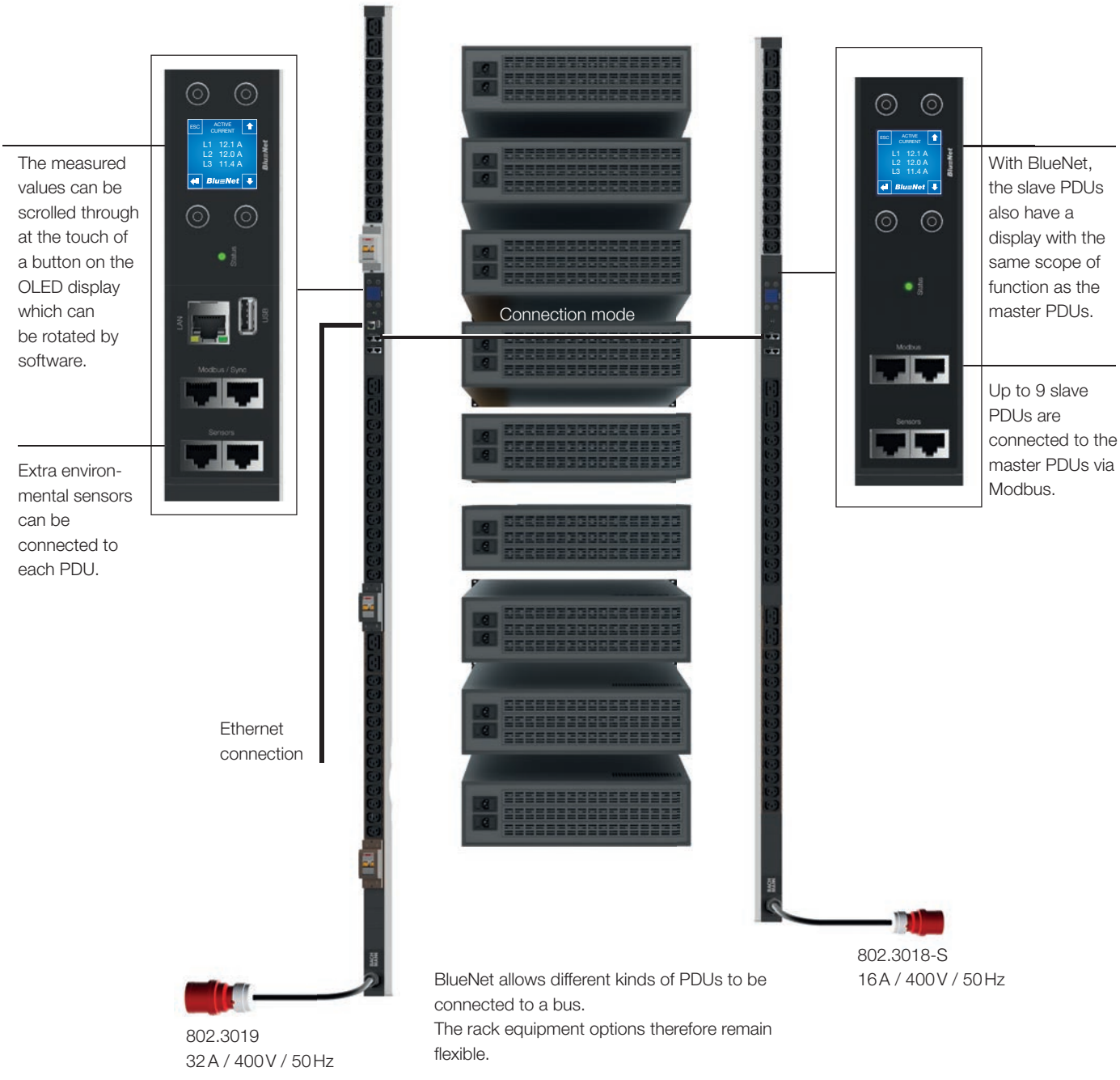
BluNet Efficient Power Management

BlueNet BN3000 is the next generation of BlueNet products. An optimised shape factor, PDUs that can be cascaded via Modbus and a rotatable OLED display create the ideal basis for the energy monitoring system of the future.
The data centre's mains supply is monitored and remotely controlled from the comfort of your desk with BlueNet Network products. BlueNet increases data centre availability, minimises down times and cuts costs. BlueNet monitors current, voltage and power. This allows resources to be planned efficiently and alarms to be issued in the event of faults.

The benefits at a glance

- PDUs can be cascaded via Modbus, just one Ethernet connection is needed for 10 PDUs
- Incredibly compact design (1 U wide x 60 mm deep), rotatable OLED display
- Robust housing made from torsionally rigid aluminium profile
- 1-phase and 3-phase versions
- 3.6 kW - 22 kW power range
- Coloured phase assignment of socket inserts
- Measurement of: current, power (effective, apparent and reactive power), energy consumption, voltage, frequency,
- power factor, N conductor
- Measurement per phase
- Option for connecting external sensors (temperature / air humidity)
- Operated locally or using web browser via Ethernet port
- Protocols: HTTP, SNMP, Ethernet 10/100 MBit/s, DHCP, NTP
- Accuracy of measurement +/- 1 %
- Internal consumption < 4 W

BlueNet BN3000 master / slave
16 - 32 A / 230 - 400 V / 50 Hz



BlueNet allows different kinds of PDUs to be connected to a bus.
The rack equipment options therefore remain flexible.

