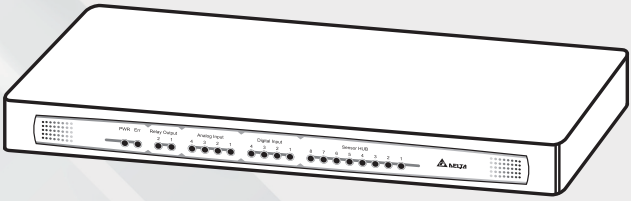


The power behind competitiveness

Delta Data Center Management System

Environmental Management System (EMS)
EnviroStation

User Manual

SAVE THIS MANUAL

This manual contains important instructions and warnings that you should follow during the installation, operation, storage and maintenance of this product. Failure to heed these instructions and warnings will void the warranty.

Table of Contents

Chapter 1 : Important Safety Instructions

1.1. Safety Warnings

Before installation,

- Ensure that the power cord plug and socket are in good condition.
- Make sure that the power source to the EnviroStation is rated between 100-240V and is well grounded.

1.2. Usage Warnings

- This unit is designed for indoor use only. Install it in a well-controlled environment away from excessive moisture, temperature extremes, conductive contaminants, dust or direct sunlight.
- Do not place or use this unit in the presence of flammable substances.
- Do not attempt to disassemble the unit which contains potentially hazardous voltages. Only trained technicians are allowed to perform this action.
- Do not attempt to perform any internal modifications on the unit.
- Do not attempt to fix/ replace internal components. When repair is needed, refer all servicing to the nearest Delta service center or authorized distributor.
- Do not allow any objects or liquids of any kind to penetrate the unit.
- Always follow this User Manual to install and operate this unit.
- Disconnect all external devices before moving this unit.

1.3. Standard Compliance

- **Network**

  IPv6 Phase-2

  - Application ID: TW-2-C-20100323-000158

- **CE**

  EMI

  EN55022 (CISPR 22) Class A

  EMS

  EN55024

➢ IEC 61000-4-2 (ESD Test)	Level 3 @ Air 8 KV/ Contact 4 KV
➢ IEC 61000-4-3 (RS Test)	Level 2 @ 3 V/m
➢ IEC 61000-4-4 (EFT Test)	Level 2 @ 5 KHz/ 1KV
➢ IEC 61000-4-6 (CS Test)	
➢ IEC 61000-4-5 (Surge Test)	Level 2 @ 1.2*50/ 8*20 us L-N 2 ohm 1 KV L-PE/ N-PE/ L+N-PE 12 ohm 2 KV

Chapter 2 : Introduction

2.1. Product Description

The EnviroStation monitors and controls environmental conditions through peripheral devices to ensure that your equipment is protected from critical conditions such as high temperature, humidity or water leakage. This rack-mountable product works seamlessly with temperature and humidity sensor EnviroProbes (optional) and other environment monitoring devices.

2.2. Features

- **Working with multiple EnviroProbes**

  The EnviroProbes are designed to work with the EnviroStation. There are three types of EnviroProbes, (1) EnviroProbe 1000 (EMS1000), (2) EnviroProbe 1100 (EMS1100) and (3) EnviroProbe 1200 (EMS1200). The EnviroProbe (EMS1000) has one temperature/ humidity sensor and four digital inputs. The EnviroProbe 1100 (EMS1100) has four digital outputs, and the EnviroProbe 1200 (EMS1200) has two analog inputs, one analog output and one water-leakage detection. To extend the monitoring and detection scope, up to 10 of EMS1000s or 4 of EMS1100s or 5 of EMS1200s can be cascaded with a maximum distance of 400 meters.

- **Smart monitoring and event notification**

  With peripheral devices, the EnviroStation monitors environment variables and informs you of event occurrences based on severity that may call for your administrative attention. It also takes necessary actions according to your configuration.

- **Event and data log keeping**

  Offers extensive records of system and environment status.

- **Handy configuration tool EzSetting**

  Compatible with Windows systems, EzSetting allows you quick and effortless setup via a user-friendly interface.

- **Network connection through RJ45 connector**

  Direct network connection through an RJ45 cable offers immediate configuration via your local network environment with comprehensive management capabilities networking security.

- **Compatibility with SNMP (Simple Network Management Protocol), HTTP and HTTPS**

  Works with universal protocols including SNMP, HTTP and HTTPS.

- **Direct COM Port connection**

  Lets you manage your EnviroStation even when a network connection is not available.

- **Working with up to 16 PDU devices**

  EnviroStation monitors each PDU's load, frequency, watt, accumulated power consumption, etc.

- **IPMI supported**

  Supports IPMI version 1.5 & version 2.0.

- **Flexible reaction setup**

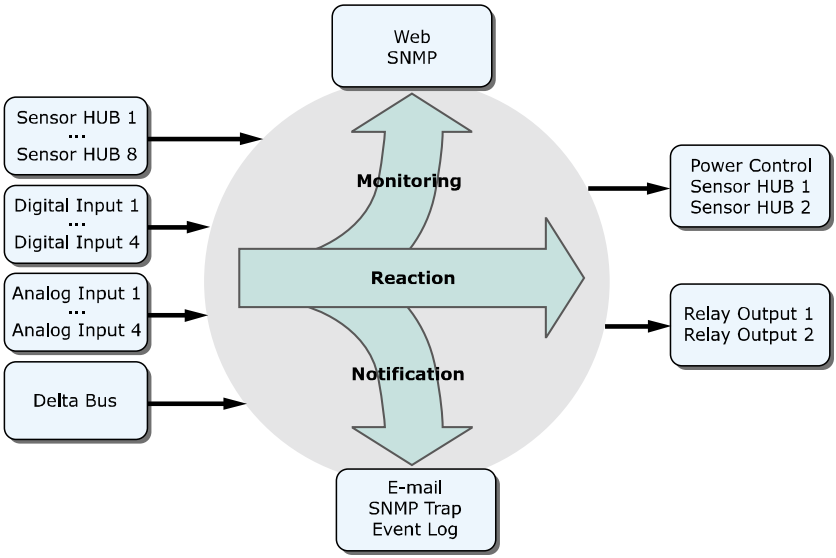
  You can create your own reaction rules. Based on the input conditions of Digital Input, Analog Input, Sensor HUB, PDU, EnviroProbe or RS485, the EnviroStation controls the actions of output devices such as Digital Output, EnviroProbe or RS485.

Other features and supported protocols include:

- User notification via SNMP Traps
- Simple Network Time Protocol
- Simple Mail Transfer Protocol
- Remote event log management through syslog
- Network Time Protocol
- Configuration via Telnet/ text mode
- BOOTP/ DHCP
- IPv4 and IPv6
- HTTPS, SSH, SFTP and SNMPv3 security protocols
- RADIUS (Remote Authentication Dial In User Service) login

Signal Flow

The following figure explains how EnviroStation monitors and processes signals.



2.3. Package Contents

Please carefully verify EnviroStation and the included accessories. Contact your dealer if any item is missing or damaged. Should you return the items for any reason, ensure that they are carefully repacked using the original packing materials that came with the unit.

No.	Item	Quantity
❶	EnviroStation	1 PC
❷	Sensor HUB adapter	8 PCS
	Terminal block (for Sensor HUB adapter)	8 PCS
❸	Bracket ear (including cage nuts and screws)	1 SET
❹	Door contact sensor	1 SET
❺	AC power cord	1 PC
❻	RJ45 to DB9 cable	1 PC
❼	Standard CAT5 cable	1 PC
❽	Extension cable (for leakage sensor)	1 PC

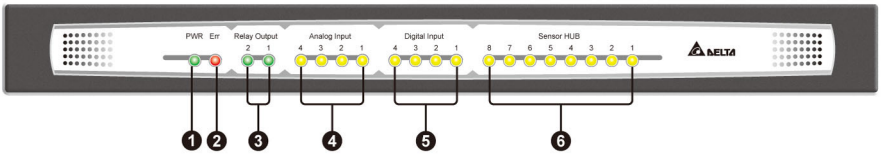
You will need the following items:

Peripheral devices such as Alarm Beacon, temperature/ humidity/ water leakage sensors and EnviroProbes are not included in the package. Also, additional Standard CAT5 cables used to cascade EnviroProbes are not included. You will need to obtain these items separately.

