Infra Power®

PDU Inspired by Your Data Center

User Manual

IPM-03 PDU management software

W kWh Monitored PDU
WS kWh Switched PDU

Wi Outlet kWh Monitored PDU
WSi Outlet kWh Switched PDU

Designed and manufactured by Austin Hughes

FC   CE   RoHS   REACH

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 40⁰ Celsius (104⁰ 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.
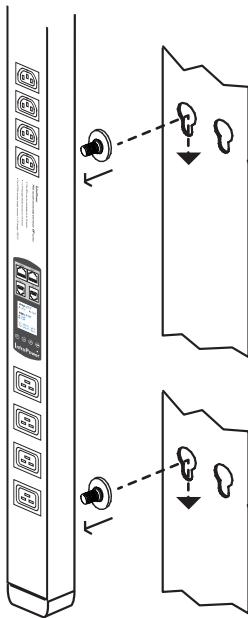
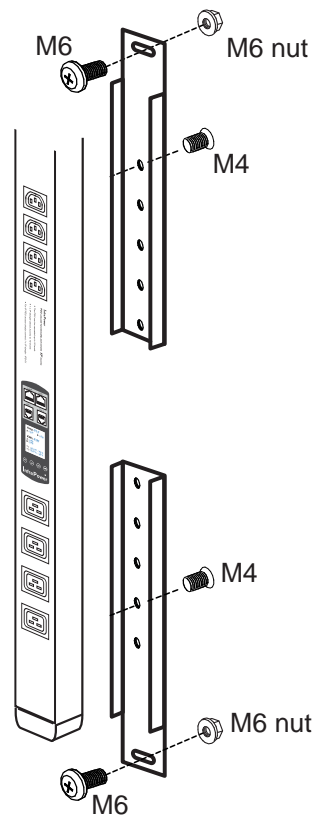# Package contents

(1) Vertical W / Wi / WS / WSi PDU x 1

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

M4   +   PEG   2 - 3 sets

- **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 / Wi / WS / WSi 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. Hardware

< 1.1 >   W / Wi / WS / WSi PDU Key Features

InfraPower®	kWh PDU		Outlet kWh PDU	
	Monitored	**Switched**	**Monitored**	**Switched**
	W	**WS**	**Wi**	**WSi**
Outlet Measurement			✔	✔
Circuit kWh Measurment	✔	✔	✔	✔
Temp-Humid Sensor port x 2	✔	✔	✔	✔
16 Levels in Single Daisy Chain	✔	✔	✔	✔
One IP Access 16 PDU Levels	✔	✔	✔	✔
SNMP Capability via IP Dongle	✔	✔	✔	✔
Hot-pluggable Meter w/ 1.8" Color LCD	✔	✔	✔	✔
Outlet Switch ON / OFF		✔		✔
Local kWh & Amp Meter	✔	✔	✔	✔
Vertical & Horizontal PDUs	✔	✔	✔	✔
Tool-less Mounting for Vertical PDU	✔	✔	✔	✔
Management Software Editions (Free)	IPM-03 IPM-02 PPS-02-S (via IPD-02S)	IPM-03 IPM-02 PPS-02-S (via IPD-02S)	IPM-03 - PPS-02-S (via IPD-02S)	IPM-03 - PPS-02-S (via IPD-02S)

< 1.2 > 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
3 1.8" color LCD display	**Main** **Amp:** 21.0 A: 8.2 B: 12.8 **kWh:** 4.62 **Volt:** 220.0 T1: 25.1 ℃ T2: 25.8 ℃
4 Menu button	⌃ ⌄ Ⓜ ←
6 Buzzer	**5** Reset button
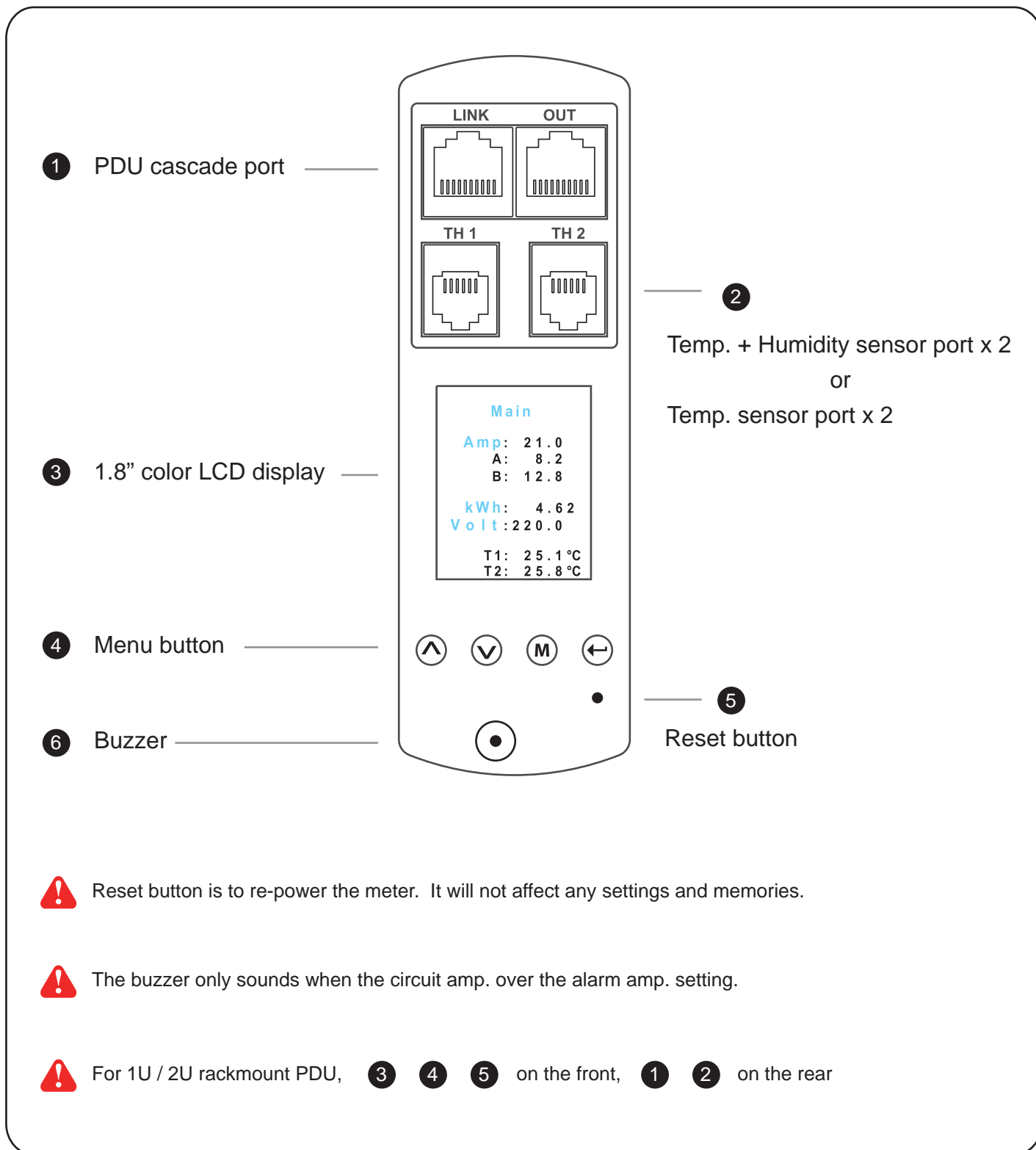
⚠ Reset button is to re-power the meter. It will not affect any settings and memories.

⚠ The buzzer only sounds when the circuit amp. over the alarm amp. setting.

⚠ For 1U / 2U rackmount PDU, **3** **4** **5** on the front, **1** **2** on the rear
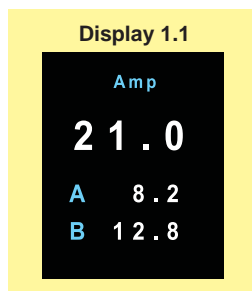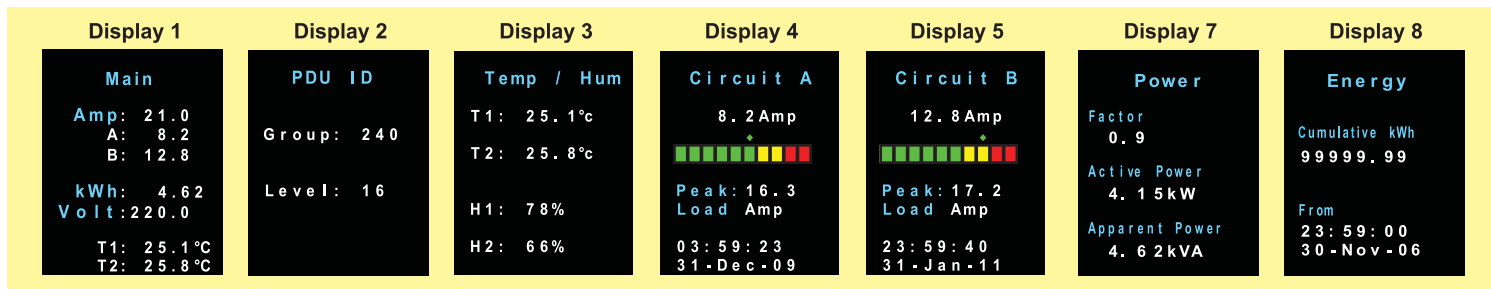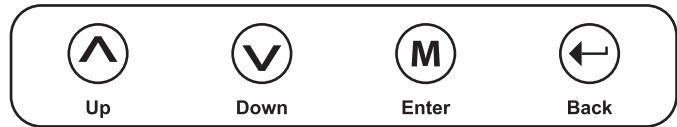
< 1.2 > W Meter Display & Setting

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

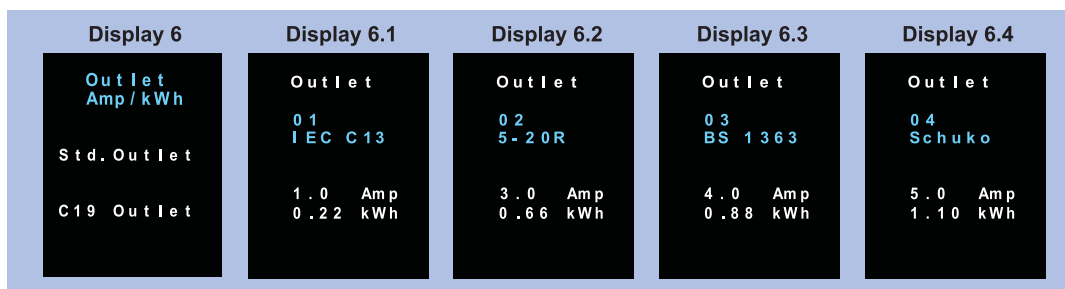W Meter provides the buttons to select the displays

∧ Up	∨ Down	M Enter	← Back

Display 1

```
      Main
Amp:  21.0
  A:    8.2
  B:   12.8
kWh:   4.62
Volt:220.0
  T1: 25.1°C
  T2: 25.8°C
```

Display 2

```
    PDU  ID

Group:  240

Level:   16
```

Display 3

```
 Temp / Hum
T1:  25.1°c
T2:  25.8°c

H1:  78%
H2:  66%
```

Display 4

```
  Circuit A
    8.2Amp
▮▮▮▮▮▮▮▮▮▮
Peak:16.3
Load  Amp
03:59:23
31-Dec-09
```