BlueNet BN3000 master / slave

16 - 32 A / 230 - 400 V / 50 Hz

NEW

Article number	Article number for slave variant	Cable type	Cable cross-section mm²	Cable length (m)	Plug	Phase(s)	Rated voltage (V)	Current (A)	Max power in kVA	C13	C19	SOEC**	Outlets in total
802.3004	802.3004-S	H05VV-F	2.5	3	CEE*	1	230	16	3.7	16	4	0	20
802.3005	802.3005-S	H05VV-F	4	3	CEE	1	230	32	7.4	16	4	0	20
802.3006		H05VV-F	2.5	3	CEE	1	230	16	3.7	16	0	4	20
802.3007		H05VV-F	4	3	CEE	1	230	32	7.4	16	0	4	20
802.3008		H05VV-F	2.5	3	CEE	3	400	16	11.0	0	6	0	6
802.3009		H05VV-F	4	3	CEE	3	400	32	22.1	0	6	0	6
802.3010		H05VV-F	2.5	3	CEE	3	400	16	11.0	18	3	0	21
802.3011		H05VV-F	2.5	3	CEE	3	400	16	11.0	18	0	3	21
802.3012	802.3012-S	H05VV-F	2.5	3	CEE	3	400	16	11.0	24	6	0	30
802.3013	802.3013-S	H05VV-F	4	3	CEE	3	400	32	22.1	24	6	0	30
802.3014		H05VV-F	2.5	3	CEE	3	400	16	11.0	24	0	6	30
802.3015		H05VV-F	4	3	CEE	3	400	32	22.1	24	0	6	30
802.3016		H05VV-F	2.5	3	CEE	3	400	16	11.0	24	6	6	36

available from stock

802.3005

802.3010

802.3012

802.3013

Connecting cables for power supply

Art. no.	Cable colour	Cable cross-section mm²	Cable length (m)	Plug	Coupling
356.119	black	1.0	0.50	C14	C13
356.169	black	1.0	0.75	C14	C13
356.120	black	1.0	1.00	C14	C13
356.127	black	1.0	1.50	C14	C13
356.171	black	1.0	2.00	C14	C13
356.172	black	1.5	0.50	ECP*	C13
356.1721	black	1.5	0.75	ECP*	C13
356.1722	black	1.5	1.00	ECP*	C13
356.1723	black	1.5	1.50	ECP*	C13
354.127	black	1.5	2.00	ECP*	C13
356.1731	black	1.5	0.50	C20	C19
356.1732	black	1.5	0.75	C20	C19
356.1733	black	1.5	1.00	C20	C19
356.183	black	1.5	1.50	C20	C19
356.1735	black	1.5	2.00	C20	C19
356.1971	black	1.5	0.50	ECP*	C19
356.1972	black	1.5	0.75	ECP*	C19
356.1973	black	1.5	1.00	ECP*	C19
356.1974	black	1.5	1.50	ECP*	C19
356.1975	black	1.5	2.00	ECP*	C19
356.900	grey	1.0	0.50	C14	C13
356.901	grey	1.0	0.75	C14	C13
356.902	grey	1.0	1.00	C14	C13
356.903	grey	1.0	1.50	C14	C13
356.904	grey	1.0	2.00	C14	C13
356.905	grey	1.5	0.50	ECP*	C13
356.906	grey	1.5	0.75	ECP*	C13
356.907	grey	1.5	1.00	ECP*	C13
356.908	grey	1.5	1.50	ECP*	C13
356.909	grey	1.5	2.00	ECP*	C13
356.910	grey	1.5	0.50	C20	C19
356.911	grey	1.5	0.75	C20	C19
356.918	grey	1.5	1.00	C20	C19
356.935	grey	1.5	1.50	C20	C19
356.936	grey	1.5	2.00	C20	C19
356.937	grey	1.5	0.50	ECP*	C19
356.938	grey	1.5	0.75	ECP*	C19
356.939	grey	1.5	1.00	ECP*	C19
356.940	grey	1.5	1.50	ECP*	C19
356.941	grey	1.5	2.00	ECP*	C19

*ECP=earthing contact plug

**SOEC=socket outlet with earthing contact

Maximum availability and safety

with BlueNet RESIDUAL CURRENT MONITORING (RCM)

Using residual current monitoring allows changes in the level of insulation to be detected at an early stage before protective devices are tripped by a high residual current, that puts people at risk and involves the risk of fire. This time advantage allows countermeasures to be planned and contributes to the high availability of the power supply and therefore the system. Thanks to the Bachmann BlueNet PDU, this residual current monitoring isn't just undertaken at central measuring points, but on the socket outlets of every consumer. This standard-compliant residual current technology, the result of a joint development with Bender, provides a high physical granularity, maximum safety and high availability. This AC / DC sensitive technology monitors all kinds of residual current in modern power supplies with switching power. The new BlueNet residual current PDU is therefore particularly suited to use in IT.

Permanent monitoring is absolutely essential in modern information technology. Continuous monitoring equipment reduces the work involved in statutory repeat tests. In accordance with accident prevention guidelines (BGV A3), the testing dates for measuring insulation can be adapted to suit actual circumstances and optimise costs using permanent RCM. DIN VDE 0100-410 (Protective measures – protection from electric shock) is also applied as prescribed by law for final circuits of up to 20 A without use of an RCD, which may result in undesired switching off.

The BlueNet residual current monitor is able to record residual currents of 5 mA and higher. Residual current activation values can be set in the BlueNet software. BlueNet Software reliably signals instances where these values are exceeded. All measured values are transferred to superordinate monitoring systems via the Ethernet interface. A local display in the PDU also provides information about all important measured values. This setup ensures that the availability of the power supply has absolute priority at all times and that the system is not unexpectedly cut off in the event of errors.

The BlueNet technology also allows a master-slave network to be installed, saving installation costs and minimising the administration work involved.

The benefits at a glance

Greater safety for people, operations and systems:

