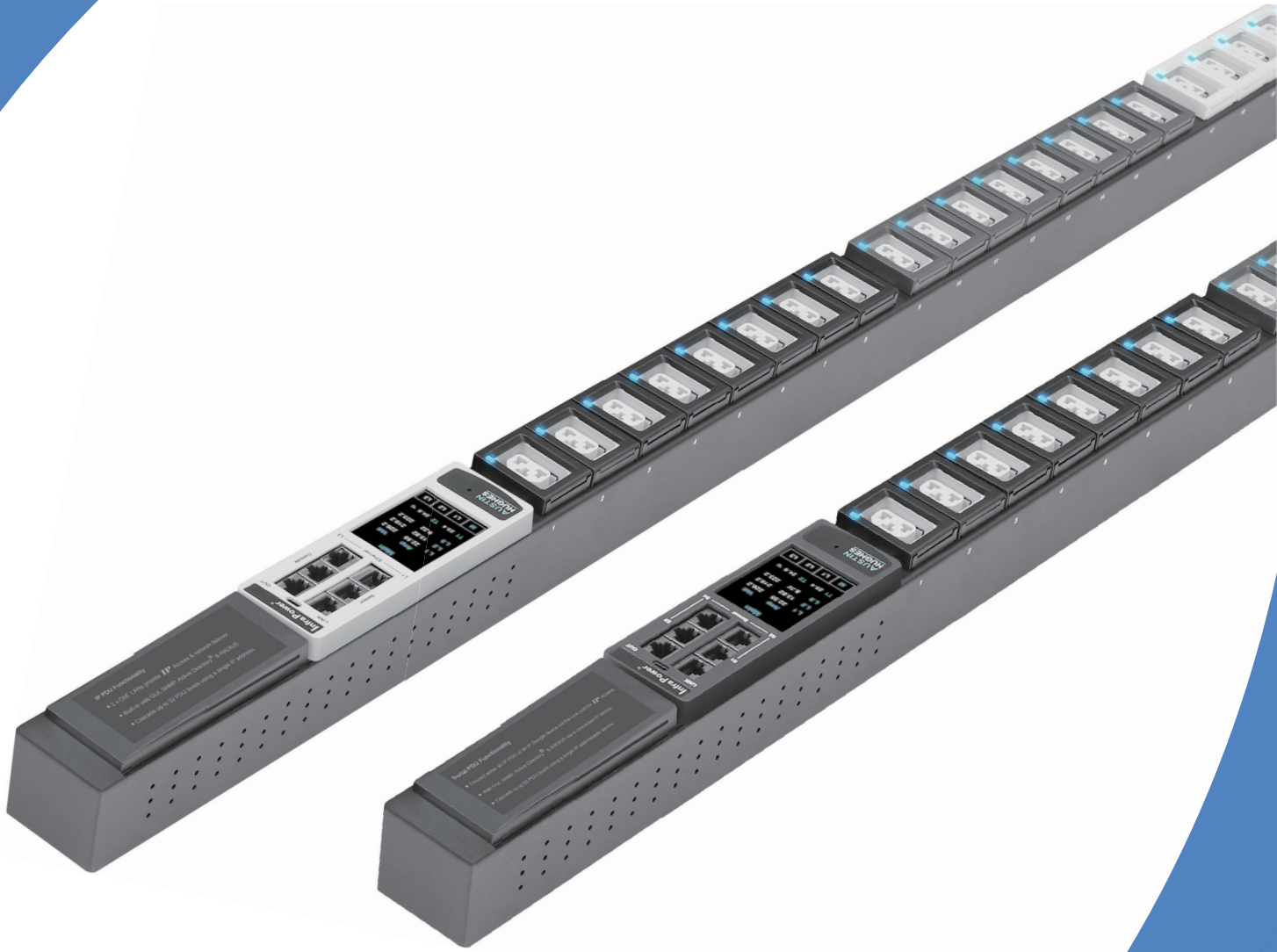# InfraPower®

2000 Series PDU

3-Phase 400V / 208V
1-Phase 230V / 208V / 110V

Slimmer. Smarter. Superior

Rack Power Management, like many areas of Information Technology Infrastructure has evolved in recent years and the options available today enable better usability, energy efficiency, and capacity planning.

