

## i-PDU

## Integrated Intelligent Power Distribution.

i-PDU has been developed to seamlessly integrate with Cooper B-Line's i-BOX and i-PAL systems (access control and environmental monitoring system) providing the ability to set-up, manage and control an intelligent power distribution solution using standard IP network addressable technology.

Once an i-BOX has been configured on the network and the i-PDU has been connected the system offers the benefit of real time, bi-directional communications with each i-PDU connected. Importantly this provides not only the ability to accurately monitor and record the power consumption values of each i-PDU but allows the system administrator to control the operation of each and everyone of the individual i-PDU sockets.



The i-PDU can be configured to perform users configurable outlet start up sequences. This soft start functionality also includes the provision to allow optimised start up using pre set time delays or current draw thresholds.

The i-PDU contains a precise measuring device that samples for KWH readings 4,000 times per second, readings are reported at scheduled intervals to the centralised database.

### Features of i-PDU

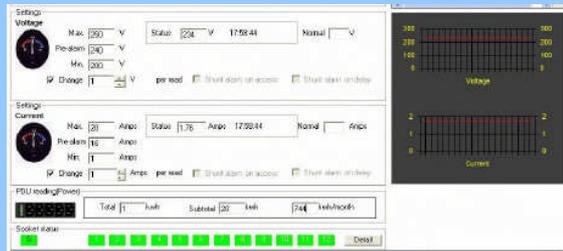
- ❑ Seamless integration to i-BOX using the same central management software platform (free of charge updates may need to be installed).
- ❑ 12 x Individually fused outlets.
  - 10 x IEC-60320 C13 +
  - 2 x IEC-60320 C19.
- ❑ Up to 4 i-PDU's connected to one i-BOX.
- ❑ 13amp / 16amp & 32 amp versions.
- ❑ Plug and Play connection.
- ❑ Fully configurable sequential start-up.
- ❑ Mains filtered.
- ❑ Protected and monitored on/off switch.
- ❑ 2 x 20 Character display.
  - Individual Socket status: on / off / fuse failure and fault
  - KWH display / Voltage / Current / Firmware and software version.
- ❑ Standalone configuration function buttons.



# New Product Release

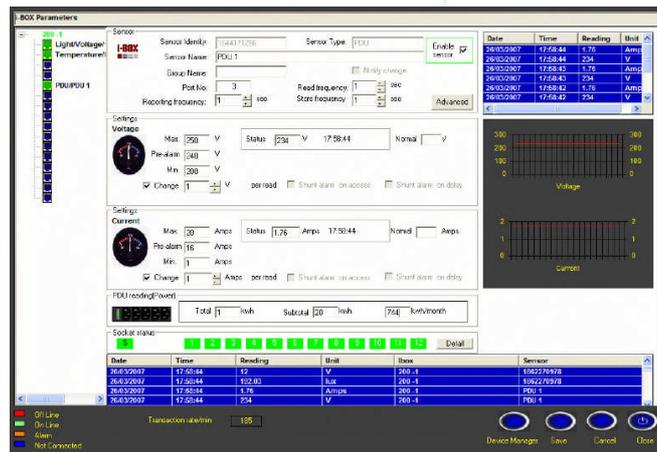
## Alarm Settings and Reporting

- ❑ Fuse failure
- ❑ Socket change status on/off
- ❑ Alarm Maximum Voltage/Current
- ❑ Pre-Alarm Maximum Voltage/Current
- ❑ Low-Alarm Voltage/Current
- ❑ Change-Alarm Sudden increase Voltage/Current
- ❑ Daily, weekly, monthly reports
- ❑ Selectable start and end date
- ❑ Average and peak KWH used
- ❑ Group PDU's by Circuit and or Client



## Main configuration Screen for i-PDU

The Main i-PDU sensor screen provides a clear overview of the current status of the i-PDU. A real time graph is provided for an instant visual analysis of the recent transactions with each i-PDU having it's own text label.



## The i-PDU transaction logging is fully configurable as follows:

**Reporting Frequency:** This is how often the live reading on the sensor is transmitted to the PC.

**Read Frequency:** This is how often the i-Box unit interrogates the sensor for a reading.

**Store Frequency:** This is how often the readings are stored on the local database; note that when the i-BOX is connected to the PC software readings are also stored to the PC hardware at intervals as set on the reporting frequency. Each i-BOX can store locally a maximum of 5,000 readings; this can be expanded to 16,000 with additional memory. Storage at the PC is only limited by the size of the hard disk.

**Maximum-Alarm/Pre-Alarm/Minimum-Alarm/Change-Alarm:** Can be defined for both voltage and current. Once the reading exceeds these limits it will trigger an alarm and the appropriate transaction will appear on the main screen, providing the sensor's type, alarm description, i-BOX name and sensor ID. These alarms can be configured to transmit SNMP traps or email/SMS via a SMTP server.