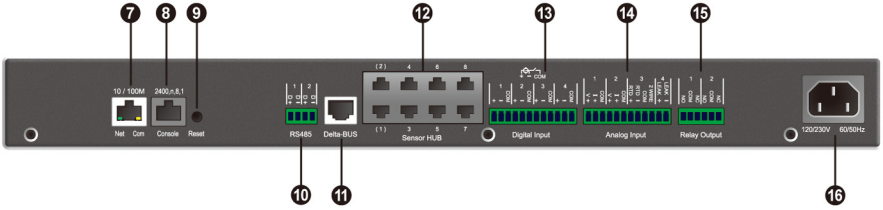
2.4. Interface

The LED indicators and connectors on the front and rear panel are shown as follows. For their functions and indications, please refer to the table below.

Front panel:



Rear panel:



No.	Item	Description
❶	Power LED	It indicates whether the unit is connected to a power source. • On (green): Connected. • Off: Not connected.
❷	Fault LED	It indicates whether an internal fault has occurred. • On (red): Fault occurred. • Off: Normal.
❸	Relay Output LEDs	• On (green): The Relay Output is switched to NC (Normal Close). • Off: The Relay Output is switched to NO (Normal Open).
❹	Analog Input LEDs	• On (yellow): The value of the Analog Input is out of the assigned normal range. • Off: The value of the Analog Input is in the normal range.

No.	Item	Description
❺	Digital Input LEDs	• On (yellow): The Digital Input is activated and defined as 'Warning' or 'Alarm'. • Off: The Digital Input is defined as 'None' or 'Information'.
❻	Sensor HUB LEDs	• On (yellow): The Sensor HUB is activated and defined as 'Warning' or 'Alarm'. • Off: The Sensor HUB is defined as 'None' or 'Information'.
❼	10/ 100 Base-T Network Port	It connects the EnviroStation to the network. 1. When the EnviroStation initializes or upgrades its firmware, the two LED indicators on the 10/ 100 Base-T network port flash simultaneously. Please refer to the following for LED illumination definition. • **Rapid simultaneous flashing** (every 50ms): Initialization or firmware upgrade in progress. • **Slow simultaneous flashing** (every 500ms): Initialization failure. **Warning :** Do **NOT** disconnect the EnviroStation's input power during initialization or firmware upgrade! This could result in data loss or damage to the EnviroStation. 2. The green LED indicator shows the network connection status: • **ON**: Network connection is established and the IPv4 address is useable. • **OFF**: Not connected to a network. • **Flashes slowly** (every 500ms): Faulty IP address. 3. The yellow LED indicator shows the linking status: • **Flashes rapidly** (every 50ms): Linking normal. • **Flashes slowly** (every 500ms): Linking abnormal.
❽	Console Port	It connects to a workstation with an RJ45 to DB9 cable.
❾	Reset Button	It resets the EnviroStation's network module. This will not affect the operation of other connected devices.

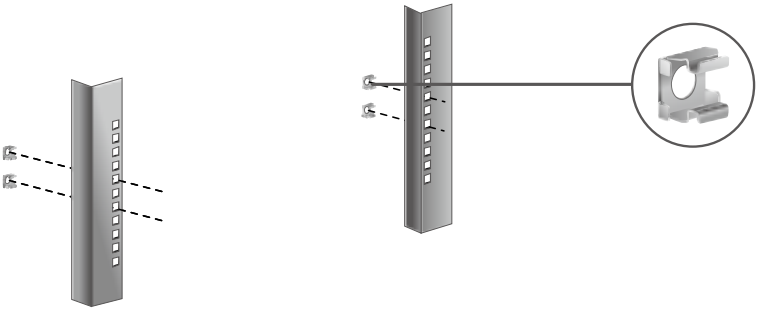
No.	Item	Description
⑩	Modbus RS485 port	It connects devices to EnviroStation via the Modbus protocol.
⑪	Delta-BUS	It provides power (12Vdc) and connects to EnviroProbe(s) using a standard CAT5 cable with straight-through wiring.
⑫	Sensor HUB	It connects to general sensor devices and provides them power (12/ 24Vdc) using standard CAT5 cables with straight-through wiring.
⑬	Digital Input	Four input contact devices can be connected to EnviroStation. The wet contact active rating is 5~24Vdc,1~9mA.
⑭	Analog Input	It connects to four analog sensor devices, including: • Two 0-10Vdc analog voltage sensors or 0-20mA current-loop sensors. • 1 RTD sensor. • 1 leakage sensor.
⑮	Relay Output	It connects to relay-controlled devices.
⑯	AC Line Inlet	It provides power to EnviroStation. The range is 100V~240V 60/ 50Hz.

Chapter 3 : Installation

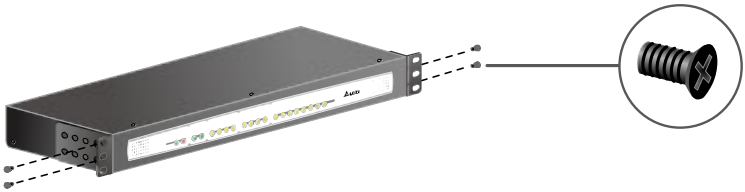
In this chapter, you will learn the installation procedures for the EnviroStation, EnviroProbes, Alarm Beacon, and devices connecting via RS485, Sensor HUB, Digital Inputs, Analog Inputs and Relay Outputs.

3.1. Rack-mount Installation

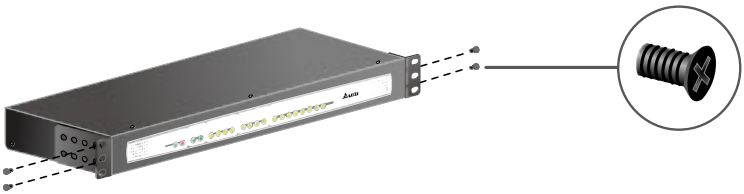
Step 1 Choose a location in the rack. On the vertical mounting rails, insert the provided cage nuts.



Step 2 Use screws to attach the two bracket ears provided in the accessory box to the EnviroStation.



Step 3 Make sure the mounting holes and the bracket ears on the EnviroStation are aligned properly, then secure the bracket ears to the rack with the four provided mounting screws (two for each end), EnviroStation occupies 1U of rack space.



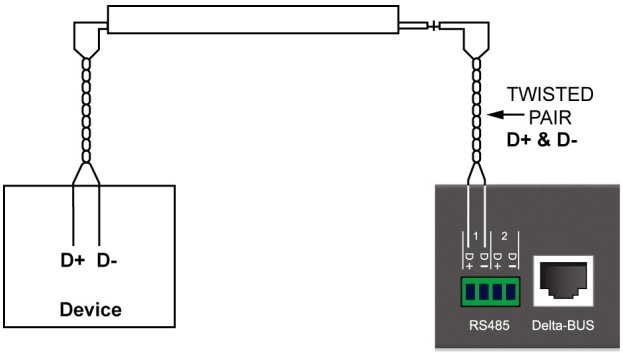
Step 4 Connect the AC power cable from the rear panel to an unoccupied power outlet. This will automatically power up the EnviroStation.

WARNING:

Before connecting the EnviroStation to a power source, make sure that the power source is rated between 100-240V and is well grounded.

3.2. RS485

EnviroStation provides two RS485 ports for devices that communicate through the Modbus protocol such as power meters and door contact systems. Using an RS485 port, eight devices with different ID numbers can be cascaded, however, their communication parameters must be identical (For example: Baud rate: 2400, data bits: 8, parity: none, stop bits: 1, and flow control: None).

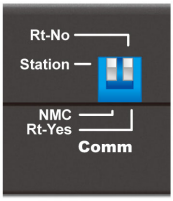


3.3. EnviroProbe

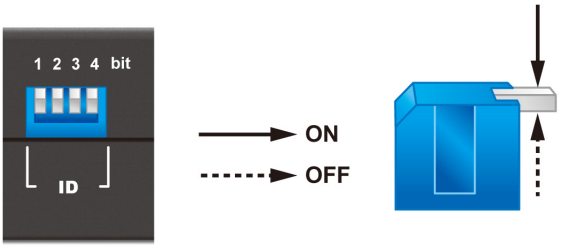
Detecting environment temperature and humidity, the EnviroProbes are designed to work with the EnviroStation. You can cascade multiple EnviroProbes to extend the detecting range. To install the EnviroProbe(s), please see the following instructions.

Step 1 Set the **Comm** DIP switch to **Station** on the EnviroProbe(s).

Step 2 Make sure the last EnviroProbe in the chain (the farthest) is set to **Rt-Yes**, and the rest of the EnviroProbes are set to **Rt-No**. If only one EnviroProbe is connected, please also make sure that it is set to **Rt-Yes**.