Austin Hughes has developed the new InfraPower 2000 series cutting-edge rack power solutions for your IT environment, including a comprehensive range of single-phase to three-phase power distribution units with a new design intelligent meter and lockable / combo IEC outlets.

AUSTIN HUGHES®

InfraPower®

CONNECTION – Secure Auto Lock.

– Patented IEC outlets with slide lock mechanism design by Austin Hughes
– L13 Slide-lock C13 outlets connectable & lockable to C14 plugs using generic IEC cables
– L19 Slide-lock C19 outlets connectable & lockable to C20 plugs using generic IEC cables
– X19 Slide-lock combo C13 / C19 outlet connectable & lockable to C14 / C20 plugs using
   generic IEC cables

REMOTE ACCESS – High Availability.

– Z IP PDU model with embedded dual Gigabit ethernet LAN IP for redundant networkaccess via IP
– Enterprise-level IP authentication support e.g., Active Directory (AD), LDAPv3 / LADPS,
   RADIUS or local credential database

METERING – Precise Intelligence.

– Z & M meters provide real-time local & remote power management
– Billing grade meter accuracy within +/- 0.5%

LINKING – Cost Saving Efficiency.

– Both Z & M iPDUs provide daisy chain functionality
– Via one single Z IP PDU or PDU dongle up to 32 iPDU levels can be accessed via
   single network IP

CONFIGURATION - Diversified & Customizable.

– 110V, 208V, 230V, 400V, 415V and more Volt inputs
– 1 Phase, 2 Phase & 3 Phase PDU
– 10A to 100A Amp inputs
– Up to 48 outlets for standard models; Custom outlet configurations available
– 0U, 1U & 2U form factor for standard models; Customized chassis size and color available
– C13, C19, US NEMA, UK, Schuko, French, Fused IEC and other outlet selections available
– Variety cordset & inlet available
– Top or Bottom Feed
– Flexible Mounting :
    – all vertical PDUs are supplied with screw button & universal bracket mounting kits
   – all rackmount PDUs are supplied with horizontal rackmount kits

Smarter.
Slimmer.
Superior.

Intelligent Model Coverage

InfraPower 2000 Series Intelligent PDUs are available with a variety of models and functionality.

	IP PDU Series				Serial PDU Series			
	Z-2100 (Z)	Z-2200 (Zi)	Z-2300 (ZS)	Z-2400 (ZSi)	M-2100 (M)	M-2200 (Mi)	M-2300 (MS)	M-2400 (MSi)
Embedded Dual IP	●	●	●	●	✖	✖	✖	✖
Strip Power Monitoring	●	●	●	●	●	●	●	●
Circuit Power Monitoring	●	●	●	●	●	●	●	●
Circuit Breaker Monitoring	●	●	●	●	●	●	●	●
Outlet Level Monitoring		●		●		●		●
Outlet Level Switching			●	●			●	●

New Generation Meter
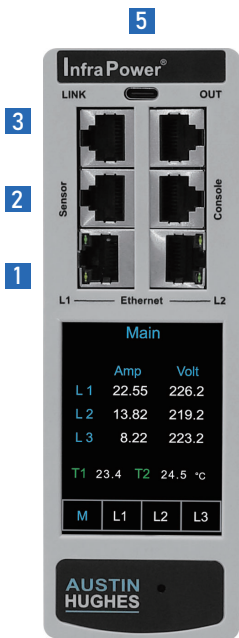
Z IP Meter

1 Embedded dual LAN IP

2 Sensor port x 1
 – support single or daisy chain sensors (up to 4)

3 LINK & OUT cascading ports
 – up to 32 levels of M / Z meter iPDU

4 Console port x 1
 – PDU configuration

5 USB-C function port x 1
 – WIFI
 – firmware update
 – backup power for meter against PDU power failure

✳ The latest Z PDU controller,
 powered by ARM9 CPU (Microchip AT91SAM9G25)

