Synergy Global Technology Inc

www. RackmountMart.com

Toll Free: 1-888-865-6888

Tel: 510-226-8368 Fax: 510-226-8968

Email: sales@RackmountMart.com

InfraPower®

PDU Inspired by Your Data Center

User Manual

IPM-02   **PDU management software**

W kWh monitored PDU
WS kWh switched PDU

Legal Information

First English printing, October 2002

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 B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

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.
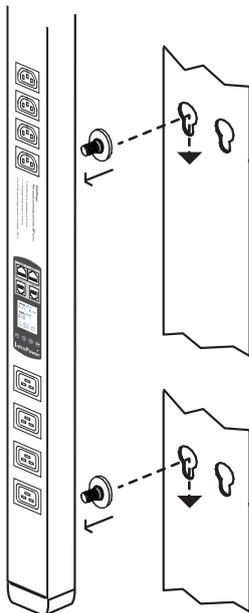
Package contents

(1) Vertical W / WS PDU x 1

- **VMS** mounting screw, set of 2 or 3

| + | 2 - 3 sets |
| M4 PEG | |

- **VMB** mounting bracket set

Bracket x 2   M4 x 2   M6 x 2   M6 nut x 2

M6   M6 nut

M4

M4

M6 nut

M6

OR
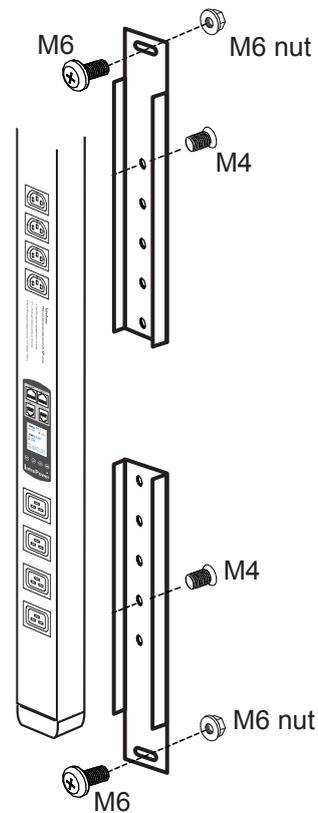
(2) Rackmount W / WS PDU x 1

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

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

⚠ Don't exceed the outlet, branch or phase limitations

Content

Content

Part I.   W / WS PDU Key Features

Infra Power®	kWh PDU	
	Monitored	**Switched**
	W	**WS**
Outlet kWh Measurement		
Circuit kWh Measurement	✔	✔
Temp-Humid Monitoring	✔	✔
Cascading up to 16 PDU Levels	✔	✔
16-PDU to 1-IP via IP Dongle	✔	✔
SNMP Capability via IP Dongle	✔	✔
Enlarged 1.8" LCD Screen	✔	✔
Switchable Outlets		✔
Local kWh & Amp Meter	✔	✔
Vertical & Horizontal PDUs	✔	✔
Multiple PDU Mounting ways	✔	✔
Management Software Editions	**IPM-Pro** **IPM-03** **IPM-02 (Free)**	**IPM-Pro** **IPM-03** **IPM-02 (Free)**

Part II.   InfraPower Manager IPM-02 Key Features

InfraPower Manger IPM-02 is a **FREE** entry level PDU mangement software to remote & monitor up to 15 IP dongle group (max. 16 PDU levels in each IP dongle group), total 240 PDUs

5 concurrent user access are bundled for achieving the demand of multi-user / multi-tasking in nowadays' time-sharing date center operation.

Infra**Power**® Manager			IPM-02
Capacity	IP Dongle Groups (Just 1 for 16 PDU levels)	Basic	15
		Max.	15
	PDU number	Basic	240
		Max.	240
	Concurrent Users	Basic	5
		Max.	5
Enhanced Features	User Grouping		
	Chart Reporting		
	Outlet Level Energy (kWh) Measurement		
	Outlet Level Current (A) Monitoring		
	Energy (kWh) Measurement		✓
	Apparent Power (kVA) Monitoring		✓
	Power Factor Measurement		✓
	Circuit Breaker Monitoring		✓
Basic Features	Aggregate Current (A) Monitoring		✓
	Individual Outlet Switch ON / OFF		✓
	Temp-Humid Monitoring		✓
	Alarm Threshold Setting		✓
	Reporting		✓
	Graphical User Interface		✓
	Remote Access via Web Browser		✓
Software Platform	Windows		✓
	Linux		
PDU Models Support	Wi / WSi (Outlet Level Measurement)		
	W / WS		✓

Part III.
< 3.1 > W meter display & setting

All W series PDUs are equipped with a highly advanced and sophisticated component - W Meter. It provides the cascade ports for daisy chain up to 16 x PDU. Furthermore, for IP PDU access, simply connect 1 x IP Dongle for all daisy chain PDUs to save IP network address. Two sensor ports are integrated for temperature & humidity monitoring. Creatively, 1.8" color LCD display offers a real time local monitoring and detailed PDU status.

① PDU cascade port

LINK   OUT

TH 1   TH 2

②

Temp. + Humidity sensor port x 2

or

Temp. sensor port x 2

Main

Amp: 21.0
A: 8.2
B: 12.8

kWh: 4.62
Volt:220.0

T1: 25.1℃
T2: 25.8℃

③ 1.8" color LCD display

④ Menu button

⌃ ⌄ Ⓜ ←

Infra Power

⑤
Reset button

⚠ For 1U / 2U rackmount PDU, **③** **④** **⑤** on the front, **①** **②** on the rear
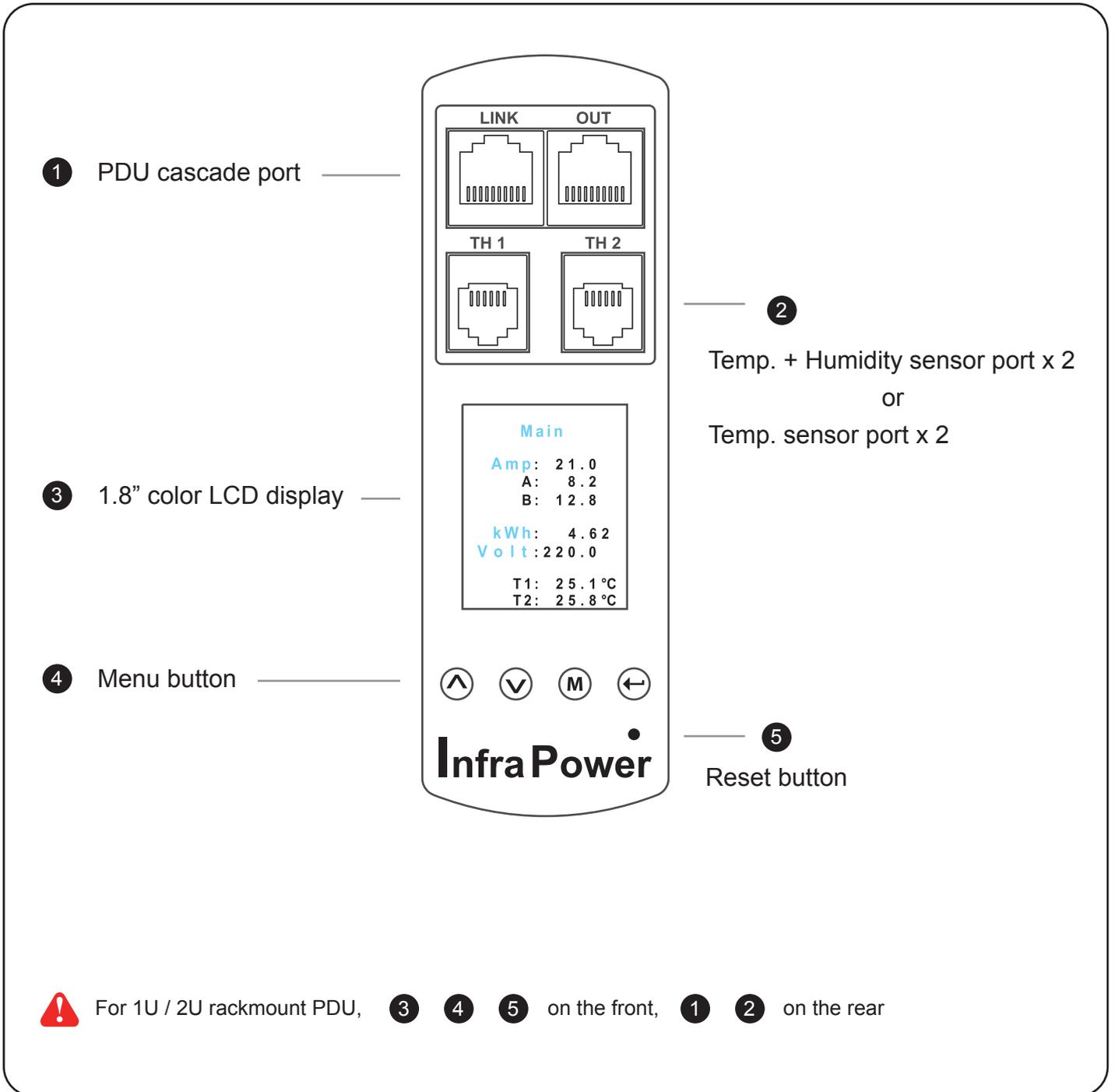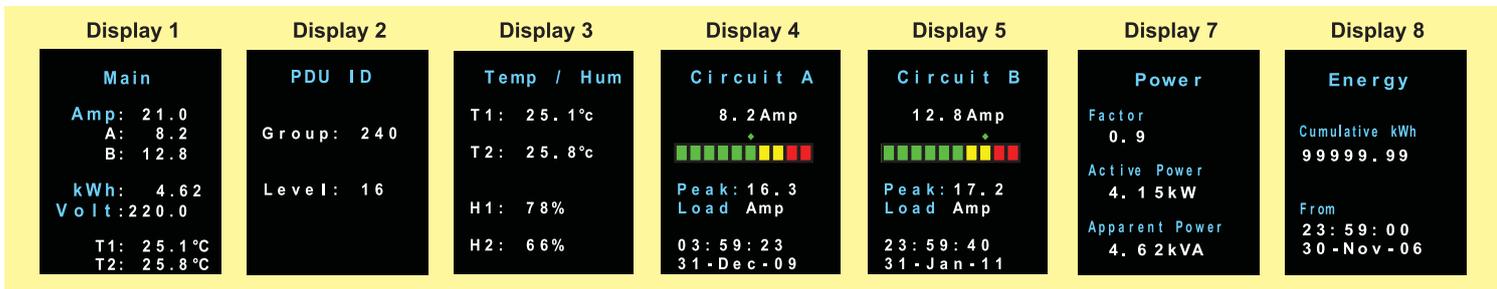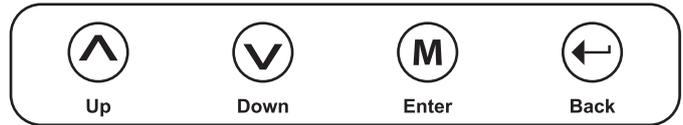
< 3.1 >   W meter display

W 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, Temperature & Humidity.