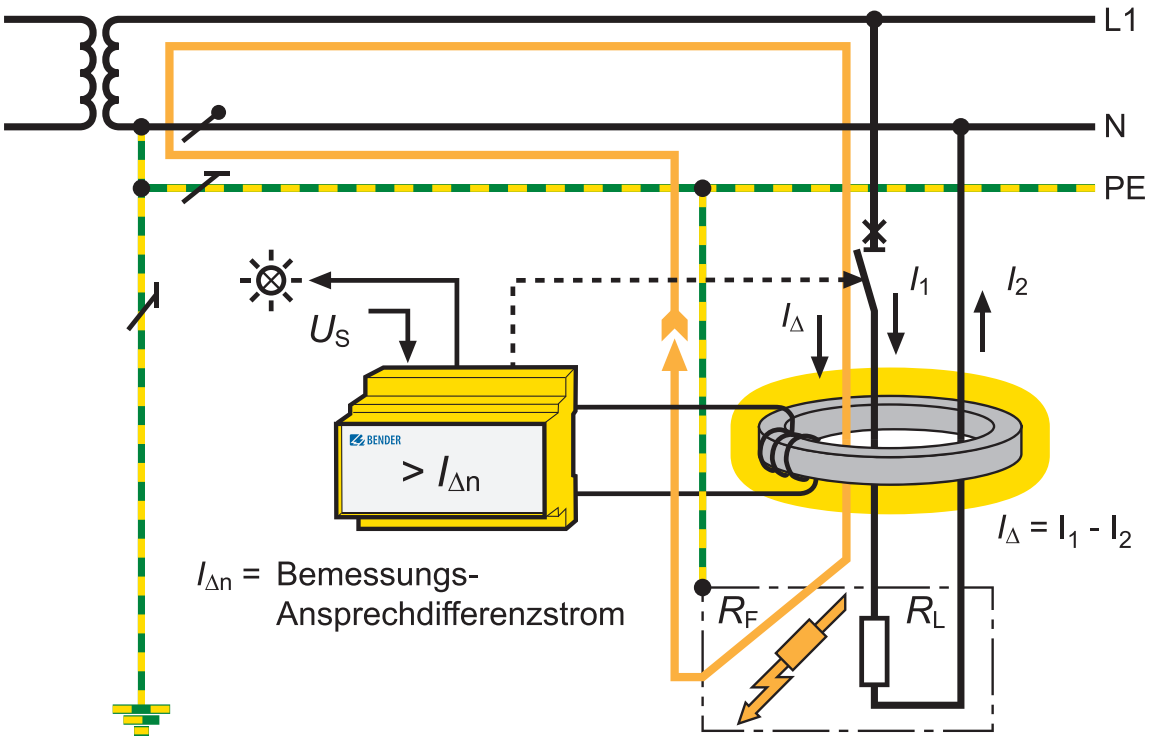
- Early detection of data loss and network failure
- DIN VDE 0100-410 is applied as prescribed by law for final circuits of up to 20 A without use of an RCD
- Recording of residual currents at the consumer socket outlet directly for the fastest possible error localisation
- Preventative safety to protect people from the hazards caused by electric current
- Faults and unexpected interruptions to the operation of sensitive equipment are minimised
- Insulation errors in newly installed systems and devices are detected immediately
- Permanent monitoring of systems and operating equipment
- TN-S systems are monitored for additional unwanted N-PE bridges

More cost-effective

- Continuous monitoring equipment reduces the work involved in repeat tests. In accordance with §5 of the accident prevention guidelines BGV A3, the testing dates for measuring insulation can be adapted to suit actual circumstances using permanent RCM
- No expensive and unscheduled system downtimes and service interventions

Greater fire protection

- Combustible residual currents are recognised as they arise



BENDER TECHNOLOGY INCLUDED

Article number	Article number for slave variant	Cable type	Cable cross-section mm²	Cable length (m)	Plug	Phase(s)	Rated voltage (V)	Current (A)	Max power in kVA	C13	C19	SOEC**	Outlets in total	from stock
802.3022		H05VV-F	2.5	3	CEE	3	400	16	11.0	18	3	0	21	OR
802.3023		H05VV-F	2.5	3	CEE	3	400	16	11.0	18	0	3	21	OR
802.3024	802.3024-S	H05VV-F	2.5	3	CEE	3	400	16	11.0	24	6	0	30	OR
802.3025	802.3025-S	H05VV-F	4	3	CEE	3	400	32	22.1	24	6	0	30	OR

802.3022

802.3024

802.3025

**SOEC=socket outlet with earthing contact OR = on request

BlueNet Switched
Power distribution units

- Socket outlets can be switched individually
- Safe zero-voltage switching
- Integrated LED switching status check per port
- Integrated Ethernet connection
- Operated via a web browser
- Includes the following protocols: HTTP, HTTPS, SNMP, SMTP, NTP, SSH
- Robust aluminium housing

329.704

BlueNet Switched PDU 1-phase (16 A / 230 V / 50 Hz)

	Art. no.	Version	Dimensions (L x W x D)
	BlueNet Switched 1-phase		
	19", 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact		
V	329.700	· 8 x IEC320 non-heating appliance socket C13	482.6 x 44 x 199 mm
	329.702	· 6 x socket outlet with earthing contact	482.6 x 44 x 199 mm
	Zero U Space, 2.0 m H05VV-F 3G 1.50 mm², black, with right angle plug with earthing contact		
V	329.701	· 16 x IEC320 non-heating appliance socket C13	692 x 44 x 199 mm

BlueNet Switched PDU 3-phase (3 x 32 A / 400 V / 50 Hz)

- In the 32 A versions of the Switched PDUs, each 32 A per phase is split over two groups of pots with two MCBs.

Art. no.	Version	Dimensions (L x W x D)
BlueNet Switched 3-phase		
3.0 m Ölflex 3G 4 mm², black, with CEE plug 32 A red		
329.704	· 12 x IEC320 non-heating appliance socket C19	1202 x 44 x 207 mm

V Lockable socket outlets

BlueNet Managed
Power distribution units

- Socket outlets can be switched individually
- Safe zero-voltage switching
- Integrated LED switching status check per port
- Integrated Ethernet connection
- Operated via a web browser
- Integrated measurement of current, effective power, voltage, frequency and phase angle
- Includes the following protocols: HTTP, HTTPS, SNMP, SMTP, NTP, SSH
- Robust aluminium housing
- Illuminated LCD

329.802

BlueNet Managed PDU

Art. no.	Version	Dimensions (L x W x D)	
BlueNet Managed 1-phase			
3.0 m H05VV-F 3G1.5 mm²			
329.806	· 4 x socket outlet with earthing contact	482.6 x 44 x 207 mm	V

BlueNet Managed PDU 3-phase (3 x 32 A / 400 V / 50 Hz)

- In the 32 A versions of the Managed PDUs each 32 A phase is split over two groups of pots with two MCBs.