M Serial Meter

✳ IP connection via Z meter PDU or IP dongle

1 LINK & OUT cascading ports
 – up to 32 levels of M / Z meter iPDU

2 Sensor port x 4
 – support single or daisy chain sensors

3 USB-C function port x 1
 – firmware update
 – backup power for meter against PDU power failure
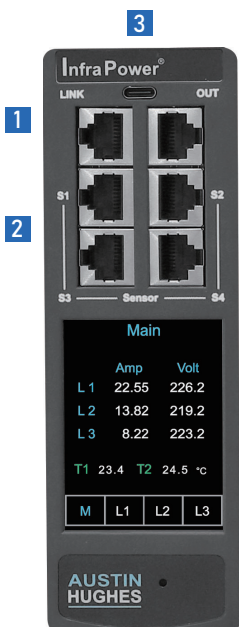
2.8" Touchscreen Color Display

The sharp & highly visible display of 2.8" touchscreen LCD provides local data of:

– Energy Consumption (kWh)
– Power (KW)
– Power Factor
– Current (Amp)
– Voltage (V)
– Temperature & Humidity

Billing Grade Meter Accuracy

The +/- 0.5% accuracy of the InfraPower PDU meter is vital for billing accuracy, energy efficiency, capacity planning and performance monitoring.

Hot-swappable Design

Easily replace power modules without interrupting critical operations, ensuring maximum uptime and flexibility. Simplify maintenance and minimize down-time with this innovative and user-friendly solution.

Mechanical Design - Outlets.

In 2023, Austin Hughes takes great pride in announcing the obtainment of a patent for our outstandingly designed IEC outlets. This significant milestone encompasses the auto lock design of L13, L19 outlets, and combo X19 outlet. In addition to the patented innovative design, the materials and manufacturing of these new outlets strictly adhere to UL standards.

X19 Slide-lock Combo C13 / C19 Outlet
- Patented slide lock design by Austin Hughes
- Patented hybrid of IEC C13 & C19 outlet design by Austin Hughes
- X19 outlets provides the flexibility to connect C14 and C20 plugs in the same outlet
- Simplify PDU outlet configuration and provides flexibility to accommodate different power distribution requirements
- Secure C13-C14 and C19-C20 power cords and avoid accidental disconnection
- LED available for Switched PDUs to indicate outlet on / off status

L13 Slide-lock C13 Outlet
- Patented slide lock design by Austin Hughes
- Built-in slide locking lever automatically lock the C14 plug after insertion
- Secure C13-C14 power cords and avoid accidental disconnection
- LED available for Switched PDUs to indicate outlet on / off status

L19 Slide-lock C19 Outlet
- Patented slide lock design by Austin Hughes
- Built-in slide locking lever automatically lock the C20 plug after insertion
- Secure C19-C20 power cords and avoid accidental disconnection
- LED available for Switched PDUs to indicate outlet on / off status

Color selection for slide lock outlet
Colored L13 & X19 IEC outlets allow easy identification of rackmount equipment power paths, and facilitate power distribution management.

| Black | Grey | White | Red | Blue | Green |
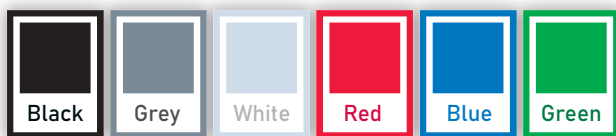
Mechanical Design - Chassis.

- Slim profile 0U chassis design with only 56mm in width and 55mm/68mm in depth
- Industrial grade chassis supports PDU operating temperature -5 to 60°C
- 8 colored chassis available for primary & redundant (A&B) power feed differentiation

| Black | White | Red | Blue | Green | Orange | Yellow | Purple |

• Standard

Alternative Outlet

US NEMA, UK BS1363, German Schuko, French, standard IEC C13 & C19 outlets are available. For project based custom requirements, specific outlets (e.g., Fused IEC, Australian, South African or International) are also available.

Safety & quality assurance

In the same year, Austin Hughes has proceeded the submission to UL . With a profound understanding of the significance of safety in PDUs, we firmly believe that both safety and quality are indispensable. The UL qualified further solidifies our commitment to delivering secure and reliable products.

Daisy Chain PDU Connection.

InfraPower rack intelligent PDUs provide connection ports for PDU daisy chain. To daisy chain units, each PDU can simply be connected in series to the next by Cat5/6 cables. With the 1st level Z PDU with embedded IP, up to 32 daisy chain levels can be achieved. Z and M series 1-phase/ 3-phase PDUs can be inter-cascaded in a single daisy chain, up to 32 PDU levels.

