InfraPower®

Inspired by Your Data Center

User Manual

MK Metered PDU : 3 Phase 208V & 400V
1 Phase 110V, 208V & 230V

Designed and manufactured by Austin Hughes

Legal Information

First English printing, January 2022

Information in this document has been carefully checked for accuracy; however, no guarantee is given to the correctness of the contents. The information in this document is subject to change without notice. We are not liable for any injury or loss that results from the use of this equipment.

Safety Instructions

Please read all of these instructions carefully before you use the device. Save this manual for future reference.

- Unplug equipment before cleaning. Don't use liquid or spray detergent; use a moist cloth.
- Keep equipment away from excessive humidity and heat. Preferably, keep it in an air-conditioned environment with temperatures not exceeding 40º Celsius (104º Fahrenheit).
- When installing, place the equipment on a sturdy, level surface to prevent it from accidentally falling and causing damage to other equipment or injury to persons nearby.
- When the equipment is in an open position, do not cover, block or in any way obstruct the gap between it and the power supply. Proper air convection is necessary to keep it from overheating.
- Arrange the equipment's power cord in such a way that others won't trip or fall over it.
- If you are using a power cord that didn't ship with the equipment, ensure that it is rated for the voltage and current labelled on the equipment's electrical ratings label. The voltage rating on the cord should be higher than the one listed on the equipment's ratings label.
- Observe all precautions and warnings attached to the equipment.
- If you don't intend on using the equipment for a long time, disconnect it from the power outlet to prevent being damaged by transient over-voltage.
- Keep all liquids away from the equipment to minimize the risk of accidental spillage. Liquid spilled on to the power supply or on other hardware may cause damage, fire or electrical shock.
- Only qualified service personnel should open the chassis. Opening it yourself could damage the equipment and invalidate its warranty.
- If any part of the equipment becomes damaged or stops functioning, have it checked by qualified service personnel.

What the warranty does not cover

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
  - ☐ Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
  - ☐ Repair or attempted repair by anyone not authorized by us.
  - ☐ Any damage of the product due to shipment.
  - ☐ Removal or installation of the product.
  - ☐ Causes external to the product, such as electric power fluctuation or failure.
  - ☐ Use of supplies or parts not meeting our specifications.
  - ☐ Normal wear and tear.
  - ☐ Any other causes which does not relate to a product defect.
- Removal, installation, and set-up service charges.

Regulatory Notices Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in business, industrial and commercial environments.

Any changes or modifications made to this equipment may void the user's authority to operate this equipment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-position or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Unpacking

The equipment comes with the standard parts shown on the package contents. Check and make sure they are included and in good condition. If anything is missing, or damage, contact the supplier immediately.

All electrical power and power control wiring must be installed by a qualified electrician and comply with local and national regulations.

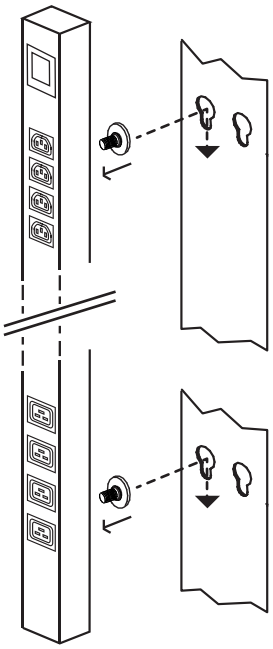
Don’t exceed the outlet, branch or phase limitations

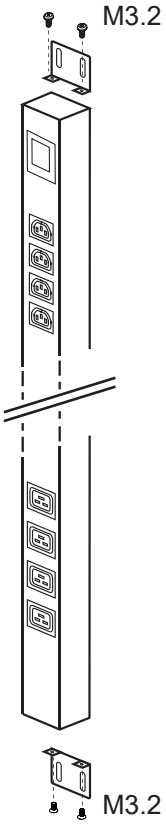
Package contents

(1) Vertical MK PDU x 1

- **VMS** mounting screw set

- **VMB** mounting bracket set





Power ON

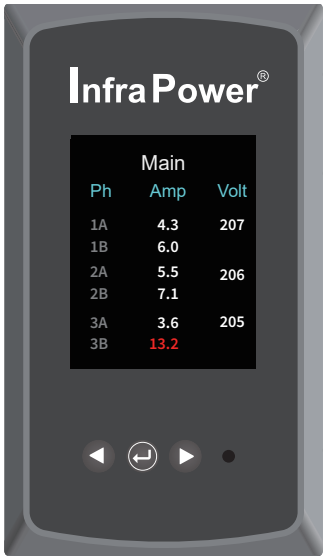
- Connect the PDU into an appropriately rated receptacle
- When the PDU is power on, the LED display will light up. That means all outlets are activated
- Keep the equipments in the power off position until it is plugged into the PDU