Art. no.	Version	Dimensions (L x W x D)	
BlueNet Managed 3-phase			
3.0 m H05VV-F 5G 4 mm², black, with CEE plug 32 A red			
329.800	· 24 x IEC320 non-heating appliance socket C13 · 6 x IEC320 non-heating appliance socket C19	1713 x 44 x 207 mm	V
329.801	· 12 x IEC320 non-heating appliance socket C19	1202 x 44 x 207 mm	
329.802	· 24 x socket outlet with earthing contact	1713 x 44 x 207 mm	

V Lockable socket outlets

BlueNet BN2000 Inline

16 - 32 A / 230 - 400 V / 50 Hz

BlueNet
Efficient Power Management

The BlueNet BN2000 Inline is an easy-to-install intelligent system for monitoring and displaying energy use. The product is particularly suited to data centres and industrial applications. The BlueNet BN2000 Inline can be quickly and cheaply integrated in existing and new infrastructures using the integrated terminal block or the connection cable that has already been fitted.

The benefits at a glance

- Integrated measurement of current, voltage, frequency, effective, apparent and reactive power and power factor
- Integrated Ethernet connection
- Operated via a web browser
- Protocols: HTTP, SNMP, Ethernet 10/100 MBit/s, DHCP, NTP
- Display on backlit rolling LC display
- Integrated temperature sensor
- Up to 2 sensors can be connected (see page 55)
- Robust enclosure in steel plate
- High-resolution TFT display
- Software can be used to turn the display to make it easier to read
- Can be reconnected with terminal block
- Removable mounting plate for cable ducts or wall mounting

Designed for use in production, the BlueNet BN2000 Inline series is ideal for production facilities.

BlueNet BN2000 Inline

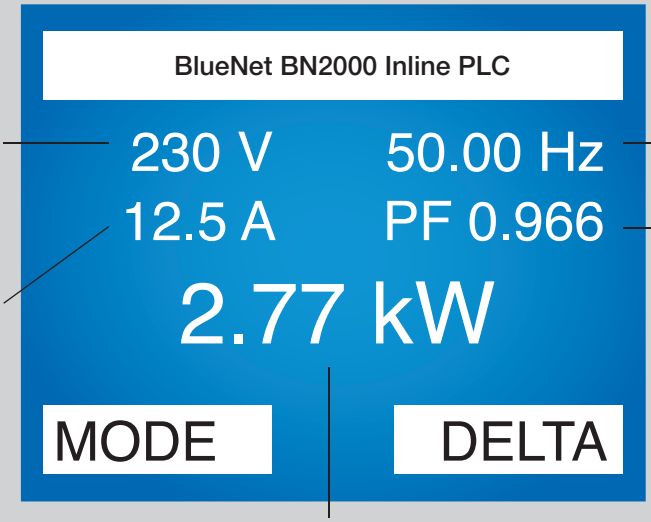
Art. no.	Phases	Voltage V	Current A	Power in kVA	from stock	Dimensions (mm)
329.3032	1	230	16	3.7	yes	232 x 104 x 102
329.3033	3	400	16	11.0	yes	232 x 104 x 102
329.3037	3	400	32	22.1	yes	232 x 104 x 102

329.3032

329.3033

BlueNet BN2000 accessories

Art. no.	Description
BlueNet BN2000 accessories	
329.3104	· Combined temperature and humidity sensor 2.0 m cable



Mains voltage (V)
Displays the voltage of the incoming mains supply to which the power meter is connected.

Current (A)
The current now being drawn by the connected devices.

Frequency (Hz)
Current mains frequency

Power factor
Displays the power factor.

Power measurement (kW)
The effective power drawn by the consumers, taking the phase angle into account. Power consumption of the connected devices.

BlueNet BN2000 Inline PLC

(PowerLine communication)
16 - 32 A / 230 - 400 V / 50 Hz

The BlueNet BN2000 Inline is an easy-to-install intelligent system for monitoring and displaying energy use. The product is particularly suited to data centres and industrial applications. The BlueNet BN2000 Inline can be quickly and cheaply integrated in existing and new infrastructures using the integrated terminal block or the connection cable that has already been fitted.

The benefits at a glance

- Integrated measurement of current, voltage, frequency, effective, apparent and reactive power and power factor
- Integrated Ethernet connection
- Operated via a web browser
- Protocols: HTTP, SNMP, Ethernet 10/100 MBit/s, DHCP, NTP
- Display on backlit rolling LC display
- Integrated temperature sensor
- Up to 2 sensors can be connected
- Robust enclosure in steel plate
- High-resolution TFT display
- Software can be used to turn the display to make it easier to read
- Can be reconnected with terminal block
- Removable mounting plate for cable ducts or wall mounting
- Other mounting plates available on request
- PowerLine Communication allows measurement data to be queried via the mains supply without an Ethernet connection

BlueNet BN2000 Inline PLC

Art. no.	Phases	Voltage V	Current A	Power in kVA	from stock	Dimensions (mm)
329.3060	1	230	16	3.7	OR	232 x 104 x 102
329.3061	3	400	16	11.0	OR	232 x 104 x 102
329.3062	1	230	32	7.4	OR	232 x 104 x 102
329.3063	3	400	32	22.1	OR	232 x 104 x 102

329.3060

329.3061

BlueNet PowerLine Concentrator

The BlueNet PowerLine Concentrator collects the data from the PowerLine PDUs and supplies it to the network via the Ethernet interface.

Art. no.	Version
BlueNet Concentrator with PowerLine communications module	
19" housing	
329.3117	· 2 x 3 phase / 400 V

BlueNet BN2000 accessories

Art. no.	Description
BlueNet BN2000 accessories	
329.3104	· Combined temperature and humidity sensor 2.0 m cable

BlueNet Power Unit 2 U

(Modular) 16 - 32 A / 230 - 400 V / 50 Hz

The BlueNet Power Unit offers a modular platform for power distribution in data centres.
The Power Unit base unit provides power distribution in the rack. If necessary, the measurement module can be retrofitted or replaced during operation without interrupting the supply.