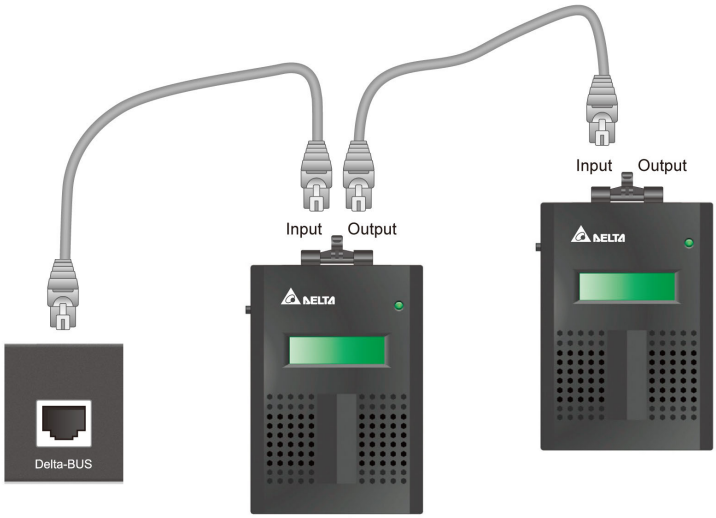
Step 3 Set the ID DIP switch to assign an ID for each EnviroProbe (please refer to the EnviroProbe User Manual). No particular numeric order is required for the connected units; however, make sure that each EnviroProbe is assigned with a unique ID. Up to ten EnviroProbes can be cascaded.



Step 4 Attach the EnviroProbe(s) to rack cabinet doors or metal plates.

Step 5 Use a standard CAT5 cable to connect the first (nearest) EnviroProbe's **Input** to the **Delta-BUS** port on the rear panel.

Step 6 Cascade other EnviroProbes using standard CAT5 cables. Connect the **Output** port to the next EnviroProbe's **Input** port. Please see the figure below.



WARNING:

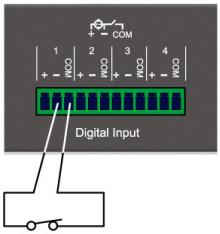
Under no circumstance should you connect the EnviroProbe's Input port to another one's Input port. This may cause unrecoverable malfunction to your EnviroProbes. Please be careful and always make sure that you are connecting the correct ports before you plug in.

3.4. Digital Input

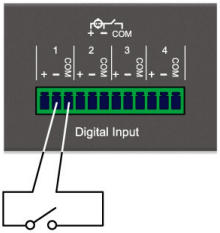
The EnviroStation provides four Digital Inputs. Wet and Dry Contacts can be connected for applications such as smoke, fire and door security detection. To connect your peripheral devices, please refer to the following figures for terminal connections:

Digital Value	Dry Contact	Wet Contact
1	Close	5~24Vdc
0	Open	< 1.5Vdc

- **Dry Contact :** Normal Open [NO] or Normal Close [NC].

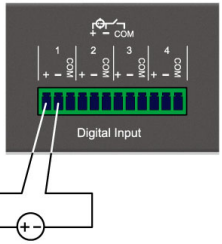


Normal Open, contact close for alarm

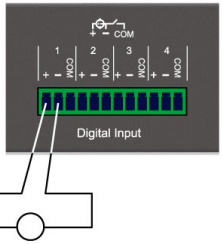


Normal Close, contact open for alarm

- Wet Contact: Active rating 5~24Vdc, 1~9mA.



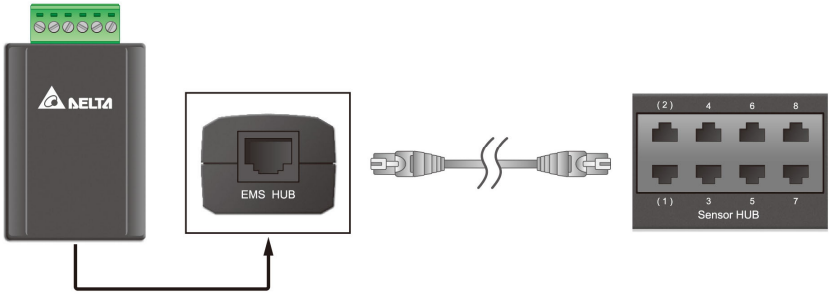
Normal Open, supply power for alarm



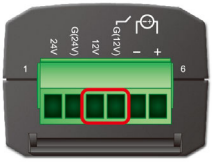
Normal Close, cut off power for alarm

3.5. Sensor HUB

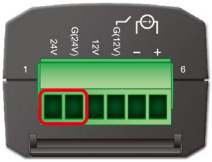
In the accessory box you can find eight provided Sensor HUB adapters (RJ45 to 6-pin terminal connector) which are used to connect peripheral devices for purposes such as smoke, fire and door contact detection. To connect a Sensor HUB device, please see the following instructions:



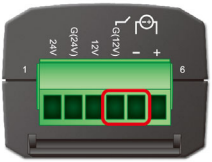
- Connect a Sensor HUB adapter to a Sensor HUB port on the rear panel with a standard CAT5 cable.
- On the other side of the adapter, plug a 6-pin terminal block (provided with the package) into the green terminal connector so wires from peripheral devices can be tightened and fixed with the screws.
- Depending on the contact types and power requirement of the devices you are connecting, different terminal connections are required. Please see the following figures:



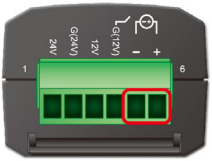
1) +12Vdc is provided by connecting the following two terminal points: **12V** and **G (12V)**.



2) +24Vdc is provided by connecting the following two terminal points: **24V** and **G (24V)**.



3) Connect Dry Contact signal to **G (12V)** and – terminal points.



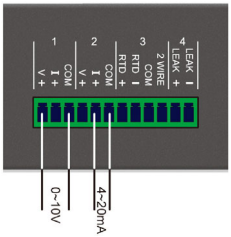
4) Connect Wet Contact signal to + and – terminal points. The active rating is 5~24Vdc, 1~9mA.

NOTE:

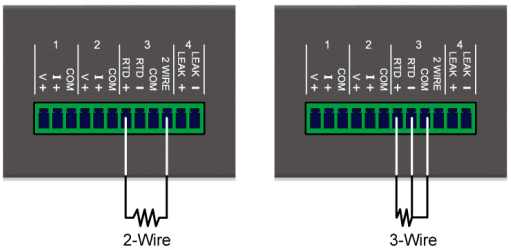
For HUB1/ HUB2, you can manually turn on/ off power or enable automatic power control. Please see ***5.2.1 Management – Sensor HUB***.

3.6. Analog Input

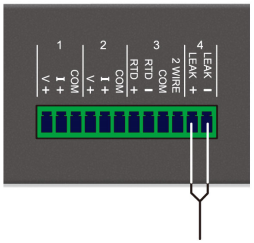
The EnviroStation provides four Analog Inputs, which are generally used to connect sensor devices that monitor the environment by observing voltage or current fluctuations. The Analog Input 1 and 2 can be connected to a voltage (0~10Vdc) or current (0~20mA) source. Please see the following illustrations.



The Analog Input 3 is dedicated to a 2-wire or 3-wire RTD (Resistance Temperature Detector) input. You can connect a PT100 (2/3-wire) temperature sensor to it. Please see the figure below:

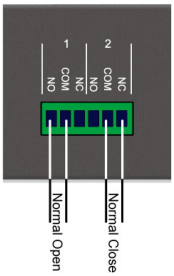


The Analog Input 4 is designed to connect a leakage sensor for leakage detection. You can use the provided extension cable to extend its length.



3.7. Relay Output

EnviroStation provides two Relay Outputs which can be used in cooperation with Digital/ Analog Input devices to take appropriate actions when events are reported.
The power rating is 26Vdc, 0.8A. Please see the following illustrations for the terminal configurations:

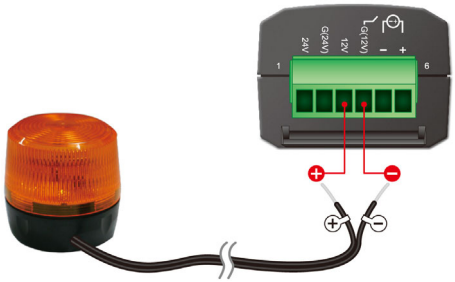


3.8. Alarm Beacon

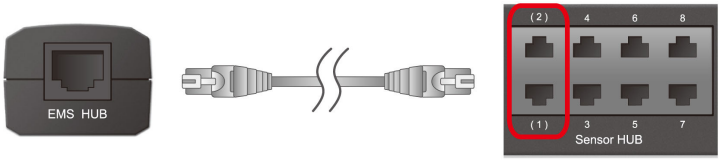
The Alarm Beacon should be installed in a visible location and triggered by specific events to alert you to any unusual situations. To install the Alarm Beacon, a provided terminal block and a Sensor HUB adapter are needed. Below, a 12V Alarm Beacon is used as an example.