# New Product Release

## Details Screen for i-PDU

Socket status	Connected equipment	Delay/Startup (sec)	Delay/Current (>11A)	Normal Current (A)	Permit to work	Date/Time
OFF <span style="color:red">■</span>	1 Router 1	1	0	0	On Test socket 1	02/04/2007 10:25:13
OFF <span style="color:red">■</span>	2 Router 2	1	0	0		
OFF <span style="color:red">■</span>	3 Router 3	1	0	0		
OFF <span style="color:red">■</span>	4 Server 1	5	0	0		
OFF <span style="color:red">■</span>	5 Server 2	10	4	0		
OFF <span style="color:red">■</span>	6 Server 3	15	8	0		
OFF <span style="color:red">■</span>	7 Server 4	20	12	0		
OFF <span style="color:red">■</span>	8 Server 5	25	16	0		
OFF <span style="color:red">■</span>	9 Server 6	30	20	0		
OFF <span style="color:red">■</span>	10 Server 7	35	24	0		
OFF <span style="color:red">■</span>	11 Server 8	40	32	0		
OFF <span style="color:red">■</span>	12 Network Switch	1	0	0		

PDU: Power on delay  sec Max. total current PDU  Amps Read kwh  Quarterly  Hourly  
Power feed group   kwh Account group   kwh

Status legend: ■ Off ■ On ■ Not connected ■ Fault/Fuse ■ Sync.error

End delay Reset PDU kwh Auto setup Save Close

The status of the sockets is displayed on the left hand side. Each status has a unique colour.

- Colour green means that the socket is switched on.
- Colour red indicates that the socket is switched off.

If there is a fuse failure in any of the sockets, it will become amber and the appropriate transaction will appear in the main screen. There is a space in front of every socket to enter a brief description of the equipment connected to that particular socket.

**Delay Start-up:** This column includes the number of seconds before a socket is activated when the PDU is switched on. If the input value is zero, the socket will not be switched on. (Range: 0s → 254s)

**Delay/Current:** This column indicates the upper limit of the current in the unit before a particular socket is switched on. For example if the input value for a particular socket is 5, it will not be switched on until the current in the unit has dropped down to 5 amps or less. The fields will be highlighted yellow if configuration details require updating to the i-PDU. All you need to do is to press the save button to synchronize the database.

**Smart Start:** It is possible to configure the sockets in the order that you wish them to start with perhaps less delay between ports utilising the current sensing feature, as this will automatically delay the next socket until the current has been sensed to be below the configured threshold.

**Normal Current:** This shows the normal amount of current consumed by each device. This value is determined by the user and is merely for user's information as a reference to the expected current.



# New Product Release

**Permit to work & Date/Time:** The last two columns display the last explanation of why a socket was switched on or off. The user is forced to complete a pop up window with the reason why the socket status has been manually changed; this transaction is stored on the server software with time/date stamp and operator responsible.

**Overall delay:** This is the period that the mains supply has to be continuously present before the first socket delay timer starts. By setting individual i-PDU's with a sequenced start-up will avoid surges of power on equipment connected to i-PDU's fed from the same power circuit. This avoids multiple attempts for mains to return and the surges this can cause.