The benefits at a glance

- 3.6 kW - 44 kW power range, 1 phase (CEE or IEC320) or 3 phases
- 2 galvanically isolated infeeds (16 - 32 A / 230 - 400 V)
- Up to four outputs on the rear (IEC320 or CEE)
- Measurement of: current per phase & in total, effective power per phase & in total, voltage, frequency, phase angle
- Energy consumption, N conductor
- Operated via web browser
- Active issuing of alarms by e-mail or SNMP Trap
- Encrypted data communication
- Protocols: HTTP, HTTPS, SNMP, SMPT, NTP, SSH, Ethernet 100 MBit/s
- Display on backlit rolling LC display
- Robust 19" enclosure in steel plate with just 2 U
- Accuracy of measurement +/- 1 %

BlueNet Power Unit

The measurement module can be replaced during operation without interrupting the supply to the connected devices.

2 U high, 19" wide (1 U is 44.45 mm)

Current, effective power, voltage, frequency, phase angle and energy can be read from the LC display on the front of the unit. LEDs indicate whether there is voltage present on each of the phases.

A built-in Ethernet port lets you export readings and set alarm thresholds via a web browser or SNMP.

Two galvanically isolated infeeds

Power measurement (kW)
The effective power drawn by the consumers, taking the phase angle into account. Power consumption of the connected devices.

Mains voltage (V)
Displays the voltage of the incoming mains supply to which the power meter is connected.

Phase angle
Displays the phase shift in the power network.

Frequency (Hz)
Current mains frequency

Current (A)
The current now being drawn by the connected devices.

Phase indicator (P)
Shows the phase (1, 2 or 3) currently being measured. Display moves automatically through the phases showing their respective measured values.

Total energy consumption (kWh)
The total energy consumption shown on the display is calculated taking the phase angle into account.

BlueNet Power Unit

16 A / 230 V / 50 Hz

Sample system for 2 x 16 A/230 V = 7.2 kW (1.8kW per C19 output)

BlueNet Power Unit with measurement module
Art. no. 329.9015 and 329.9010

Supply A
16 A / 400 V / 50 Hz

BlueNet Power Unit with measurement module
Art. no. 329.9015 and 329.9010

Supply B
16 A / 400 V / 50 Hz

Plug-in energy distribution system including measurement module for blade systems, switches etc. with high power consumption per port.
2 x C20 inputs and 2 x C19 outputs on the rear.

The benefits at a glance

- Up to 4 consumers can be directly connected via C19 plugs
- Ideal for combination with blade PDUs or a smaller number of servers in the rack
- 2 galvanically isolated C20 infeeds, 400 V / 16 A / 50 Hz each
- Measurement module can be replaced during operation (plug-and-play)
- Integrated power metering
- Ethernet interface with integral web server
- Excellent value for money
- Modest space requirement (2 U)

Upgrade solution

Sample system for 2 x 16 A / 230 = 7.2 kW (3.6 kW per CEE output)

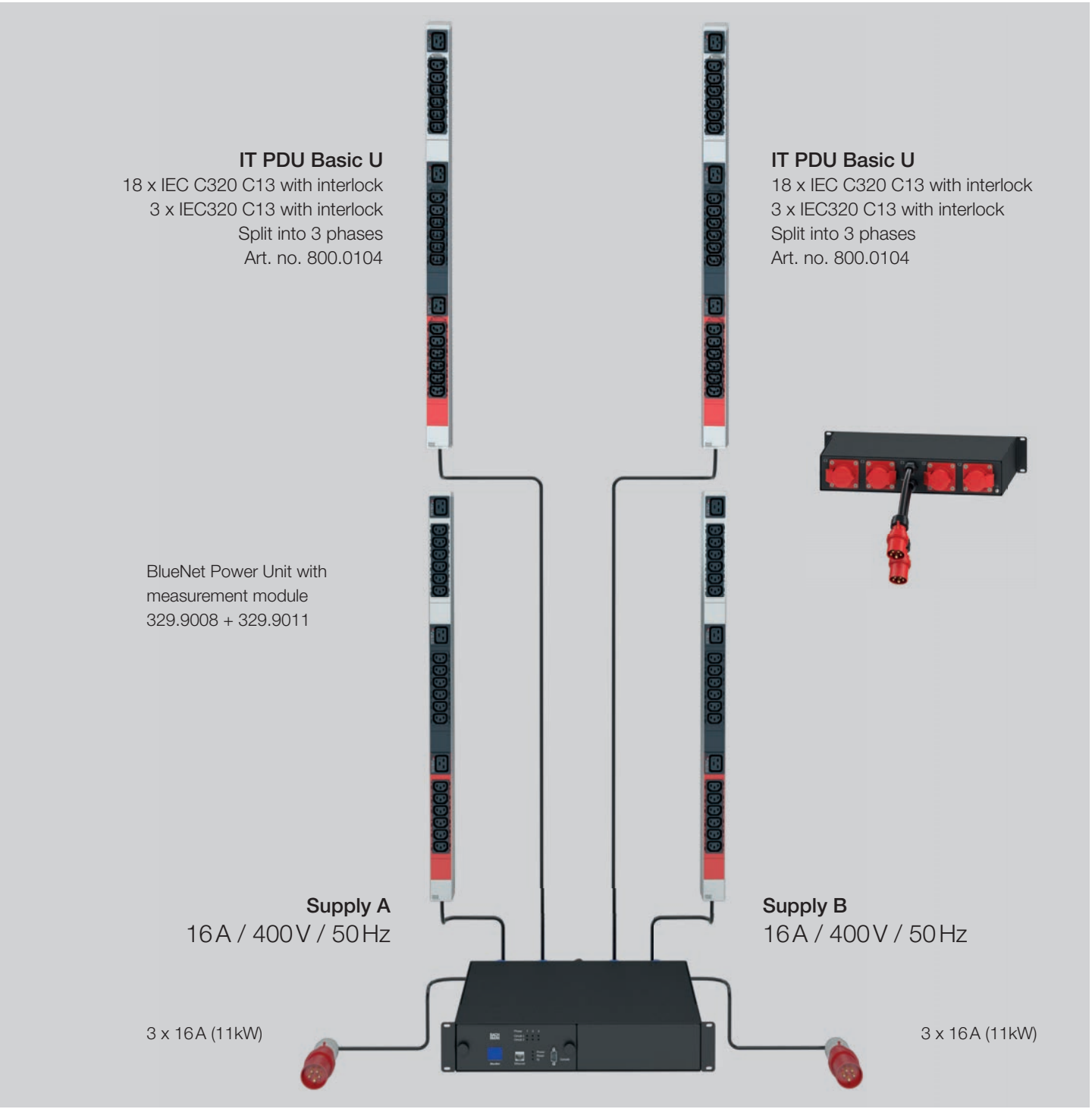
BlueNet Power Unit with measurement module
Art. no. 329.9014 and 329.9010