Display 5

```
  Circuit B
   12.8Amp
▮▮▮▮▮▮▮▮▮▮
Peak:17.2
Load  Amp
23:59:40
31-Jan-11
```

Display 7

```
    Power
Factor
0.9
Active Power
4.15kW
Apparent Power
4.62kVA
```

Display 8

```
    Energy

Cumulative kWh
99999.99

From
23:59:00
30-Nov-06
```

Display 1.1

```
    Amp

 21.0

A    8.2
B   12.8
```

Press (M) to change °C / °F

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

```
  Outlet
 Amp/kWh

Std.Outlet

C19 Outlet
```

Display 6.1

```
Outlet

01
IEC C13

1.0   Amp
0.22 kWh
```

Display 6.2

```
Outlet

02
5-20R

3.0   Amp
0.66 kWh
```

Display 6.3

```
Outlet

03
BS 1363

4.0   Amp
0.88 kWh
```

Display 6.4

```
Outlet

04
Schuko

5.0   Amp
1.10 kWh
```
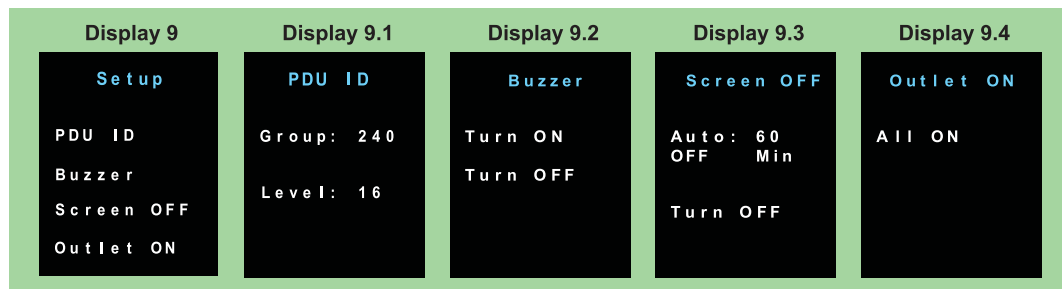
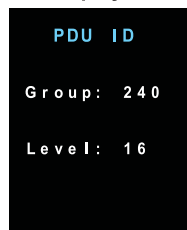## < 1.2 >   W Meter Display & Setting

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.
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.
The user can press any button to stop the buzzer sound.

Display 9.3

Screen OFF

Auto: 60
OFF   Min
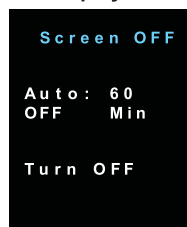
Turn OFF

Screen OFF :

All PDUs are shipped with the metter LCD in always ON status.
W meter allows the user to turn off the meter LCD by time setting (1 - 60 mins, 0 = always 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 kWh Switched / WSi outlet kWh Switched PDU models only. All Switched PDUs are shipped in outlet ON status.

< 1.3 > 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-S

- 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 |
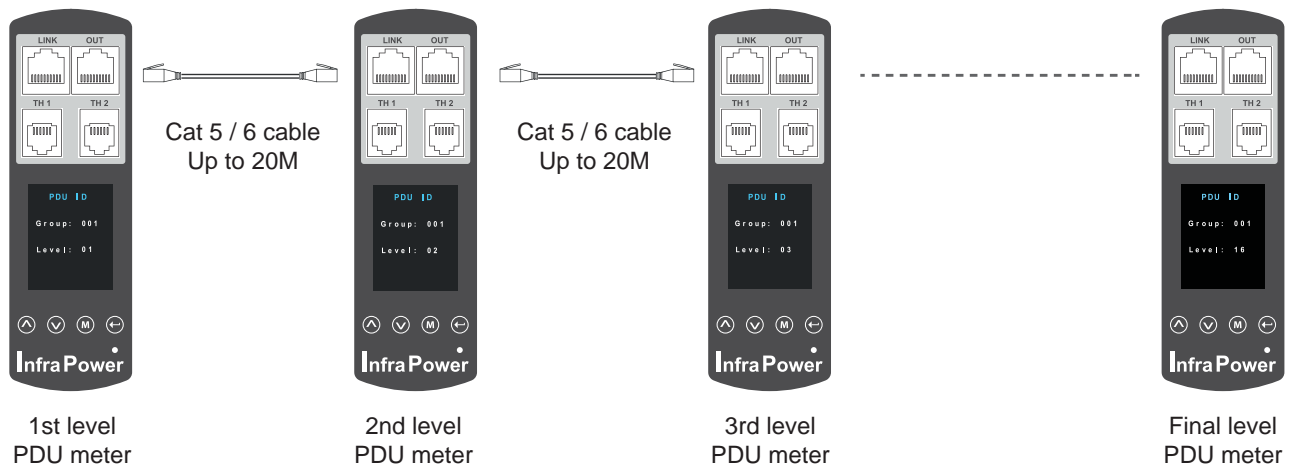
For **PDU level setting**, please refer to previous page.

< 1.4 > Temp. / Humidity Sensor Connection & Specification

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)
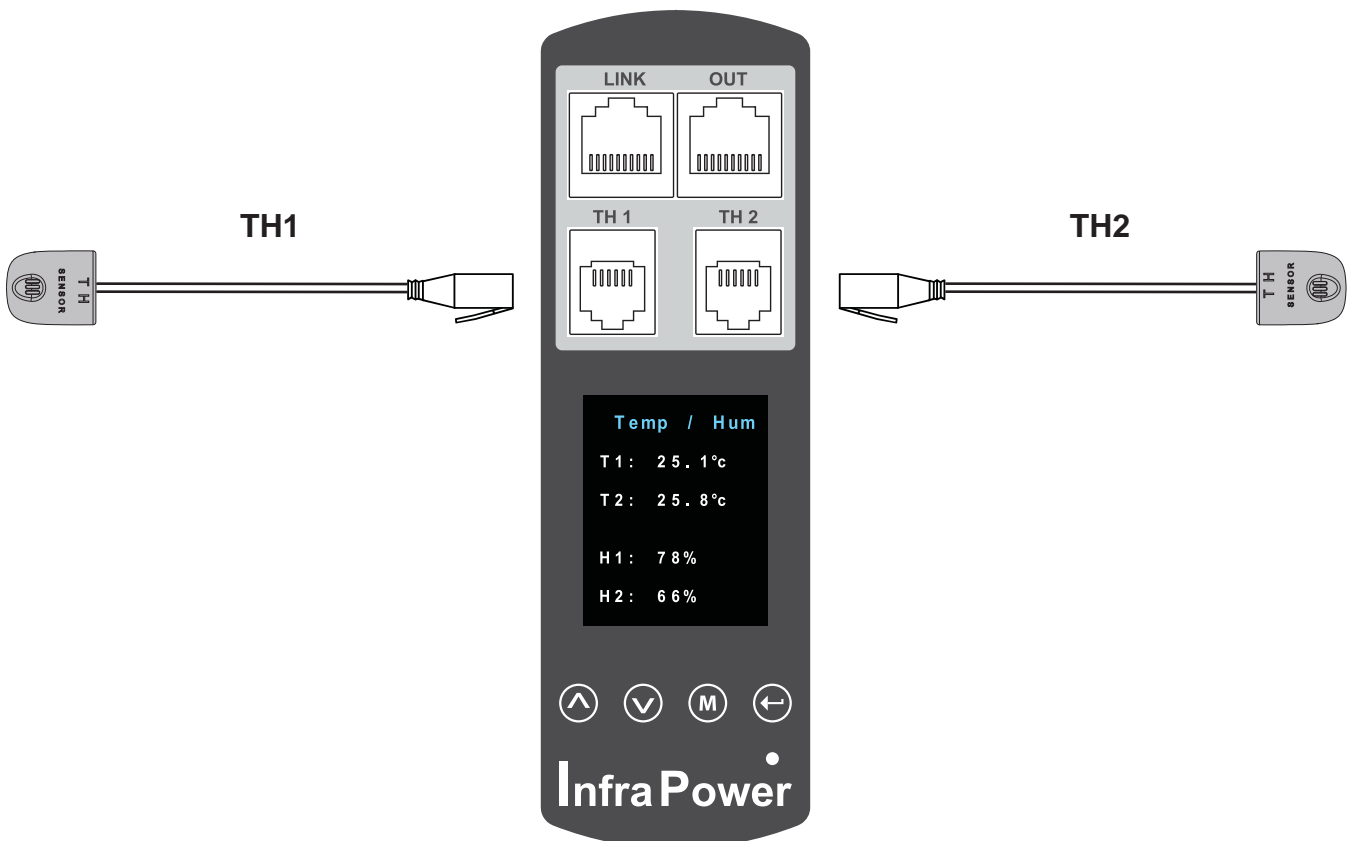
< 1.4 >   Temp. / Humidity Sensor Connection & Specification

		Temp. & Humid. Sensor	Temp. Sensor
Part no.		IG - TH01	IG - T01
Temperature Sensitivity	Range	0 to 80°C (32 to 176°F)	
	Accuracy	±1.0°C typical (±2°F)	±1.5°C (±3°F)
	Resolution	0.1°C (0.2°F)	
	Response Time	5 to 30 sec	
Relative Humidity Sensitivity	Range	0 to 100% R.H	/
	Accuracy	0 to 100, ±8.0% R.H 20 to 80, ±4.5% R.H.	/
	Resolution	1% R.H.	/
	Response Time	8 sec	/
Power Requirement	Voltage	12VDC, powered by sensor port	
	Current Consumption	20mA	
	Power consumption	0.24 Watt	
	Power on indicator	Red LED	Green LED
Housing	Chassis & Cover	plastic	
	Color	Dark gray	
	Installation	Magnetic base for unrestricted installation	
Cable	Cable Length	TH sensor w/ 2m cable (standard) TH sensor w/ 4m cable (option)	T sensor w/ 2m cable (standard) T sensor w/ 4m cable (option)
	Cable Specification	4-wired 3.5mm to RJ11	
	Cable Color	Black	Beige
Environmental	Operating	0 to 80°C Degree	
	Storage	-5 to 80°C Degree	
	Humidity	0~100%, non-condensing	
Dimensions	Product	30L x 25Wx 18H mm	
Weight	Net	10g	
Compatibility	InfraPower	W / WS / Wi / WSi series PDU	
	InfraSolution	X-2000 series	
	InfraGuard	Cabinet sensor system	
Safety Regulatory		FCC & CE certified	
Environmental		RoHS2 & REACH compliant	

< 1.5 > 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.
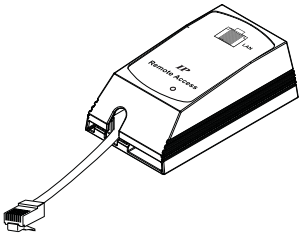
IP dongle for vertical PDU

Model :
IPD-02-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)