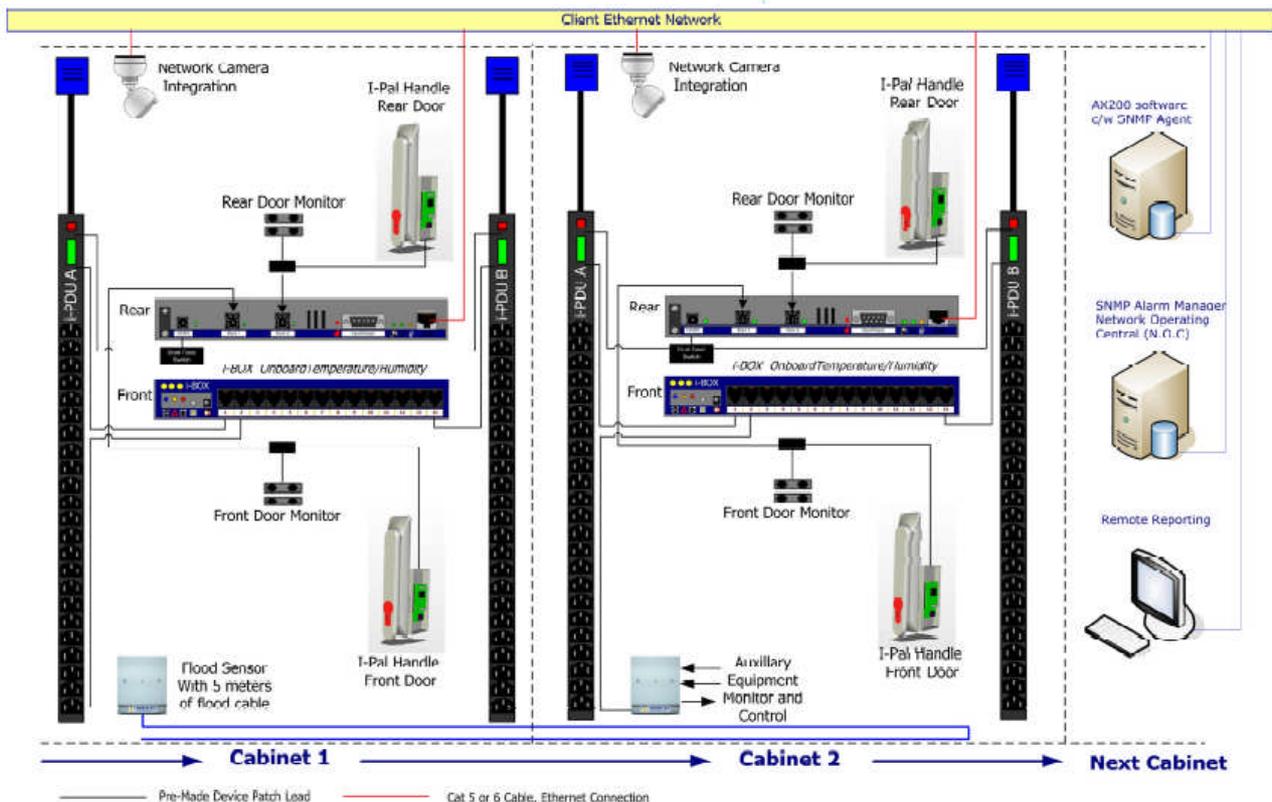
**Threshold Current:** This is the maximum current you can obtain from the PDU.

**Auto Setup:** Restores the default start-up values.

Pressing the **End delay** button will terminate any delay time and all the sockets in the unit will be switched on. **Reset Power** button will bring the value of total power back to zero.

States to be indicated on PDU relay LED:

1. **Normal:** Power switched on, power sensed – LED on solid
2. **Fault Feedback:** Power switched off, power sensed – 0.5 sec on / off flash for 3 seconds, off 2 seconds
3. **Fuse Fault:** Power switched on, power not sensed – 80 ms seconds on/off flash
4. **Socket Off:** Power switched off, power not sensed – LED off.



# New Product Release

## Technical Specifications & Part Codes

<b>Material Finish</b> <b>Unit O/A Dimensions</b> <b>Unit Weight</b>  <b>Supplied individually boxed</b> <b>Packaged Size</b> <b>Packaged Weight</b>	<b>Mild Steel Housing</b> <b>Painted Black RAL9005</b> <b>1350mm High x 90mm Wide x 60mm Deep</b> <b>5.2kg</b>  <b>1550mm x 150mm x 150mm</b> <b>6.35kg</b>	
Order Code	Description	Lead Time
IBOXPDU1612WC1316U	<b>i-PDU Intelligent PDU.</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> 220 / 230v A/C 50 Hz.</li> <li><input type="checkbox"/> Max rating 20Amps.</li> <li><input type="checkbox"/> 12 x Individually fused outlets. 10 x IEC-60320 C13 + 2 x IEC-60320 C19.</li> <li><input type="checkbox"/> Individual outlet status LED.</li> <li><input type="checkbox"/> On / Off Switch.</li> <li><input type="checkbox"/> Fitted with 3m power supply lead terminated with a UK 3-pin BS1363 plug.</li> <li><input type="checkbox"/> Integrated i-BOX power supply outlet.</li> <li><input type="checkbox"/> Local PDU status screen.</li> <li><input type="checkbox"/> Supplied with I-BOX power supply lead and sensor port connection lead.</li> </ul>	7 - 10 Working Days
IBOXPDU1612WC1316C	<b>i-PDU Intelligent PDU.</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> 220 / 230v A/C 50 Hz.</li> <li><input type="checkbox"/> Max rating 20Amps.</li> <li><input type="checkbox"/> 12 x Individually fused outlets. 10 x IEC-60320 C13 + 2 x IEC-60320 C19.</li> <li><input type="checkbox"/> Individual outlet status LED.</li> <li><input type="checkbox"/> On / Off Switch.</li> <li><input type="checkbox"/> Fitted with 3m power supply lead terminated with a 16Amp Commando plug.</li> <li><input type="checkbox"/> Integrated i-BOX power supply outlet.</li> <li><input type="checkbox"/> Local PDU status screen.</li> <li><input type="checkbox"/> Supplied with I-BOX power supply lead and sensor port connection lead.</li> </ul>	7 - 10 Working Days
<b>Compliance</b>	WEEE Directive. RoHS Compliant CE Approved	