Supply A
16 A / 400 V / 50 Hz

Supply B
16 A / 400 V / 50 Hz

The benefits at a glance

- 2 galvanically isolated infeeds, 400 V / 16 A / 50 Hz each
- Measurement module can be replaced during operation (plug-and-play)
- Modest space requirement (2 U)
- Easy to upgrade using plug connector
- Phase-level monitoring (current, voltage, power, power factor)
- Monitoring of neutral conductor



BlueNet Power Unit

16 A / 400 V / 50 Hz
Sample system for 2 x 3 x 16 A/400 V = 22 kW (5.5kW per Basic PDU)

The benefits at a glance

- Up to 4 consumers can be directly connected via C19 plugs
- Up to 4 multiple-socket outlets can be connected
- Ideal for combination with blade PDUs or a smaller number of servers in the rack
- 2 galvanically isolated C20 infeeds, 400 V / 16 A / 50 Hz each
- Measurement module can be replaced during operation (plug-and-play)
- Integrated power metering
- Ethernet interface with integral web server
- Excellent value for money
- Modest space requirement (2 U)

IT PDU Basic U
36 x IEC C320 C13 with interlock
Split into 3 phases
Art. no. 800.0102

IT PDU Basic U
36 x IEC C320 C13 with interlock
Split into 3 phases
Art. no. 800.0102

Supply A
32 A / 400 V / 50 Hz

Supply B
32 A / 400 V / 50 Hz

BlueNet Power Unit with measurement module 329.9012 + 329.9011

Sample system for 2 x 3 x 32 A / 400 V = 44 kW (11kW per Basic PDU)

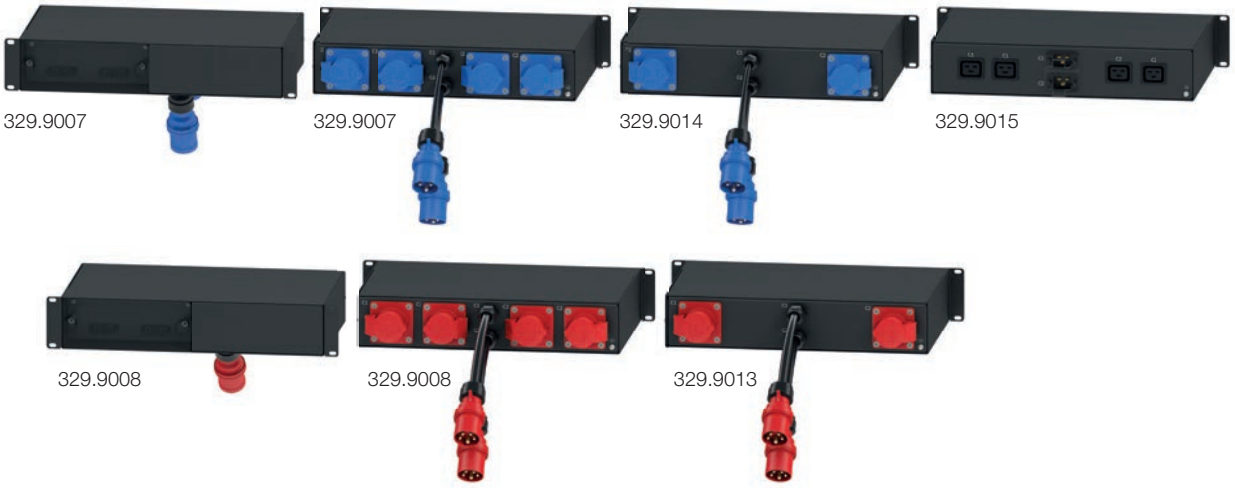
The benefits at a glance

- Ideal for combination with PDUs with built-in MCB C16A circuit breakers
- Up to 4 multiple-socket outlets can be connected
- Cabling and installation kept to a minimum with 400 V / 32 A supply cables
- 2 galvanically isolated CEE infeeds, 400 V / 16 A / 50 Hz each
- Measurement module can be replaced during operation (plug-and-play)
- Integrated power metering
- Ethernet interface with integral web server
- Excellent value for money
- Modest space requirement (2 U)

The measurement module can be replaced during operation without interrupting the supply to the connected devices.

BlueNet Power Unit base unit (measurement module is available separately)

Art. no.	Input	Output
BlueNet Power Unit		**482.6 x 88 x 317 mm**
2 x 1 phase 230 V		
329.9007	· 2 x 3.0 m CEE 16 A / 230 V	· 4 x CEE 16 A / 230 V
329.9014	· 2 x 3.0 m CEE 16 A / 230 V	· 2 x CEE 16 A / 230 V
329.9015	· 2 x C20 16 A / 230 V	· 4 x C19 16 A / 230 V
329.9016	· 2 x C20 16 A / 230 V	· 2 x C19 16 A / 230 V
2 x 3 phase 400 V		
329.9008	· 2 x 3.0 m CEE 16 A / 400 V	· 4 x CEE 16 A / 400 V
329.9013	· 2 x 3.0 m CEE 16 A / 400 V	· 2 x CEE 16 A / 400 V
329.9009	· 2 x 3.0 m CEE 32 A / 400 V	· 4 x CEE 32 A / 400 V
329.9012	· 2 x 3.0 m CEE 32 A / 400 V	· 2 x CEE 32 A / 400 V



BlueNet Power Unit (measurement module)

Art. no.	Version
BlueNet Power Unit Monitored Plus	
with integrated Ethernet interface	
329.9010	· 16 - 32 A / 230 V
329.9011	· 16 - 32 A / 400 V

BlueNet Power Unit set (base unit + measurement module)

Art. no.	Input	Output
BlueNet Power Unit		**482.6 x 88 x 317 mm**
2 x 1 phase 230 V		
329.9001	· 2 x 3.0 m CEE 16 A / 230 V	· 4 x CEE 16 A / 230 V
2 x 3 phase 400 V		
329.9002	· 2 x 3.0 m CEE 16 A / 400 V	· 4 x CEE 16 A / 400 V
329.9003	· 2 x 3.0 m CEE 32 A / 400 V	· 4 x CEE 32 A / 400 V

The measurement module can be replaced during operation without interrupting the supply to the connected devices.