Display for PDU Monitoring

- Amp, Voltage & Power Factor
- kWh Energy Consumption
- Active & Apparent Power
- Temp. & Humidity

W Meter provides the buttons to select the displays

∧	∨	M	←
Up	Down	Enter	Back

Display 1	Display 2	Display 3	Display 4	Display 5	Display 7	Display 8
Main Amp: 21.0 A: 8.2 B: 12.8 kWh: 4.62 Volt:220.0 T1: 25.1℃ T2: 25.8℃	**PDU ID** Group: 240 Level: 16	**Temp / Hum** T1: 25.1℃ T2: 25.8℃ H1: 78% H2: 66%	**Circuit A** 8.2Amp Peak:16.3 Load Amp 03:59:23 31-Dec-09	**Circuit B** 12.8Amp Peak:17.2 Load Amp 23:59:40 31-Jan-11	**Power** Factor 0.9 Active Power 4.15kW Apparent Power 4.62kVA	**Energy** Cumulative kWh 99999.99 From 23:59:00 30-Nov-06

Display for Outlet Measurement

- Outlet Amp
- Outlet kWh
(Wi and WSi series PDUs only)

⚠ **Display 6 only for Wi / WSi outlet measurement PDU**

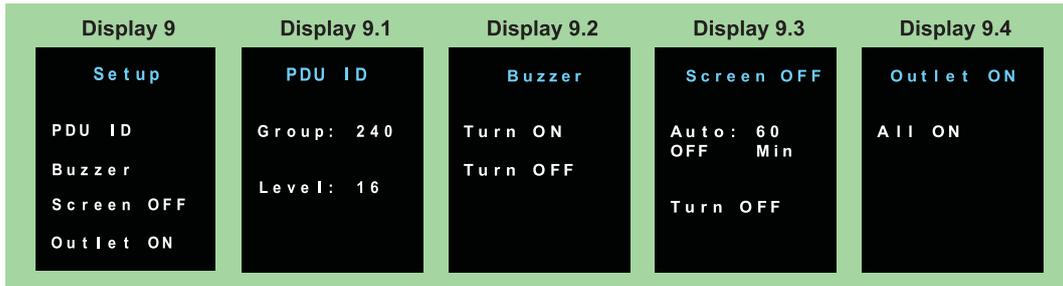| Display 6	Display 6.1	Display 6.2	Display 6.3	Display 6.4
Outlet **Amp/kWh** Std.Outlet C19 Outlet	**Outlet** 01 IEC C13 1.0 Amp 0.22 kWh	**Outlet** 02 5-20R 3.0 Amp 0.66 kWh	**Outlet** 03 BS 1363 4.0 Amp 0.88 kWh	**Outlet** 04 Schuko 5.0 Amp 1.10 kWh

< 3.1 > W meter setting

W meter allows the user to do some settings below :

Display for Local PDU Setting

- PDU Level
- Meter buzzer
- Meter screen
- PDU Outlet ON

Display 9	Display 9.1	Display 9.2	Display 9.3	Display 9.4
Setup PDU ID Buzzer Screen OFF Outlet ON	**PDU ID** Group: 240 Level: 16	**Buzzer** Turn ON Turn OFF	**Screen OFF** Auto: 60 OFF Min Turn OFF	**Outlet ON** All ON

Display 9.1

PDU ID

Group: 240

Level: 16

PDU level setting :

Step 1 - Press the ⋀ & ⋁ button to ⎡display no.9⎤ and press Ⓜ to confirm

Step 2 - Press the ⋀ & ⋁ button to ⎡PDU ID⎤ and press Ⓜ to confirm

Step 3 - In display 9.1, Press the ⋀ & ⋁ button to select PDU level no. & press Ⓜ to confirm

Step 4 - Press ⬅ to exit

Display 9.2

Buzzer

Turn ON

Turn OFF

Buzzer :
W meter allows the user to set the meter buzzer ON / OFF by meter's 4 buttons

Display 9.3

Screen OFF

Auto: 60
OFF   Min
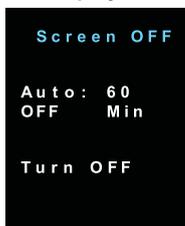
Turn OFF

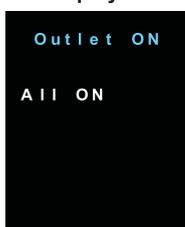**Screen OFF :**
W meter allows the user to turn off the meter LCD by time setting (1 - 60 mins, 0 = keep ON)
When the meter is in OFF status, the user can press any button to make it ON.

Display 9.4

Outlet ON

All ON

Outlet ON :
This is for WS switched PDU models only. All switched PDUs are shipped in outlet OFF status.
The users have to switch ON the outlets of PDU in display no.9.4

< 3.2 >   PDU meter setting & cascade

PDU Daisy Chain up to 16 Levels

The W meter built-in not only provides the local power monitoring, but also the connection ports for the PDU daisy chain. For daisy chain connection, each PDU just simply to be connected in series to the next by Cat5/6 cables. Maximum 16 PDUs are supported in one daisy chain group.

- The PDU can be cascaded up to 16 levels
- For IP PDU access simply connect 1 x IP dongle - IPD-02
- 1 x IP dongle allows access to 16 levels

1st level PDU meter	2nd level PDU meter	3rd level PDU meter	Final level PDU meter
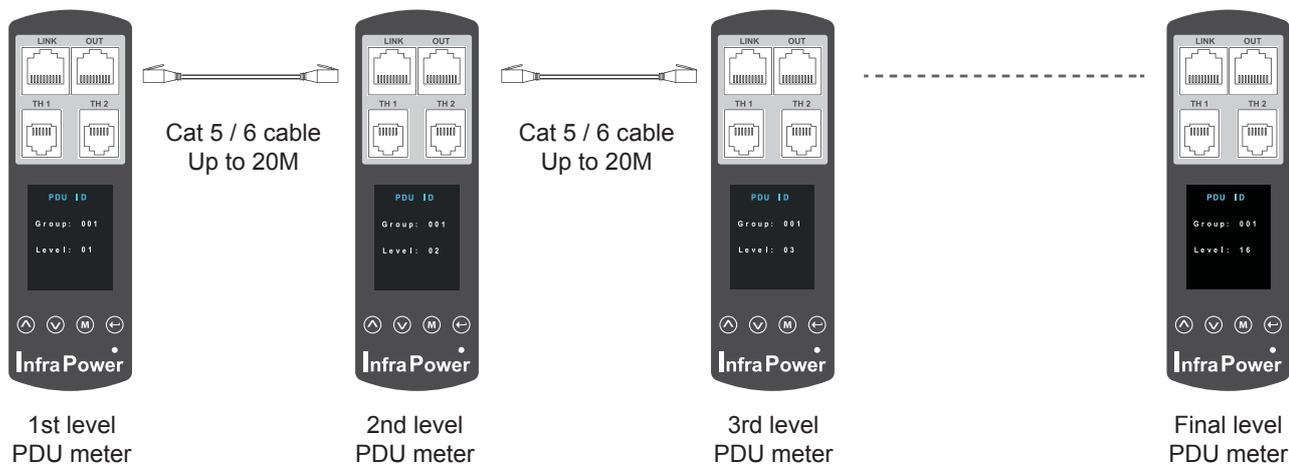
⚠ For **PDU level setting**, please refer to the left side page.

< 3.3 >　Plug n Play Temp. & Humidity Sensor Connection

W meter provides 2 sensor ports for Temp. & Humidity monitoring. The user can see the Temp. / Humidity reading not only from the local meter display but also from remote management software.

- low profile design with magnetic base for easy affixing to the rack cabinet
- Plug n Play
- sensor with 2M or 4M cord
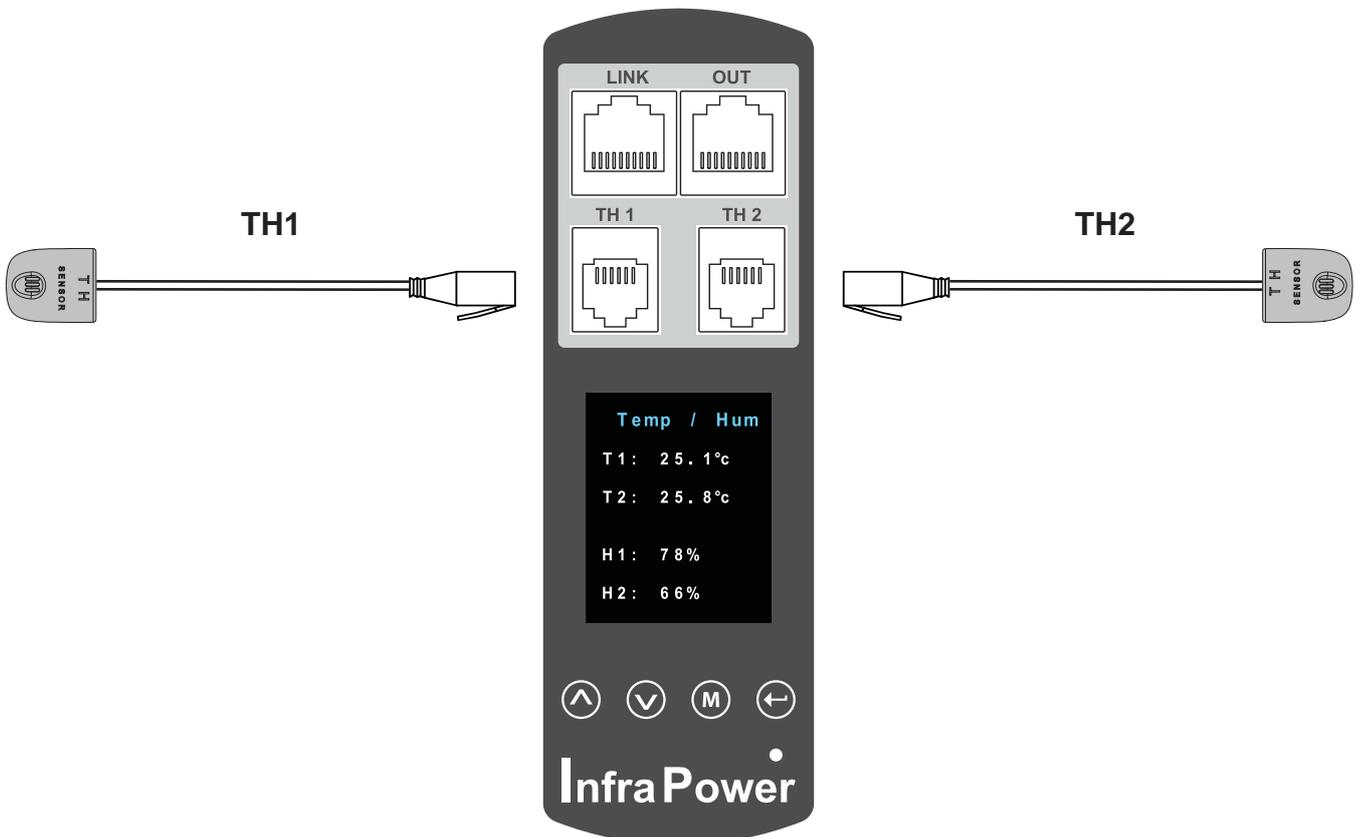- pair of sensors can be connected to a single W meter

Temp. & Humid. Sensor

Model :
IG - TH01 - 2M (2M cord)
IG - TH01 - 4M (4M cord)

Temp. Sensor

Model :
IG - T01 - 2M (2M cord)
IG - T01 - 4M (4M cord)

TH1

TH2

LINK　OUT

TH 1　TH 2

Temp / Hum

T1: 25.1°c

T2: 25.8°c

H1: 78%

H2: 66%

InfraPower

< 3.4 >   IP dongle installation & connection

IP Dongle Access to 16 PDU Levels

Patented IP Dongle provides IP remote access to the PDUs by a true network IP address chain. Only 1 x IP dongle allows access to max. 16 PDUs in daisy chain - which is a highly efficient application for saving not only the IP remote accessories cost, but also the true IP addresses required on the PDU management.

