ELEVATE
Future Faster

TECHNICAL GUIDE

Elevate Intelligent PDUs

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Behind each Elevate solution sits a principle to offer a higher standard of performance, features or component choice as standard when compared with alternatives in the market.

Introduction

Intelligent Power Distribution Units (PDUs) are sophisticated power management solutions engineered to deliver real-time visibility, control, and automation of power distribution across critical infrastructure environments. These devices are essential in modern data centres (DCs), where uptime, energy efficiency, and remote management are paramount. Intelligent PDUs enable granular monitoring of power usage at the outlet, circuit, or device level, allowing operators to optimise load balancing, detect anomalies, and implement remote power cycling.

This Technical Guide explores the capabilities, deployment considerations, and operational advantages of Elevate's Intelligent PDUs specifically tailored for the data centre (DC) market, where scalable, secure, and efficient power management is a foundational requirement.

Product Overview

PRECISION. CONTROL. VISIBILITY.

Power Smarter with Elevate Intelligent PDUs

Elevate's Intelligent PDUs are engineered to meet the evolving demands of modern data centres and mission-critical environments. Designed with flexibility and performance in mind, our PDUs deliver real-time insight and remote control over your power infrastructure, ensuring uptime, efficiency, and peace of mind.

Key Features:

- Voltage Rating: 230V AC – fully compliant with UK power standards
- Input Options: BS1363, IEC C20, or hardwired for seamless integration
- Output Flexibility: Choose from BS1363, IEC C13, or C19 outlets to match your equipment
- Form Factors: Available in horizontal (1U/2U) and vertical (0U) configurations to suit any rack layout
- Advanced Monitoring: Track per-outlet or per-phase current, voltage, power factor, and energy usage in real time
- Remote Control: Power cycle, reboot, or shut down outlets from anywhere with secure remote switching
- Network Ready: Connect via Ethernet, Wi-Fi, or RS-232 for maximum deployment flexibility
- Protocol Support: Seamless integration with SNMPv3, HTTP/HTTPS, SSH, Telnet, and Modbus TCP/IP

Why Choose Elevate?

- Optimise Energy Use: Identify inefficiencies and reduce operational costs with detailed power analytics.
- Enhance Uptime: Proactively manage loads and respond to issues before they impact performance.
- Scale with Confidence: Modular designs and flexible configurations grow with your infrastructure.
- Secure by Design: Built-in encryption and access controls keep your power network protected.

Elevate Intelligent PDUs - because power management should be as smart as the systems it supports.

PRECISION. CONTROL. VISIBILITY.

C16 and 32A Commando-Style Power Connections

C16 and 32A Commando-style power connectors, built to the IEC 60309 standard, offer robust and reliable solutions for structured cabling environments, industrial applications, and high-performance IT infrastructure. Engineered for durability and high-current capacity, these connectors are ideally suited for powering data centre PDUs, heavy equipment, and temporary installations such as events or construction sites.

The C16 (16A) variant provides a compact and reliable option for lighter loads or mobile setups, while the 32A version supports nearly double the power capacity - up to 22 kW - making it a preferred choice for high-demand and hyperscale deployments.

Commando connectors are distinguished by their rugged design and secure locking mechanism, which prevents accidental disconnection and ensures a stable power connection, even in challenging or outdoor environments. Their oversized contact pins and IP44/IP67-rated waterproof housings enhance both safety and reliability under load.

PDUs fitted with C16 Commando inlets often include additional features that support safer and more efficient operation, such as:

- **Individually fused IEC C13 outlets**
- **External earth connection facilities**
- **RMS current monitoring**

These features help to safeguard connected equipment and simplify energy management in critical infrastructure.

In summary, Commando-style connections deliver a scalable, secure, and high-performance power interface, ideally suited for modern industrial and IT environments where uptime, safety, and adaptability are essential.

PRECISION. CONTROL. VISIBILITY.