2 U high, 19" wide (1 U is 44.45 mm)

Current, effective power, voltage, frequency, phase angle and energy can be read from the LC display on the front of the unit. LEDs indicate whether there is voltage present on each of the phases.

A built-in Ethernet port lets you export readings and set alarm thresholds via a web browser or SNMP.

Up to 12 miniature circuit breakers provide optimum protection and access in the rack itself.

BlueNet Power Unit 3 U

including integrated fuses (modular)

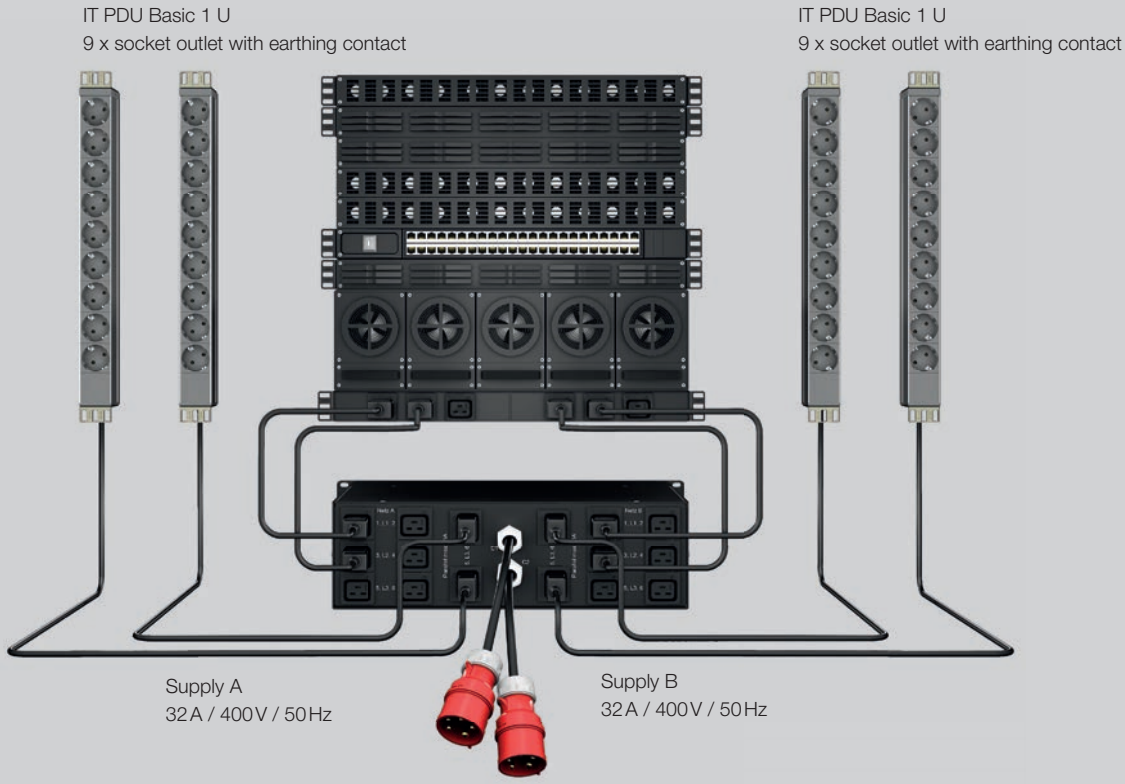
16 - 32 A / 230 - 400 V / 50 Hz

BlueNet POWER UNIT offers a modular platform for power distribution in data centres.
The POWER UNIT base unit provides power distribution in the rack. If necessary, the measurement module can be retrofitted or replaced during operation without interrupting the supply.
Our 3 U Power Unit is a modular platform for meeting the individual needs of modern data centres.

The benefits at a glance

- 3.6 kW - 44 kW power range, 1 phase (CEE or IEC320) or 3 phases,
- 2 galvanically isolated infeeds (16 - 32 A / 230 - 400 V)
- Measurement of: current per phase & in total, effective power per phase & in total, voltage, frequency, phase angle, energy consumption, N conductor
- Operated via web browser
- Active issuing of alarms by e-mail or SNMP Trap
- Encrypted data communication
- Protocols: HTTP, SNMP, Ethernet 10/100 MBit/s, DHCP, NTP
- Display on backlit rolling LC display
- Robust 19" enclosure in steel plate
- Accuracy of measurement +/- 1 %
- Fused with up to 12 circuit breakers
- Integrated fuse monitoring

BlueNet Power Unit 32 A / 400 V / 50 Hz



BlueNet Power Unit 3 U with
measurement module
329.9024 + 329.9022

BlueNet Power Unit 3 U (basic unit)

including 12 integrated C16A miniature circuit breakers (measurement module available separately)

Art. no.	Input	Output
BlueNet Power Unit 3 U base unit		**482.6 x 88 x 317 mm**
2 x 32 A / 400 V		
329.9024	· 2 x 3 m CEE 32 A / 400 V	· 16 x IEC320 C19 with IEC lock

BlueNet Power Unit 3 U (basic unit + measurement module)

Art. no.	Input
BlueNet Power Unit 3 U measurement module	
with integrated Ethernet interface	
329.9022	· 16 - 32 A / 400 V

The benefits at a glance

- Up to 16 consumers or PDUs can be directly connected via C19 plugs
- Ideal for use in the Blade Center Rack or racks which combine Blade Centers and regular servers
- 2 galvanically isolated infeeds, 400 V / 32 A / 50 Hz each
- Measurement module can be replaced during operation (plug-and-play)
- Phase-level monitoring (current, voltage, power, power factor)
- Ethernet interface with integral web server
- Excellent value for money

Accessories

Mounting kits for IT PDUs

· The brackets are screwed to the PDU end cap using a screw connection (screws provided).