Hot-Pluggable design facilitates the IP dongle installation. Simply integrate the IP Dongle to the 1st PDU, then the entire daisy chain group can be remote over IP. Hence, administrator can remotely access all PDUs in the daisy chain group by one single IP via the IP Dongle.
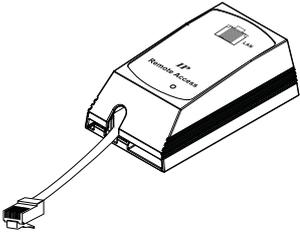
IP dongle for vertical PDU

Model :
IPD-02
IPD-02-S (with SNMP feature)

Vertical IP dongle installation steps :

- slide the IP dongle on the plate above the meter
- plug the RJ-45 connector of IP dongle into the LINK port of the ⟨ 1st level PDU ⟩ meter
- use the CAT. 5 / 6 cable to connect IP dongle to network device

Network Hub

IP dongle

To LAN port

To LINK port of
the 1st PDU

Cat 5 / 6 cable
Up to 20M

Cat 5 / 6 cable
Up to 20M

To LINK port
of next PDU
(Up to 16 levels)

| PDU ID |
| Group: 001 |
| Level: 01 |

| PDU ID |
| Group: 001 |
| Level: 02 |

| PDU ID |
| Group: 001 |
| Level: 03 |

1st level
PDU meter

2nd level
PDU meter

3rd level
PDU meter
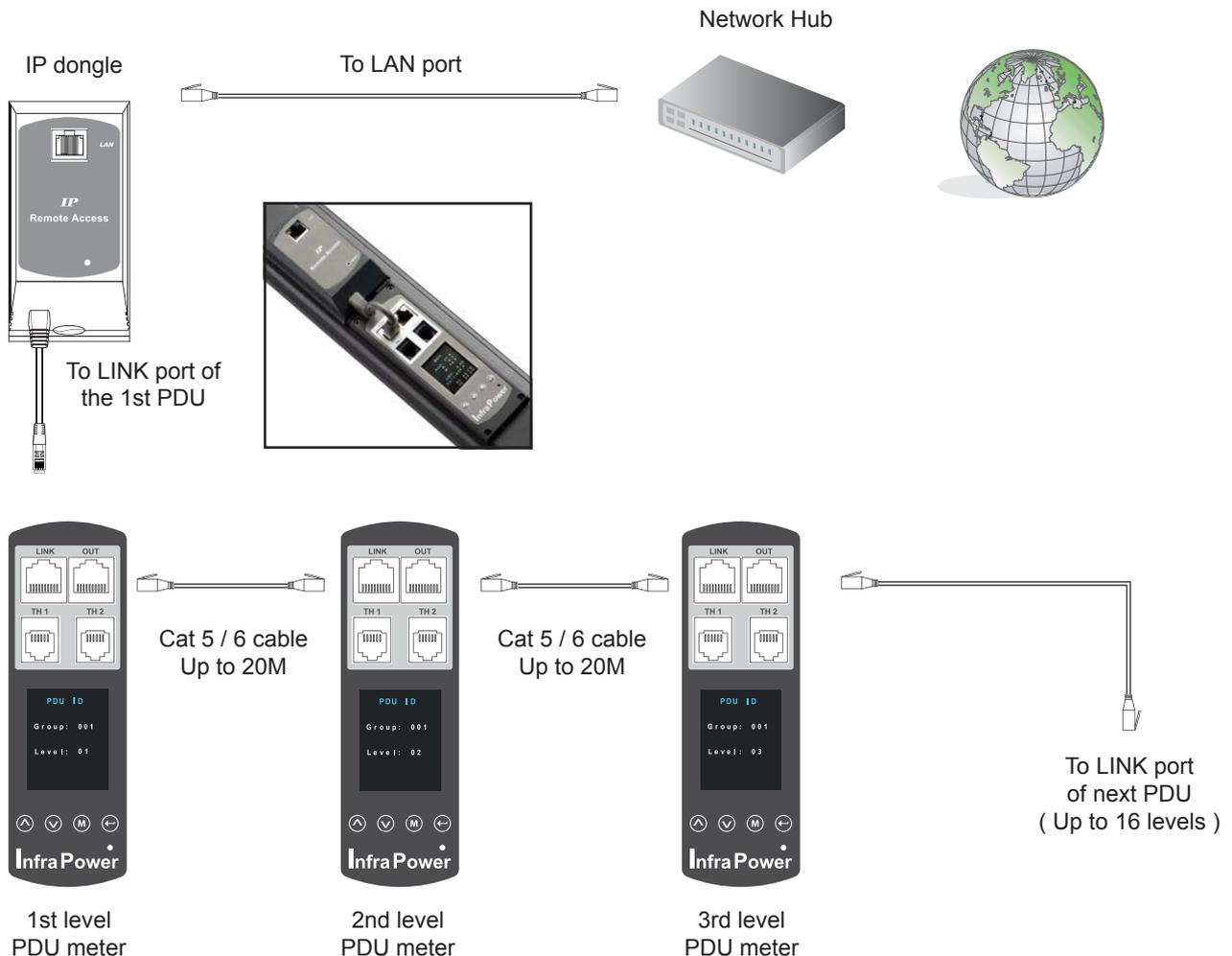
< 3.4 > IP dongle installation & connection
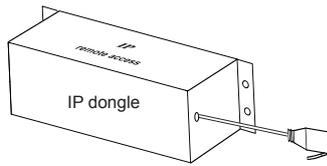
IP dongle for rackmount PDU

Model :
IPD-H02
IPD-H02-S (with SNMP feature)

IP dongle

Horizontal IP dongle installation steps :

- fix the IP dongle on the rear side of rackmount PDU with 4 screws

- plug the RJ-45 connector of IP dongle into the LINK port of the | 1st level PDU | meter

- use the CAT. 5 / 6 cable to connect IP dongle to network device

A

B

Rear side of rackmount PDU

To LAN port
of IP dongle

IP dongle

To LINK port
of the 1st PDU

Network Hub
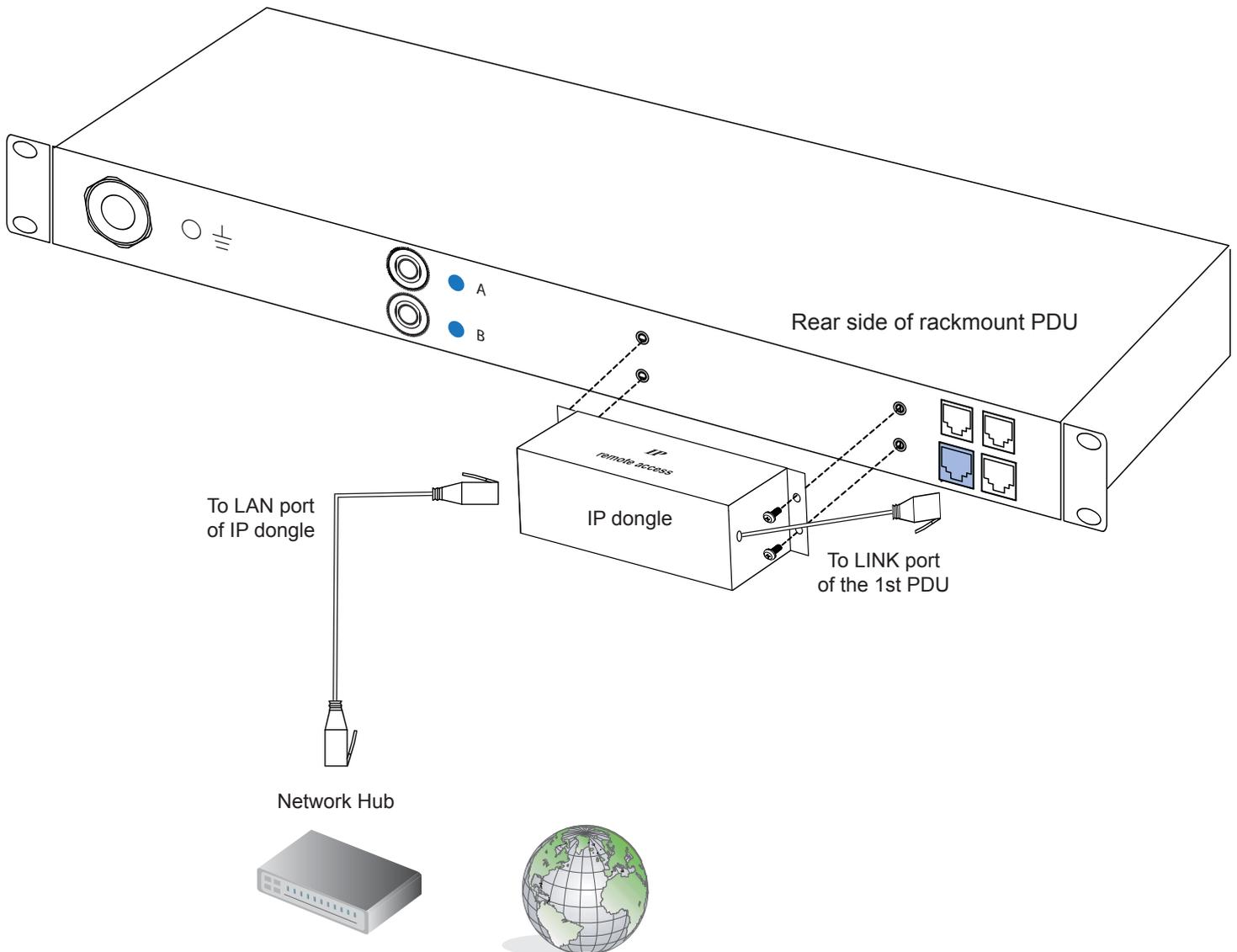
< 3.5 > Easy Change on PDU Power Feed Position

Power Feed Entry Flexibility - By Meter Setting

Customization of top feed power entry is available on request.
The change of the power feed entry position is possible after installation. The W series meter provides the flexibility to simply turnover on top feed PDUs with the use of meter conversion buttons and an alternative membrane.
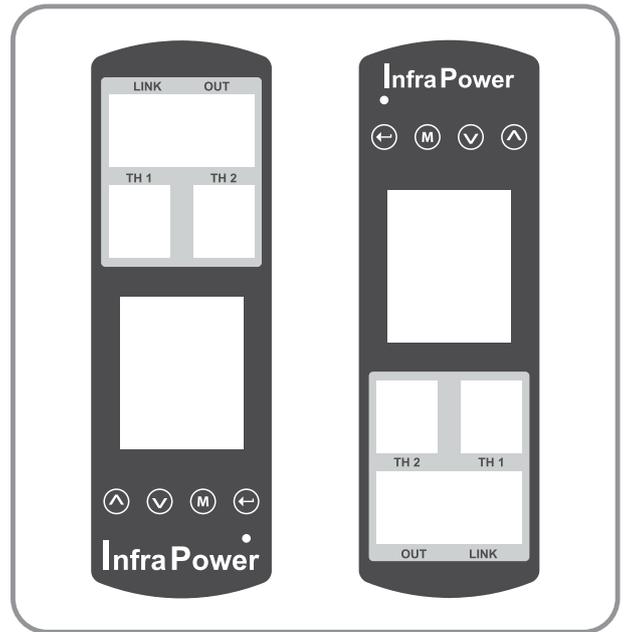
Meter
Membrane **A**