1st level
PDU meter

2nd level
PDU meter

3rd level
PDU meter
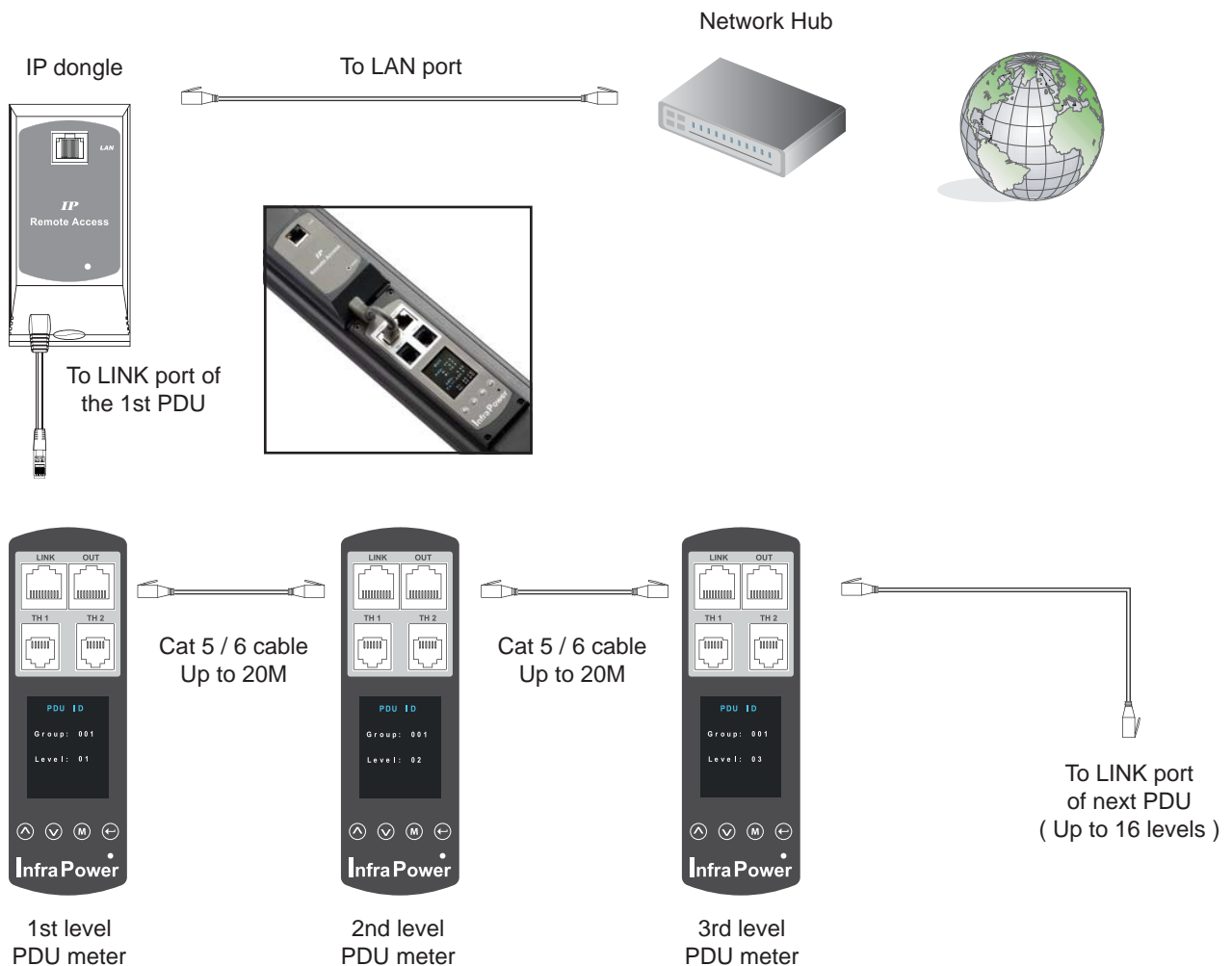
< 1.5 >   IP Dongle Installation & Connection
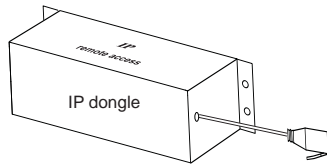
IP dongle for rackmount PDU

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

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

Rear side of rackmount PDU

To LAN port
of IP dongle

IP dongle

To LINK port
of the 1st PDU

Network Hub
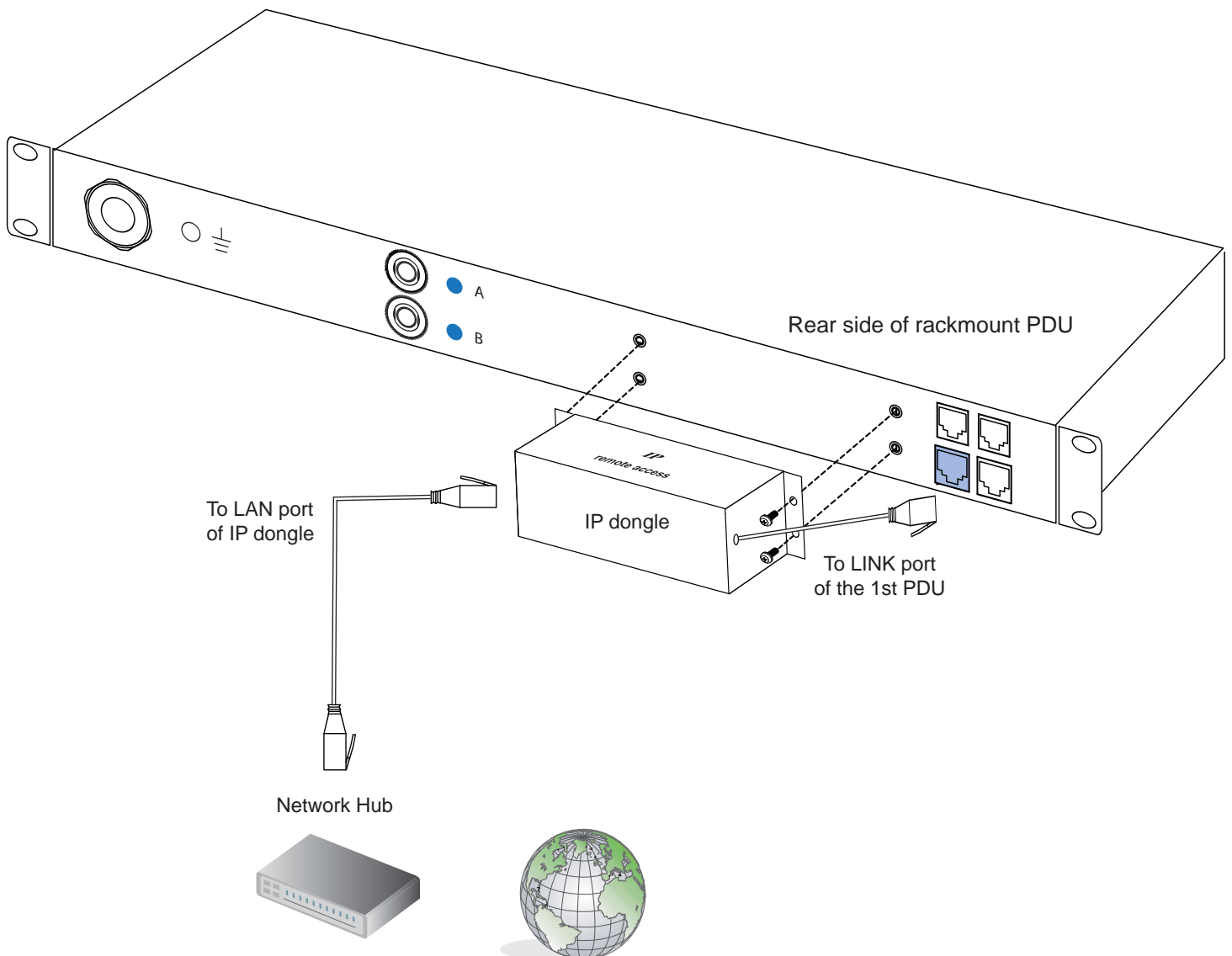
< 1.6 >   Easy Change on PDU Power Feed Position

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 inversion buttons and an alternative membrane.
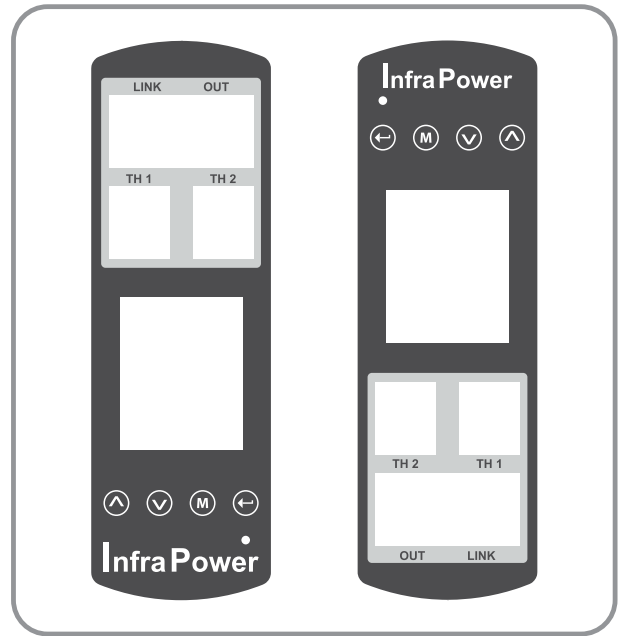
Meter
Membrane **A**

Meter
Membrane **B**

1 Turn the PDU upside-down

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

Membrane **A**

3 Replace the meter membrane

Membrane **A**

4 Completed
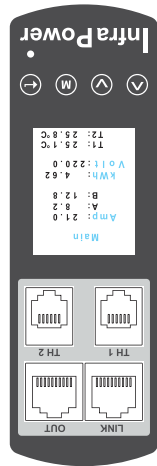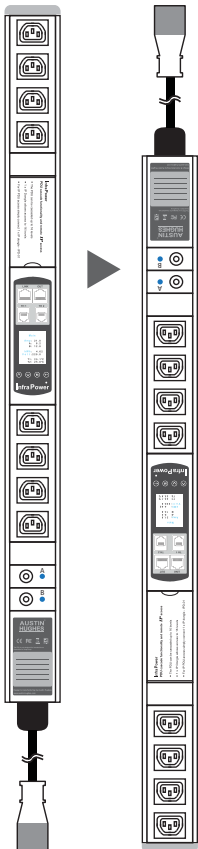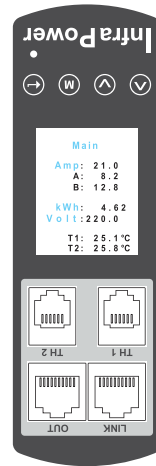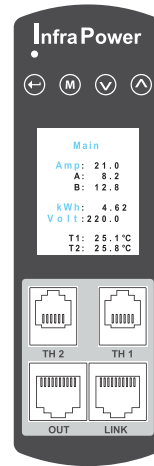
Membrane **B**

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

Part II. Software

< 2.1 > Key Features

InfraPower Manger IPM-03 is a free PDU mangement software to remote & monitor up to 30 IP dongle group (max. 16 PDU levels in each IP dongle group), total 480 PDUs

