ABOVE THE STANDARD

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HVAC SYSTEM

Intelligent Modular Power Distribution Unit

Features

- Advanced power quality monitoring and metrics, ±1% metering accuracy
- C13 and C19 combined in any order, auto-locked outlets, outlet's power status LED indicate
- Individual outlet control, power sequencing on/off, timed on/off control
- LCD display with touchable screen, LCD orientation rotatable, metering information real-time display
- Ethernet 10M/100M, USB, CAN, I/O, IIC (sensor), RS485 (sensor)
- Protocols: HTTP/HTTPS (HTML5, REST, JSON), SSH, IoT (MQTT), SNMP (V1, 2c, 3), SMTP
- User configurable threshold alarms for sensors reported over SNMP, SMTP, and HTTP POST to customizable URL
- Access control through user accounts with passwords and X.509 (PKI) certificates, Cloud Access (AWS and Google)
- Signed and encrypted firmware upgrades (network, USB) to ensure authenticity and integrity
- Circuit breaker(s) and surge protection,
- Industrial grade mechanical design, Slot assembly mode and screwless on panel
- Temperature, humidity, power consumption monitoring; digital binary state signal sensor; supports third party external sensor with power supply (5V)

The IMP Series PDU is an intelligent modular power distribution with high accuracy energy measurement and reliable outlets controls. It offers industrial-grade reliability, complete power management, user-configurable firmware, and hot-swappable capability for maintenance. Its futureproof design helps manage operations more efficiently and greener.

The IMP series PDU incorporates Center Controller Module, Phase/Total Meter Module, Circuit Breaker Module and Relay/Outlet Module

The Center Controller Module

the intelligent control center of PDU, that houses high compute power, display screen, and multiple connectivity ports.

- LCD with touched display provides information on power usage, outlet status and critical alerts.
- Touchable LCD also provides an easy way to check and control PDU's status on site.

- 10/100 Ethernet ports enables connectivity to network infrastructure, supports protocols with HTTP/HTTPS (HTML5, REST, JSON), SSH, IoT (MQTT), SNMP (V1, 2c, 3) and SMTP with user defined access control to all system functions
- Sensor port allows plug-and-play external sensors of temperature, humidity, Water Leak, Smoke Detector, Door Status Monitor and with threshold exception detection and reporting over the network.
- USB-A update signed and encrypted firmware, USB-B generate diagnostic logs.
- RS485s use to cascade PDUs in daisy mode.

The Phase/Total Meter Module

to meter, monitor energy parameter of every phase or total flow. It can be set on the total input of PDU or be set on the input of any outlets group.

- Voltage (V, TRMS), Current (A, TRMS).
- Active Power (kW), Reactive Power (KVA), Apparent Power (KVA).
- Energy (kWh), Power Factor, Frequency.

The Relay/Outlet Module

a smallest outlet module, one module includes 4 outlets. And the module can meter, monitor and control every outlet within itself, with ±1% metering accuracy following IEC 62053-21 standards. Up to 12 Relay/Outlet modules can be combined into a PDU.

- meter, monitor and control every outlet within module.
- Remote Outlet and Outlet Group On/Of, Outlet Grouping Across Linked PDUs. Identify the exact outlet that caused a circuit breaker to trip.
- Power-on/off Sequencing with Customizable Delays.
- LED Outlet Indicators.
- A rugged and intuitive outlet and power cord locking system plug and unplug easily by autolock and manual release.
- Alterable Relay Control Technology (ARCT@) greatly reduce energy consuming heating and EMI level, prolong the relays lifetime.

The Circuit Breaker Module

to protect current surge/overlord in any unexpected situation.

- Used in AC50Hz/60Hz, rated voltage AC250V equipment circuit.
- Lines to provide accurate and reliable short circuit and overload protection.
- 10,000 ON-OFF operations @6 per minute Endurance.
- Compatible with certifications: UL489, TUV, CCC.
- The status of the module will be displayed in real time on the web side.

In generally, to a typical PDU's configuration, one Center Controller Module and several Relay/Outlet Modules are required, Circuit Breaker Module and Phase/Total Meter Module can be added or not in different configurations.