Step 1 Plug the terminal block into the green terminal connector of the Sensor HUB adapter.

Step 2 Connect the positive wire (+) from the Alarm Beacon to the **12V** terminal on the terminal block, and the negative wire (-) to the **G (12V)** terminal. Make sure that the screws on the connected terminals are tightened properly.



Step 3 Use a standard CAT5 cable to connect the RJ45 connector of the adapter to the Sensor HUB1/ HUB2 on the rear panel of the EnviroStation.



Step 4 Place the Alarm Beacon in a visible location.

3.9. PDU Installation

Step 1 The EnviroStation can connect with up to 16 PDU devices (different models are allowed). If you wish to cascade PDU devices, please set a unique ID No. (0~15) for each PDU with its own four DIP switches (see ***Table 3-1***).

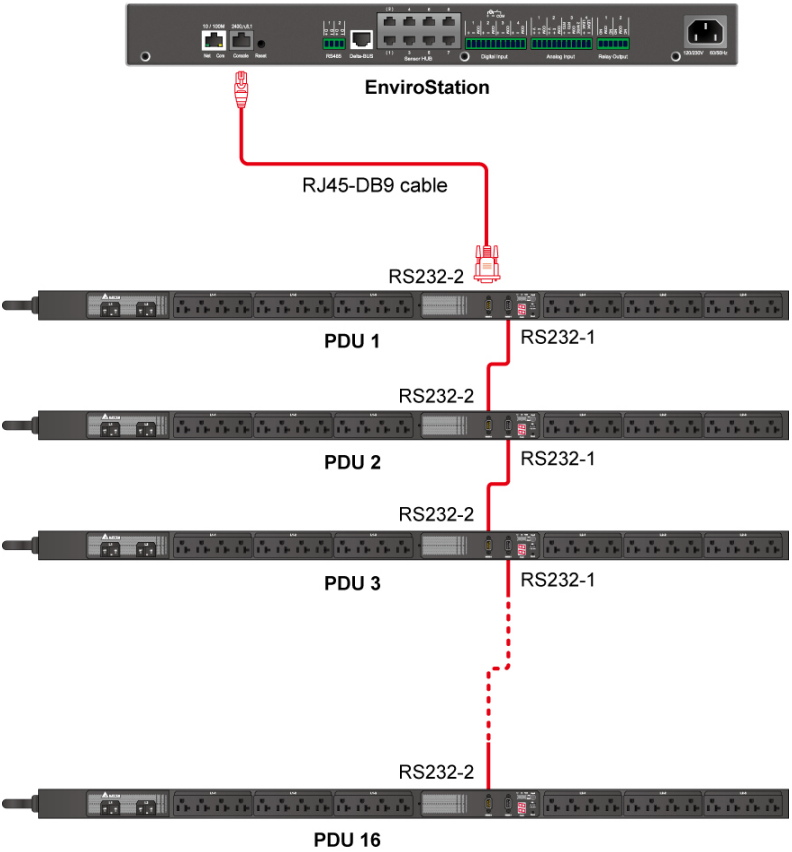
Table 3-1: Settings of PDU DIP Switches

PDU DIP Switches	ID Number
ON 1 2 3 4	0
ON 1 2 3 4	1
ON 1 2 3 4	2
ON 1 2 3 4	3
ON 1 2 3 4	4
ON 1 2 3 4	5

PDU DIP Switches	ID Number
ON 1 2 3 4	6
ON 1 2 3 4	7
ON 1 2 3 4	8
ON 1 2 3 4	9
ON 1 2 3 4	10
ON 1 2 3 4	11

PDU DIP Switches	ID Number
ON 1 2 3 4	12
ON 1 2 3 4	13
ON 1 2 3 4	14
ON 1 2 3 4	15

Step 2 Use the provided RJ45-DB9 cable to connect the EnviroStation and your PDU. Connect the RJ45 to the EnviroStation's console port and connect the DB9 to the PDU's RS232-2 port. If you need to cascade several PDU devices, please use the RS232 cables provided in your PDU devices. Please refer to the figure below.



Step 3 After installation, please visit InsightPower SNMP IPv6 for EnviroStation Web, click **Device→ Management→ PDU**, and check the **PDU Enable** box. Please note that the text mode will be disabled if you check the **PDU Enable** box.

Chapter 4 : System Configurations

There are different ways you can configure your EnviroStation. If a network connection is available at your location, the following methods can be used:

- **Web-based interface**: The InsightPower SNMP IPv6 for EnviroStation Web offers comprehensive system management and monitoring. Please refer to ***Chapter 5: InsightPower SNMP IPv6 for EnviroStation Web***.
- **EzSetting**: Use the provided program EzSetting to quickly set up your SNMP IPv6. Please refer to ***4.2 Configuring with EzSetting***.
- **Telnet mode**: Configure your SNMP IPv6 in text mode. Please refer to ***4.3 Configuring via Telnet***.

The above-mentioned methods require network connection. If not available, you can use direct COM port connection to set up your EnviroStation. Please see ***4.4 Configuring through COM Port***.

NOTE:

1. To ensure system security, it is highly recommended that you change your account and password after the first login.
2. If you have multiple EnviroStation units installed in your network, we highly suggest that you change the EnviroStation's default Host Name to avoid conflicts. Also, it is recommended that you disable BOOTP/ DHCP and manually assign a valid static IP address to the EnviroStation.

4.1. Configuring via InsightPower SNMP IPv6 for EnviroStation Web

To set up the EnviroStation via your web browser, please follow the instructions below:

Step 1 Use a CAT5 network cable to connect the EnviroStation's 10/ 100 Base-T network port to the network. Launch your web browser. In the address bar, enter the EnviroStation's default Host Name **InsightPower**, or default IP address **192.168.1.100**. If you are unable to connect, please see ***Chapter 7 : Troubleshooting Q6***.

NOTE:

If you have previously changed the EnviroStation's Host Name or IP address, connect with the new settings.

Step 2 Log in as Administrator (default account/ password: admin/ password, case sensitive).

Step 3 Specify your preferred display language (default: English) from the dropdown menu on the top right of the page. The EnviroStation remembers your language preference. In the following instructions, English is chosen as the display language.

Step 4 Click **System** → **Administration** → **User Manager**. Manage your login accounts and passwords under the "Local Authentication" subhead. The access permission for the account types are listed as follows:

1) Administrator: Allowed to modify all settings.
2) Device Manager: Allowed to modify device-related settings.
3) Read Only User: Only allowed to view settings without the permission to make changes. .

You can manually specify whether users are allowed to log in from other LANs. If you wish to block login attempts from external connections, selecting Only in this LAN. Otherwise, select Allow Any.

Step 5 Click **System** → **Administration** → **TCP/ IP** to set Host Name, IP address, Subnet Mask and Gateway IP for the EnviroStation.

Step 6 Click **Time Server** to manually set time and date for the system, or enable automatic time synchronization between the EnviroStation and the time servers.

NOTE:

To completely set up your SNMP IPv6, please refer to ***Chapter 5: InsightPower SNMP IPv6 for EnviroStation Web.***

4.2. Configuring with EzSetting

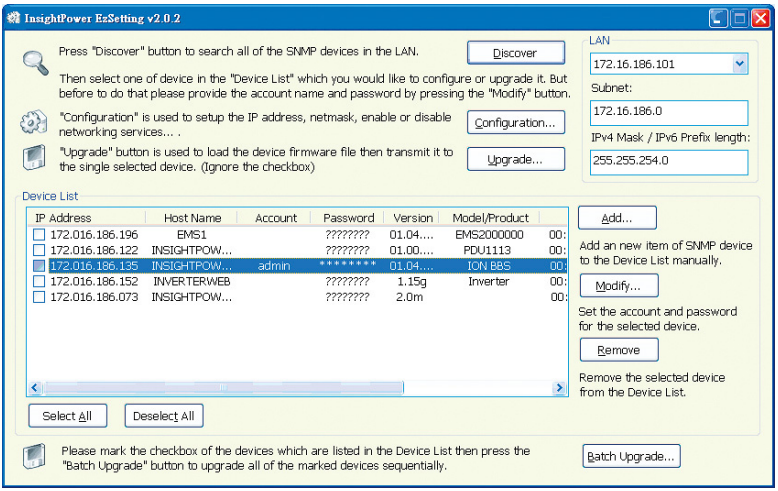
The EzSetting (compatible with Windows 2000/ 2003/ 2008/ XP/ Vista/ 7) allows you to easily configure your EnviroStation and upgrade firmware on your SNMP devices. Please download it from the website https://datacenter-softwarecenter.deltaww.com

Step 1 Use the provided standard CAT5 cable to connect the 10/ 100 Base-T network port from EnviroStation's rear panel to the network.