Art. no.	Version
1 U mounting brackets	
940.142	· Mounting brackets left and right
> 1 U mounting brackets	
940.096	· Mounting brackets left and right

Mounting brackets for VM profile variant / universal installation

· Power strip is fixed by insertion into the profile groove provided
· No additional screws required

Art. no.	Version
1 U mounting brackets	
940.141	· Mounting brackets left and right
1 U mounting brackets	
940.143	· Mounting brackets left and right
1 U link	
800.0053	· For connecting two vertically fitted PDUs

Locking clip

Art. no.	Version
Locking clips	
940.103	· Red locking clip for IEC 320 non-heating appliance socket outlets C13, supplied in packs of 12.

Connecting cables for power supply

Art. no.	Cable colour	Cable cross-section mm²	Cable length (m)	Plug	Coupling
356.119	black	1.0	0.50	C14	C13
356.169	black	1.0	0.75	C14	C13
356.120	black	1.0	1.00	C14	C13
356.127	black	1.0	1.50	C14	C13
356.171	black	1.0	2.00	C14	C13
356.172	black	1.5	0.50	ECP*	C13
356.1721	black	1.5	0.75	ECP*	C13
356.1722	black	1.5	1.00	ECP*	C13
356.1723	black	1.5	1.50	ECP*	C13
354.127	black	1.5	2.00	ECP*	C13
356.1731	black	1.5	0.50	C20	C19
356.1732	black	1.5	0.75	C20	C19
356.1733	black	1.5	1.00	C20	C19
356.183	black	1.5	1.50	C20	C19
356.1735	black	1.5	2.00	C20	C19
356.1971	black	1.5	0.50	ECP*	C19
356.1972	black	1.5	0.75	ECP*	C19
356.1973	black	1.5	1.00	ECP*	C19
356.1974	black	1.5	1.50	ECP*	C19
356.1975	black	1.5	2.00	ECP*	C19
356.900	grey	1.0	0.50	C14	C13
356.901	grey	1.0	0.75	C14	C13
356.902	grey	1.0	1.00	C14	C13
356.903	grey	1.0	1.50	C14	C13
356.904	grey	1.0	2.00	C14	C13
356.905	grey	1.5	0.50	ECP*	C13
356.906	grey	1.5	0.75	ECP*	C13
356.907	grey	1.5	1.00	ECP*	C13
356.908	grey	1.5	1.50	ECP*	C13
356.909	grey	1.5	2.00	ECP*	C13
356.910	grey	1.5	0.50	C20	C19
356.911	grey	1.5	0.75	C20	C19
356.918	grey	1.5	1.00	C20	C19
356.935	grey	1.5	1.50	C20	C19
356.936	grey	1.5	2.00	C20	C19
356.937	grey	1.5	0.50	ECP*	C19
356.938	grey	1.5	0.75	ECP*	C19
356.939	grey	1.5	1.00	ECP*	C19
356.940	grey	1.5	1.50	ECP*	C19
356.941	grey	1.5	2.00	ECP*	C19

*ECP=earthing contact plug

Locking cap IEC320 C13 & C19

Art. no.	Version
Connecting cable for interlock	
800.0050	· C19 locking caps, 10 items incl. unlocking tool
800.0051	· C13 locking caps, 10 items incl. unlocking tool
800.0052	· Unlocking tool for locking cap

RackFix tool-free mounting on 19" rail

· Self-locking fixing connector for tool-free fastening of PDUs in 19" rack

Art. no.	Version
RackFix tool-free rack fastening	
940.166	· Fixing clip, supplied in packs of 50
940.167	· Disassembly tool for fixing clip

Shift inhibitor

· To protect against unintentional actuation of miniature or residual current circuit breakers

Art. no.	Version
Shift inhibitor	
940.140	· Activation lock for circuit breakers and single-pole switches, to protect against operation of switch lever where unauthorised or dangerous

Data cables –> Transfer of data within various categories

Art. no.	Length	Version
CAT5e patch cable plug/plug		
918.003	1.0 m	· CAT5e cable, shielded, colour grey
940.052	3.0 m	· Conforms to ISO / IEC 11801 and EN 50173
940.053	5.0 m	· Ends 1 and 2: RJ45 plug with protective rubber sleeve and protective tongue for interlock
		· Suitable for e.g. CAT5e socket / socket 940.057

CAT6 patch cable plug / plug		
940.040	3.0 m	· CAT6 cable, shielded, colour grey
940.041	5.0 m	· Conforms to ISO / IEC 11801 and EN 50173
		· Ends 1 and 2: RJ45 plug with protective rubber sleeve and protective tongue for interlock
		· Suitable for e.g. CAT6 socket / socket 940.044

CAT6a patch cable plug / plug		
918.006	1.0 m	· CAT7 cable, shielded, colour black
918.007	3.0 m	· Conforms to IEC 61156-6
918.008	5.0 m	· Ends 1 and 2: RJ45 Hirose TM12 CAT6a plug with protective rubber sleeve and unlocking tongue
		· Suitable for e.g. CAT6 socket / socket 940.044

CAT6a patch cable plug		
918.033	3.0 m	· CAT7 cable, shielded, colour black
918.034	5.0 m	· Conforms to IEC 61156-6
		· End 1: RJ45 Hirose TM12 CAT6a plug with protective rubber sleeve and unlocking tongue. End 2: CAT6a TKM 10 GB keystone socket.
		· Fits into keystone frame 917.000 / 917.001 / 917.061 / 917.062

RJ12 patch cable plug / plug		
940.089	3.0 m	· RJ12 cable, unshielded, colour black
		· Conforms to ISO / IEC 11801 and EN 50173
		· Ends 1 and 2: RJ12 plug with protective rubber sleeve
		· Suitable for e.g. RJ12 socket / socket 940.085

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