Contents

Part I. Product Highlights

MK series PDU is equipped with a highly advanced component - MK Meter .

- Circuit / Phase Amp, Volt & kWh.
- Billing Grade Meter Accuracy within +/- 1%.
- 1.8” Color LCD Meter
- Field replaceable design allows meter replacement without PDU power interruption.



Hot-Swappable Meter

1.8" Color LCD Display

- 3 Phase Local Metering
- Circuit / Phase Amp, Volt & kWh
- Billing Grade Meter Accuracy within +/- 1%

Buttons for Reading & Settings

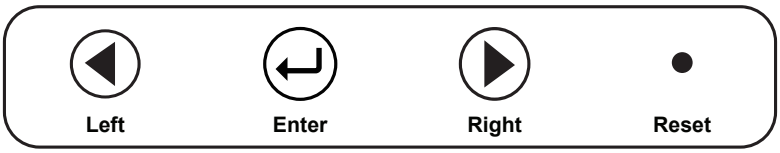
InfraPower® MK Metered PDU Features	
Three Phase	- 208V / 400V
Single Phase	- 110V / 208V / 230V
Meter	- 1.8” Colour LCD Meter - Hot-Swappable Meter
Local Monitoing	- Circuit / Phase Amp & kWh Measurement - Billing Grade Meter Accuracy Within +/- 1%
Circuit Protection	- Resettable Fuse / Hydraulic MCB
Chassis	- 0U / 1U / 2U Form Factor - Tool-less Mounting for Vertical PDU
Environmental	- Operating Temperature -5 to 60°C
Outlet	- C13 / C19 Lockable IEC / US NEMA / UK / Schuko / French
Customization	- Available on request
Compliance	- EMC : FCC, CE/EMC - Safety : UL 62368-1:2014, CE/LVD - Environment : RoHS3, Reach - ISO : 9001 / 14001

Part II. 3 Phase MK Meter - 208V 20A/ 30A
400V 16A/ 32A

< 2.1 > Key Features

Meter	:	Hot-Swappable
Local Display	:	1.8” Color LCD
Phase Level x 3	:	Current (A), Phase Voltage (V), Energy Consumption (kWh), Energy (kW), Power Factor & Frequency (Hz)
Accuracy	:	Billing Grade +/-1%