Step 2 Make sure the workstation and the EnviroStation are on the same LAN.

Step 3 From the root directory, launch **EzSetting**.

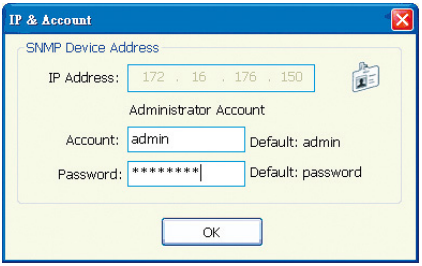
Step 4 Click **Discover** to search all available SNMP devices on the LAN. A list of devices will be shown.



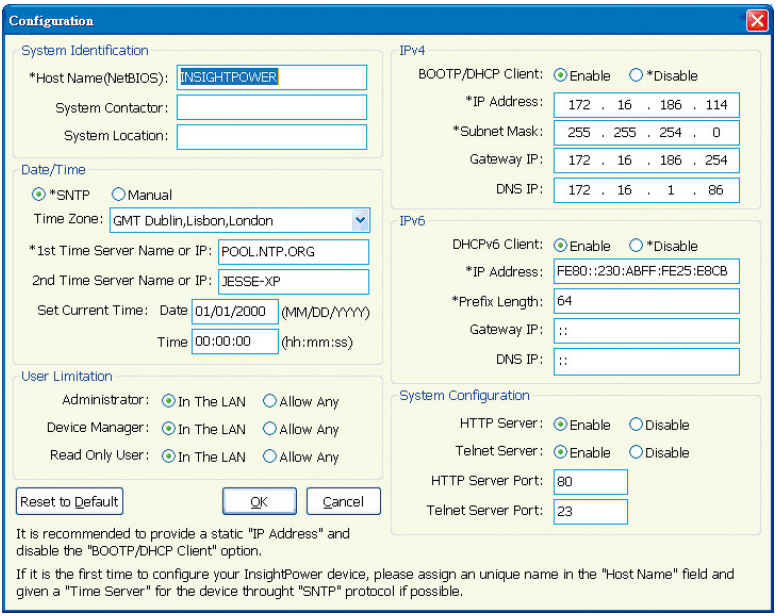
NOTE:

1. If you want to search SNMP devices in a different domain, change the **Subnet** and **IPv4 Mask/ IPv6 Prefix Length** and click **Discover**.
2. If the EnviroStation cannot be found, check UDP port 3456 on the workstation you are using. Make sure it is open.

Step 5 Select the SNMP device that you want to modify from the **Device List.** Click **Modify** and enter account and password (default: admin/ password, case sensitive).



Step 6 Click **Configuration** to configure network settings.



NOTE:

Refer to ***Chapter 5: InsightPower SNMP IPv6 for EnviroStation Web*** for complete configurations.

4.3. Configuring via Telnet

Step 1 Use the provided standard CAT5 cable to connect the 10/ 100 Base-T network port from the rear panel to the network.

Step 2 Connect the workstation (Windows or Linux) to the LAN that the EnviroStation is connected to.

Step 3 For Windows, launch DOS prompt mode (**Start** → **Run** → key in **cmd** and press **enter**). For Linux, launch shell.

Step 4 Enter the following command: **telnet InsightPower** or **telnet IP address** to initiate telnet connection with the EnviroStation.

Step 5 When connection is established, enter **account** and **password** (default: admin/ password, case sensitive). The **Main Menu** will appear on the screen. Please refer to ***4.5 Configuring via Text Mode*** for more information.

NOTE:

1. The EnviroStation will terminate idle connections after 60 seconds.
2. Refer to ***Chapter 5: InsightPower SNMP IPv6 for EnviroStation Web*** for complete configurations.

4.4. Configuring through COM Port

If a network connection is not available at your location, you can still set up the EnviroStation via COM port connection. Please follow the instructions below.

NOTE:

If you are running a non-Windows system, refer to your system's User Manual for Telnet client.

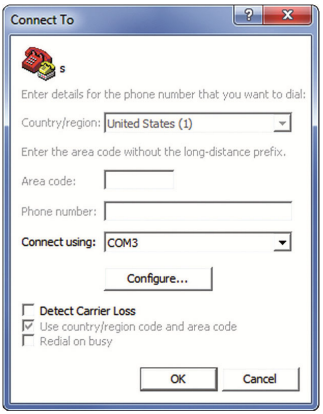
Step 1 Use the provided standard CAT5 cable to connect the 10/ 100 Base-T network port from the rear panel to the network.

Step 2 For Windows 2000, 2003, 2008 and XP, go to **Start** → **Programs** → **Accessories** → **Communications** and select **HyperTerminal**.

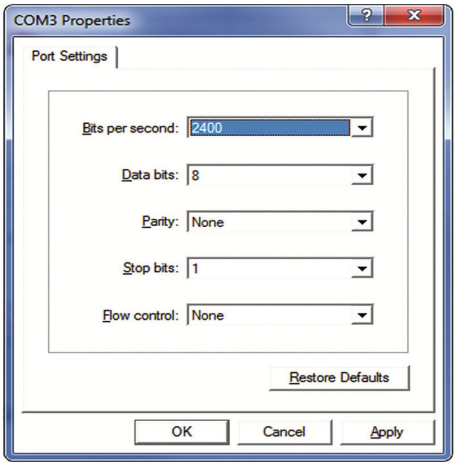
NOTE:

Microsoft has removed HyperTerminal from Windows Vista and later versions. If your operation system does not include the program, a free alternative Telnet/ SSH client PuTTy can be downloaded from http://www.putty.org.

Step 3 Enter a name, choose an icon for the connection and click **OK**. From the dropdown menu **connect using**, select the **COM port** that is connected to the EnviroStation.



Step 4 Click **configure** and set up COM port parameters as follows:

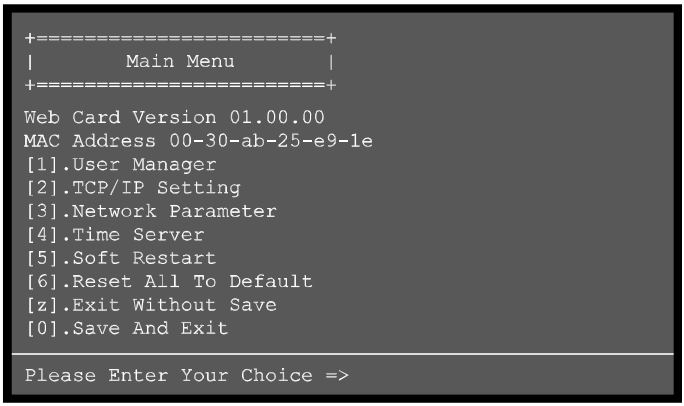


Step 5 Click **OK** to continue. HyperTerminal will automatically connect to the EnviroStation. If it does not connect, click the telephone icon from the tool bar. When connection is established, log in with account/ password. (Default: admin/ password, case sensitive). Once you are logged in, the **Main Menu** appears on the screen. Please refer to ***4.5 Configuring via Text Mode*** for more information.

4.5. Configuring via Text Mode

You can configure the EnviroStation via text mode by using Telnet/ SSH clients such as HyperTerminal and PuTTy. In this section, you can find descriptions and default settings.

