

IP-PDU

Product Overview

- IP-PDU (Internet Protocol P Power Distribution Unit) is a specialized piece of equipment designed to manage and distribute electrical power to the various devices and equipment within a data center. It is often used to improve the efficiency, reliability, and management of power distribution in a data center environment.
- Frog IP-PDU play a critical role in maintaining the uptime and efficiency of modern data centers by providing visibility into power usage and enabling proactive management of power-related issues. They are key component of overall data center infrastructure management.
- Here are some key features and functions of a FROG IP-PDU as follows; remote monitoring, real-time data, outlet-level control, alerts¬ifications, energy efficiency, load balancing, historical data&reporting, security, environmental monitoring, integration with data center management software, remote power cycling, rack-level and device-level management, predictive maintenance.
- In summary, FROG IP-PDU is a critical component that enhances power management and monitoring capabilities, helping organizations improve energy efficiency, reduce downtime, and maintain the reliability of their IT infrastructure.



IP-PDU

Product Features

Frog Engineering IP-PDU Features	A Series	B Series	C Series	D Series
PDU LEVEL POWER MONITORING <ul style="list-style-type: none"> - PDU-level power measurements (V, A, VA, W, kWh, PF, Hz). - Phase-level power measurements (V, A, VA, W, kWh, PF, Hz). - Circuit level power measurements (V, A, VA, W, kWh, PF). - High-accuracy, billing-grade metering capabilities. - Event log record/view. - 4-level user-defined alarm thresholds & notifications. 	■	■	■	■
OUTLET LEVEL SWITCHING <ul style="list-style-type: none"> - Remote On / Off power control by individual outlet. - User-defined power on/off delay of individual outlet. - Last Known State Power-on. - Individual outlet on/off time scheduling. 			■	■
OUTLET LEVEL POWER METERING <ul style="list-style-type: none"> - Outlet-level power measurements (A, VA, PF). - Outlet-level watt-hour energy metering (kWh). - Outlet-level alarm thresholds & notifications. 		■		■
ENVIRONMENTAL MONITORING <ul style="list-style-type: none"> - Real-time breaker ON / OFF status monitoring and alarm. 	■	■	■	■
CIRCUIT BREAKER STATUS MONITORING <ul style="list-style-type: none"> - Plug & Play environmental sensors including temp & hum, smoke, water, door contact, dry contact. - Customizable alarm thresholds and notifications. 	■	■	■	■
NETWORK MANAGEMENT <ul style="list-style-type: none"> - Supports HTTP, HTTPS, Telnet/SSH, SSL/TLS, SNMP v1/v2c/v3, NTP, SMTPS, - Daisy Chain up to 9 slave FROG ENGINEERING IP-PDU for 1 master 	■	■	■	■

Frog Engineering IP-PDU



IP-PDU

Product Features



High resolution LCD display

- 2.8" FTF color LCD with high resolution displays shows clear and rich information of PDU data and configuration.



Billing grade accuracy

- Accurate power metering capability which meets IEC and GB accuracy standard and provides reliable data to Data Center managers for billing reference.



Comprehensive rack environment monitoring

- 2x T/H sensor, 1x door contact sensor, 1x smoke sensor, 1x water logging sensor and 1x dry contact sensor supported as default.



Daisy-Chain

- This enables multiple FROG ENGINEERING IP-PDUs to share one IP address to save network resources (up to 10 x FROG ENGINEERING IP-PDUs).



Individual outlet control

- Remote outlet on/off switching function provides possibility to turn off individual outlets in extreme over-load or short-circuit condition; users can also schedule the on/off time of individual outlets for special use cases.



Enhanced cyber security

- FROG ENGINEERING IP-PDU supports multiple communication protocols in secured connection and latest version to prevent its system from cyber attack.



Compact body design

- Slim chassis and low profile magnetic circuit breaker save valuable space in the rack.



Breaker status monitoring

- FROG ENGINEERING IP-PDU provides real-time status monitoring and alarming of circuit breakers at bank level.



Cable retention

- FROG ENGINEERING IP-PDU's patented socket retention mechanism can effectively prevent downtime caused by accidental cable fallout.



Upgradable & hot-swap controller

- The Controller can be replaced or upgraded without shutting down the power to the rack breakers at bank level.