Meter
Membrane **B**

1 Turn the PDU upside-down

2 Press first button ⋀ & last button ← to convert display

Membrane **A**

3 Replace the meter membrane

Membrane **A**

4 Completed

Membrane **B**
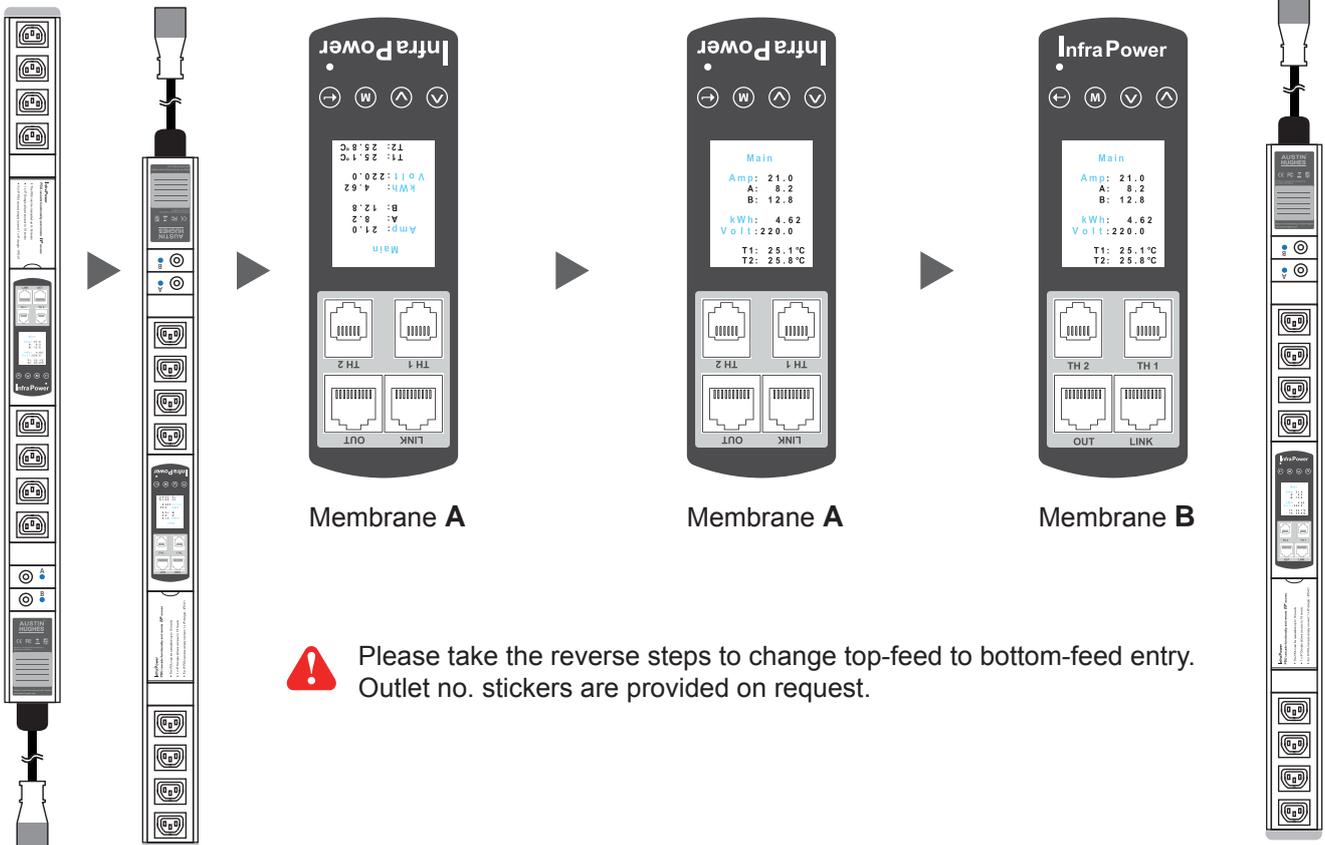
⚠ Please take the reverse steps to change top-feed to bottom-feed entry. Outlet no. stickers are provided on request.

Part IV.
< 4.1 >   IP dongle configuration

After the completion of IP dongle connection, please take the following steps to configure the IP dongle :

1. Prepare a notebook computer to download the IP setup utilities from the link :
http://www.RackmountMart.com/support/utilities/infrapower/IPdongleSetup.msi

2. Double click the [IPDongleSetup.msi] and follow the instruction to complete the installation.

3. Go to each first level PDU with the notebook computer & a piece of CAT. 5 / 6 cable to configure the IP dongle by IP setup utilities as below. Please take the procedure for all IP dongles **ONE BY ONE**.

CAT. 5 / 6 cable

IP dongle on 1st level PDU

To notebook computer
LAN port

To IP dongle
LAN port

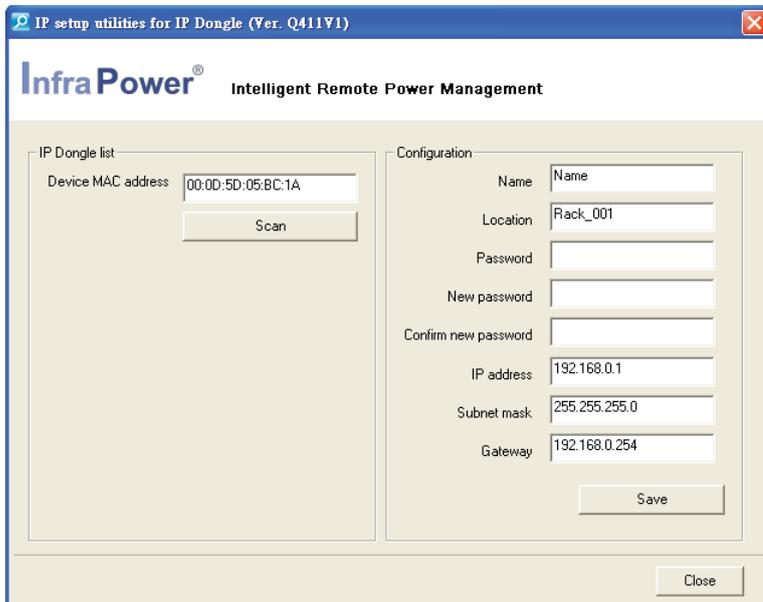⚠ Reconnect the IP dongle with the network device
(router or hub), after finish IP dongle configuration.

Ensure the PDU in
power ON status
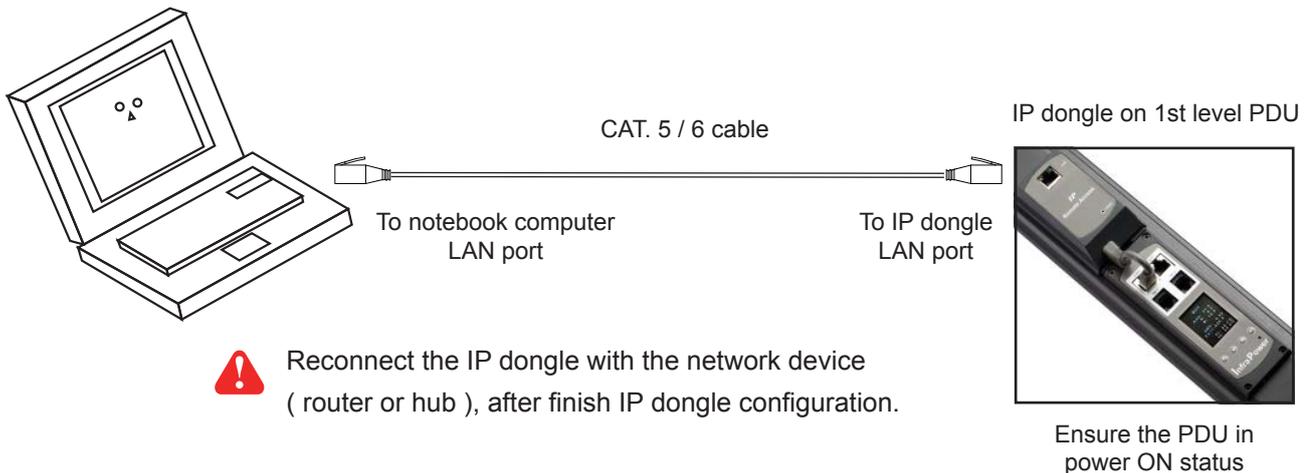
⚠ Write down the new IP address & password
for < Setup > purpose, refer to P.18

4. Click **Scan** to search the connected IP dongles

5. Enter the device name in the name field (min. 4 char. / max. 16 char.). **The default is Name.**

6. Enter the location in the location field (min. 4 char. / max. 16 char.). **The default is Rack_001.**

7. Enter the password in the password field for authentication (min. 8 char. / max. 16 char.). **The default is 00000000.**

8. Enter the new password in the new password field (min. 8 char. / max. 16 char.).

9. Re-enter the new password in the Confirm new password field.

10. Change the desired IP address / Subnet mask / Gateway, then click **Save** to confirm the setting to IP dongle.

11. The default IP address is as below:

IP address :   192.168.0.1

Subnet mask :   255.255.255.0

Gateway :   192.168.0.254

< 4.2 > InfraPower Manager - IPM-02, FREE PDU management software

InfraPower Manager, IPM-02, is a FREE **PDU** management software to enhance the features and benefits of the WS kWh switched and W kWh monitored PDUs by providing a centralized and remote management platform, and total reporting with detailed logs & event occurrences.

InfraPower Manager IPM-02 can support max. 5 concurrent login users and manage multi- IP dongles max. 15, hence the concurrent login users can access & remote PDUs max. 240 (15 IP dongles x 16 level PDUs).

⚠️
Software download
Prepare a management PC to download the free InfraPower Manager - IPM-02

from the link **http://www.RackmountMart.com/support/software/infrapower/IPM-02.msi**

Supported OS platform list :
- MS Windows XP Professional with SP3 (32bit only)
- MS Windows 7 Professional with SP1
- MS Windows 7 Ultimate with SP1
- MS Windows Server 2003 R2 Standard Edition with SP2
- MS Windows Server 2008 Standard Edition SP2
- MS Windows Server 2008 R2 Standard Edition SP1

⚠️ **Ensure the user logins in the management PC as a member of "Administrators" Group before IPM-02 Installation and execution.**

Software download

IPM-02.msi

Double click the IPM-02.msi

and follow the instruction to complete the installation.
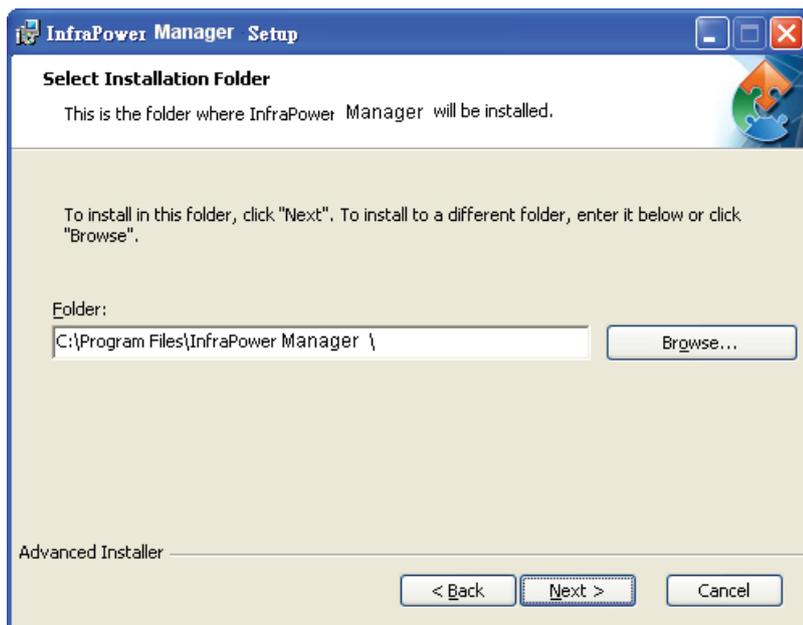
Software download