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

InfraPower IPM-03

Features		
Capacity	IP Dongle Group (Just 1 for 16 PDU levels)	30
	PDU number	480
	Concurrent Users	5
Enhanced Features	Outlet Level kWh & Amp Measurement	✔
	Outlet Scheduling	✔
	Energy Consumption (kWh) Monitoring	✔
	Apparent Power (kVA) Monitoring	✔
	Power Factor Measurement	✔
	Circuit Breaker Monitoring	✔
	SNMP Capability via IP Dongle	✔
Basic Features	Aggregate Current (Amp) Monitoring	✔
	Individual Outlet Switch ON/OFF	✔
	Temp-Humid Monitoring	✔
	Alarm Threhold Setting	✔
	Rising Alert Threshold Setting	✔
	Remote Access via Web	✔
	Graphic User Interface	✔
	Reporting	✔
PDU Series Support	WSi / Wi (Outlet Measurement)	✔
	WS / W	✔

< 2.2 > IP Dongle Configuration

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

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

Step 2. Double Click the | IPDongleSetup.msi | and follow the instruction to complete the installation

Step 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**
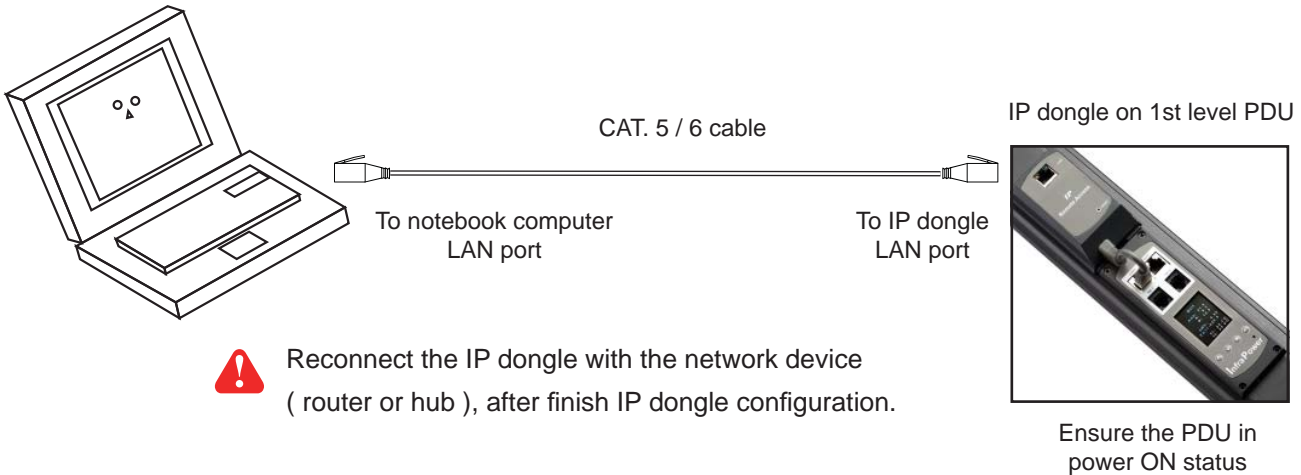
CAT. 5 / 6 cable

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.20

Step 4. Click **" Scan "** to search the connected IP dongle

Step 5. Enter device name in " **Name** " (min. 4 char. / max. 16 char.). Default is " **Name** "

Step 6. Enter device location in " **Location** " (min. 4 char. / max. 16 char.). Default is " **Rack_001** "

Step 7. Enter password in " **Password** " for authentication (min. 8 char. / max. 16 char.) Default is **" 00000000 "**

Step 8. Enter new password in " **New password** " (min. 8 char. / max. 16 char.)

Step 9. Re-enter new password in " **Confirm new password** "

Step 10. Change the desired " **IP address** " / " **Subnet mask** " / " **Gateway** ", then Click **" Save "** to confirm the changes
The default IP setting is as below:
IP address :   192.168.0.1
Subnet mask :   255.255.255.0
Gateway :   192.168.0.254

< 2.3 >   Hardware Requirements of the Management PC

Please prepare a management PC with the hardware requirements as below for
InfraPower Manager - IPM-03

Recommended hardware requirements :
- Processor: Dual Core 2GHz or above
- Memory: 2GB RAM
- Available Disk Space: 500GB
- Drive: DVD ROM drive
- Display: 1440 x 900 or higher resolution monitor

⚠

- The default service port of web server is 80.

- A dedicated PC to run InfraPower Manager - IPM-03 is recommended.

- Make sure the management PC is POWER ON & IPM-03 is under operation.

  Otherwise, daily data backup will NOT be proceeded.

< 2.4 >   Supported OS Platform & Language

InfraPower Manager – IPM-03 supports the OS platforms & languages as below:
- 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-03 Installation and execution.**

User can select the following languages under Control Panel > Region and Language in English Edition OS:

1) Arabic (Saudi Arabia)

2) Chinese (Traditional, Hong Kong S.A.R.)

3) Dutch (Netherlands)

4) English (Australia)

5) English (United Kingdom)

6) English (United States)

7) French (France)

8) German (Germany)

9) German (Switzerland)

10) Italian (Italy)

11) Japanese (Japan)

12) Korean (Korea)

13) Norwegian (Norway)

14) Portuguese (Portugal)

15) Russian (Russia)

16) Spanish (Spain)

17) Turkish (Turkey)
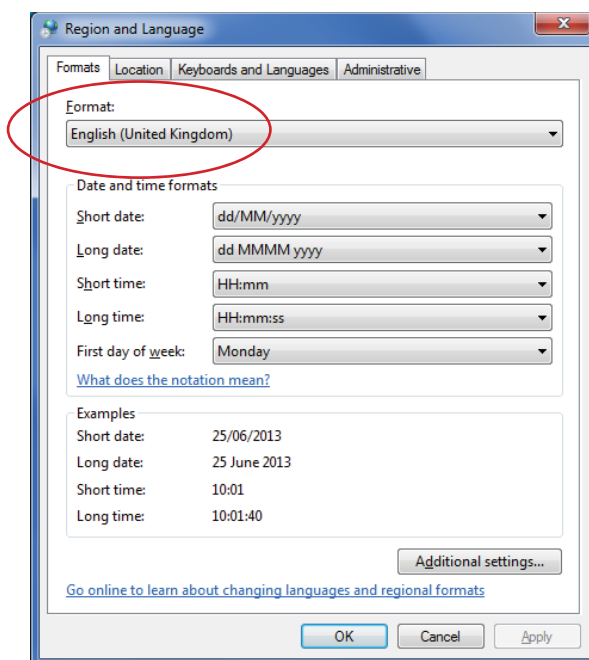
< 2.5 > Software Download

InfraPower Manager, IPM-03, is a **PDU** management software to enhance the features and benefits of the W kWh Monitored / Wi Outlet kWh Monitored / WS kWh Switched / WSi Outlet kWh Switched PDUs by providing a centralized and remote management platform, and total reporting with detailed logs & event occurrences.

InfraPower Manager IPM-03 can support max. 5 concurrent login users and manage multi- IP dongles max. 30, hence the concurrent login users can access & remote PDUs max. 480 (30 IP dongles x 16 level PDUs).

Software download

Please download the InfraPower Manager - IPM-03 to the management PC
from the link **http://www.austin-hughes.com/support/software/infrapower/IPM-03.msi**

Double click the | IPM-03.msi | and follow the instruction to complete the installation.

IPM-03.msi

click " **Next** "

click " **Install** "

click " **Finish** "
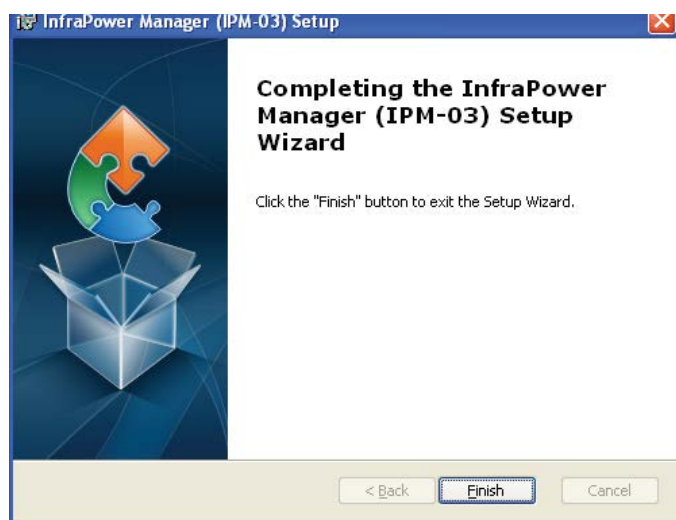
· · · · · · · · · · · · · · · · · · · **Complete**

< 2.6 > First Time Start-up Setting

Step 1. Double Click the ⬚InfraPower Manager - IPM-03⬚

and follow the instruction to complete start-up setting.

IPM-03
InfraPower Manager

⚠️ **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-03⬚ , and then select **Properties**.
- Click the **Compatibility** tab.
- Tick the box **Run this program as an administrator**, and then click OK.
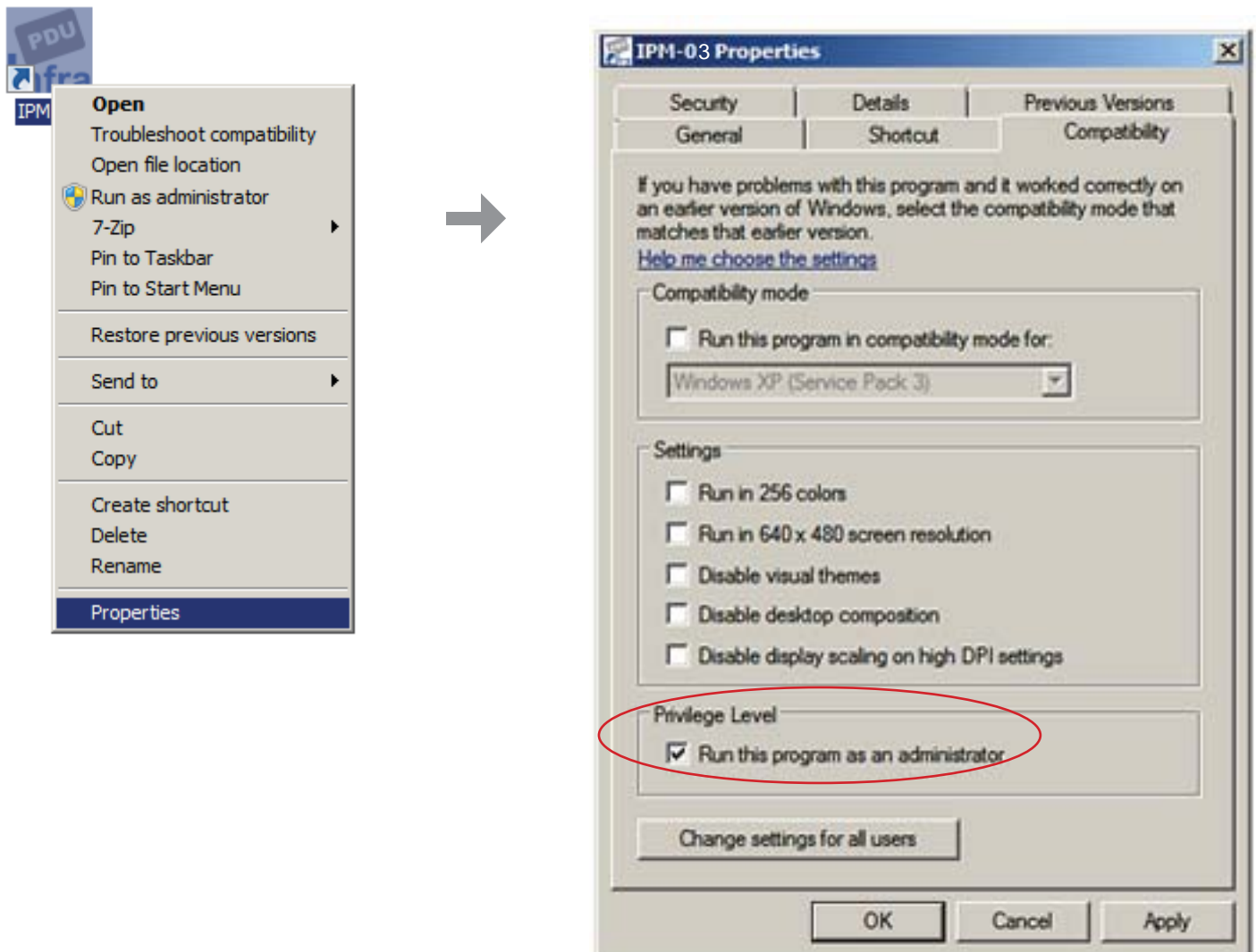
< 2.6 >   First Time Start-up Setting

Step 2. Click " **Next** " in " **InfraPower Manager start-up setting** " box

Step 3. Input the fields of the following window & Click " **Install** "

If the port of web server is not 80, please input the appropriate no. here and follow the instruction in " Change port no. of web server" next page to make the change effective.