Upgradable & scalable output modules

- Output socket combinations, outlet quantities can be changed and module functionality can be upgraded live in field.



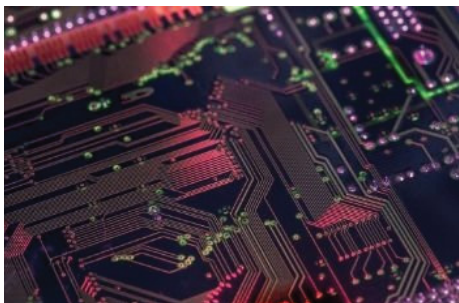
High-density power distribution

- FROG ENGINEERING IP-PDU supports up to 42 IEC outlets in an outlet monitored and switched version which is top of the industry.



HOW WILL YOU BENEFIT FROM FROG ENGINEERING IP-PDU?

Product Features



Designed for higher availability

- Hot-swappable and upgradeable PDU platform allow user to repair or upgrade the PDU in-field without power interruption thus increasing the uptime of IT devices.
- Patented locking IEC outlets to prevent accidental plug falling.



Experience the continuously evolving pdu functionality and performance

- The live upgradeable PDU controller and output socket module enables Frog Engineering IP-PDU to maintain its functionality and performance always up-to-date.



Comprehensive rack environment monitoring

- Frog Engineering IP-PDU is designed to accommodate up to 5 external sensor probes with user customizable alarms and notification.
- Extended Sensor box is available for more sensor probes.



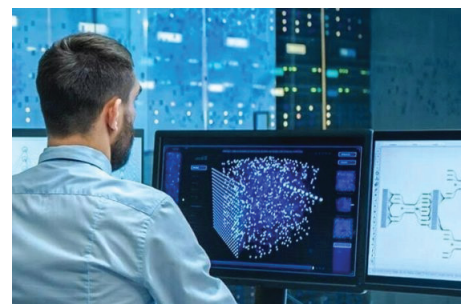
Optimized energy consumption and capacity management

- With Frog Engineering IP-PDU, user can quickly determine where energy is being used, simplify load balancing and reveal the locations where spare power capacity is.
- Saving energy by turning off idle servers.
- Provide on-spot power status and rack environment monitoring to help cut cooling costs.



Real-time and historical power consumption data viewing and graphing

- View logs of user access, settings, user actions and alarms for troubleshooting.
- Record / view / report power and environmental data and graph to understand the trend in a given time period.



Simplified integration with management tools

- Multiple remote access method supported such as HTTP, SNMP, Modbus, Telnet/SSH in secured connection.
- Integration with Frog Engineering Manager software to simplify implementation and change management of IT assets.



Enhanced security

- Strong encryption and password policy, advanced authorization options including TLS, SSH, Radius etc.
- Customizable SSL or TLS certificate allows users to upload their own certificate for better safety.

SMART INTEGRATION FOR YOU

Frog Engineering IP-PDU provides users with local display, Web interface, Frog Engineering Manager software or 3rd party DCIM to monitor and manage all PDUs.

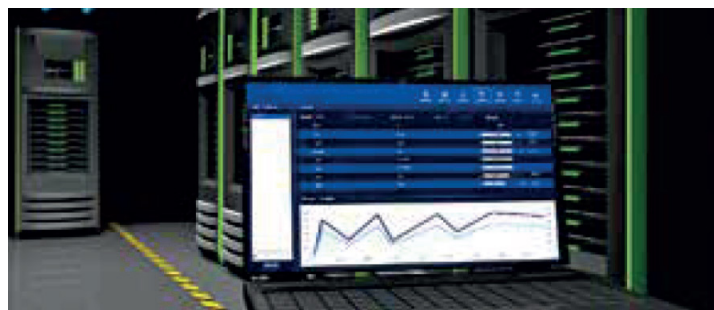
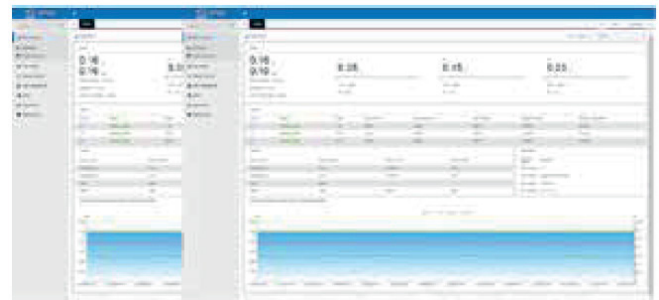
Home	Phase L1	Sensors	
Type: ZPDU (D)	U: 228.5V I: 4.45A	T1: 29°C	H1: 60%
192.168.1.192	Apparent Power: 1.02KVA	T2: 33°C	H2: 64%
Address:1	Power Factor: 0.68	Door: Open	
Version: 6.14.14.14	Apparent Energy: 37.3KWh	Smoke: Normal	
		Water: Normal	
2019-12-19 11:29	2019-12-19 11:29	2019-12-19 11:29	