Software download
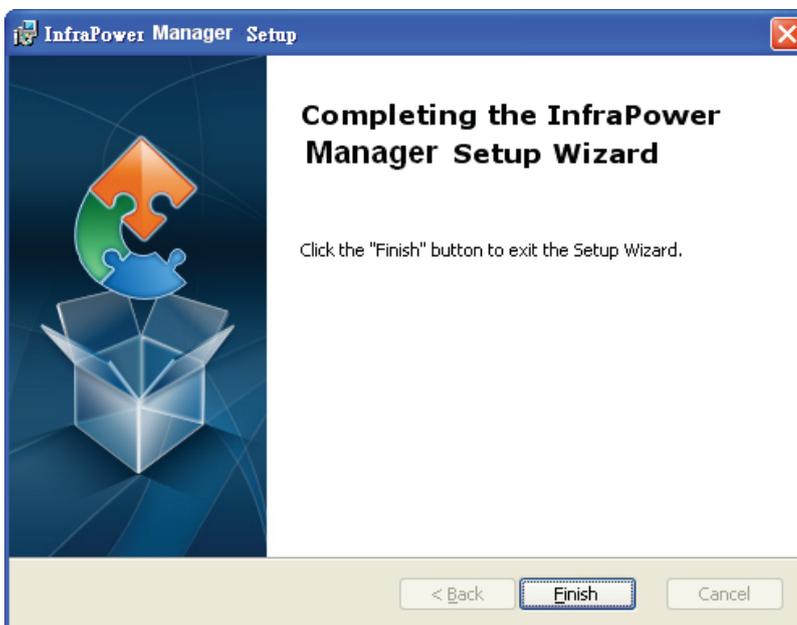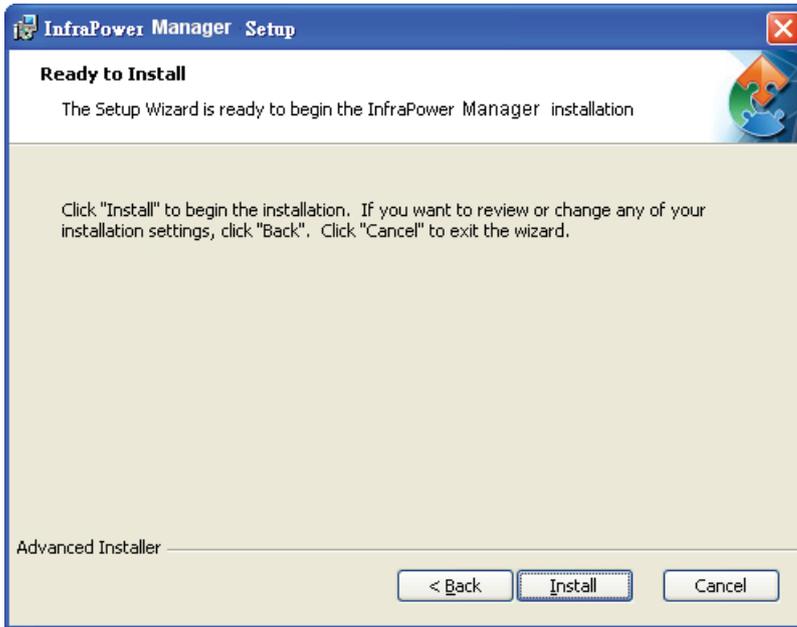
IPM-02
InfraPower Manager
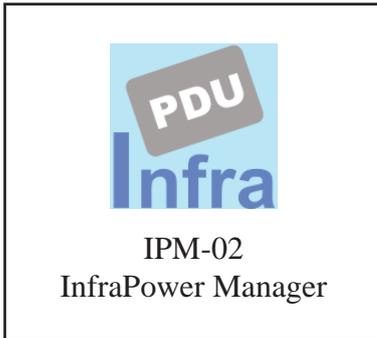
Double click the InfraPower Manager - IPM-02 and follow the instruction to complete start-up setting.

⚠️ **For MS Windows 7 and MS Windows server 2008,**

it requires to run a program with administrator rights before execution:

- Right click InfraPower Manager - IPM-02 , and then select **Properties**.
- Click the **Compatibility** tab.
- Tick the box **Run this program as an administrator**, and then click OK.

InfraPower Manager

InfraPower Manager start-up setting

Please follow the instruction to complete your own setting.

Click "Next" to continue or "Cancel" to exit.

[Next]   [Cancel]

InfraPower Manager

Software component(s) analysis & installation

The following 3 software component(s) are required to run InfraPower Manager .

(1) Apache 2.2   Please decide to use the existing or new Apache 2.2.

○ Use existing Apache
(Tick this if the management PC has been already installed Apache)

● Install new Apache 2.2

Folder :   C:\AppServ\

Port :   80

(2) PHP 5   Please decide to use the existing or new PHP 5.

○ Use existing PHP
(Tick this if the management PC has been already installed PHP)

● Install new PHP 5

Folder :   C:\AppServ\

(3) PostgreSQL 9.0   Please decide to use the existing or new PostgreSQL 9.0.

○ Use existing PostgreSQL
(Tick this if the management PC has been already installed PostgreSQL)

● Install new PostgreSQL 9.0

Folder :   C:\Program Files\PostgreSQL\9\

PostgreSQL login :   postgres

PostgreSQL password :   1qaz2WSX

[Install]   [Cancel]

Completed

⚠ PostgreSQL password can be changed by user.
The password of PostgreSQL must contain at least three of the following four character groups:
- English uppercase characters (A through Z)
- English lowercase characters (a through z)
- Numerals (0 through 9)
- Non-alphabetic characters (such as !, $, #, %)

Part V.   Software Usage & Operation

Users can follow below step 1 - 3 to access the management PC and InfraPower Manager IPM-02

System authentication

User name	admin
Password	• • • • • • • •

[Login]   [Cancel]

Step 1. Open Internet Explorer (I.E.), version 7.0 or above

Step 2. Enter the URL of management PC into the address bar
(If fail to access, please ask MIS to check the service port of the management PC)
e.g. http://192.168.0.1/IPM-02/

Step 3. Enter the user name (the default is admin)
Enter the password (the default is 00000000)

1	2	3	4	5
Login user	Login user	Login user	Login user	Login user

Router or hub

Management PC
IPM-01 InfraPower Manager
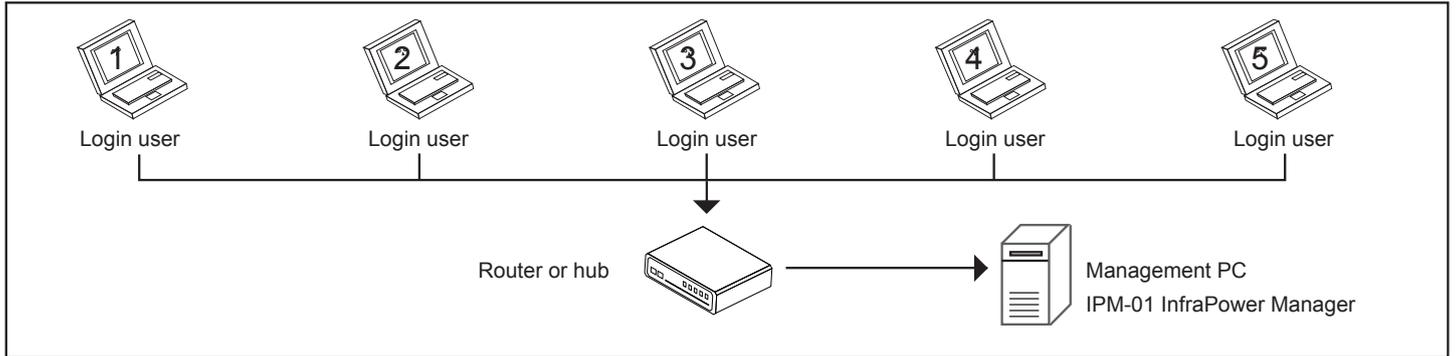
< 5.1 >   System setup

Initial system setup on :
< User >
< Setup >
< Alarm >
< General >
< Backup >
< Sys log >

⚠️ Administrator should access to
< User >, < Setup >, < Alarm >, < General > & < Backup >
for initial system setup

< 5.2 >   Usage & operation

< PDU >
•   Status
•   Details
< TH Sensor >
< Event >
< Log >
•   PDU
•   TH Sensor
•   Daily kWh
< Report >

< 5.1 > System setup

In **< User >** page, the administrator can create max. 5 concurrent login users and set the user name & password. After this, all users can take the three steps above to access IPM-02.

User setup

	Activate	User name	User login password	Confirm password
Administrator :	☑	admin	••••••••••••••••	••••••••••••••••

- Only administrator can access SYSTEM SETTING.
- Only administrator can set and change all users' password.
- Min. 4 char. and max. 16 char. for user name.
- Min. 8 char. and max. 16 char. for user login password.
- If there is any change of user name, system will automatically delete the original operator and create a new one. A new user login password is required.

Operator 01 :	☑	Kenny.Wong	••••••••••••••••	••••••••••••••••
Operator 02 :	☑	William.Wong	••••••••••••••••	••••••••••••••••
Operator 03 :	☐			
Operator 04 :	☐			

[Apply]   [Cancel]

In **< Setup >** page, the administrator can activate the IP dongle group & set the group command password.

IP dongle groups | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |

* Initially, please setup the IP dongle one by one.

IP dongle group 01 :   ☑ Activate   ☐ Deactivate

- **DO NOT** activate the group if there is no any IP dongle and PDU connection.
- Each IP dongle group consist of one IP dongle and max. 16 PDU.

01   IP dongle setting

IP dongle address :   192.168.1.56
IP dongle password :   ••••••••••••••••

- If the administrator wants to change IP dongle address and password, two steps are required.
- **Firstly**, enter the IP Setup utilities to make the change. (ref. to User Manual page 5)
- **Secondly**, return to this page to make the same change on IP address and password.

01   IP dongle group

Command password :   ☐ Enable   ☑ Disable
New command password :
Confirm new password :

- Administrator needs to set command password for IP dongle groups one by one.
- Command password required for any PDU configuration and control.
- Administrator can set different command password for different IP dongle group or all IP dongle groups share the same password.

[Apply]   [Cancel]

< 5.1 >   System setup

< Alarm >

Alarm email server setting

Alarm email :	☑ Enable ☐ Disable	• This alarm setting is for all IP dongle PDU groups.
SMTP server :	192.168.0.1	
SMTP port :	25	
POP3 server :	192.168.0.1	
POP3 port :	110	
User email :	example@email.com	
User name :	User_name_01	
Password :	•••••••••••••••	
Alarm interval :	20 (Min. 10, Max. 60 minutes)	

Alarm email to

Email address 01 :
Email address 02 :
Email address 03 :
Email address 04 :
Email address 05 :

[Apply]   [Cancel]

< 5.1 >   System setup

< General >

Auto data refresh

Refresh rate :   10   (Min. 10, Max. 60 seconds)

- Auto data refresh rate on the page of **PDU STATUS**, **PDU DETAILS** and **TH STATUS**.