C13/C19 Power Connections in IT Infrastructure

C13 and C19-style power connectors—defined under the IEC 60320 standard—are a cornerstone of modern IT and structured cabling environments. Their widespread adoption across data centres, telecoms, and enterprise networks is driven by a combination of standardization, flexibility, and efficiency.

The C13 connector, rated up to 10A, is commonly used for general-purpose IT equipment such as network switches, patch panels, and desktop servers. In contrast, the C19 connector, rated up to 16A, is designed to handle higher-power devices, including enterprise-grade servers, UPS systems, and high-density storage arrays.

Both connector types support:

- **Universal compatibility with a broad range of power distribution units (PDUs) and rack-mounted devices**
- **Compact form factors, enabling space-efficient, high-density installations**
- **Locking variants that prevent accidental disconnection and improve operational uptime**

By leveraging these standardized connectors, organisations benefit from simplified procurement, reduced SKU complexity, and greater flexibility in infrastructure design. The result is a modular, scalable, and maintainable power distribution ecosystem, perfectly suited to the evolving demands of mission-critical IT environments.

Electrical Specifications

Parameter	Specification
Input Voltage	230-240AC
Frequency	50/60Hz
Max Load per PDU	Up to 32A (single or three-phase)
Overload Protection	Circuit breakers or fuses
Surge Protection	Optional Integrated MOV
Accuracy (Monitoring)	+/- 1% for voltage and current readings

Environmental and Mechanical Features

- **Operating Temperature: 0°C to 60°C**
- **Humidity: 10%–90% non-condensing**
- **Enclosure: Powder-coated steel or aluminium**
- **Ingress Protection: IP20 (standard), higher on request**
- **Mounting Options: Tool-less button mount, brackets, or cage nuts**

Elevate Intelligent Power Distribution Units (iPDUs) often feature RJ45 ports for Ethernet connectivity, allowing remote management via a network. They also include RJ11 ports for environmental sensors, such as temperature and humidity monitoring. These ports enable seamless integration with data centre infrastructure, ensuring efficient power management and monitoring.

Intelligence Features

The Elevate Design Advantage

The Elevate design delivers a sophisticated, integrated approach to connectivity, monitoring, and power management. At its core is an Ethernet Port (IEEE 802.3) with full 10/100 Base-T network capability, enabling reliable remote access. A High-Speed MODBUS RS-485 Port allows daisy-chaining of up to 32 PDUs, simplifying scalable deployment.

Environmental awareness is built-in through dedicated sensor ports: the Temperature Sensor Port supports up to eight daisy-chained sensors, while the Humidity Sensor Port enables continuous ambient monitoring. A Remote Display Port allows connection of an additional RGB screen, enhancing visibility in various installation environments, and the Local TFT Touchscreen Display provides intuitive access to live data on energy consumption, environmental status, security events, and alarm conditions.

For physical access control and enhanced security, the design includes Cabinet Lock Control for electronic handles, a Cabinet Door Card Reader Port for user authentication, and Cabinet Door Contact Monitoring to detect unauthorized access.

Integration flexibility is further supported by three sets of voltage-free contacts, ideal for connecting sensors such as leak detectors. A USB 2.0 Port enables use of compact PIN cameras or facilitates automatic configuration uploads. Finally, a Reset Button offers quick system recovery, ensuring resilience and operational continuity.

Together, these features make Elevate a robust, scalable, and intelligent power management platform, purpose-built for modern data environments.