Local LCD display

- Remove the risk of overload when deploying or moving critical IT equipment through a local crystal clear LCD display, offering better capacity management in addition to reliable distribution.

Built-in Web interface

- Monitors Canovate IP-PDU parameters via web browser with no dedicated software required. Through single IP address, users can view up to 10 Frog Engineering IP-PDU.

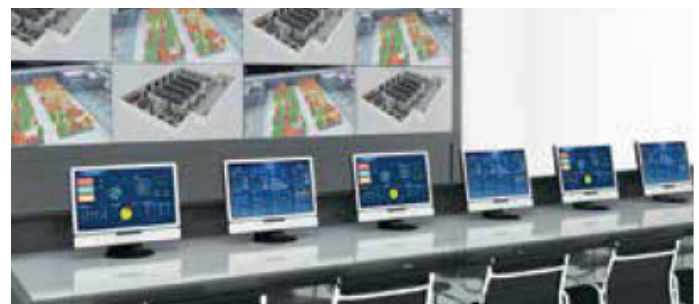


IP-PDU Manager

- Enable you to manage thousands of PDUs with a combined dashboard view, management, consolidated alerts & reporting.

DCIM integration

- Integrate your Frog Engineering IP-PDU with users' existing DCIM or BMS solution through SNMP or standard Modbus protocol.