⚠️ PostgreSQL password can be changed by user.
The password **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 !, $, #, %)

• • • • • • • • • • • • • • • • • • • **Complete**

< 2.6 >   First Time Start-up Setting
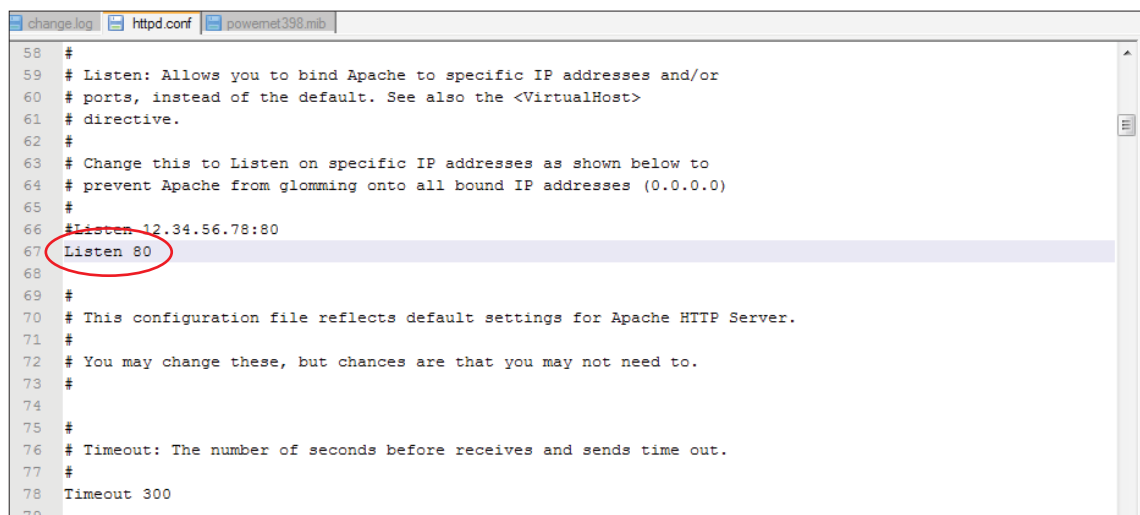
< 2.7 > Change Port no. of Web Server

⚠️ **Change port no. of web server.**

If users want to use another port no. instead of 80, please take the following steps after

InfraPower Manager IPM-03 " **First time start-up setting** " is completed.

Step 1. Go to the path of web server being installed. (Default: <u>C:\AppServ\Apache2.2\conf\</u>)

Step 2. Open " **httpd.conf** " & change " **Listen 80** " to " **Listen xx** " where xx means the port users want to use save the change

```
 change.log    httpd.conf    powernet398.mib
58  #
59  # Listen: Allows you to bind Apache to specific IP addresses and/or
60  # ports, instead of the default. See also the <VirtualHost>
61  # directive.
62  #
63  # Change this to Listen on specific IP addresses as shown below to
64  # prevent Apache from glomming onto all bound IP addresses (0.0.0.0)
65  #
66  #Listen 12.34.56.78:80
67  Listen 80
68
69  #
70  # This configuration file reflects default settings for Apache HTTP Server.
71  #
72  # You may change these, but chances are that you may not need to.
73  #
74
75  #
76  # Timeout: The number of seconds before receives and sends time out.
77  #
78  Timeout 300
79
```

Step 3. Restart Apache services.
Go to <u>Control Panel</u> > <u>Administrative Tools</u> > <u>Services</u> > <u>Apache2.2</u> & Click " **Restart** "

· · · · · · · · · · · · · · · · · · · **Complete**

Part III.   System Setup & Remote Access

< 3.1 >   System setup

Users can follow below step 1 - 3 to access the management PC and InfraPower Manager IPM-03

Step 1. Open Internet Explorer (I.E.), version 8.0 or above

Step 2. Enter the URL of management PC into the address bar

⚠️ (If fail to access, please ask MIS to check if the port for web server is enable.

Default port : 80)

e.g. http://192.168.0.1/IPM-03/

Step 3. Enter " **User name** " . Default is " **admin** "

Enter " **Password** " . Default is " **00000000** "
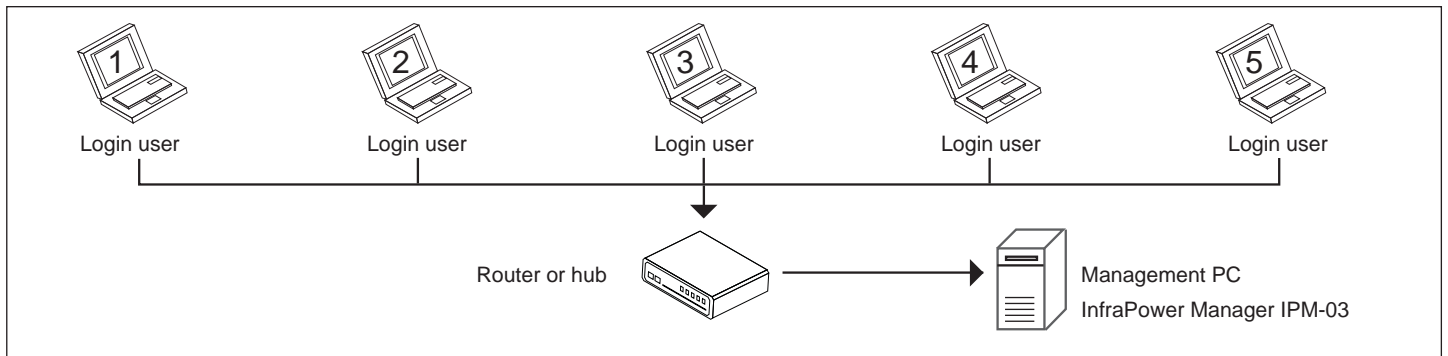
Then users should go to < **User** >, < **Setup** >, < **Alarm** >, < **General** > & < **Backup** > for initial system setup

⚠️ Only Administrator is authorised to access < **User** >, < **Setup** >, < **Alarm** >, < **General** > & < **Backup** >

< 3.1 > System setup

In < **User** > page, administrator can create 4 more operators.

Step 1. Tick " **Operator 1:** "

Step 2. Input " **User name** " & " **User login password** "

Step 3. Input user login password in " **Confirm password** " again

Step 4. Repeat Step 1 to 3 for other operators if necessary

Step 5. Click " **Apply** " to finish the user setup

< 3.1 >   System setup

In **< Setup >** page, administrator can activate max. 30 IP dongle groups & set the group command password

Step 1. " Activate " IP dongle group 01

Step 2. Input **" IP address "** & **" password "** of the IP dongle

Step 3. " **Enable** " Command password

Step 4. Input " **New command password** ". Default is " **00000000** "

Step 5. Input new command password in " **Confirm new password** " again.

Step 6. Click " **Apply** " to finish the IP dongle group setup

Step 7. Repeat step 1 to 6 for other IP dongle groups if necessary

< 3.1 > System setup

In < **Alarm** > , administrator can configure the alarm email server & max. 5 email recipients to receive alarm notifications from the software

Step 1. " **Enable** " alarm email

Step 2. Input " **SMTP server** " and " **SMTP port** "

Step 3. Input " **User email** "

Step 4. " **Enable** " or " **Disable** " the " **SMTP authentication** "

Step 5. Input " **User name** " and " **Password** "

Step 6. Select the " **SMTP secure** " (None / SSL / TLS)

Step 7. Input the " **Alarm interval** "

Step 8. Input the alarm recipient email account in " **Alarm mail recipient 01** "

Step 9. Repeat step 8 for other alarm recipients if necessary

Step 10. Click " **Apply** " to finish the alarm email server setting

---

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		
User email :	example@email.com		
SMTP authentication :	☑ Enable	☐ Disable	
User name :	example@email.com		
Password :	••••••••••••••••		
SMTP secure :	SSL ▾		
Alarm interval :	60	(Min. 10, Max. 60 minutes)	

Alarm email to

Alarm mail recipient 01 :	user01@email.com ✕
Alarm mail recipient 02 :	
Alarm mail recipient 03 :	
Alarm mail recipient 04 :	
Alarm mail recipient 05 :	

[Apply] [Cancel]

< 3.1 > System setup

In < **General** > , administrator can change the " **Refresh rate** " , " **Scan rate** " & " **Temperature unit** " across all IP dongle groups

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]

In < **Backup** > , administrator can " **Enable** " or " **Disable** " the daily data backup. When " **Enable** ", the backup path can be changed

Data backup setting

Daily backup :　☑ Enable　　☐ Disable

Backup to :　`C:\Program Files\InfraPower Manager (IPM-03)\`

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]

< 3.1 > System setup

< Sys log > provides past 2000 event records of **< 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

< 3.2 >   Remote Access

After administrator completes < System Setup >, up to 4 additional users can access the management PC remotely. User can follow the steps below to access management PC &
| InfraPower Manager IPM-03 |

Step 1. Add the port of web server in the firewall settings of the management PC.
- Open " **Control Panel** "
- Select " **Windows Firewall** "
- Select " **Advanced settings** "
- Right Click " **Inbound Rules** " & select " **New Rule…** "
- Select " **Port** " & Click " **Next>** "
- Select " **TCP** " then " **All local port**s " & Click " **Next>** "
- Select " **Allow the connection** " & Click " **Next>** "
- Tick all three options & Click " **Next>** "
- Input the " **Name** " & " **Description** " of the port & Click " **Finish** "

Step 2. Open the web browser of remote client PC

Step 3. Input the URL of | InfraPower Manager IPM-03 | in the address bar
e.g. http://192.168.0.1/IPM-03/

⚠️ If the port no. of web server is not 80, please enter the appropriate port no. follow the IP address e.g. http://192.168.0.1:81/IPM-03/