Monitoring

- Real-time current draw per outlet or per bank
- Voltage and power factor monitoring
- Energy consumption logging (kWh)
- Threshold-based alerts (email, SNMP traps)

Remote Management

- Web-based GUI for configuration and monitoring
- SNMP integration with DCIM platforms
- Outlet-level control for power cycling or load shedding
- User authentication and role-based access

Security

- HTTPS and SSH for secure communication
- SNMPv3 with authentication and encryption
- Configurable firewall and IP access control

Key Elements of the Intelligent PDUs

1. **Modbus Port**
   High Speed MODBUS RS 485, Daisy chain up to 32 PDUs

2. **Remote Display Port**
   Connect a secondary RGB display for ease of viewing

3. **Cabinet Lock Control Port**
   Connect Electronic Handles

4. **Cabinet Door Card Reader Port**
   Connect Card Reader or Electronic Handle Card Reader aspect

5. **Cabinet Door Contact Monitoring Port**
   Connect door contacts

6. **Temperature Sensor Port**
   Connect up to 8 daisy chained sensors

7. **Humidity Sensor Port**
   Connect Humidity / Temperature Sensor

8. **Voltage Free Contacts**
   3 sets of Volt Free Contacts for connection of any accessory such as leak detection

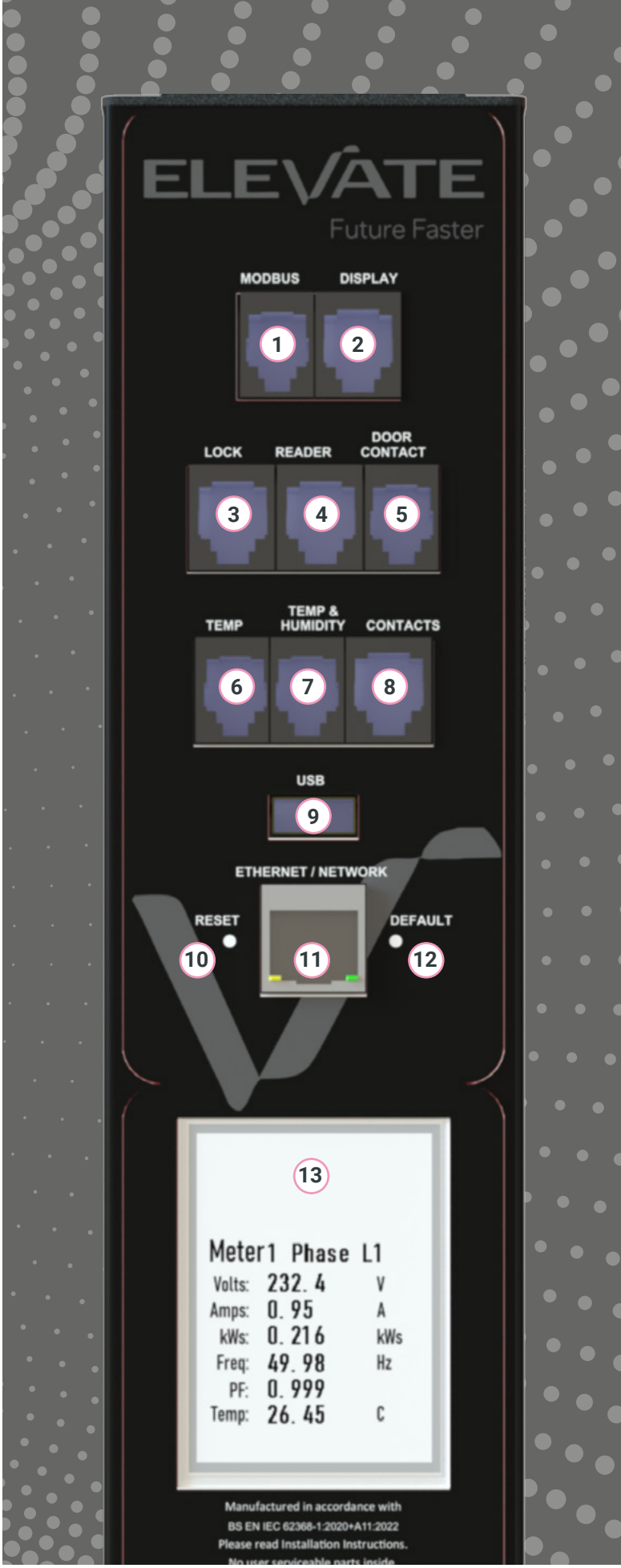
9. **USB 2.0 Port**
   Used for small PIN camera or Automatic Config upload

10. **Reset Button**

11. **Ethernet Port**
    IEEE 802.3 with full 10/100 Base-T network capability

12. **Default Button**
    Enables a “Factory Reset”. Please contact us for correction operation.