Field Replaceable Design.

Meter
A field replaceable RMS meter with 2.8" color LCD display with touchscreen functionality. The hot swappable design helps eliminate maintenance downtime by simply replacing a possible defective meter without a service interruption.

DC Module
Given the mission critical nature of the environment the intelligent rack PDU is designed, built and manufactured to provide extremely high levels of resiliency. In addition to the hot swappable digital local touchscreen display, field replaceable DC power modules are used within the intelligent PDU models to avoid unnecessary downtime.
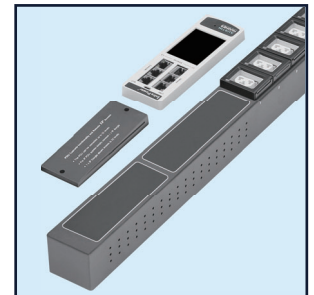
Latching Relay.

Outlet LEDs are built-in for switched PDU models with outlet switching functionality. Outlet switching is controlled via latching relays. Ensuring an 'always on' operational performance and outlet status returning to a pre-power outage after a planned or unplanned shutdown. Power consumption during normal or standard operation is low and therefore assists to reduce energy usage of the overall PDU.
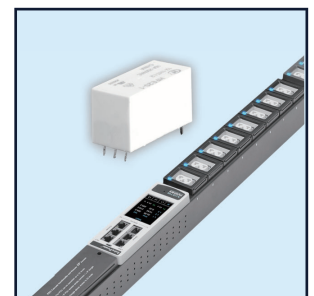
Safety | Protection.

Downtime can be incredibly expensive in data centers and lead to data loss in mission-critical applications. InfraPower PDUs offer a range of safety devices that protect equipment from unexpected power quality issues, protect users from harm while working on the rack.

Selection for safety devices
Magnetic Circuit Breaker (MCB) / Earth-leakage Circuit Breaker / Resettable Fuse /
Surge Protector / EMI Filter / Residual Current Monitor (RCM)

PDU Technology Features & Specification

Intelligent PDU Features	Z-2000	M-2000
Strip / Circuit Level Power Monitoring	Z-2100 (Z)	M-2100 (M)
Outlet Level Power Monitoring	Z-2200 (Zi)	M-2200 (Mi)
Outlet Switching On/ Off + Strip/ Circuit Level Power Monitoring	Z-2300 (ZS)	M-2300 (MS)
Outlet Switching On/ Off + Strip/ Circuit/ Outlet Level Power Monitoring	Z-2400 (ZSi)	M-2400 (MSi)
Circuit Breaker Monitoring & Trip Alarming	●	●
Billing Grade Meter Accuracy Within +/- 0.5%	●	●
Phase Balance % for 3-Phase PDUs	●	●
Embedded Dual LAN IP	●	
2.8" Color Touch LCD	●	●
Hot-Swappable Meter	●	●
Field Replaceable DC Module	●	●
PDU Cascade Up to 32 Levels	●	●
Serial Console Port for PDU Configuration	1	
USB-C Function Port for WIFI	1	
USB-C Function Port for Firmware Update & Meter Backup Power Source	1	1
Sensor Ports (Support Single or Daisy Chain Sensors**)	1**	4**
Sensor Support : Temp + Humid / Temp / Smoke / Door Sensors	●	●
DCIM support : SNMP V2 / V3 & Rest API	●	●
Free Management Software (Max. 1600 PDUs)	●	●
Configuration Range : 110V, 208V, 230V, 400V, 415V and more Volt inputs	●	●
1 Phase, 2 Phase & 3 Phase PDU	●	●
10A to 100A Amp inputs	●	●
Up to 48 outlets for standard models	●	●
0U, 1U & 2U form factor for standard models	●	●
Outlets : X19 with C13 & C19 Connectivity & Slide-Lock	●	●
L13 (C13) & L19 (C19) with Slide-Lock	●	●
C13 & C19	●	●
US Nema	●	●
UK / SCH / FR	●	●
Fused IEC	●	●
International, South Africa, Australian, etc	●	●
Inlets : 1 Phase : 60309 / 60309 with 6mm² cordset / Open-end / C20 / UK / Schuko	●	●
L6-30P / L-620P / L5-30P / 5-30P / L5-20P / 5-20P /5-15P	●	●
3 Phase : 60309 / CS8365C / L21-30P / L21-20P / L15-30P / L15-20P	●	●
Colors : 6 Outlet Colors for Selection	●	●
8 Chassis Colors for Selection	●	●
Safety Devices : Hydraulic MCB / Resettable Fuse	●	●
Options : ELCR / Surge Protector / EMI Filter	●	●
RCM (Residual Current Monitoring Module)	●	●
Temp + Humid / Temp / Smoke / Door Sensors	●	●
Door Mount PDU Panel with 4.3" Color LCD	●	●
WiFi Kit	●	
PDU IP Dongle		●
Operating Temperature -5 to 60°C	●	●