Specifications

Table 1. Input and output Section Specifications.

Item	Value
Input Plug	Battier Connector
Input Voltage	85-260 VAC
Input Current	32 Amp
Output Receptacles	Nema5-15R, IEC60320-C13, IEC60320-C19, GB2099.9-10A, GB2099.9-16A
Output Nominal Voltage	85-260 VAC
Circuit Breaker	Optional
Communication port	RJ45, 10M/100M, USB, CAN, I/O, IIC (sensor), RS485 (sensor)
Daisy Chain	Up to 255 PDUs can be daisy chained using RS485
Environmental Sensor	Temperature, Humidity, Power Consumption Monitoring, Smoke, Water Leakage Via RJ11 or RJ 45 port Sensor (Supports third party external sensor)
Network Protocol	HTTP/HTTPS (HTML5, REST, JSON), SSH (+PKI), IoT (MQTT), SNMP (v1, 2, 3), SMTP
Energy Monitoring	Voltage (V, RMS), Current (A, RMS), Active Power (kW), Reactive Power(kW), Apparent Power (kVA), Energy (kWh), Power Factor, Frequency Apparent Power (kVA), Energy (kWh), Power Factor, Frequency

Specifications

Remote Outlet Switching	Yes
Monitoring Input line	Yes
Monitoring Per Group	Yes
Monitoring per Outlet	Yes
Display	2.4" 262K color LCD display: Voltage, current, or active power (per line, per breaker, or per receptacle / outlet); Alarms; Configuration information (name, ratings, IP / Networking information). Auto-flip orientation

Parameter

Table 2. General Specifications.

Measure Parameters	
IRMS Measurement Error	1.0 %
VRMS Measurement Error	1.0 %
Active Energy Measurement Error	0.5 %
Reactive Energy Measurement Error	0.5 %
Power Factor Error	±0.05 Degrees
Relative Humidity Error	±2.0% RH
Temperature Error	±0.3 ˚C
Other Parameters	
Operating Temperature	-10˚C - 60˚C
Storage Temperature	-20˚C - 70˚C
Relative Humidity	10 – 90 % RH, non-condensing

Parameter

Dimensions (W*D*L)	W: 2.165" (55mm)
	D: 2.362" (60mm)
	L: Base on product configuration
Weight	Base on product configuration

- The length and weight are based on module and outlet configuration; outlet quantity should be multiple of 4.

Ordering Information

IMP PDUs are available with various key features and intelligence levels.

	Inlet Power Monitoring	Branch Circuit Monitoring	Circuit Breaker Trip Alarming	Outlet Level Monitoring	Outlet Level Switching
IMP 1000 Series	●	●	●	●	●
IMP 2000 Series	●	●	●	-	●
IMP 3000 Series	●	●	●	●	-
IMP 4000 Series	●	●	●	-	-

- Consult your Customer Service Representative or Applications Engineer for special configuration of your application.