MK Meter provides the buttons to select the display

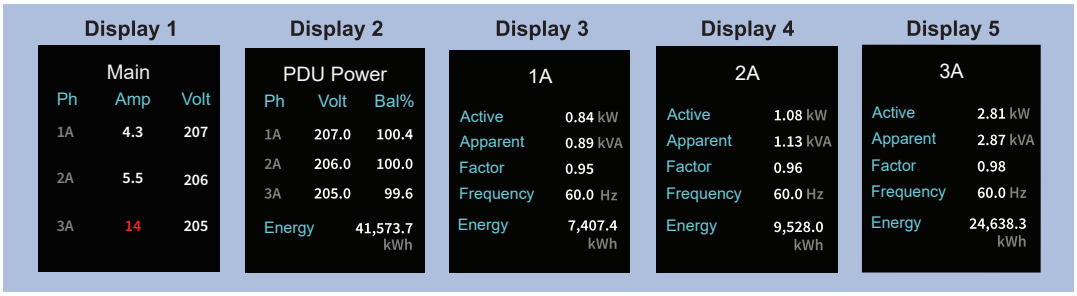


< 2.2 > Reading

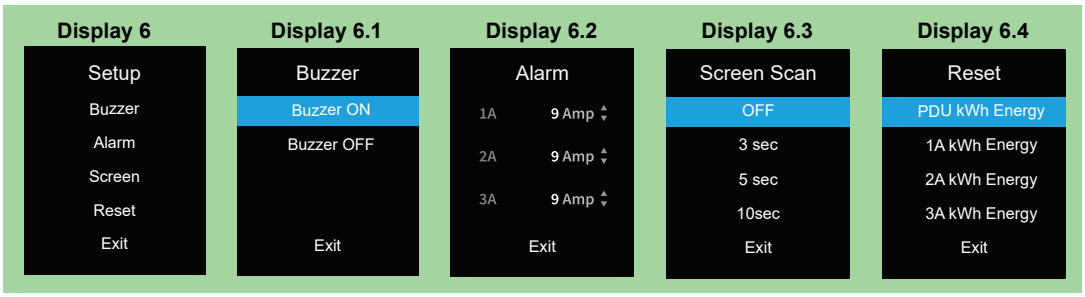
MK meter 1.8” color LCD provides a sharp and highly visible reading for the local 3-phase reading of Current (Amp), Voltage (Volt), Power (kW), Energy Consumption (kWh), Power Factor.

Reading < 3 Phase 208V 20A / 30A & 400V 16A / 32A >

- Phase Level x 3
- Amp, Voltage & Power Factor
- kWh Energy Consumption
- Active & Apparent Power



< 2.3 > Setting Steps



Step 1 - Press the ◀ / ▶ button to [Display 6] and press ↵ to confirm.

Step 2 - Press the ◀ / ▶ button to select [Buzzer] / [Alarm] / [Screen] / [Reset] and press ↵ to confirm.

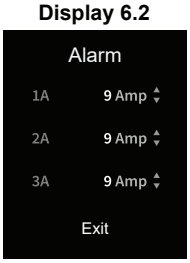
To Exit - Press the ◀ / ▶ button to [Exit] and press ↵ to confirm.

Display 6.1

Buzzer :

MK meter allows the user to set the meter buzzer ON / OFF by meter's 4 buttons.
All PDUs are shipped with the buzzer in ON status.
When the PDU's circuit or outlet Amp is over alarm level, the buzzer will sound.

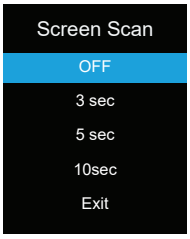
Display 6.2



Alarm :

User can set the alarm threshold for individual phase 1A / 2A / 3A.

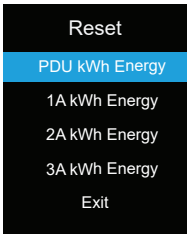
Display 6.3



Screen Scan :

MK meter updates the screen figure regularly.
User can select the time interval off, 3 sec, 5 sec or 10 sec.

Display 6.4



Reset :

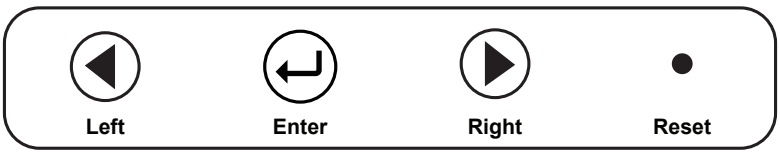
MK meter allows the user to reset the kWh figures.
User can reset the overall or individual phase kWh energy consumption figure.

Part III. 3 Phase MK Meter - 208V 50A/ 60A
400V 63A

< 3.1 > Key Features

Meter	:	Hot-Swappable
Local Display	:	1.8” Color LCD
Bank Level x 6	:	Current (A), Phase Voltage (V), Energy Consumption (kWh), Energy (kW), Power Factor & Frequency (Hz)
Accuracy	:	Billing Grade +/-1%

