

Expert Power Control 8221-1 / 8226-1

12-fold switched PDU with integrated current metering and monitoring

Dual-Circuit
Outlet-metered (8226)

Front and rear side of **Expert Power Control 8221-1**
and **Expert Power Control 8226-1**



Features

- 12 Power Ports individually switchable directly on the device, via HTTPS, SNMP, command line tool and RS232 serial interface
- Status and Power-up delay (0...9999 seconds) adjustable individually for each Power Port after power blackout
- Latency time of 1 second prevents simultaneous power-up of multiple Power Ports
- Paired switching of outlets possible, e.g. output 1 of bank 1 simultaneously with output 1 of bank 2
- Programmable turn-on/turn-off sequence
- 2 energy meters per bank and for **8226-1** also per load outlet; one meter continuously, the other resettable
- Metering of energy, current, power factor, phase angle, frequency, voltage and active / apparent / reactive power
- A clearly visible LED display per bank for total current, IP address, sensor data and error reports
- 12-channel watchdog, an individual watchdog (ICMP/TCP) can be assigned for each Power Port
- 2 independent power inputs of 230 V for the same or different phases
- Integrated overvoltage protection prevents damage of device and of connected consumers (L-N 10 kA), status retrievable over network
- 2 interfaces for optional sensors for environmental monitoring (temperature, humidity and air pressure)
- Event-based port switching possible by set sensor thresholds
- Internal beeper for acoustic alarm for sensor thresholds
- Comfortable configuration by web browser, Windows or Linux tool
- Firmware update via Ethernet during operation

- IPv6-ready
- HTTP/HTTPS, e-mail (SSL, STARTTLS), DHCP, Syslog
- SNMPv1, v2c, v3 (Get/Traps)
- TLS 1.0, 1.1, 1.2
- Telnet, Radius and Modbus TCP support
- Access control via IP Access Control List
- Android and iOS app *Gude Control* allows access from anywhere
- Low internal power consumption, typ. 5 W / 7 W (**8221-1 / 8226-1**)
- Developed and manufactured in Germany

Electrical Connections

- 2 Power supplies IEC C20, max. 16 A, 230 V
- 2 x 6 Power Ports IEC C13, max. 10 A
- Ethernet connector RJ45 (10/100 Mbit/s)
- Serial interface RS232 (Sub-D 9-pin)
- 2 RJ45 interfaces for optional sensors

Technical Details

- Dimensions: 19 inch, 1 rack unit
- LxHxD: 43.9 x 4.4 x 19.5 cm (without brackets)
- Weight: ca. 2.9 kg
- Operating temperature: 0-50 °C
- Storage temperature: -20 - 70 °C
- Relative humidity: 0 - 95 % (non-condensing environment)

- | | |
|---|--|
| <input checked="" type="checkbox"/> IPv6 | <input checked="" type="checkbox"/> SNMPv3 |
| <input checked="" type="checkbox"/> HTTPS | <input checked="" type="checkbox"/> Telnet |
| <input checked="" type="checkbox"/> SSL | <input checked="" type="checkbox"/> Modbus TCP |

Order Code	Product	Feature	Operating Voltage	Max. Current
8221-1	Expert Power Control 8221-1	2 x 6 outlets IEC C13, energy metering per bank	230 V	2 x 16 A
8226-1	Expert Power Control 8226-1	2 x 6 outlets IEC C13, energy metering per bank and per outlet	230 V	2 x 16 A



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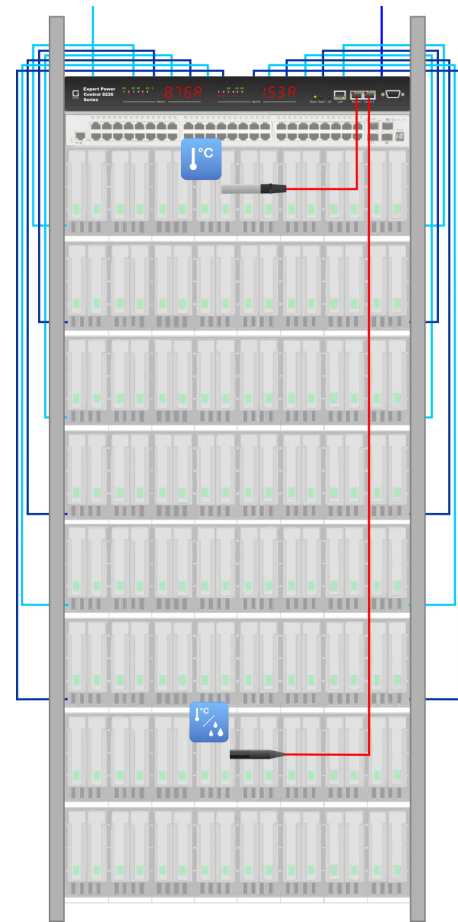
Deployment of **Expert Power Control 8226-1** by example of a data center

The following data center scenario serves as an application example for **Expert Power Control 8226-1**: A standard 19 inch rack with 12 servers is deployed with customer critical applications running on the servers. The user's target: to implement a reliable power distribution as well as an intelligent device management regarding capacity and system monitoring - all at a reasonable cost-benefit ratio.

As for the extension of the IT infrastructure, typical objectives arising are e.g.:

- ▶ Enhancement of energy efficiency
- ▶ Metering of energy consumption on rack and server level in real time
- ▶ Implementation of a reliable environment monitoring
- ▶ Prevention of down-times and of system critical conditions
- ▶ To ensure instant remote access in case of need
- ▶ Support of commonly used authentication and encryption protocols

Expert Power Control 8226-1 is mounted in a free RU space of a 19 inch rack. Both IEC C20 power supplies (max. 16 A, 230 V) allow a total switching power of 7500 W for the servers. Thanks to the integrated sensor interfaces, environment monitoring is easily realized by connecting plug-and-play sensors: **Sensors 7104, 7105** and **7106** make it possible to retrieve temperature, humidity and air pressure data from different corners of the rack. Selectable threshold and reporting settings enable users to dispose of relevant monitoring data for their power supply infrastructure. Hence, appropriate actions can be taken before problems occur. Moreover integrated energy meters allow precise measuring and logging of power consumption, both on unit and on outlet level.



Expert Power Control 8226-1
with two sensors in 19 inch rack

Order Code	Product	Feature
7101	Temperature Sensor 7101	Cable sensor with splash-proof sensor head (IP64), RJ45 connector, -20°C to +80°C, cable ca. 2.3 m
7104 *	Temperature Sensor 7104	Cable sensor, RJ45 connector, -20°C to +80°C, cable ca. 2.3 m
7105 *	Temp., Humidity Sensor 7105	Cable sensor, RJ45 connector, -20°C to +80°C, 0-90% humidity, cable ca. 2.3 m
7106 *	Temp., Humidity, Air pressure Sensor 7106	Cable sensor, RJ45 connector, 20°C to +80°C, 0-90% humidity, 300-1100 hPa, cable ca. 2.3 m
* Sensors also available with calibrated temperature range: 7104-2, 7105-2, 7106-2		
7201	Temperature Sensor 7201	Box case with RJ45 socket, -20°C to +80°C
7202	Temp., Humidity Sensor 7202	Box case with RJ45 socket, -20°C to +80°C, 0-90% humidity
0804	IEC Extension Cable 0804	Extension cable for IEC C13 to C14, length: 3 m
0807	Cable Holder 0807	13 fixation bridges for load cables at the rear side