IP dongle groups auto scan

Scan rate :   5   (Min. 5, Max. 60 seconds)

- Auto scan rate on the page of **PDU STATUS** and **TH STATUS**.

Temperature unit

Unit :   ☐ °C   ☑ °F

[Apply]   [Cancel]

< Backup >

Data backup setting

Daily backup :   ☑ Enable   ☐ Disable

Backup to :   C:\Program Files\InfraPower Manager (IPM-02)\

Example : C:\Program Files\IPM\

- Daily backup proceeded at 00:00 for last 24 hours data.
- The backup data for **PDU LOG**, **OUTLET LOG**, **TH LOG**, **DAILY KWH LOG**, **EVENT**, **SYS LOG** saved in CSV file format.
- Folder   IPM_Backup   will be automatically created under the path you entered.

[Apply]   [Cancel]

< 5.1 >   System setup

< Sys log > provides last 2000 event occurrences in < User >, < Setup >, < Alarm >, < General > & < Backup >.

First / Previous 1 2 3 4 5 6 7 8 9 10 Next / Last	Last 2000 log records.

Date	Time	Event	Description
2012/05/24	15:38:18	User	[admin] : Add operator - Operator 01 - Kenny.Wong
2012/05/24	15:38:18	User	[admin] : Add operator - Operator 02 - William.Wong
2012/05/17	17:43:18	Setup	[admin] : Disable command password - IP dongle group 01
2012/05/17	17:36:23	Setup	[admin] : Enable command password - IP dongle group 01

System setup events

- **User**
  - (1) Add / Delete operator
  - (2) Change user login password
- **Setup**
  - (1) Activate / Deactivate IP dongle group No.
  - (2) Change IP dongle No. address or password
  - (3) Enable / Disable IP dongle group No. command password
  - (4) Change IP dongle group No. command password
- **Alarm**
  - (1) Enable or Disable alarm
  - (2) Change alarm email server setting
  - (3) Add / Delete alarm mail recipient

- **General**
  - (1) Change refresh mode time rate
  - (2) Change scan mode time rate
  - (3) Change temperature unit
- **Backup**
  - (1) Enable / Disable daily backup
  - (2) Change backup path

< 5.2 >   Usage & operation

< Status > provides the users a scan function to monitor the PDUs of each IP dongle group one by one.

| IP dongle groups | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | Scan | Stop |

PDU status

IP dongle name :   Name
IP address :   192.168.1.56

Level	Name	Location	Circuit A Amp Max. / Load / Alarm / Low alert	Circuit A kWh	Circuit B Amp Max. / Load / Alarm / Low alert	Circuit B kWh	Total Amp Load	Total kWh	TH 1 °C	TH 1 %	TH 2 °C	TH 2 %
01	WS16-32A	Server_Rack_001	16 / 1.0 / 13.0 / 0.0	0.1	16 / 0.0 / 13.0 / 0.0	0.0	1.0	0.1	26.0	54.0	26.2	55.5
02	WS16-32A	Server_Rack_002	16 / 0.0 / 13.0 / 0.0	0.0	16 / 0.0 / 13.0 / 0.0	0.0	0.0	0.0	26.7	52.9	26.7	53.5
03	WS16-32A	Server_Rack_003	16 / 0.0 / 13.0 / 0.0	0.0	16 / 0.0 / 13.0 / 0.0	0.0	0.0	0.0	-	-	-	-
04	WS16-32A	Server_Rack_004	16 / 0.0 / 13.0 / 0.0	0.0	16 / 0.0 / 13.0 / 0.0	0.0	0.0	0.0	-	-	-	-
05	WS20-32A	Server_Rack_005	16 / 0.0 / 13.0 / 0.0	0.0	16 / 0.0 / 13.0 / 0.0	0.0	0.0	0.0	-	-	-	-
06	WS20-32A	Server_Rack_006	16 / 0.0 / 13.0 / 0.0	0.0	16 / 0.0 / 13.0 / 0.0	0.0	0.0	0.0	-	-	-	-
07	WS20-32A	Server_Rack_007	16 / 0.0 / 13.0 / 0.0	0.0	16 / 0.0 / 13.0 / 0.0	0.0	0.0	0.0	-	-	-	-
08	WS20-32A	Server_Rack_008	16 / 0.0 / 13.0 / 0.0	0.0	16 / 0.0 / 13.0 / 0.0	0.0	0.0	0.0	-	-	-	-
09	W16-16A	Server_Rack_009	16 / 0.0 / 13.0 / 0.0	0.0	- / - / - / -	-	0.0	0.0	26.7	52.9	26.7	53.5
10	W16-16A	Server_Rack_010	16 / 0.0 / 13.0 / 0.0	0.0	- / - / - / -	-	0.0	0.0	26.0	54.0	26.2	55.5
11	W16-16A	Server_Rack_011	16 / 0.0 / 13.0 / 0.0	0.0	- / - / - / -	-	0.0	0.0	-	-	-	-
12	W16-16A	Server_Rack_012	16 / 0.0 / 13.0 / 0.0	0.0	- / - / - / -	-	0.0	0.0	-	-	-	-
13	WS20-16A	Server_Rack_013	16 / 0.0 / 13.0 / 0.0	0.0	- / - / - / -	-	0.0	0.0	-	-	-	-
14	WS20-16A	Server_Rack_014	16 / 0.0 / 13.0 / 0.0	0.0	- / - / - / -	-	0.0	0.0	-	-	-	-
15	WS20-16A	Server_Rack_015	16 / 0.0 / 13.0 / 0.0	0.0	- / - / - / -	-	0.0	0.0	-	-	-	-
16	WS20-16A	Server_Rack_016	16 / 0.0 / 13.0 / 0.0	0.0	- / - / - / -	-	0.0	0.0	-	-	-	-

☑ Auto data refresh : ☐☐☐☐☐☐☐☐   Untick during data input

| Search | Search new installed PDUs

* Press F11 to enlarge or diminish the screen

< 5.2 >   Usage & operation

< **Details** > provides a detailed status about a certain PDU. The users can
- Set the name & location for PDU
- Set alarm amp. & low alert amp for PDU
- Reset peak amp & kWh for PDU
- Switch ON / OFF outlets one by one (WS kWh switched PDU only)

IP dongle groups	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15

PDU details

Level :	01 ▼ V12C13/4C19-32A-WS	PDU kWh :	0.10
Status :	Connected	PDU load amp :	1.0
Name :	WS16-32A	Power factor :	0.98
Location :	Server_Rack_001	Apparent power (kVA) :	0.22

Circuit A Max. amp : 16   Alarm amp : 13.0
Load amp : 1.0   Low alert amp : 0.0

Peak amp : 2.0   2012/06/01 00:00:00   [Reset]
kWh : 0.10   2012/06/01 00:00:00   [Reset]

Circuit B Max. amp : 16   Alarm amp : 13.0
Load amp : 0.0   Low alert amp : 0.0

Peak amp : 0.0   2012/06/01 00:00:00   [Reset]
kWh : 0.00   2012/06/01 00:00:00   [Reset]

Outlet	Name	Status	Switch	Outlet	Name	Status	Switch
01	IBM_Server_1	ON	OFF	07	IBM_Server_3	ON	OFF
02	IBM_Server_2	ON	OFF	08	IBM_Server_4	ON	OFF
03	Dell_Server_1	ON	OFF	09	Dell_Server_3	ON	OFF
04	Dell_Server_2	ON	OFF	10	Dell_Server_4	ON	OFF
05	Sun_Server_1	ON	OFF	11	Sun_Server_3	ON	OFF
06	Sun_Server_2	ON	OFF	12	Sun_Server_4	ON	OFF
13	HP_BladeServer_1	OFF	ON	15	HP_BladeServer_3	OFF	ON
14	HP_BladeServer_2	OFF	ON	16	HP_BladeServer_4	OFF	ON

Click outlet icon for setting   Click outlet icon for setting

☑ Auto data refresh : ▮▮▮▮▮▮▯▯▯▯ Untick during data input

[Apply]   Save new data

[Cancel]   Cancel new data input

[Set maintenance]   All IPM communication to and from the PDU is stopped, notification to the user is stopped,
Set PDU in Maintenance mode   and the PDU readings are " - ".

[Disable monitoring]
Stop monitoring removed PDU

* Press F11 to enlarge or diminish the screen

< 5.2 > Usage & operation

In **< Outlet setting >** page, the users can set
- the name of outlet
- time interval of power up sequence delay to next outlet (WS kWh switched PDU only)

IP dongle groups	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15

Outlet setting

PDU level :   01   V12C13/4C19-32A-WS

Stauts :   Connected

Name :   WS16-32A

Location :   Server_Rack_001

Outlet :   01 ⌄

Name :   IBM_Server_1

Status :   ON

Power up sequence delay to next outlet :   1   (Min. 1, Max. 10 seconds)

Apply	Save new data		Exit	Return to **PDU DETAILS**
Cancel	Cancel new data input			

< 5.2 >   Usage & operation

< TH status > shows the readings & status of the TH sensors of the PDUs for each IP dongle group one by one.

⚠️ The GUI does not show the readings if the TH sensors are not installed & activated.

IP dongle groups | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | Scan | Stop

TH status

IP dongle name :   Name
IP address :   192.168.1.56

PDU		Setting		TH 1				TH 2		
					°C	%			°C	%
Level	Name	Setting	Location	Temp. / Alarm	Humid. / Alarm	Location	Temp. / Alarm	Humid. / Alarm		
01	WS20-32A	🔳	Rear_Top	26.4 / 35.0	52.9 / 65.0	Rear_Bottom	26.5 / 35.0	54.5 / 65.0		
02	WS20-32A	🔳	Rear_Top	27.1 / 35.0	52.0 / 65.0	Rear_Bottom	27.0 / 35.0	52.5 / 65.0		
03	WS20-32A	🔳	-	- / -	- / -	-	- / -	- / -		
04	WS20-32A	🔳	-	- / -	- / -	-	- / -	- / -		
05	WS16-32A	🔳	-	- / -	- / -	-	- / -	- / -		
06	WS16-32A	🔳	-	- / -	- / -	-	- / -	- / -		
07	WS16-32A	🔳	-	- / -	- / -	-	- / -	- / -		
08	WS16-32A	🔳	-	- / -	- / -	-	- / -	- / -		
09	W20-16A	🔳	Rear_Top	27.1 / 35.0	52.0 / 65.0	Rear_Bottom	27.0 / 35.0	52.5 / 65.0		
10	W20-16A	🔳	Rear_Top	26.4 / 35.0	52.9 / 65.0	Rear_Bottom	26.5 / 35.0	54.5 / 65.0		
11	W20-16A	🔳	-	- / -	- / -	-	- / -	- / -		
12	W20-16A	🔳	-	- / -	- / -	-	- / -	- / -		
13	W16-16A	🔳	-	- / -	- / -	-	- / -	- / -		
14	W16-16A	🔳	-	- / -	- / -	-	- / -	- / -		
15	W16-16A	🔳	-	- / -	- / -	-	- / -	- / -		
16	W16-16A	🔳	-	- / -	- / -	-	- / -	- / -		

☑ Auto data refresh : ☐☐☐☐☐☐☐☐ Untick during data input

| Search | Search new installed PDUs

* Press F11 to enlarge or diminish the screen

< 5.2 > Usage & operation

In **< TH setting >** page, user can
- activate / deactivate the TH sensor
- set the location & Temp. / Humid. alarm of the TH sensor

⚠️ The default TH setting is ⌜Deactivate⌝ .
If the TH sensor is installed, please tick ⌜Activate⌝ . Otherwise, no TH readings will be displayed in < TH status >
Please do not activate the TH sensor if no TH sensor installed. Otherwise, Disconnected alarm will be triggered.