13. **Local TFT “Touch Screen Display”**
    IEEE 802.3 with full 10/100 Base-T network capability



Intelligent Monitoring Comparison

	IPLite	INT1 (Overall Monitoring)	INT3 (Overall & Individual Socket Monitoring & Switching)
			PDU Info
Rack Mount Vertical (0U)	✓	✓	✓
Rack Mount Horizontal (1U+)	✓	✓	✓
Construction	Mild Steel	Mild Steel	Mild Steel
Finish	Powder Coated	Powder Coated	Powder Coated
Main Lead	HO7	HO7	HO7
Lead Length	3 Metre	3 Metre	3 Metre
Maximum Number of Sockets	42	48	48
Socket Types	C13 & C19	C13, C19, UK, Schuko, Plus other	
			Electrical Characteristics
Single / Three Phase Options	Single Phase Only	Both	Both
Main Input	85 - 265 VAC	85 - 265 VAC	85 - 265 VAC
Frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Overall Meter Current Range	0 - 63 Amps	0 - 63 Amps	0 - 63 Amps
Socket Current Range	-	-	0 - 16 Amps
Overall Meter Accuracy	+/- 1% Typical	+/- 1% Typical	+/- 1% Typical
			Overall Meter Accuracy
RMS Volts	✓	✓	✓
RMS Amps	✓	✓	✓
Kilowatts	✓	✓	✓
Frequency	✓	✓	✓
Power Factor	✓	✓	✓
Internal PDU Temperature	✓	✓	✓
Peak Voltage	✓	✓	✓
Peak Current	✓	✓	✓
kVA	✓	✓	✓
kWh (Cumulative)	✓	✓	✓
Kg/CO_2 (Cumulative)	✓	✓	✓
BTU/h (Cumulative)	✓	✓	✓
KJ/h (Cumulative)	✓	✓	✓
Cost (Cumulative)	✓	✓	✓

	IPLite	INT1 (Overall Monitoring)	INT3 (Overall & Individual Socket Monitoring & Switching)
			Overall Meter Accuracy
Class II	✓	✓	✓
Billing Quality	✓	✓	✓
Sampling Rate 4000 times a second	✓	✓	✓
			Individual Socket Measurement
Amps	-	-	✓
Watts	-	-	✓
VA	-	-	✓
kWh (Cumulative)	-	-	✓
			Socket Control
Individual Socket Switching	-	-	✓
Individual Socket Power Cycle	-	-	✓
			Connectivity
SNMP v1, 2, 3	✓	✓	✓
HTML, HTTP, HTTPs	✓	✓	✓
XML	✓	✓	✓
Email Alerts	✓	✓	✓
			Daisy Chaining
RS485 Modbus - 1 Master up to 31 Slaves	✓	✓	✓
			Local RGB Display
Fitted within PDU	✓	✓	✓
Remote Display Option	✓	✓	✓
Capability only, Sensors Availiable Separately			
			Enviromental Sensor
Temperature Sensor Port (Up to 8 Sensors)	✓	✓	✓
Humidity / Temperature Sensor	✓	✓	✓
Volt Free Contacts (3 Sets)	-	✓	✓
			Cabinet Security Ports
Door Contacts	-	✓	✓
Electronic Door Handle	-	✓	✓
Card Reader / Pin Pads	-	✓	✓

Installation Guidelines

Intelligent PDU Access

Connect PDU to Power. Use a USB-C to network adaptor such as Aura AR-08-006 and connect to laptop. Plug short Network cable into Network Port on the PDU.