Technical Specifications

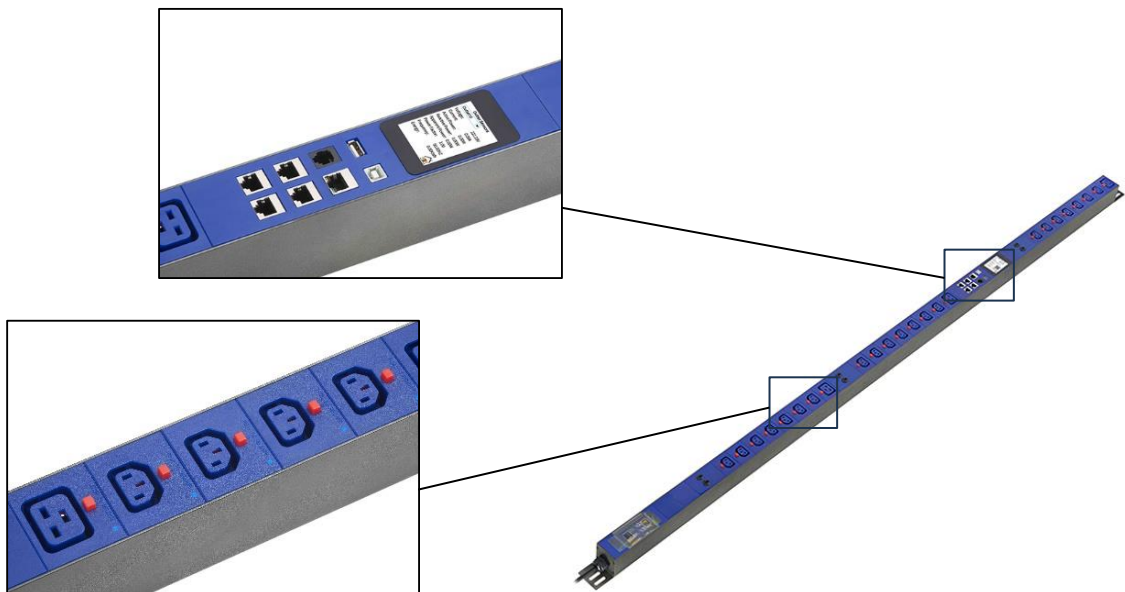| Features	
Model	IMP-lynx-S24T32-001
Energy Metering	Power (Active/Reactive/Apparent KVA), Voltage (V, TRMS), Current (A, TRMS), Energy (kWh), Power Factor, Frequency
Metering Accuracy	ISO/IEC 62053-21 1%
Metering per Input Line	Yes
Metering per Branch Circuit Breaker	Yes
Metering per Output Receptacle	Yes
Remote Outlet Switching	Yes
Timing/schedule Outlet Switching	Yes
Circuit Breaker status	Yes
Compatible sensors	Temperature, Humidity, Water Leak, Smoke Detector, Door Status Monitor
Alarm	Audible and Visual Alarm output
Networking	10/100 Base-T Ethernet port
Remote Management	HTTP/HTTPS (HTML5, REST, JSON), SSH (+PKI), IoT (MQTT), SNMP(V1,2C,3), SMTP
Cascading	Can be daisy chained together using RS-485
Onboard Display	LCD Touch-screen (orientation rotatable); Meter information (Voltage, Current, Active power and Energy); System information, Network information
Embedded Processor	ARM Cortex M7 480 MHZ, 2MB SPI Flash, 1MB RAM