IP dongle groups	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15

TH setting

PDU level :   ⌜01⌝   V12C13/4C19-32A-WS
Stauts :   Connected
Name :   WS16-32A
Location :   Server_Rack_001

	TH 1	☑ Activate	☐ Deactivate		TH 2	☑ Activate	☐ Deactivate
	Locaton :	Rear_Top			Locaton :	Rear_Bottom	

	Alarm Setting	Reading			Alarm Setting	Reading
Temp. (°C) :	35.0	26.9		Temp. (°C) :	35.0	27.0
Humid. (%) :	65.0	51.5		Humid. (%) :	65.0	52.9

Apply	Save new data
Cancel	Cancel new data input

Exit	Return to **TH STATUS**

➡️

< 5.2 >   Usage & operation

< Event > provides last 2000 events occurrences about PDU's configuration & connection, outlet configuration and sensor's configuration & connection in a certain IP dongle group.

| IP dongle groups | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |

First / Previous **1** 2 3 4 5 6 7 8 9 10 Next / Last   Last 2000 log records.

Date	Time	Event	Description
2012/05/23	16:39:31	PDU configuration	[-] : PDU Circuit breaker return to normal - PDU Level 01 - Circuit 01
2012/05/23	13:45:10	PDU configuration	[-] : PDU Circuit breaker tripped - PDU Level 01 - Circuit 01

The types of event

- IP dongle connection
- Disconnection / Reconnection

- PDU connection
- Disconnection / Reconnection

- Sensor connection
- Disconnection / Reconnection

- PDU configuration
(1) Change alarm amp.
(2) Change low alert amp.
(3) Reset peak amp /w date and time
(4) Reset kWh /w date and time
(5) Change PDU name
(6) Change PDU location
(7) Amp. alarm
(8) Amp. low alert
(9) Amp. normal
(10) Circuit Breaker tripped / return to normal
(11) Set PDU to maintenance
(12) Remove PDU from maintenance

- Outlet configuration
(1) Switch outlet on / off
(2) Change outlet name
(3) Change power up sequence delay to next outlet

- Sensor configuration
(1) Activate / Deactivate TH Sensor
(2) Change temp. alarm
(3) Change humid. alarm
(4) Change TH Sensor location
(5) Temp. alarm
(6) Humid. alarm

< PDU log > provides last 2000 PDU log records about a certain PDU by the user's selection. The software will generate a PDU log record in every 10 mins.

| IP dongle groups | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |

PDU log

PDU level : 01 ▾ V12C13/4C19-32A-WS   Name :   WS16-32A
Current status :   Connected   Location :   Server_Rack_001

					Circuit A			Circuit B			Total	
					Amp	kWh		Amp	kWh		Amp	kWh
Date	Time	Name	Location	Status	Max. / Load / Alarm / Low alert			Max. / Load / Alarm / Low alert			Load	
2012/05/22	10:18:38	WS20-32A	Server_Rack_001	Connected	16 / 0.0 / 13.0 / 0.0	0.00		16 / 0.0 / 13.0 / 0.0	0.00		0.0	0.00
2012/05/22	10:11:12	WS20-32A	Server_Rack_001	Connected	16 / 0.0 / 13.0 / 0.0	0.00		16 / 0.0 / 13.0 / 0.0	0.00		0.0	0.00

First / Previous **1** 2 3 4 5 6 7 8 9 10 Next / Last   Last 2000 log records.

* Press F11 to enlarge or diminish the screen
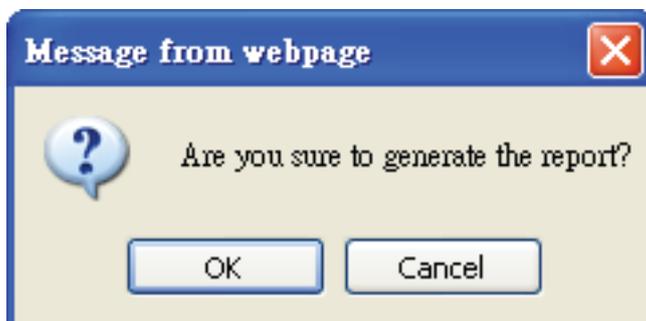
< 5.2 >   Usage & operation

< TH log > provides last 2000 TH log records about a certain PDU by the user's selection. The software will generate a TH log record in every 10 mins.

| IP dongle groups | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |

TH log

PDU level : 01 ▼ V12C13/4C19-32A-WS   Name : WS16-32A
Current status : Connected   Location : Server_Rack_001

				TH 1			TH 2	
				°C	%		°C	%
Date	Time	Status	Location	Temp. / Alarm	Humid. / Alarm	Location	Temp. / Alarm	Humid. / Alarm
2012/05/22	10:27:38	Connected	Rear_Top	26.4 / 35.0	52.9 / 65.0	Rear_Bottom	26.5 / 35.0	54.5 / 65.0
2012/05/22	10:17:36	Connected	Rear_Top	27.1 / 35.0	52.0 / 65.0	Rear_Bottom	27.0 / 35.0	52.5 / 65.0

First / Previous 1 2 3 4 5 6 7 8 9 10 Next / Last   Last 2000 log records.

* Press F11 to enlarge or diminish the screen

< Daily kWh log > provides last 2000 daily energy consumption log records about a certain PDU by the user's selection. The record is logged at 00:00 everyday (± 5 mins.).

⚠ The daily kWh log will not be recorded at 00:00 if the PDU connected less than 24 hours.

| IP dongle groups | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |

Daily kWh log

PDU level : 01 ▼ V12C13/4C19-32A-WS   Name : WS16-32A
Current status : Connected   Location : Server_Rack_001

			Circuit A	Circuit B	Total
			kWh	kWh	kWh
Date	Time	Status			

First / Previous 1 2 3 4 5 6 7 8 9 10 Next / Last   Last 2000 log records.

* Press F11 to enlarge or diminish the screen

Completed

< 5.2 >   Usage & operation

< **Report** > provides monthly report for   PDU log ,   TH Sensor log ,   Daily kWh log &
  Event log   which can be exported in CSV format.

Please follow the steps below to export the log category you want :

Step 1 - Select the category, period & target.

Category	Period (Year / Month)	Target
☑ PDU log	2012 ▾ / 01 ▾	IP dongle group : 01 ▾
☐ TH Sensor log		PDU Level : 01 ▾
☐ Daily kWh log		
☐ Event log		

| Apply | | Cancel |

Step 2 - Click   Apply   & a   Message from webpage   dialog box pops up.

Message from webpage ✕

❓ Are you sure to generate the report?

OK   Cancel

Step 3 - Click   OK   to confirm. It may take several minutes to complete.

Processing ...

< 5.2 > Usage & operation

Step 4 - Right click the file name below & select │ Save target as │ to download the log file.

Category

- ☐ PDU log
- ☐ TH Sensor log
- ☐ Daily kWh log
- ☐ Event log

[Apply]   [Cancel]

⚠ **To download the file, please:**

(1) Right click the file link below

(2) Select [Save target as] to downlo...

- PDULog_IPDongeGroup01_PDULeve...

Context menu:
- Open
- Open in New Tab
- Open in New Window
- **Save Target As...**
- Print Target
- Cut
- Copy
- Copy Shortcut
- Paste
- Blog with Windows Live
- E-mail with Windows Live
- Translate with Live Search
- All Accelerators ▶
- Add to Favorites...
- Properties

Step 5 - Click │ Close │ to complete or │ Open │ to view the content of log.

Download complete

Download Complete

...p01_PDULevel01_2012_06.csv from 192.168.1.165

Downloaded:	0 bytes in 1 sec
Download to:	...\PDULog_IPDongeGroup01_PDULevel01_2012...
Transfer rate:	0 bytes/Sec

☐ Close this dialog box when download completes

[Open]   [Open Folder]   [Close]
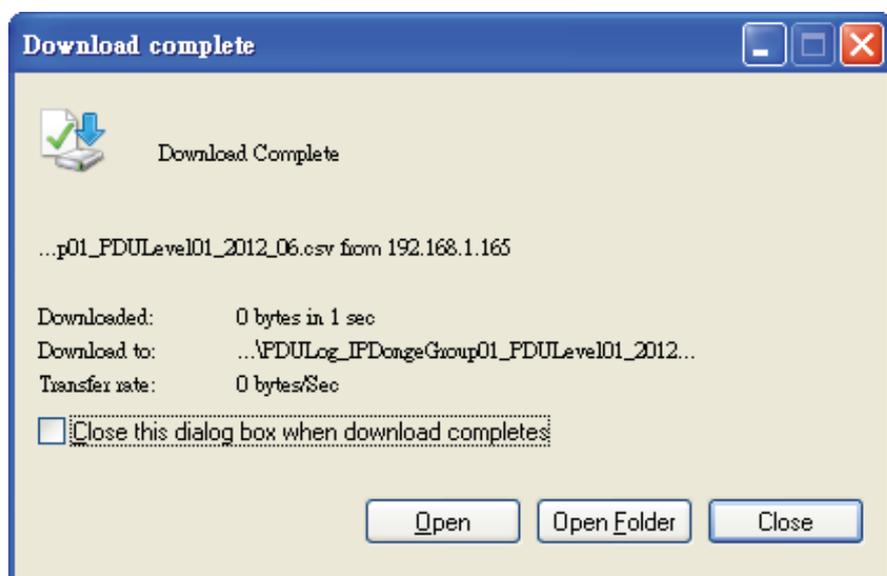
Completed

Part VI.

< 6.1 >   SNMP Management

The IP dongle can manage the connected W series PDUs (up to 16 PDUs), using tools that support SNMP v2c (Simple Network Management Protocol).

⚠ Only for IPD-02-S or IPD-H02-S

An SNMP trap is an event notification the IP dongle device sends to an SNMP management station. The trap identifies when a specific condition occurs, such as a value that is more than its predefined threshold. IP dongle device can send a trap.

(II).   Enabling SNMP Support

The following procedure summarizes how to enable the IP Dongle for SNMP support.

Step 1 - Connect the IP dongle to a computer. (Please refer to P.11)

Step 2 - Open the Internet Explorer (I.E.) version 7.0 or above

Step 3 - Enter the configured IP dongle address into the I.E. address bar
(default IP : 192.168.0.1)

Step 4 - Enter login name & password (default login name & password are 00000000)

Login name	
Password	

Login   Cancel

< 6.1 >   SNMP Management

Step 5 - Select the SNMP from the left navigation
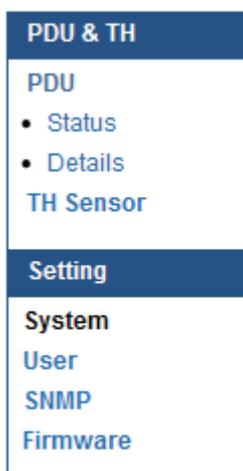
Step 6 - The SNMP Settings window appears as below:

Step 7 - In the SNMP Agent, click Enable to start the SNMP agent service.