O Main Menu



User Manager

```
+========================+
|      User Manager      |
+========================+
RADIUS
[1].RADIUS Auth: Disable
[2].Server:
[3].Secret:
[4].Port:       1812
----------------
Local Auth
    Administrator
[5].Account:    admin
[6].Password:   ********
[7].Limitation: Only in This LAN
    Device Manager
[8].Account:    device
[9].Password:   ********
[a].Limitation: Only in This LAN
    Read Only User
[b].Account:    user
[c].Password:   ********
[d].Limitation: Allow Any
[0].Back To Previous Menu

Please Enter Your Choice =>
```

No	Item	Description	Default
[1]	RADIUS Auth	Specify whether RADIUS login is allowed.	Disable
[2]	Server	The RADIUS server name.	-
[3]	Secret	The RADIUS secret.	-
[4]	Port	The RADIUS port number.	1812
[5]	Administrator Account	The default account/ password for the Administrator (case sensitive).	admin
[6]	Administrator Password		password
[7]	Administrator Limitation	Restrict Administrator login area.	Only in This LAN

No	Item	Description	Default
[8]	Device Manager Account	The default account/ password (case sensitive) for the Device Manager who is only permitted to change device-related settings.	device
[9]	Device Manager Password		password
[a]	Device Limitation	Restrict login area of the Device Manager.	Only in This LAN
[b]	Read Only User Account	The default account/ password (case sensitive) for Read Only User who can only observe settings.	user
[c]	Read Only User Password		password
[d]	Read Only User Limitation	Restrict login area of the Read Only User.	Allow Any

O TCP/ IP Configuration

```
+========================+
|     TCP/IP Setting     |
+========================+
[1].IPv4 Address:        192.168.001.100
[2].IPv4 Subnet Mask:    255.255.255.000
[3].IPv4 Gateway IP:     192.168.001.254
[4].IPv4 DNS or WINS IP:192.168.001.001
[5].DHCPv4 Client:       Enable
[6].IPv6 Address:        fe80::230:abff:fe25:900
[7].IPv6 Prefix Length:  64
[8].IPv6 Gateway IP:     ::
[9].IPv6 DNS IP:         ::
[a].DHCPv6:              Enable
[b].Host Name(NetBIOS):  INSIGHTPOWER
[c].System Contactor:
[d].System Location:
[e].Auto-Negotiation:    Enable
[f].Speed:               100M
[g].Duplex:              Full
[h].Status Stable:       3
[i].Telnet Idle Time:    60 Seconds
[0].Back To Previous Menu

Please Enter Your Choice =>
```

No.	Item	Description	Default
[1]	IPv4 Address	The IPv4 address.	192.168.001.100
[2]	IPv4 Subnet Mask	The IPv4 subnet mask setting.	255.255.255.000
[3]	IPv4 Gateway IP	The IPv4 network gateway.	192.168.001.254
[4]	IPv4 DNS or WINS IP	IPv4 Domain Name Server or WINS IP.	192.168.001.001
[5]	DHCPv4 Client	Enable/ disable DHCPv4 protocol.	Enable
[6]	IPv6 Address	The IPv6 address.	-
[7]	IPv6 Prefix Length	The IPv6 prefix length.	-
[8]	IPv6 Gateway IP	The IPv6 network default gateway.	-
[9]	IPv6 DNS IP	IPv6 Domain Name Server IP address.	-
[a]	DHCPv6	Enable/ disable DHCPv6 protocol.	Enable
[b]	Host Name (NetBIOS)	The Host Name for the EnviroStation.	INSIGHTPOWER
[c]	System Contactor	The System Contact information.	-
[d]	System Location	The System Location information.	-
[e]	Auto-Negotiation	Enable/ disable automatic transfer rate (10/ 100M bps) negotiation.	Enable
[f]	Speed	If the Auto-Negotiation is disabled, you can specify the transfer rate.	100M
[g]	Duplex	If the Auto-Negotiation is disabled, you can specify the duplex mode.	Full
[h]	Status Stable	Status change confirmation check time.	3
[i]	Telnet Idle Time	Telnet connection time-out setting.	60 Seconds

Network Parameter

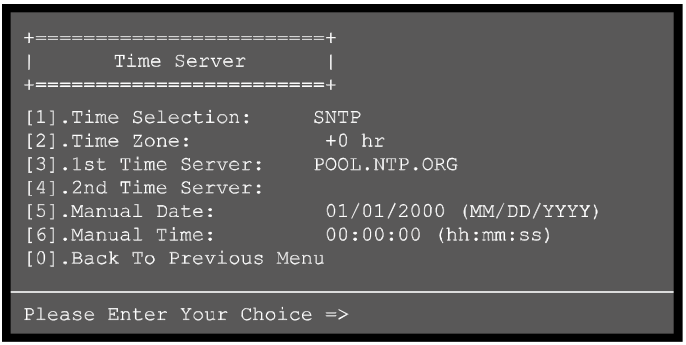
```
+=======================+
|    Network Parameter    |
+=======================+
[1].HTTP Server:          Enable
[2].HTTPS Server:         Enable
[3].Telnet Server:        Enable
[4].SSH/SFTP Server:      Enable
[5].FTP Server:           Disable
[6].Syslog:               Disable
[7].HTTP Server Port:     80
[8].HTTPS Server Port:    443
[9].Telnet Server Port:   23
[a].SSH Server Port:      22
[b].FTP Server Port:      21
[c].Syslog Server1:
[d].Syslog Server2:
[e].Syslog Server3:
[f].Syslog Server4:
[g].SNMP Get,Set Port:  161
[0].Back To Previous Menu

Please Enter Your Choice =>
```

No.	Item	Description	Default
[1]	HTTP Server	Enable/ disable HTTP protocol.	Enable
[2]	HTTPS Server	Enable/ disable HTTPS protocol.	Enable
[3]	Telnet Server	Enable/ disable Telnet protocol.	Enable
[4]	SSH/ SFTP Server	Enable/ disable SSH/ SFTP protocol.	Enable
[5]	FTP Server	Enable/ disable FTP protocol.	Disable
[6]	Syslog	Enable/ disable remote syslog.	Disable
[7]	HTTP Server Port	HTTP networking port.	80
[8]	HTTPS Server Port	HTTPS networking port.	443

No.	Item	Description	Default
[9]	Telnet Server Port	Telnet networking port.	23
[a]	SSH Server Port	SSH networking port.	22
[b]	FTP Server Port	FTP networking port.	21
[c]	Syslog Server 1	The remote syslog Host Name.	-
[d]	Syslog Server 2	The remote syslog Host Name.	-
[e]	Syslog Server 3	The remote syslog Host Name.	-
[f]	Syslog Server 4	The remote syslog Host Name.	-
[g]	SNMP Get, Set Port	The SNMP networking port.	161

Time Server

You can manually adjust time and date for the EnviroStation or set up automatic time server synchronization. The EnviroStation, Windows XP and later versions support SNTP (Simple Network Time Protocol). If you need to start up a time server service on your workstation, please refer to ***Chapter 7: Trouble-shooting Q1***.



No.	Item	Description	Default
[1]	Time Selection	SNTP or manual.	SNTP
[2]	Time Zone	Select the time zone.	+0 hr
[3]	1st Time Server	The first time server for SNTP.	POOL.NTP.ORG
[4]	2nd Time Server	The second time server for SNTP.	-
[5]	Manual Date	Set the date manually. (If the Time Selection is set to Manual)	01/01/2000
[6]	Manual Time	Set the date manually. (If the Time Selection is set to Manual)	00:00:00

Soft Restart

Reset the EnviroStation. This will not affect the operation of its connected devices.

Reset All To Default

Reset to manufacture default.

Exit Without Save

Exit and ignore changes.

Save And Exit

Preserve your changes and exit.

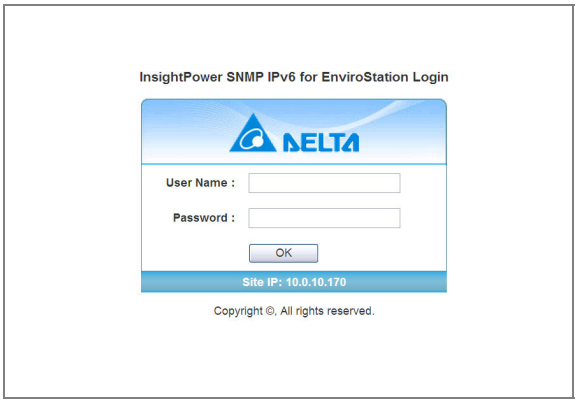
Chapter 5 : InsightPower SNMP IPv6 for EnviroStation Web

To configure EnviroStation via the InsightPower SNMP IPv6 for EnviroStation Web, please follow the steps below:

Step 1 Make sure that your EnviroStation is connected to the LAN. Use a standard CAT5 cable to connect the EnviroStation's 10/ 100 Base-T Network Port on the rear panel to your network.

Step 2 Launch your web browser. Enter EnviroStation's Host Name **http://InsightPower** or IP address **http://192.168.1.100/** in the address bar. For encrypted connection, enter **https://InsightPower or https://192.168.1.100**.

Step 3 When connection is established, the EnviroStation Login page appears. Enter your account and password (Default: admin/ password).



NOTE:

1. If you have previously changed EnviroStation's Host Name or IP address, make sure to provide the correct information accordingly.
2. If the login page is accessible, but you are unable to log in with correct account and password, additional network configuration is needed. The cause could be the IP subnet of the computer you are logging in to is different from the EnviroStation's. To solve this issue, please refer to ***Chapter 7: Troubleshooting Q3***.
3. EnviroStation will automatically log off idle connections after 30 minutes.