Software.

PDU management software helps reducing manpower and hence improving uptime and productivity. It also benefits users with capacity planning and increasing the overall efficiency of the data center. InfraPower intelligent PDU offers 3 kinds of remote management solutions for users' selection.

1. Free Management Software IPM-04

Free IPM-04 management software offers instantaneous visibility into crucial power quality, energy efficiency, and equipment health. By employing the most comprehensive and precise power management, you can effectively handle energy optimization, capacity planning, remote PDU control, environmental optimization, troubleshooting and mainte- nance with confidence.

Capacity	• 50 x iPDU Group Support (Just 1 IP for 32 iPDU level) • 1600 x iPDU Support • 5 x Concurrent User
Power Quality Measurements (kWH, kW, kVA, Power Factor, Amp)	• Inlet Power Monitoring • Branch Circuit Power Moitoring • Outlet Level Monitoring
Power Outlet Control	• Outlet Level Switching • Outlet Scheduling
Alarming	• Circuit Breaker (MCB) Monitoring • Rising Threshold & Alert • Overload Threhold & Alert
Environmental Monitoring	• Temperature (°C / °F) • Humidity (%) • Smoke Detection • Door Open / Close Detection
Reporting	• PDU log • Outlet log • Sensor log • Event log

2. Web Based GUI

A web-based GUI is integrated with our intelligent PDU. It is ideal for some users who simply require the power monitoring and input switching over IP.

3. 3rd Party DCIM via SNMP V2/V3 or REST API

Many data centers apply DCIM (Data Center Infrastructure Management) to centralize the management for monitoring power, cooling and environmental factors across facilities and IT systems. InfraPower intelligent PDU supports SNMP or REST API integration and hence user can remotely manage the PDU via their DCIM.

Infra**Power**®

PDU Accessories.

A range of accessories and peripherals designed to enhance the functionality of intelligent PDUs.

- **Temperature & Humidity Sensor :** Plug & play, low profile design with magnetic base to affix to rack, 2M or 4M cord
- **Temperature Sensor :** Plug & play, low profile design with magnetic base to affix to rack, 2M or 4M cord
- **Smoke Sensor :** When triggered red LED lights up with continuous audible alert, 1M or 3M cord
- **Door Sensor :** Mechanical door sensor, cost efficient integration to rack, 2M or 4M cord
- **WIFI Kit :** Connects to Z meter or PDU dongle, tool-less magnetic base design, 802.11 g/n/ac WIFI
- **4.3" Door Mount Display Panel :** Each plug & play panel supports 2 iPDUs, viewable with rack door closed, alarm and log displays power, temp, humidity, smoke & door status. Alarm & log available.

IP Dongles.

IPD-03-S (For Serial PDU)

Dual LAN PDU IP Dongle
- Dual LAN Network Failover
- Auto-negotiable 2 x Gigabit Ethernet standard
- Enterprise IP Authentication & Remote Management Protocols
- Supports up to 32 daisy chained iPDUs
- Simultaneous multiple access via free management software IPM-04, web GUI & DCIM
- DCIM Support - via SNMP V2 / V3 or REST API
- USB Wifi Port for connection to Wifi kit (IPD-WIFI) with standards 802.11 g/n/ac
- Detachable design

AUSTIN HUGHES®

Austin Hughes has an extensive distribution network,including the Americas, EMEA, APAC & ASEAN. Contact your nearest sales office for details of local representation

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