Step 4. System authentication page pops up automatically.
Input " **User name** ", " **Password** " & Click " **Login** "

System authentication
User name   admin
Password   • • • • • • • •

[Login]   [Cancel]

Part IV.   Software Usage & Operation

< Status > provides

- **< Search >** function to search new installed PDUs in each IP dongle group. The real time clock of the PDUs will be synchronized from the management PC during searching process (If search fails, please refer to P.41 for IP dongle firmware upgrade)
- Scan function to monitor the PDUs' status 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
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		

PDU status

IP dongle name :   default_ipd_name
IP address :   192.168.1.87

Level	Name	Location	Circuit A Amp Max. / Load / Alarm / R. alert / L. alert	kWh	Circuit B Amp Max. / Load / Alarm / R. alert / L. alert	kWh	Total Amp Load	kWh	TH 1 °C	%	TH 2 °C	%
01	WSi24-32A	Server_Rack_001	16 / 0.0 / 13.0 / 0.0 / 0.0	0.28	16 / 0.0 / 13.0 / 0.0 / 0.0	0.81	0.0	1.09	24.8	43.3	-	-
02	WSi24-32A	Server_Rack_002	16 / 0.0 / 13.0 / 0.0 / 0.0	0.01	16 / 0.0 / 13.0 / 0.0 / 0.0	0.04	0.0	0.05	-	-	-	-
03	WSi24-32A	Server_Rack_003	16 / 0.0 / 13.0 / 0.0 / 0.0	0.04	16 / 0.0 / 13.0 / 0.0 / 0.0	0.02	0.0	0.06	-	-	-	-
04	WSi24-32A	Server_Rack_004	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	0.0	0.00	-	-	-	-
05	Wi16-32A	Server_Rack_005	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	16 / 0.0 / 13.0 / 0.0 / 0.0	0.45	0.0	0.45	-	-	-	-
06	Wi16-32A	Server_Rack_006	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	0.0	0.00	-	-	-	-
07	Wi16-32A	Server_Rack_007	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	0.0	0.00	-	-	-	-
08	Wi16-32A	Server_Rack_008	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	0.0	0.00	-	-	-	-
09	WSi20-32A	Server_Rack_009	16 / 0.0 / 13.0 / 0.0 / 0.0	0.28	16 / 0.0 / 13.0 / 0.0 / 0.0	0.81	0.0	1.09	24.9	43.3	-	-
10	WSi20-32A	Server_Rack_010	16 / 0.0 / 13.0 / 0.0 / 0.0	0.01	16 / 0.0 / 13.0 / 0.0 / 0.0	0.04	0.0	0.05	-	-	-	-
11	WSi20-32A	Server_Rack_011	16 / 0.0 / 13.0 / 0.0 / 0.0	0.04	16 / 0.0 / 13.0 / 0.0 / 0.0	0.02	0.0	0.06	-	-	-	-
12	WSi20-32A	Server_Rack_012	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	0.0	0.00	-	-	-	-
13	Wi20-32A	Server_Rack_013	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	16 / 0.0 / 13.0 / 0.0 / 0.0	0.45	0.0	0.45	-	-	-	-
14	Wi20-32A	Server_Rack_014	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	0.0	0.00	-	-	-	-
15	Wi20-32A	Server_Rack_015	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	0.0	0.00	-	-	-	-
16	Wi20-32A	Server_Rack_016	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	16 / 0.0 / 13.0 / 0.0 / 0.0	0.00	0.0	0.00	-	-	-	-

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

[Search]   Search new installed PDUs

* Press F11 to enlarge or diminish the screen

Part IV.   Software Usage & Operation

In < **Details** >,

- Change " **Name** " and " **Location** " of PDU & Click " **Apply** "
- Change " **Alarm amp.** " , " **Rising alert amp.** " & " **Low alert amp.** " of PDU's circuits
  & Click " **Apply** "
- Click " **Reset** " to reset peak amp. or kWh of PDU's circuits
- Click " **ON** / **OFF** " to swich ON / OFF outlet
  (WS kWh Switched and WSi Outlet kWh Switched PDU only)
- View On / Off status of each PDU's outlet
- View aggregated current on the PDU
- View lastest loading & energy consumption of each PDU's outlet
  (Wi kWh Monitored & WSi Outlet kWh Switched PDU only)

Part IV. Software Usage & Operation

In < **Outlet setting** >,

- Change PDU's outlet name
- Change " **Power up sequence delay** " of PDU's outlet
  (WS kWh switched and WSi Outlet kWh Switched PDU only)
- Change " **Alarm amp.** " , " **Rising alert amp.** " & " **Low alert amp.** " of PDU's outlet
  (Wi kWh Monitored & WSi Outlet kWh Switched PDU only)

⚠ Click " **Apply** " to finish the above settings

- Click " **Reset** " to reset peak amp. or kWh of PDU's outlet
  (Wi kWh Monitored & WSi Outlet kWh Switched PDU only)

Part IV. Software Usage & Operation

In < **TH status** >,

- View status, location, lastest reading & alarm setting of Temp. & Humid sensors connected to each PDU

⚠ 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 |
| | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | |

TH status

IP dongle name :   default_ipd_name

IP address :   192.168.1.87

| | | | | TH 1 | | | TH 2 | | |
PDU				°C	%			°C	%
Level	Name	Setting	Location	Temp. / Alarm / R. alert	Humid./ Alarm / R. alert	Location	Temp. / Alarm / R. alert	Humid./ Alarm / R. alert
01	WSi24-32A	📋	THSensor_1_loc.	25.0 / 35.0 / 30.0	43.3 / 65.0 / 60.0	-	- / - / -	- / - / -
02	WSi24-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
03	WSi24-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
04	WSi24-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
05	Wi16-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
06	Wi16-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
07	Wi16-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
08	Wi16-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
09	WSi20-32A	📋	THSensor_1_loc.	25.0 / 35.0 / 30.0	43.3 / 65.0 / 60.0	-	- / - / -	- / - / -
10	WSi20-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
11	WSi20-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
12	WSi20-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
13	Wi20-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
14	Wi20-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
15	Wi20-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -
16	Wi20-32A	📋	-	- / - / -	- / - / -	-	- / - / -	- / - / -

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

[Search]   Search new installed PDUs

* Press F11 to enlarge or diminish the screen

Part IV. Software Usage & Operation

In < **TH setting** >,

- " **Activate** " or " **Deactivate** " Temp. & Humid sensors
- Change " **Location** " , " **Rising alert Setting** " & "**Alarm Setting** " of Temp. & Humid sensors
- Click " **Apply** " to finish the above settings

⚠ The default TH setting is ⬚ Deactivate .

    - When install T or TH sensor, please tick ⬚ Activate . Otherwise, no readings display.

    - ⬚ DON'T activate T or TH sensor if no sensor installed.

IP dongle groups	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

TH setting

PDU level : 01 V24C13-32A-WSi
Stauts : Connected
Name : WSi20-32A
Location : Server_Rack_009

TH 1	☑ Activate	☐ Deactivate			TH 2	☐ Activate	☑ Deactivate
Locaton :	THSensor_1_loc.				Locaton :	-	

	Alarm	Rising alert				Alarm	Rising alert	
		Setting	Reading				Setting	Reading
Temp. (°C) :	35.0	30.0	25.1		Temp. (°C) :	-	-	-
Humid. (%) :	65.0	60.0	43.3		Humid. (%) :	-	-	-

- DO NOT activate T or TH sensor if no sensor installed.
- When install T or TH sensor, please tick activate. Otherwise, no readings display.

Apply	Save new data		Exit	Return to TH STATUS
Cancel	Cancel new data input			

Part IV. Software Usage & Operation

< **Outlet Schedule Overview** > provides a scan overview on all settings of PDU's outlet schedules based on IP dongle group

Outlet schedule overview

IP dongle name : default_ipd_name
IP address : 192.168.1.82

Page : 1 2

PDU Level	Name	Setting	Outlet Schedule # 1 - 2 Name	Action	Outlet Schedule # 3 - 4 Name	Action	Outlet Schedule # 5 - 6 Name	Action
01	WSi24-32A	▤	ScheduleName_01	Daily - Off	-	Disabled	-	Disabled
			ScheduleName_02	Daily - Off	-	Disabled	-	Disabled
02	WSi20-13A	▤	-	Disabled	-	Disabled	-	Disabled
			-	Disabled	-	Disabled	-	Disabled
03	W16-30A	▤	-	Disabled	-	Disabled	-	Disabled
			-	Disabled	-	Disabled	-	Disabled
04	W12-16A	▤	-	Disabled	-	Disabled	-	Disabled
			-	Disabled	-	Disabled	-	Disabled
05	W20-16A	▤	-	Disabled	-	Disabled	-	Disabled
			-	Disabled	-	Disabled	-	Disabled
06	WSi24-32A	▤	ScheduleName_01	Daily - Off	-	Disabled	ScheduleName_05	Weekly - Off
			ScheduleName_02	Daily - On	-	Disabled	ScheduleName_06	Weekly - On
07	WSi10-32A	▤	-	Disabled	-	Disabled	-	Disabled
			-	Disabled	-	Disabled	-	Disabled
08	WSi24-32A	▤	-	Disabled	-	Disabled	-	Disabled
			-	Disabled	-	Disabled	-	Disabled

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

[Search] Search new installed PDUs

* Press F11 to enlarge or diminish the screen

Part IV.   Software Usage & Operation

In < **Outlet Schedule Setting** >, user can set max. 6 outlet On / Off schedules in each PDU.

The outlet schedule can be set on one-time, daily or weekly basis.

To set the outlet schedule, please follow the steps in next page

Part IV. Software Usage & Operation

PDU outlet schedule is a function allowing users to set a specific time to switch either ON or OFF the outlets on daily, weekly or one-time basis.