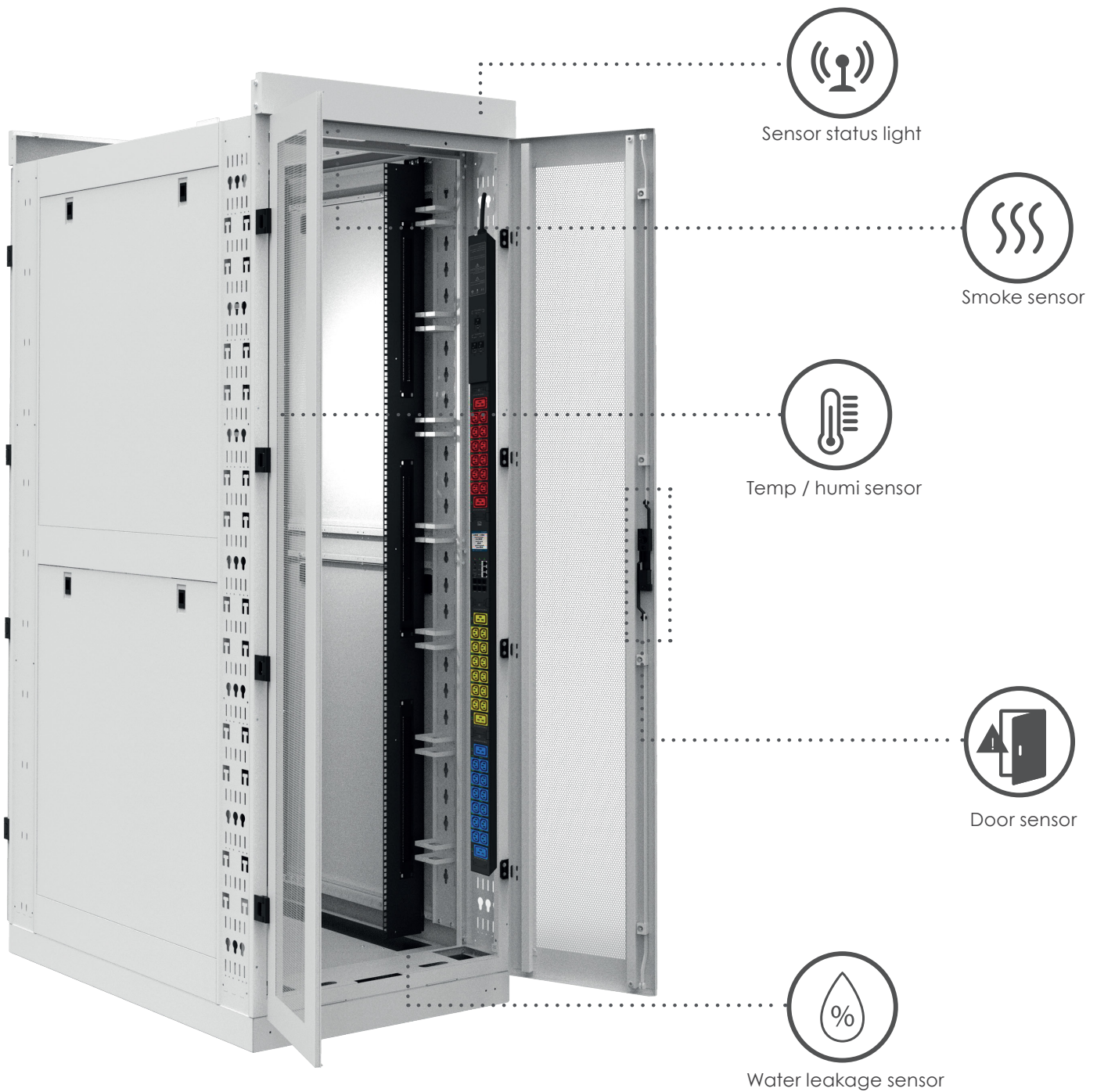


SENSOR OPTIONS FOR YOUR CABINET ENVIRONMENT

To Real-time monitor rack environment status with Frog Engineering plug-and-play sensors. Every FrogEngineering IP-PDU is designed to accommodate up to 11 external sensor probes with user customizable alarms and notification.

A variety of sensors are available to meet your needs including temperature, humidity, smoke, door contact, water detection and more.

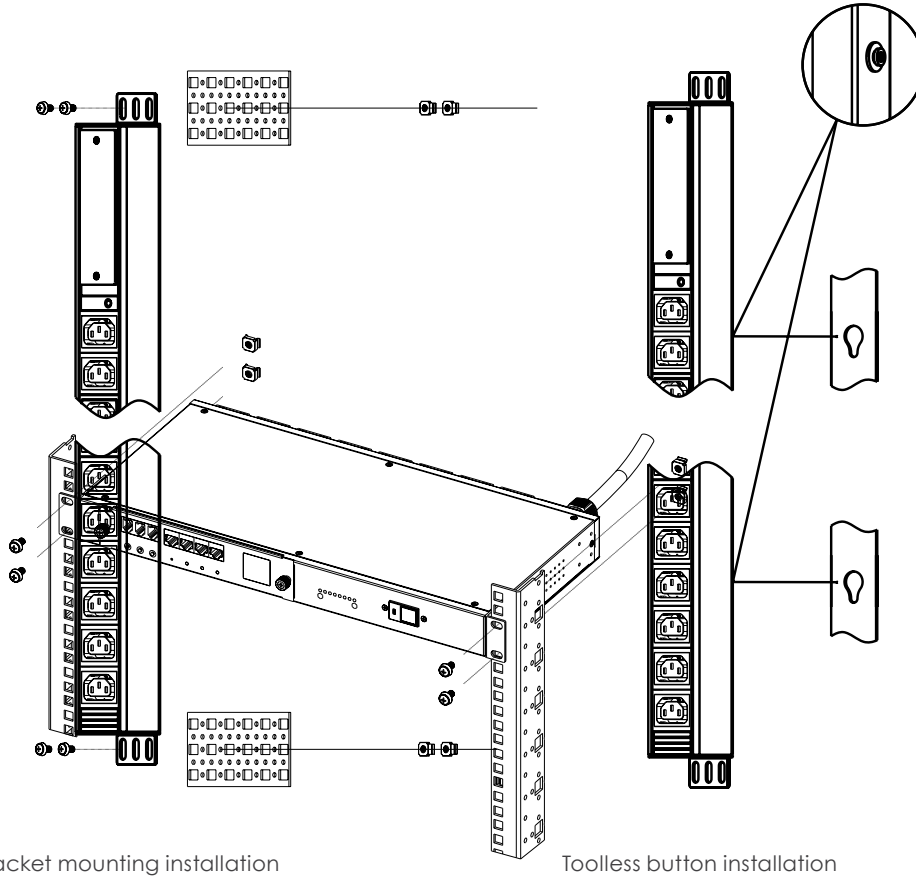
Every sensor probe is factory calibrated and designed for easy installation, setup, and identification.