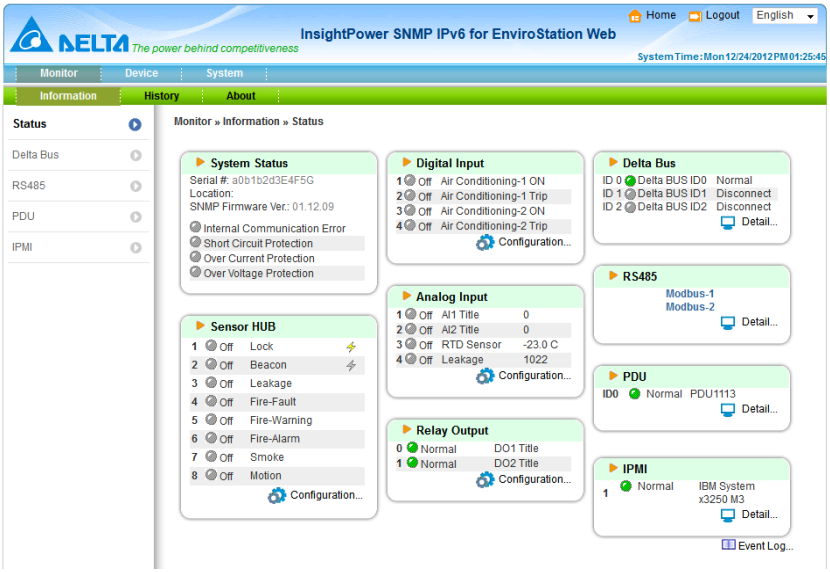
5.1 Monitor

5.1.1. Information

This includes the information of System Status, Sensor HUB, Digital Input, Analog Input, Relay Output, Delta Bus, RS485, PDU and IPMI status.

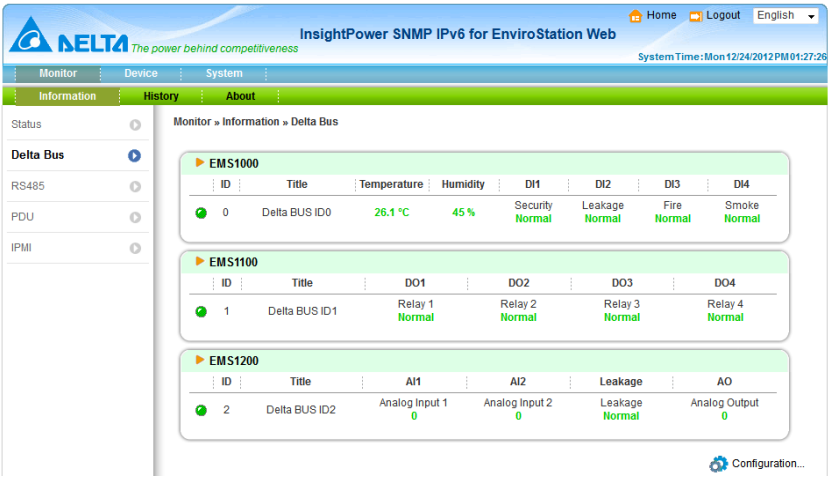
❍ Status

This page presents a status overview of connected devices. The values will be updated automatically. To set the refresh period, go to **System → Administration → Web → Web Refresh Period**.



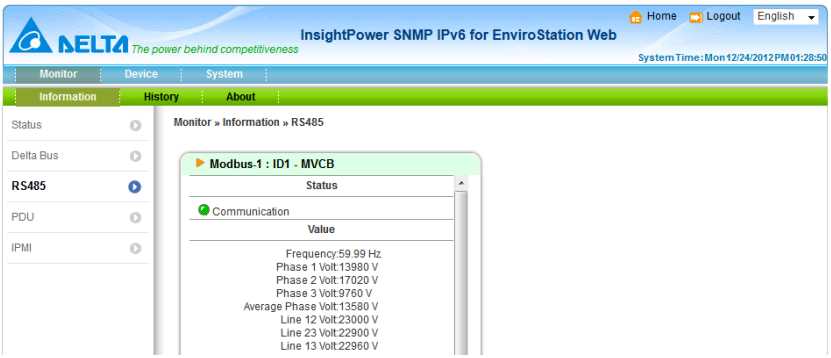
Delta Bus

Go to **Device** → **Information** → **Delta Bus** to view the status of cascaded EnviroProbes. To add or remove Delta Bus devices, click **Configuration** on the bottom right corner, or go to **Management** → **Delta Bus**.



RS485

To check RS485 device parameters, go to **Information** → **RS485**. To add or remove RS485 devices, click **Configuration** on the bottom right corner, or go to **Device** → **Management** → **RS485**.

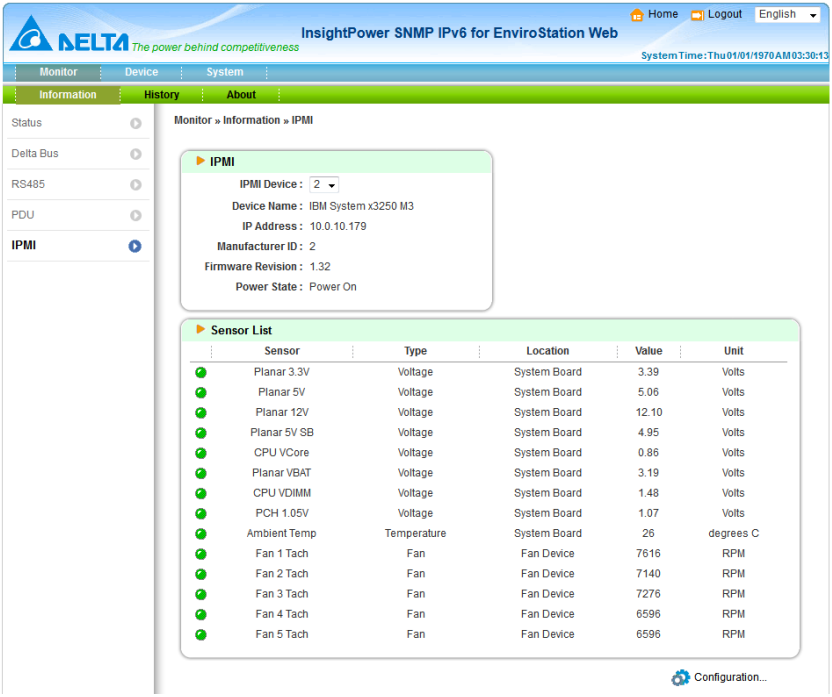


PDU

Go to **Information** → **PDU** to look up a specific PDU's ID No., model No., serial No., hardware version, firmware version, and relevant readings, such as load, frequency, watt & kWh, etc. You can also click the **Data Log** and **Energy Log** buttons (if your web page shows the two buttons) to view more relevant readings. For more information about the data log and energy log, please refer to ***5.1.2 History - Event Log*** and ***5.1.2 History - Energy Log***. If you want to enable a PDU unit, please click Configuration at the right-down corner or go to **Device** → **Management** → **PDU**.

IPMI

Go to **Information** → **IPMI** to look up a server's IPMI information, such as server name, IP address, firmware version, the server's power status and sensor status. To add, remove or configure an IPMI device, click **Configuration** at the right bottom corner, or go to **Device** → **Management** → **IPMI Device**.