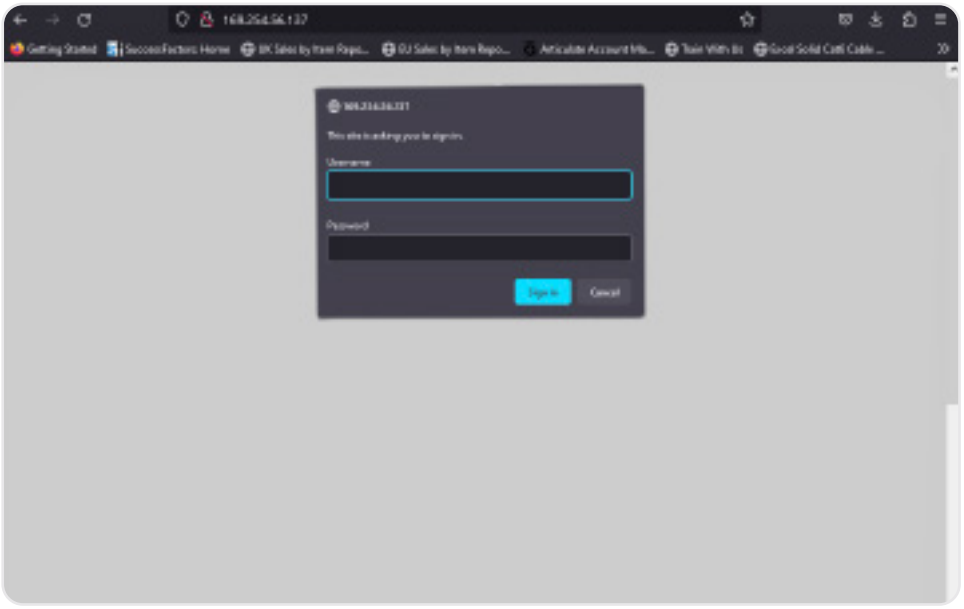
Power up the PDU.

The PDU will then display an IP Address on its screen, in this case 169.254.56.137

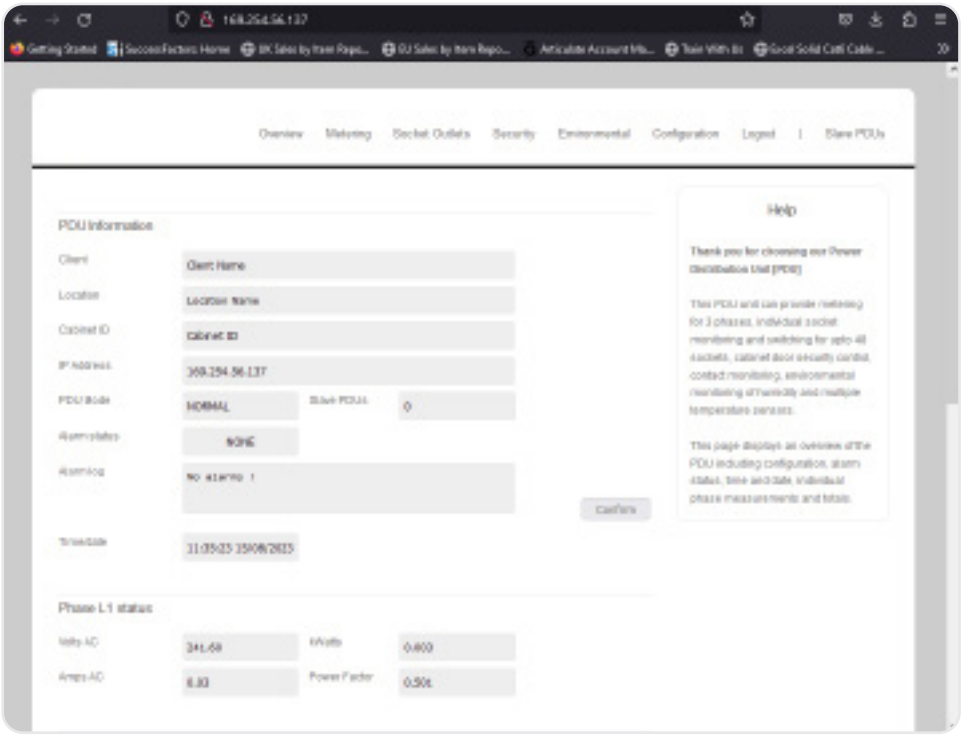
Open a browser window on your PC and enter the IP address.