FLEXIBLE INSTALLATION

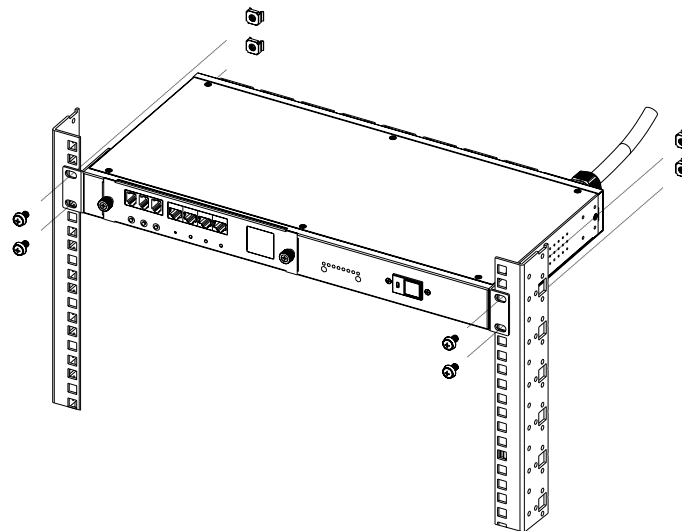
Multiple form factors give you the flexibility to choose

- 0U models are vertically mounted in the rear of your rack, providing the most amount of receptacles and not occupying your valuable rack space.
- 1U models are horizontally mounted in the U space of your rack, providing a smaller footprint for those with less equipment to power.
- Toolless mounting buttons are pre-installed to reduce installation time.



Bracket mounting installation

Toolless button installation



Side bracket installation

Category	Rack Space	Input Voltage	Derated AMP	Input Plug	#of Bank	Outlet
Total Metered PDU	0U	100-240V	32A	IEC 60309 32A	2x16A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
			63A	IEC 60309 63A	2x32A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
	0U	200-415V	3x16A	IEC 60309 16A	3x16A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
			3x32A	IEC 60309 32A	3x32A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
Outlet Metered PDU	0U	100-240V	32A	IEC 60309 32A	2x16A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
			63A	IEC 60309 63A	2x32A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
	0U	200-415V	3x16A	IEC 60309 16A	3x16A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
			3x32A	IEC 60309 32A	3x32A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
Total Metered & Outlet Switched PDU	0U	100-240V	32A	IEC 60309 32A	2x16A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
			63A	IEC 60309 63A	2x32A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
	0U	200-415V	3x16A	IEC 60309 16A	3x16A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
			3x32A	IEC 60309 32A	3x32A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
Outlet Metered & Switched PDU	0U	100-240V	32A	IEC 60309 32A	2x16A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
		100-240V	63A	IEC 60309 63A	2x32A	21xIEC 60320 C13+3xIEC 60320 C19
						20xIEC 60320 C13+4xIEC 60320 C19
						18xIEC 60320 C13+6xIEC 60320 C19
	200-415V	3x16A	IEC 60309 16A	3x16A	21xIEC 60320 C13+3xIEC 60320 C19	
					20xIEC 60320 C13+4xIEC 60320 C19	
					18xIEC 60320 C13+6xIEC 60320 C19	
	200-415V	3x32A	IEC 60309 32A	3x32A	21xIEC 60320 C13+3xIEC 60320 C19	
					20xIEC 60320 C13+4xIEC 60320 C19	
					18xIEC 60320 C13+6xIEC 60320 C19	