MK Meter provides the buttons to select the display

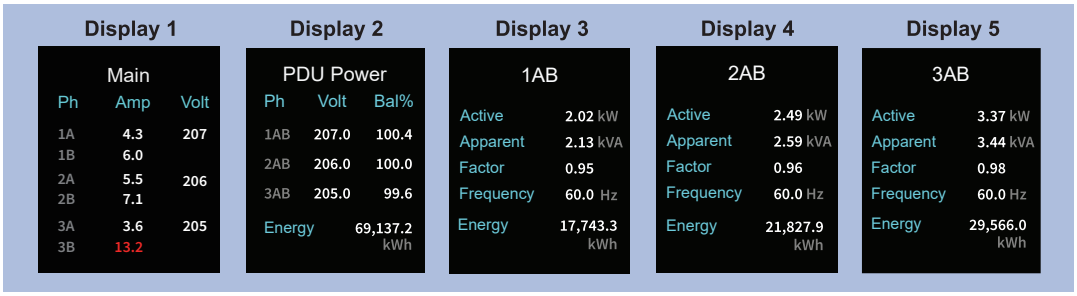


< 3.2 > Reading

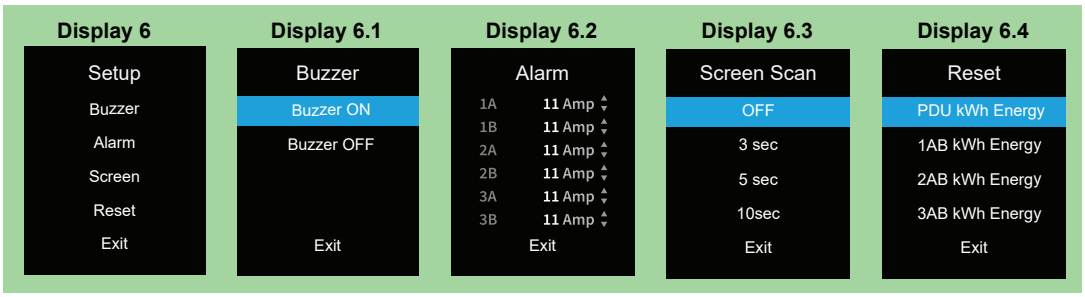
MK meter 1.8” color LCD provides a sharp and highly visible reading for the local 3-phase reading of Current (Amp), Voltage (Volt), Power (kW), Energy Consumption (kWh), Power Factor.

Reading < 3 Phase 208V 50A / 60A & 400V 63A >

- Bank Level x 6
- Amp, Voltage & Power Factor
- kWh Energy Consumption
- Active & Apparent Power



< 3.3 > Setting Steps



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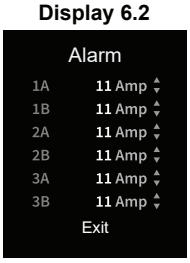
Display 6.1

Buzzer :

MK meter allows the user to set the meter buzzer ON / OFF by meter's 4 buttons.
All PDUs are shipped with the buzzer in ON status.
When the PDU's circuit or outlet Amp is over alarm level, the buzzer will sound.

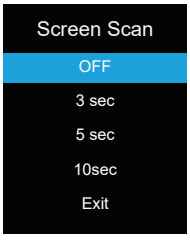
Display 6.2



Alarm :

User can set the alarm threshold for individual bank 1A / 1B / 2A / 2B / 3A / 3B.

Display 6.3



Screen Scan :

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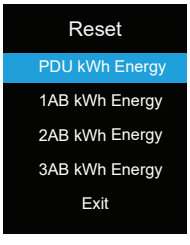
User can select the time interval off, 3 sec, 5 sec or 10 sec.

Display 6.4



Reset :

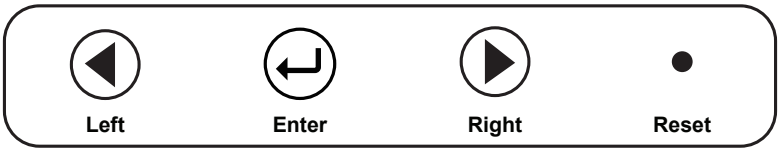
MK meter allows the user to reset the kWh figures.
User can reset the overall or individual phase kWh energy consumption figure.

Part IV. 1 Phase MK Meter - 110V, 208V & 230V

< 4.1 > Key Features

Meter	:	Hot-Swappable
Local Display	:	1.8” Color LCD
Strip Level	:	Current (A), Phase Voltage (V), Energy Consumption (kWh), Energy (kW), Power Factor & Frequency (Hz)
Accuracy	:	Billing Grade +/-1%