Each PDU provides **6 schedule tasks**. Users can follow the steps below to enable the PDU outlet schedule

Step 1. Go to < **Outlet Schedule Overview** > page, Click " **Setting** "

Part IV. Software Usage & Operation

Step 2. In < **Outlet Schedule Setting** > page, Select " **Oultet schedule 1** " & Tick " **Enable** "

Step 3. Provide the name of the outlet schedule
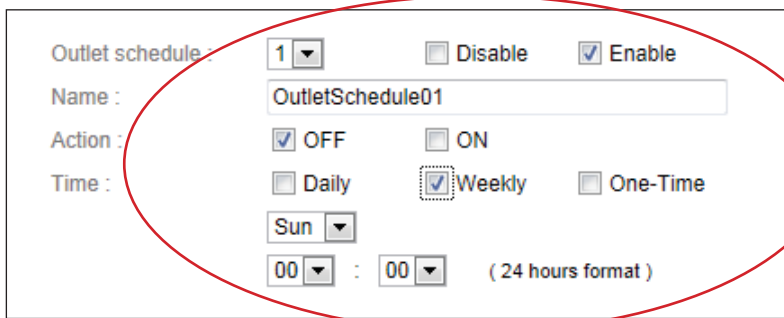
Step 4. Select the action (either ON or OFF)

Step 5. Select the time for outlet schedule.
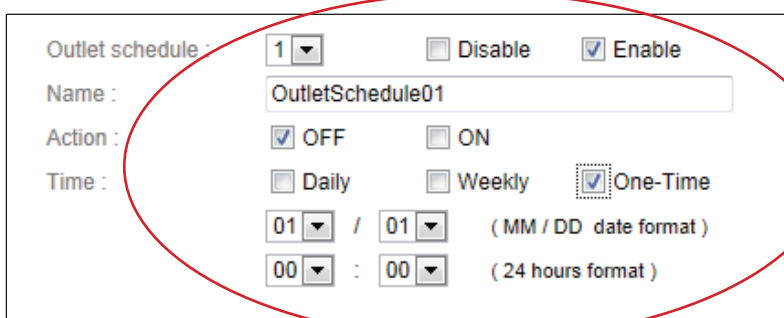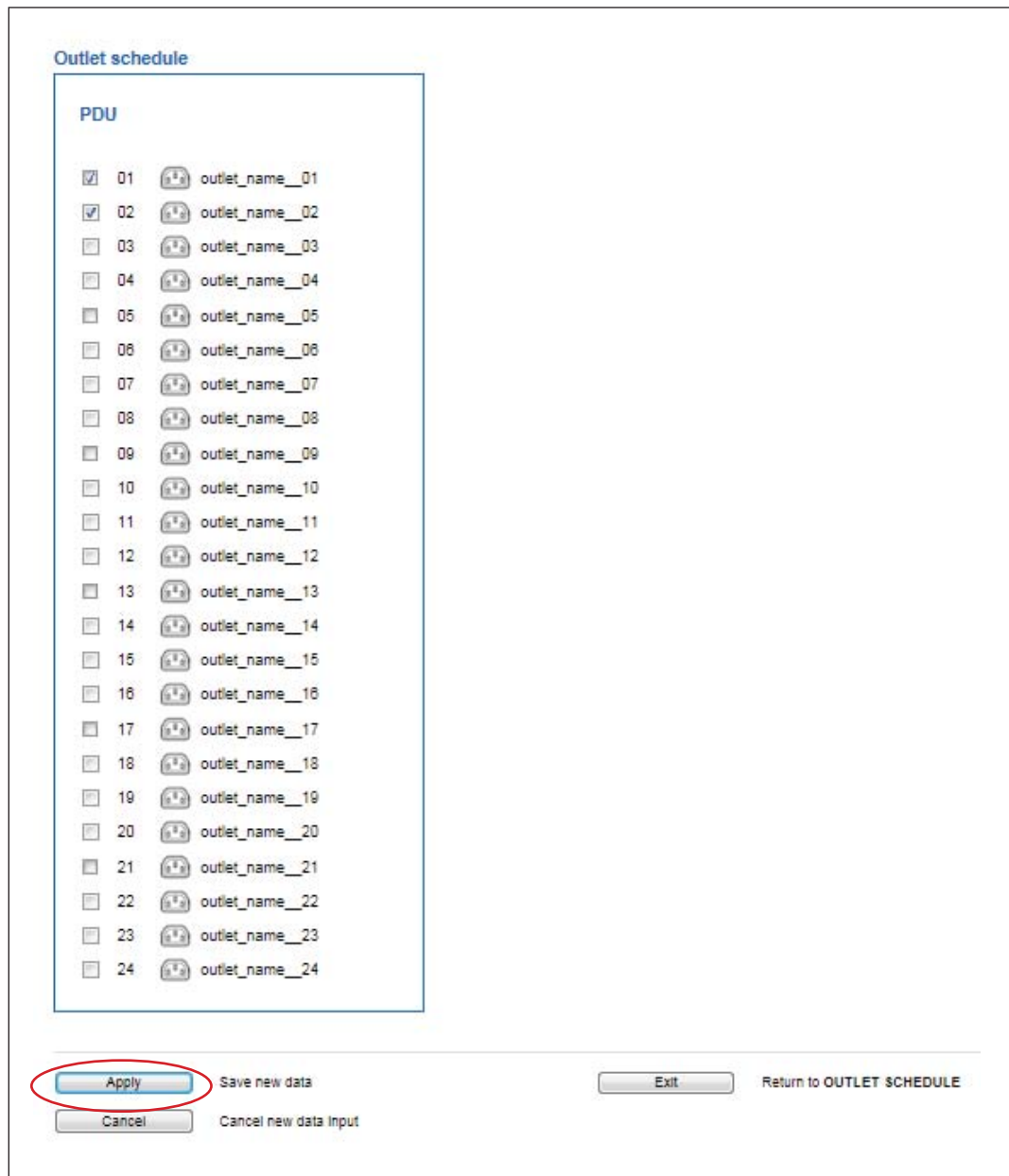
Daily ON / OFF Schedule

Weekly ON / OFF Schedule

One-time ON / OFF Schedule

Part IV. Software Usage & Operation

Step 6. Tick the outlets of the connected PDU (s) to switch ON / OFF based on the action you selected

Step 7. Click " **Apply** " to save the settings

Step 8. Repeat step 2 to 7 for Outlet Schedule 2 to 6 if necessary

⚠️

If the outlet schedule task is " **One-Time** ", that specific task will be disabled automatically once the action is completed.

To cancel the outlet schedule, tick " **Disable** " & Click " **Apply** " to finish the changes.

Part V.   Events / Log / Report

< Event > provides past 2000 event records of PDUs' configuration & connection / outlet configuration / sensors' configuration & connection in an IP dongle group

IP dongle groups
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |

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

- TH 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
(4) Change alarm amp.
(5) Change low alert amp.
(6) Reset peak amp /w date and time
(7) Reset kWh /w date and time
(8) Amp. alarm
(9) Amp. low alert
(10) Amp. normal

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

< PDU log > provides past 2000 log records of each PDU. The software will generate a PDU log record every 10 mins.

IP dongle groups
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |

PDU log

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

Part V. Events / Log / Report

< Outlet log > provides past 2000 log records of each PDU's outlet. The software will generate an outlet log record every 10 mins.

IP dongle groups	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Outlet log

PDU level :	01 ⌄	V12C13/4C19-16A-WSi	Name :	12C134C19-16A-WSi	Location :	Server_Rack_001
Outlet :	01 ⌄		Name :	IBM_Server_1	Current status :	ON

				Amp				kWh
Date	Time	Name	Status	Load	/	Alarm	/	Low alert	
2012/08/10	13:25:43	12C13/4C19-16A-WSi	OFF	-	/	-	/	-	-
2012/08/10	13:15:42	12C13/4C19-16A-WSi	OFF	-	/	-	/	-	-
2012/08/10	13:05:41	12C13/4C19-16A-WSi	OFF	-	/	-	/	-	-
2012/08/10	12:55:40	12C13/4C19-16A-WSi	OFF	-	/	-	/	-	-
2012/08/10	12:45:39	12C13/4C19-16A-WSi	OFF	-	/	-	/	-	-
2012/08/10	12:35:38	12C13/4C19-16A-WSi	OFF	-	/	-	/	-	-
2012/08/10	12:25:37	12C13/4C19-16A-WSi	OFF	-	/	-	/	-	-
2012/08/10	12:15:36	12C13/4C19-16A-WSi	OFF	-	/	-	/	-	-
2012/08/10	12:05:35	12C13/4C19-16A-WSi	ON	0.0	/	10.0	/	0.0	0.04
2012/08/10	11:55:34	12C13/4C19-16A-WSi	ON	0.0	/	10.0	/	0.0	0.04
2012/08/10	11:45:33	12C13/4C19-16A-WSi	ON	0.0	/	10.0	/	0.0	0.04
2012/08/10	11:35:32	12C13/4C19-16A-WSi	ON	0.0	/	10.0	/	0.0	0.04

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

< TH log > provides past 2000 TH log records of each PDU. The software will generate a TH log record every 10 mins.

IP dongle groups	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

TH log

PDU level :	01 ⌄	V12C13/4C19-32A-WSi	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	-	- / -		- / -		-	- / -		- / -	
2012/05/22	10:17:36	Connected	-	- / -		- / -		-	- / -		- / -	

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

Part V.   Events / Log / Report

< Daily kWh log - PDU > provides past 2000 daily energy consumption log records of each PDU. The record is logged at 00:00 everyday (+/- 5 mins.) for previous day

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

< Daily kWh log - Outlet > provides past 2000 daily energy consumption log records of each PDU's outlet. The record is logged at 00:00 everyday (+/- 5 mins.) for previous day. (Wi kWh Monitored & WSi Outlet kWh Switched PDU only)

Part V.   Events / Log / Report

< **Report** > provides monthly report for PDU log , Outlet 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 :
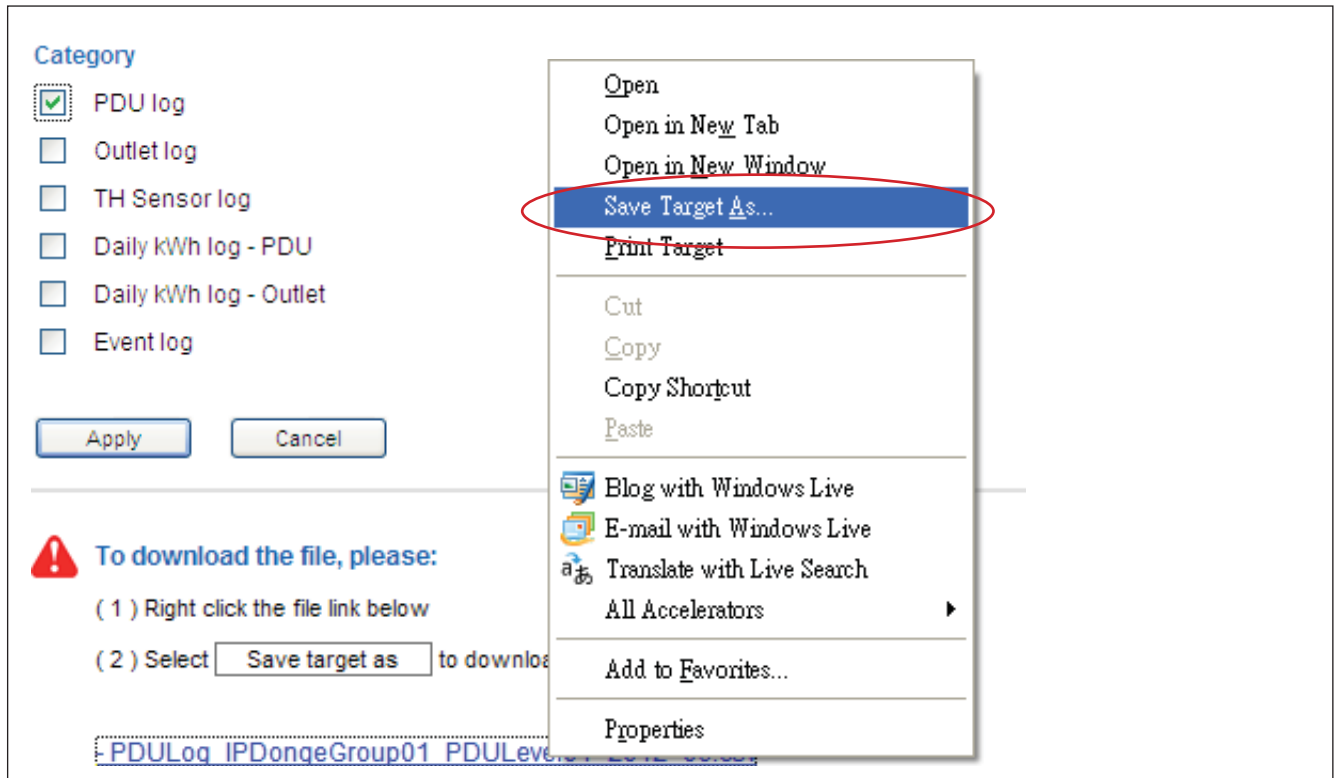
Step 1. Select " **Category** " , " **Period** " & " **Target** "

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

Apply   Cancel

Step 2. Click " **Apply** " & Click " **OK** " from the pop up window

Step 3. Right Click the file name below & Select " **Save target as** " to download the log file

Category
☑ PDU log
☐ Outlet log
☐ TH Sensor log
☐ Daily kWh log - PDU
☐ Daily kWh log - Outlet
☐ Event log

Apply   Cancel

⚠ To download the file, please:
(1) Right click the file link below
(2) Select   Save target as   to downloa

PDULog_IPDongeGroup01_PDULeve...