Step 8 - In the SNMP Polling Community field, type the name of community.
The default value is "public"

Step 9 - In the SNMP Traps version drop-down list, select disable or V2Trap you want to use.

Step 10 - In the Management Station text box, type the IP address, Trap port & Trap community of your management station.

Step 11- Click Apply   to save.

Part VII.

< 7.1 > InfraPower Manager - IPM-02

1. What is InfraPower Manager?
The InfraPower Manager is a Windows based system to consolidate management of max. 240 PDUs via 15 IP dongles, using a simple web interface which monitors and controls the WS kWh switched / W kWh monitored PDUs in the data center. Authorized users have a secure control over outlets to power ON / OFF at the managed device level. It also provides the detailed PDU, daily energy consumption and event logged records, and sends alarm email once ampere & Temp. / Humid. over the predefined alarm threshold.
Please find the link below:

<div align="center">http://www.RackmountMart.com/support/software/infrapower/IPM-02.msi</div>

2. Which OS platform does IPM-02 support?
- MS Windows XP Professional with SP3 (32bit only)
- MS Windows 7 Professional with SP1
- MS Windows 7 Ultimate with SP1
- MS Windows Server 2003 R2 Standard Edition with SP2
- MS Windows Server 2008 Standard Edition SP2
- MS Windows Server 2008 R2 Standard Edition SP1

⚠️ **Ensure the user logins in the management PC as a member of "Administrators" Group before IPM-02 Installation and execution.**

3. Which database does the IPM-02 support?
PostgreSQL

4. What is the PostgreSQL default password for IPM-02?
1qaz2WSX

5. How can I receive alarm email and get full log report?
Ensure that IPM-02 is executed and the alarm server is configured properly and being enabled.

6. What is the default user name & password of IPM-02?
Default user name "admin" & password "00000000"

7. What is the command password of IPM-02?
Each IP dongle group has its command password. It will be requested for any PDU configuration and control. The administrator can set different command password for different IP dongle group or all IP dongle groups use the same password.

8. The WS kWh switched / W kWh monitored PDUs can't be found by IPM-02?
Please double check the cable connection and the level setting of each PDU. If a cascade chain has duplicate the level PDUs, it will cause this problem.

9. Is it possible to manage the WS kWh switched / W kWh monitored PDUs from different workstations?
Yes, the InfraPower manager supports 5 concurrent login users from different workstations.

< 7.2 > IP dongle

1.   What is the IP dongle?
The IP dongle provides a simple and economical way to consolidate management of max. 16 pcs WS kWh switched / W kWh monitored PDUs, by a single IP connection to the network.

2.   What is the IP setup utilities?
This is a windows application used to assign the IP address of IP dongle. You can download the IP setup utilities from the link below:

> http://www.RackmountMart.com/support/utilities/infrapower/IPdongleSetup.msi

3.   Does the IP dongle support DHCP (Dynamic Host Configuration Protocol)?
No, the IP dongle only works with static IP-address.

4.   Will the reset of IP dongle affect the power to the outlets?
No, the IP dongle operates on a separate circuit, so the power to the outlets will remain unchanged.

5.   How can I replace a failed IP dongle?
As the IP dongle is hot swappable, without power disconnection, you can unplug the RJ45 connector and slide out the failed IP dongle from the WS kWh switched / W kWh monitored PDU. Then replace a new one for the PDU and re-configure the IP address to fit your network setting. (Please refer to the P. 11)

< 7.3 > Temp. Humidity sensor

1.   How accurate is the Temp. Humidity sensor?
It is accurate to ± 1°C (typical) & ± 4.5% RH (typical).

2.   How accurate is the Temp. sensor?
It is accurate to ± 1.5°C (typical).

< 7.4 > Meter for WS kWh switched & W kWh monitored PDU

1. What is feature of the W kWh monitored PDU?

The W kWh monitored PDU offers simple & highly reliable power distribution to multiple equipments, and built-in a 1.8" LCD meter indicates the total energy consumption of equipment connected to the PDU. The digital ampere meter has an interface which can connect to an IP dongle to the ethernet network, which allows managers to real-time remote monitor the PDU load thru the InfraPower manager (IPM-02).

2. What is feature of the WS kWh switched PDU?

The WS kWh switched PDUs offers the same features as W kWh monitored PDUs, with an addition remote control power capability to individual PDU outlets. The remote outlet power control allows power on/off functionality for power recycling to reboot locked-up equipment and to avoid unauthorized use of individual outlets.

3. Can the WS kWh switched & W kWh monitored PDUs cascade together?

Yes, the WS kWh switched & W kWh monitored model PDUs can connect together as a cascade chain.

4. If one of the cascaded WS kWh switched / W kWh monitored PDU loses power, will it affect other PDUs in the same chain?

No, the other cascaded WS kWh switched & W kWh monitored PDUs in upper & lower level will not be affected.

5. What is the maximum cabling distance between two cascaded PDUs?

Up to 20 meter (66 feet) of CAT. 5 / 6 cable.

6. What is the maximum cascade level of the WS kWh switched & W kWh monitored PDU in a chain?

16 levels

< 7.5 > Others

1. Does the InfraPower PDU has the overpower protection?

Yes, the PDU provides the resettable fuse or optional circuit breaker for the overpower protection.

2. What is the standard inlet cable length of InfraPower?

3 meter (9.9 feet).

3. Where can I find the Catalogue / User manual /Model list / Wire diagram of InfraPower PDUs?

Please visit the www.RackmountMart.com

4. How can we get a further support?

Please send the email to support@RackmountMart.com or sales@RackmountMart.com

Part VIII.

< 8.1 > PDU disconnection

1. GUI shows | a certain level PDU | **disconnected**

Step 1 - PDU power off ?

      Check the PDU is power ON or not.

Step 2 - PDU level setting duplicated in the same PDU group ?

      Check and make sure PDU level is unique and not duplicated in the same PDU group.

      (Please refer to P.1 for the PDU level setting)

2. GUI shows | from a certain level PDU to the last one | **disconnected**

Step 1 - Cable disconnected, loose or defective ?

      Check the Cat. 5/6 cable connection to PDUs and network devices. Make sure the

      connectors are firmly attached. And check if any defects on your cable or not. If yes,

      replace a new one.

Step 2 - The first disconnected PDU failed ?

      Unplug the Cat. 5/6 cable on the first disconnected PDU, then plug it to the second

      disconnected PDU to check if the problem caused by the first disconnected PDU.

3. GUI shows | the whole group of PDU(s) | **disconnected**

Step 1 - Cable disconnected, loose or defective ?

      Check the Cat. 5/6 cable connection to PDUs and network devices. Make sure the

      connectors are firmly attached. And check if any defects on your cable or not. If yes,

      replace a new one.

Step 2 - IP dongle failed ?

i.   Check if the network setting of the IP dongle is correct or not. If duplicated IP address is in a

      network, it may cause such problem.

ii.   Disconnect the IP dongle from the network and try to direct connect the Cat. 5/6 cable from

      IP dongle < LAN > port to a computer network port and use IP Setup utilities to check if the

      IP dongle can be found or not. If it cannot be found, the IP dongle may be failed.

Step 3 - 1st level PDU failed ?

      Move the IP dongle from 1st level PDU to 2nd level PDU to check if the problem caused by

      1st level PDU's failure or not. If yes, replace 1st level PDU.

< 8.2 > Replacement, Removal or addition for PDU & IP dongle

1.   How to replace the ⌈ **failed IP dongle** ⌉ **?**

Step 1 - Prepare a new IP dongle.

Step 2 - Disable alarm email in **<Alarm>** page.

Step 3 - Replace the failed IP dongle with the new one on 1st level PDU.

Step 4 - Configure the setting of the new IP dongle same as the old one.
(Please refer to P.5 for IP dongle configuration)

Step 5 - Click **Start Connection** in **<Status>** page for the relevant IP dongle.

Step 6 - Enable alarm email in **<Alarm>** page again.

2.   How to replace the ⌈ **failed 1st level PDU** ⌉ **with a new one ?**

Step 1 - Prepare a new PDU and set the PDU to 1st level.
(Please refer to P.1 for the PDU level setting)

Step 2 - Disable alarm email in **<Alarm>** page.

Step 3 - Power off & unplug the device(s) which connected to the PDU.

Step 4 - Power off & remove the failed 1st level PDU from connection.

Step 5 - Install the IP dongle on the new 1st level PDU.

Step 6 - Install and connect the new PDU.

Step 7 - Power on the new PDU and connect to the device(s).

Step 8 - Click Start Connection in **<Status>** page for the relevant IP dongle.

Step 9 - Configure the new PDU in **<Details>** and **<TH Sensor>** page such as **Alarm Amp** , **Name**,
Location…

Step 10 - Enable alarm email in **<Alarm>** page.

3.   How to replace a ⌈ **failed certain level PDU** ⌉ **with a new one ?**

Step 1 - Prepare a new PDU and set the PDU level accordingly.
(Please refer to P.1 for the PDU level setting)

Step 2 - Prepare an appropriate length Cat. 5/6 cable.

Step 3 - Click Set maintenance in **<Details>** page for the failed PDU.

Step 4 - Use the Cat. 5/6 cable to bridge over the failed PDU which will be replaced to minimize log/
data loss.

Step 5 - Power off & unplug the device(s) which connected to the failed PDU.

Step 6 - Power off & remove the failed PDU from connection.

Step 7 - Install the new PDU, cancel the cable-bridging and reconnect the
PDU to the last and next one.

Step 8 - Power on the new PDU and connect to the device(s).

Step 9 - Click Remove maintenance in **<Details>** page for the new PDU.

Step 10 - Configure the new PDU in **<Details>** and **<TH Sensor>** page such as **Alarm Amp**, **Name**,
Location…

⚠ Ignore step 2 & 4 if the failed PDU is in the last level.

< 8.2 > Replacement, Removal or addition for PDU & IP dongle

4. How to move out a PDU (without a replacement) ?

    Step 1 - Prepare an appropriate length Cat. 5/6 cable.

    Step 2 - Click **Disable Monitoring in <Details>** page to stop monitoring the removed PDU.

    Step 3 - Use the Cat. 5/6 cable to bridge over the removed PDU to minimize log/data loss.

    Step 4 - Power off & unplug the device(s) which connected to the PDU.

    Step 5 - Power off & remove the PDU from connection.

    Step 6 - Enable alarm email in **<Alarm>** page.

⚠️ If the removed PDU NOT in the last level, you MUST reconfigure and reset the level for
the affected PDU(s) which next to the removed PDU.

⚠️ Ignore step 1 & 3 if the removed PDU is in the last level.

5. How to add an extra PDU to an existing PDU group ?

    Step 1 - Prepare a PDU and set the PDU level accordingly.

        (Please refer to P.1 for the PDU level setting)

    Step 2 - Prepare an appropriate length Cat. 5/6 cable.

    Step 3 - Click Set maintenance in **<Details>** page for the affected PDU(s) which next to the
added PDU.

    Step 4 - Install and connect the new PDU.

    Step 5 - Power on the new PDU.

    Step 6 - Reconfigure & reset the level for the affected PDU(s) which next to the added PDU.

    Step 7 - Click Remove maintenance in **<Details>** page for the affected PDU(s).

    Step 8 - Click **Search** in **<Status>** page to search the new installed PDU.

    Step 9 - Configure the new PDU in **<Details>** and **<TH Sensor>** page such as
        Alarm Amp , **Name**, **Location**…

    Step 10 - Enable alarm email in **<Alarm>** page.

⚠️ Ignored step 3, 6 & 7 if the added PDU is in the last level