It will then request a User Name and Password.

Enter admin for both, you will then be logged into the main page.



The humidity or Temperature sensors can then be setup under the Environmental tab



Installation and Safety Instructions

When preparing to install and operate intelligent PDUs, please review and adhere to the following general safety and operational recommendations. Failure to do so may result in death or serious injury.

Environmental Conditions

- PDUs are intended for indoor use only.
- Avoid installation in environments where there is excessive moisture, dust, or heat, as this may affect performance or create safety hazards.

Electrical Safety

- Always connect the PDU to a three- or five-wire grounded power outlet.
- The power source must be equipped with an appropriate overcurrent and earth fault protection device (e.g. fuse or circuit breaker).
- Never connect or disconnect equipment during a lightning storm.
- Ensure that power cords, plugs, and outlets are in good working condition before installation.
- To disconnect the unit from the mains, unplug the appliance connector from the supply socket.
    - Do not disconnect under electrical load.
- If the power outlet is difficult to access (e.g. beneath flooring or overhead), ensure adequate planning for future disconnection.

Mounting and Handling

- Only use fixed brackets provided with the PDU. Additional mounting accessories, where applicable, must be installed with manufacturer-supplied hardware.
- If no suitable power outlet is available near the installation area, a dedicated outlet should be installed.
    - Extension cords and adapters must not be used.
- When installing large or heavy units, always consider assistance from additional personnel and never work alone in hazardous conditions.

Equipment Connection

- Disconnect the PDU from the mains before installing or connecting equipment to reduce risk of electric shock.
- Make all electrical connections before restoring power.
- When plugging or unplugging cables, use one hand whenever possible to avoid accidental grounding between two surfaces.

Fuse Replacement (Products with Fuses)

- Always isolate the unit from power before replacing any fuse.
- Use only the correct fuse type with the specified current rating.
  If unsure, consult a qualified electrical engineer.
- Fuse requirements by outlet type:
- Type F outlet (C13): Use Fast Acting (F), High Rupture Capacity (H)
  5×20 mm fuse, rated 10A 250V max
- Type J outlet (C19): Use Fast Acting (F), High Rupture Capacity (H)
  5×20 mm fuse, rated 16A 250V max

Thermal Trip Protection (Push-to-Reset)

- For PDUs with IEC320 Type F and Type J outlets supplied from a 32A or higher source, outlets are divided across two or more branch circuits. Each branch is protected by a 16A thermal trip, operated by a Push to Reset mechanism.
- On PDUs with per-outlet thermal protection, ratings are as follows:
- Type F outlet (C13): 10A thermal trip per outlet
- Type J outlet (C19): 16A thermal trip per outlet

Recycling and Environmental Compliance

- This product is RoHS compliant.
- At end of life, do not dispose of electrical or electronic equipment with general waste.

Contact your supplier for information on WEEE-compliant recycling and disposal services.

For full installation guidelines, please refer to the Elevate Intelligent PDU Product Specification and Software Guide, available via the Elevate website.

iPDU Build Check List

Please follow through this simple check list to ensure you obtain enough information from the customer to select the correct product available in the current range, or enable a special quote to be supplied.