Technical Specifications

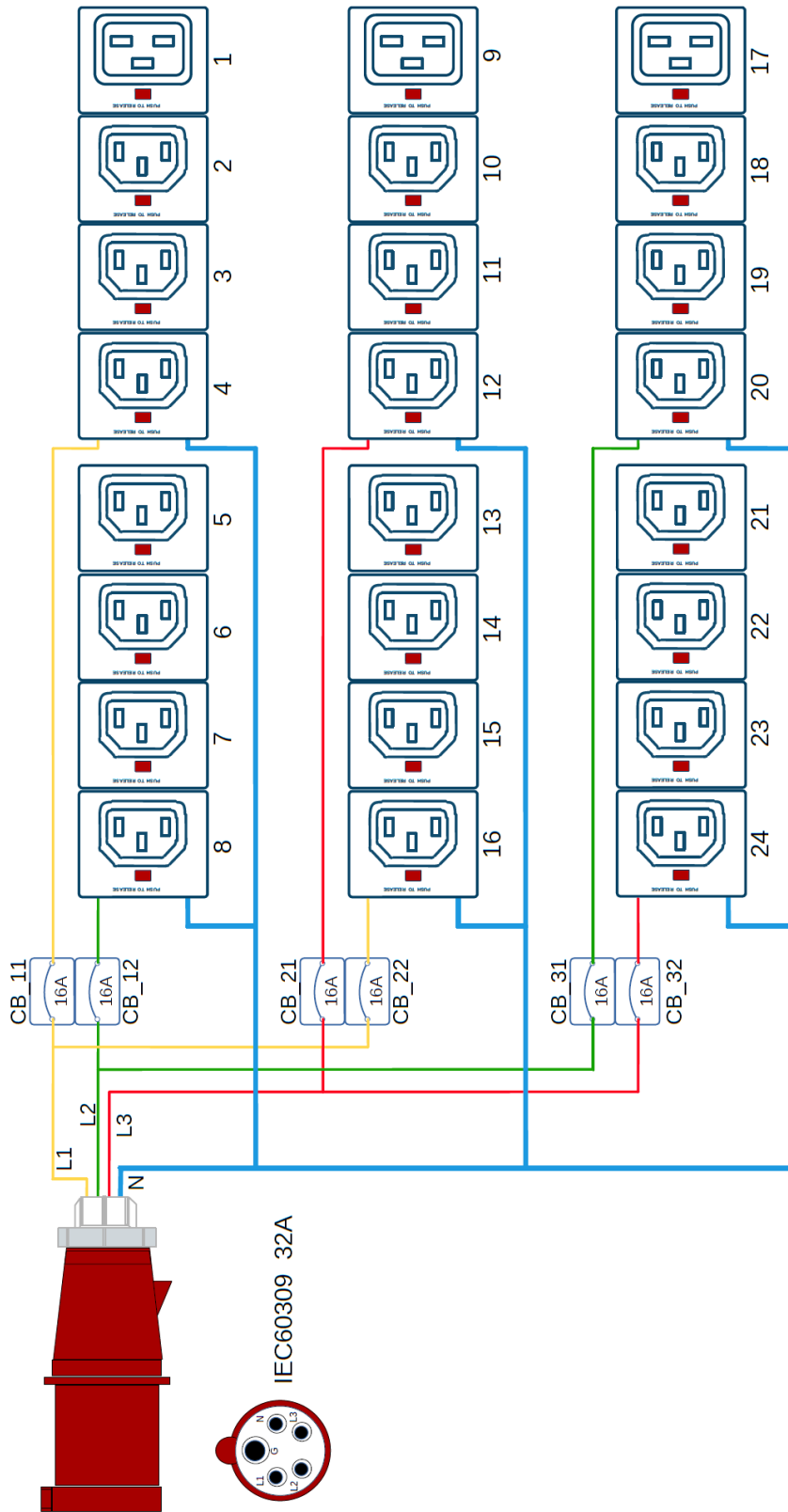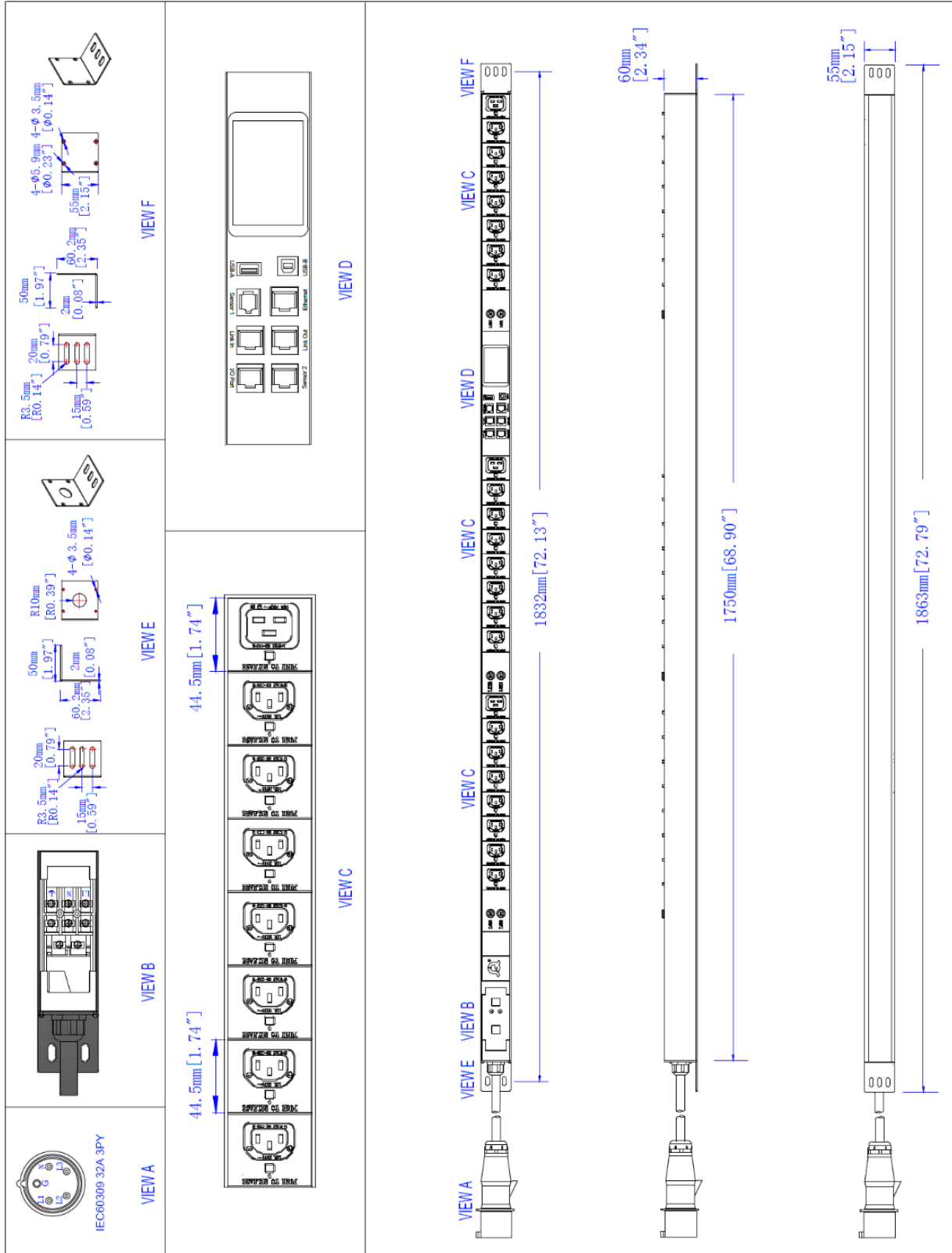| Input	
Input Plug	IEC60309 IP44 32A/415VAC 3P+N+PE Male[3P5W]
Cord Length	3 meters (9.84 feet) standard
Cord Entry	Top feed and Bottom feed compatible
Input Current	32A
Input Voltage	85 – 240V, 3 Phase
Input Frequency	50/60Hz
Power Capacity	21.1kVA at 220V
Output	
Nominal Output Voltage	220V
Rated Output Voltage	85 - 240V
Receptacles [outlets]	IEC60320 C13 Locking, 10A IEC60320 C19 Locking, 16A
Cord Retention	No
Overload Protection	B2T3-16
Physical	
Color	shell : black/gray/champagne, outlet panel: black/Ocean Blue/gray/green/yellow/Light Sky Blue
Unit Dimensions (WxDxH)	2.2" x 2.4" x 68.9" (55mm x 60mm x 1750mm)
Unit Weight	4.9kg
Shipping Weight	6.1 kg
Shipping Dimensions (WxDxH)	6.7" x 4.8" x 77.8" (170mm x 120mm x 1976mm)

Technical Specifications

Environmental	
Operating Temperature	-10°C - 60°C
Storage Temperature	-20°C - 70°C
Operating Relative Humidity	85%
Operating altitude	0-3000m
Conformance	
Regulatory Approvals	UL, FCC, VDE, RoHS,
Warranty	2 years

Accuracy	Input Measurement	Output Measurement
Voltage	±1% at 0.1 V resolution	±1% at 0.1 V resolution
Current	±1% at 0.1 A resolution	±1% at 0.1 A resolution
Active Power	±1% at 1 W resolution	±1% at 1 W resolution
Apparent Power	±1% at 1 VA resolution	±1% at 1 VA resolution
Power Factor	±1% at 0.1 resolution	±1% at 0.1 resolution
Active Energy	±1% at 0.1 kWh resolution	±1% at 0.1 kWh resolution

Electrical Diagram

Mechanical Diagram

Note

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