MK Meter provides the buttons to select the display

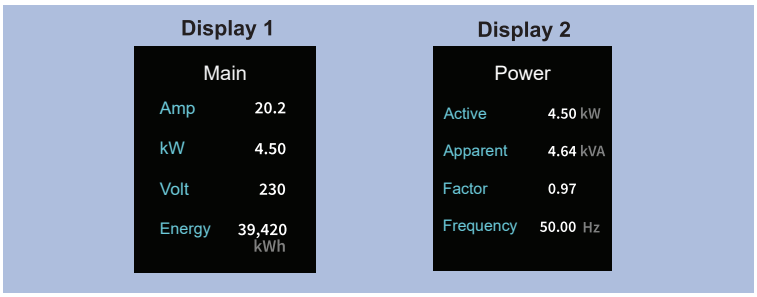


< 4.2 > Reading

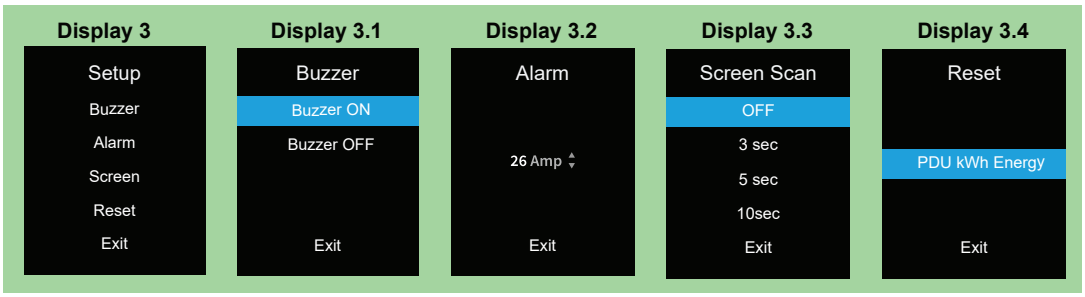
MK meter 1.8” color LCD provides a sharp and highly visible reading for the local reading of Current (Amp), Voltage (Volt), Power (kW), Energy Consumption (kWh), Power Factor.

Reading < 1 Phase 110V, 208V & 230V >

- Strip Level
- Amp, Voltage & Power Factor
- kWh Energy Consumption
- Active & Apparent Power



< 4.3 > Setting Steps



Step 1 - Press the ◀ / ▶ button to [Display 6] and press ↵ to confirm.

Step 2 - Press the ◀ / ▶ button to select [Buzzer] / [Alarm] / [Screen] / [Reset] and press ↵ to confirm.

To Exit - Press the ◀ / ▶ button to [Exit] and press ↵ to confirm.

Display 3.1

Buzzer :

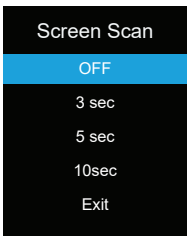
MK meter allows the user to set the meter buzzer ON / OFF by meter's 4 buttons.
All PDUs are shipped with the buzzer in ON status.
When the PDU's Amp is over alarm level, the buzzer will sound.

Display 3.2

Alarm :

User can set the alarm threshold for the PDU.

Display 3.3



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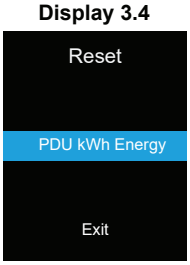
Display 3.4



Reset :

MK meter allows the user to reset the kWh figure.

Part V. How to replace the MK meter

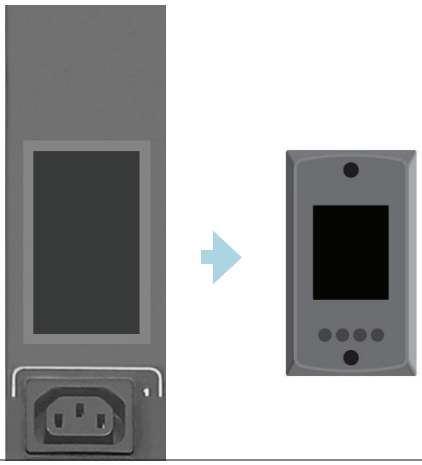
MK meter field replaceable design facilitates the replacement.
But for safety, we recommend that you disconnect the PDU power before replacement.

Step 1

Remove the membrane and release the up and bottom M3 6mm screws.

Step 2

Pull up the faulty MK meter.



Step 3

Place the new meter and fix the screws.

Step 4

If the new meter works properly, then stick the membrane to meter and complete.