CONSTRUCTION ☐ Horizontal ☐ Vertical

CURRENT ☐ 13amp ☐ 16amp ☐ 32amp

PHASING ☐ 1Ph ☐ 3Ph

MAIN LEAD ☐ Bottom Entry ☐ Top Entry (INT Range Only)

Lead length in meters _____ Standard is 3 metres

FUNCTIONALITY

Active	☐ Overall Unit Monitoring	IPLite or INT1
	☐ Per Socket Monitoring	INT3
	☐ Per Socket Switching	INT3

SOCKET OPTIONS

Socket Types	Socket types and quantities can be mixed
C13	Qty _____
C19	Qty _____
UK	Qty _____
Schuko	Qty _____
Other	Qty _____

Check Configurator tool and standard part tables for normal configurations

Total Socket Quantity _____

Is locking required _____

ESTIMATED NUMBER OF UNITS _____

ANY SPECIAL INSTRUCTIONS _____

_____

Compliance and Standards

When it comes to powering mission-critical infrastructure, compliance isn't optional - it's essential. The Elevate Intelligent PDU is built to meet the highest standards of safety, reliability, and environmental responsibility, giving you complete peace of mind.

Built to Comply. Engineered to Perform.

- Socket Compliance: Fully compatible with BS 1363 and IEC 60320 standards, ensuring safe and reliable connections across a wide range of IT and power equipment.
- CE & UKCA Marked: Certified for both European and UK markets, meeting all applicable safety and performance directives.
- RoHS & WEEE Compliant: Designed with sustainability in mind—free from hazardous substances and fully compliant with electronic waste disposal regulations.
- EMC Certified: Meets EN 55032 and EN 55024 standards for electromagnetic compatibility, ensuring interference-free operation in dense IT environments.
- Safety Assured: Tested to EN 62368-1, the latest safety standard for AV and ICT equipment, protecting both users and infrastructure.

Elevate iPDUs are more than just power distribution - they're a commitment to quality, compliance, and operational excellence.

Applications

Elevate iPDU: Powering Performance Across Every Environment

Whether you're managing a hyperscale data centre or a compact edge deployment, the Elevate iPDU range delivers intelligent, reliable, and scalable power distribution where it matters most.

Data Centres & Server Rooms

Maximise uptime and efficiency with real-time power monitoring, outlet-level control, and seamless integration into your DCIM platform. Elevate iPDUs are built for high-density racks, offering vertical and horizontal mounting options, robust security, and full compliance with global standards.

Edge Computing Environments

In remote or space-constrained locations, Elevate iPDUs provide the visibility and control needed to manage distributed infrastructure. With remote switching, energy usage tracking, and secure network connectivity, you can maintain operational continuity—without being on-site.

Telecoms & Network Closets

Compact, reliable, and easy to deploy, Elevate iPDUs are ideal for telecom cabinets and network closets. Their flexible socket configurations and intelligent monitoring help ensure consistent power delivery to critical networking gear.

Industrial Automation Systems

Designed to withstand demanding environments, Elevate iPDUs support industrial-grade reliability with advanced surge protection, environmental monitoring, and integration with Modbus TCP/IP systems. Keep your automation infrastructure powered, protected, and performing.

One Platform. Infinite Possibilities.

With Elevate iPDUs, you gain more than just power distribution—you gain control, insight, and peace of mind across every layer of your infrastructure.

Troubleshooting

Issue	Possible Cause	Recommended Action
No power to outlets	Tripped breaker or fuse	Check and reset/replace
Inaccurate readings	Calibration drift	Recalibrate or replace sensors
Network unreachable	IP conflict or misconfig	Verify settings and DHCP/static IP
Outlet not switching	Firmware or relay fault	Update firmware or contact support

Elevate Intelligent PDUs deliver a robust and scalable power management solution designed for mission-critical environments. With advanced capabilities to monitor, control, and report on power usage in real time, Elevate empowers data centre and IT professionals to optimise energy efficiency, maintain uptime, and manage infrastructure remotely with confidence. Built for performance, engineered for reliability, Elevate is the intelligent choice for modern power distribution.

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ELEVATE

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an excel solution