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 4. Click " **Close** " to complete or " **Open** " to view the content of log file

• **Complete**

Part VI.   SNMP Setup / Firmware Upgrade

< SNMP Setup >

The IP dongle can manage the connected W series PDUs in a single daisy-chain up to 16 PDUs via SNMP v2c (Simple Network Management Protocol).

⚠ Only IP dongle model : IPD-02-S or IPD-H02-S can support SNMP

(I).   Accessing MIB Files

Use the World Wide Web (WWW) to download the SNMP MIB file at this URL:
http://www.austin-hughes.com/support/utilities/infrapower/IPD-MIB.mib

(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.12)

Step 2. Open the Internet Explorer (I.E.) version 8.0 or above

Step 3. Enter the configured IP dongle address into the I.E. address bar.
Default IP address is " **192.168.0.1** "

Step 4. Enter " **Login name** " & " **Password** ". Default login name & password are " **00000000** "

Login name	
Password	

Login   Cancel
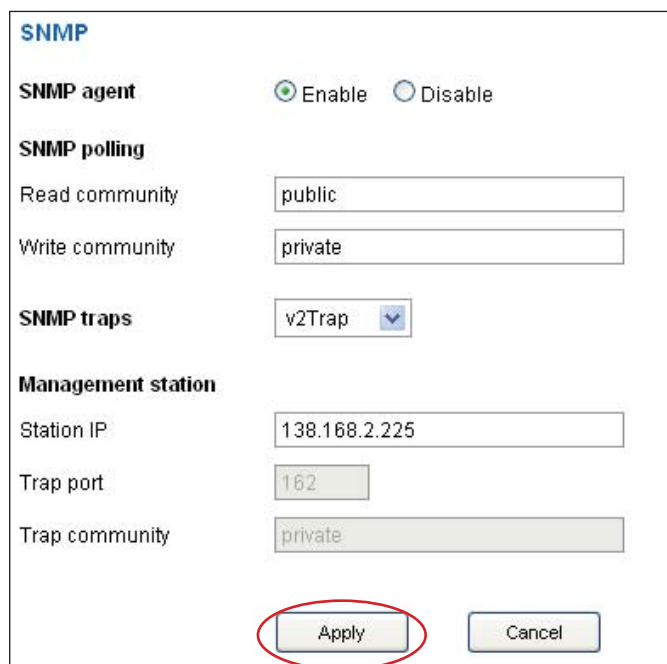
Part VI.   SNMP Setup / Firmware Upgrade

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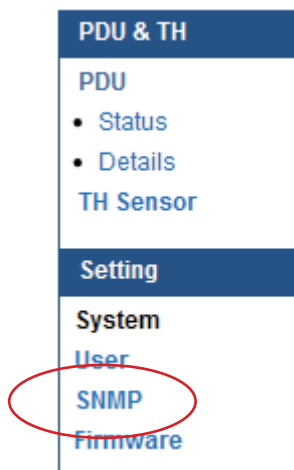
Step 6. The SNMP Settings window appears as below:

Step 7. Click " **Enable** " in " **SNMP Agent** " to start the SNMP agent service

Step 8. Input " **Read Community** ". Default is " **public** "

Step 9. Input " **Write Community** ". Default is " **private** "

Step 10. Select " **disabled** " or " **V2Trap** " in " **SNMP Traps** "

⚠️ If select " **V2Trap** " , please input IP address of the SNMP management station in " **Station IP:** "

Step 11. Click " **Apply** " to finish the SNMP settings

Part VI.   SNMP Setup / Firmware Upgrade

< Firmware Upgrade >

If fail to search the PDU, please take the following steps to upgrade the IP dongle firmware :

Step 1. Download the IP dongle firmware from the link :
   http://www.austin-hughes.com/support/software/infrapower/V2395S.img

Step 2. Connect the IP dongle to the computer.

Step 3. Open the Internet Explorer (I.E.) version 8.0 or above

Step 4. Enter the configured IP dongle address into the I.E. address bar.
   Default IP address is " **192.168.0.1** "

Step 5. Enter " **Login name** " & " **Password** ". Default login name & password are " **00000000** "

Login name	
Password	

[Login]   [Cancel]

Step 6. Select the Firmware from the left navigation

PDU & TH

PDU
- Status
- Details

TH Sensor

Setting

System
User
SNMP
Firmware
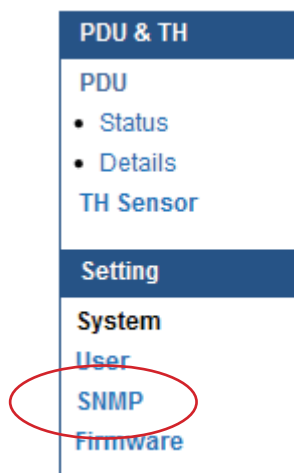
Part VI.   SNMP Setup / Firmware Upgrade

Step 7. The firmware upgrade window appears as below :

Step 8. Click " **Browse** " and select the firmware file (xxx.img) from the specific path in the pop up window and Click " **Open** "

Step 9. Click " **Upgrade** " to start the upgrade process. It takes a few minutes to complete.

Step 10. Once complete, UI will return to the login page.

Part VII.   FAQ

InfraPower Manager - IPM-03

1.   What is InfraPower Manager?
The InfraPower Manager IPM-03 is a Windows based system to consolidate management of max. 480 PDUs via 30 IP dongles, using a simple web interface which monitors and controls the WSi Outlet kWh Switched / Wi Outlet kWh Monitored / 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:

http://www.austin-hughes.com/support/software/infrapower/IPM-03.msi

2.   Which OS platform does IPM-03 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-03 Installation and execution.**

3.   Why user can't login to the Management PC remotely ?
Make sure the port for web server is added in the firewall setting and the services of web server is started in the management PC.

4.   Which database does the IPM-03 support?
PostgreSQL

5.   What is the PostgreSQL default password for IPM-03?
1qaz2WSX

6.   How can I receive alarm email and get full log report?
Ensure that IPM-03 is executed and the alarm server is configured properly and being enabled.

7.   What is the default user name & password of IPM-03?
Default user name " **admin** " & password " **00000000** "

8.   What is the command password of IPM-03?
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.

9.   The WSi Outlet kWh Switched / Wi Outlet kWh Monitored / WS kWh Switched / W kWh Monitored PDUs can't be found by IPM-03?
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.

Part VII. FAQ

10. Is it possible to manage the WSi Outlet kWh Switched / Wi Outlet kWh Monitored / WS kWh Switched / W kWh Monitored PDUs from different workstations?
Yes, the InfraPower manager supports 5 concurrent login users from different workstations.

1. What is the IP dongle?
The IP dongle provides a simple and economical way to consolidate management of max. 16 pcs WSi Outlet kWh Switched / Wi Outlet kWh Monitored / 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.austin-hughes.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 WSi Outlet kWh Switched / Wi Outlet kWh Monitored / 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 user manual < 2.2 > for details)

Temp. Humidity sensor

1. How accurate is the Temp. & Humid. 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).

3. How to install the Temp. / Temp. & Humid. sensor ?
Plug in the Temp. / Temp. & Humid. sensor ONLY AFTER the PDU is ON.

Part VII. FAQ

<div style="border: 1px solid blue; display: inline-block; padding: 5px;">

Meter for W series Intelligent kWh PDU

</div>

1. What is feature of the Wi Outlet kWh Monitored / 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-03).

2. What is feature of the WSi Outlet kWh Switched / 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 WSi Outlet kWh Switched / Wi Outlet kWh Monitored / 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 WSi Outlet kWh Switched / Wi Outlet kWh Monitored / 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 WSi Outlet kWh Switched / Wi Outlet kWh Monitored / WS kWh Switched / W kWh Monitored PDU in a chain?
16 levels

<div style="border: 1px solid blue; display: inline-block; padding: 5px;">

Others

</div>

1. What is the default outlet status of WSi Outlet kWh Switched / WS Switched PDU ?
The default outlet status is ON.

2. Will the PDU settings remain unchanged after power OFF?
Yes, the settings will remain unchanged such as PDU Name, Location, Alarm amp., Low alert amp., Outlet Name......

3. Does the InfraPower PDU has the overpower protection?
Yes, the PDU provides the resettable fuse or optional circuit breaker for the overpower protection.

4. What is the standard inlet cable length of InfraPower?
3 meter (9.9 feet).

5. Where can I find the Catalogue / User manual /Model list / Wire diagram of InfraPower PDUs?
Please visit the www.austin-hughes.com

6. How can we get a further support?
Please send the email to support@infra-power.com or sales@infra-power.com

Part VII. FAQ

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 to user manual < 1.2 > display 9.1 for details)

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 net-

work, 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.

Part VIII. Troubleshooting

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 user manual < 2.2 > for details)

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 user manual < 1.2 > display 9.1 for details)

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 user manual < 1.2 > display 9.1 for details)

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.

Part VIII.　Troubleshooting

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 user manual < 1.2 > display 9.1 for details)

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

Part VIII. Troubleshooting

1.8" meter LCD display

1. **LCD meter no display.**

    Step 1 - Check PDU is power ON or not.

    Step 2 - Press any button on the LCD meter. The SCREEN OFF function may be enable.
    (Please refer to user manual < 1.2 > display 9.3 for details)

    Step 3 - If the LCD meter still no display please call your dealer for support.

2. **The whole LCD meter display turn white?**

    Step 1 - Use a pin to press the reset button to re-power the meter. Don't worry, it will not
    affect any settings & memories.

    Step 2 - If the LCD meter still turn white, please call your dealer for support.

InfraPower Manager IPM-03

1. **Try to login InfraPower Manager IPM-03 but the web browser only shows " HTTP 404 Not Found "**

    Step 1 - Services for Web server in management PC started ?
    Make sure the services is started. Go to Control Panel -> Administrative Tools ->
    Services -> Apache2.2 and make sure the status is " Started ".

    Step 2 - Port for web server in management PC is occupied by other service ?
    Check if the port for web server is used by other service. If yes, please release
    the port of that particular service and assign another port for it.

    Step 3 - Port for web server is added in the firewall of management PC ?
    Check if the port is added in the firewall. If not, please add and enable the connection in
    the firewall. Please refer to user manual < 3.2 > for details.