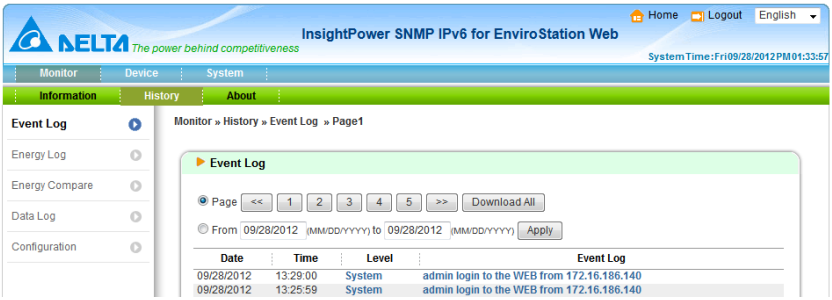


5.1.2 History

Event Log

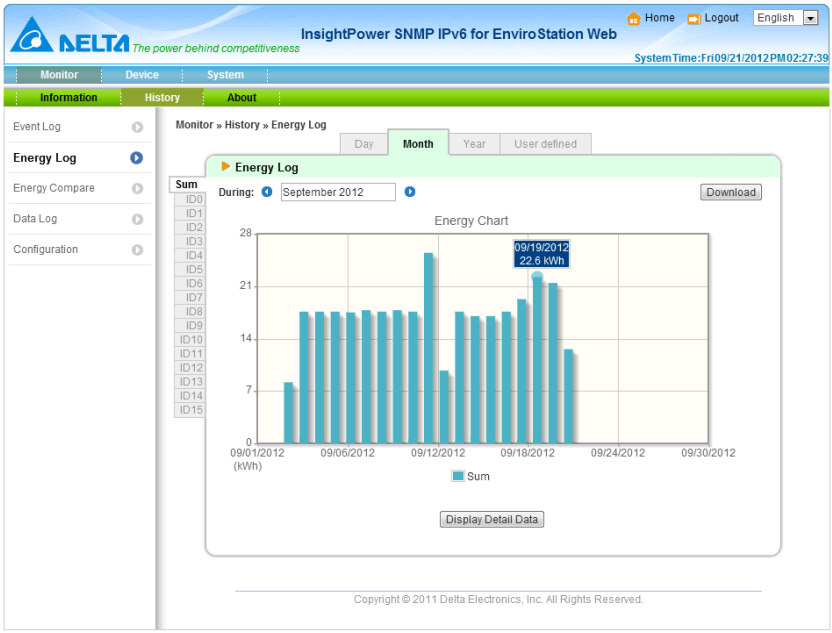
This table lists all occurred event. The existing ones are overwritten when the maximum number of entries (1,000) is reached. You can also download the entire event log archive (event_log.xls) recorded during an assigned period of time on your computer.

- **Date**: The date when the event occurred.
- **Time**: The time when the event occurred.
- **Level**: The Event Level of the event that occurred.
- **Event Log**: The description of the event that occurred.



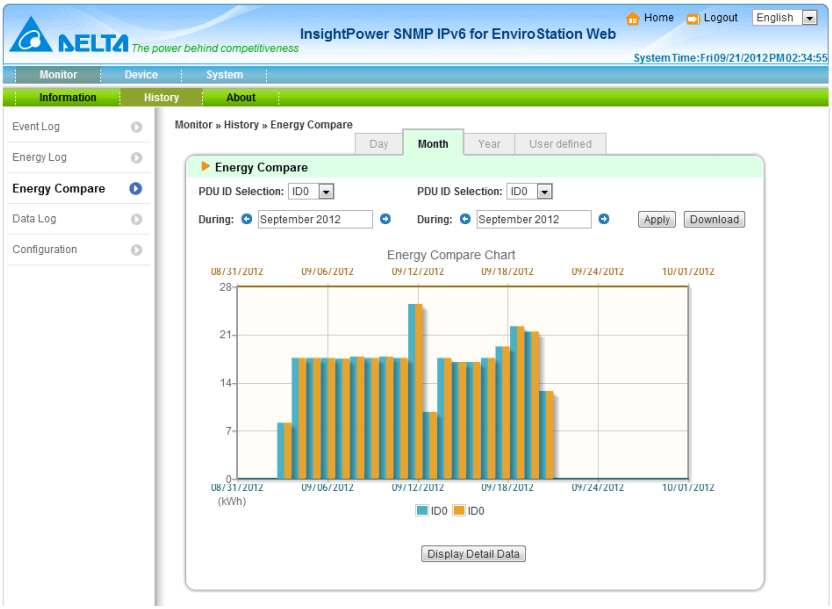
Energy Log

Go to **Monitor** → **History** → **Energy Log** to look up selected PDUs' energy logs. You can set up a specific time, click the **Display Detail Data** button to view detailed records and click the **Download** button to download the energy logs. The existing records are overwritten when the maximum number of entries (8,000) is reached.



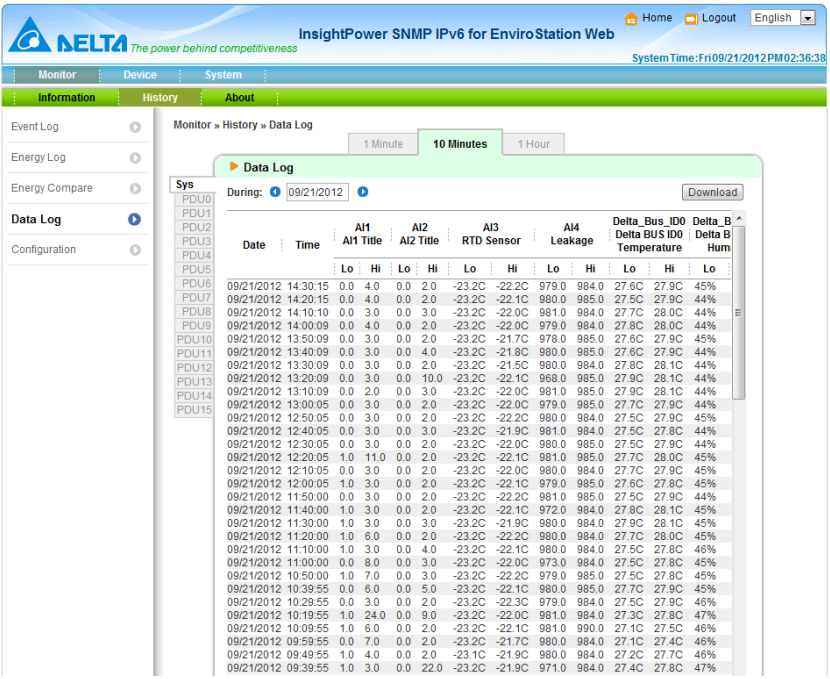
Energy Compare

Go to **Monitor** → **History** → **Energy Compare** to see any selected two PDUs' energy compare table. Choose any two PDUs' ID No., select a specific time, click the **Apply** button, and an energy compare table appears. You can click the **Display Detail Data** button to view detailed comparison records and click the **Download** button to download comparison logs. The existing records are overwritten when the maximum number of entries (8,000) is reached.



Data Log

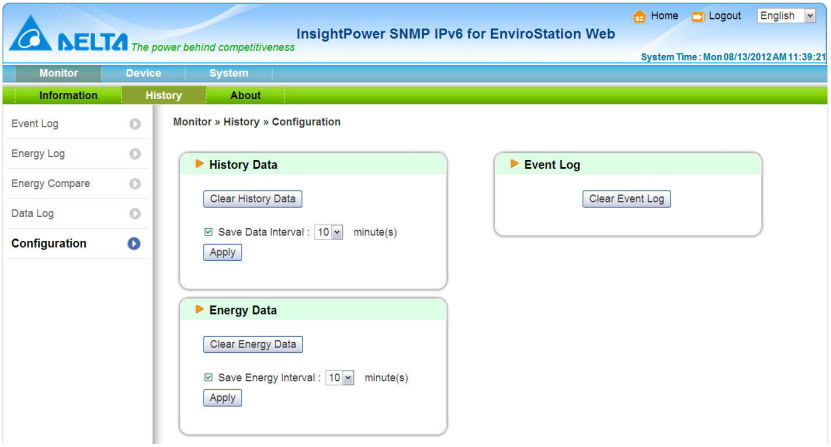
Go to **Monitor** → **History** → **Data Log** to see the analog inputs' data logs, EnviroProbe sensors' data logs and a specific PDU's data log recorded in a specific time. The data log includes information about the selected PDU's total output frequency, total output power, each branch's output voltage, output current and output power. Choose a PDU's ID No., select a specific time, and its data log appears. You can click the **Download** button to download the data log. The existing records are overwritten when the maximum number of entries (8,000) is reached.



Configuration

Go to **Monitor** → **History** → **Configuration** to clear the event log, energy log, energy compare log, and data log. You can also assign **Save Data Interval** and **Save Energy Interval**.

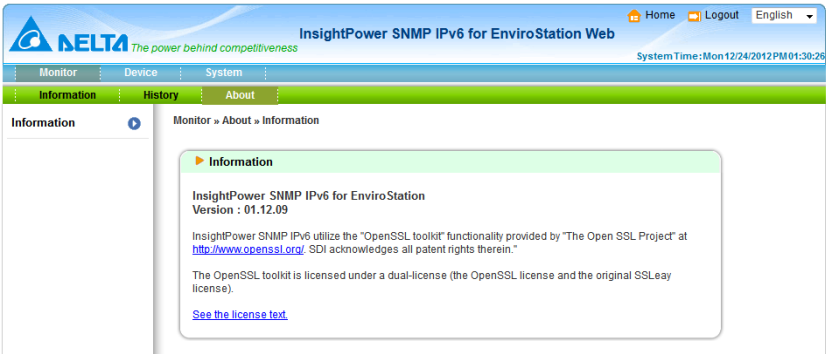
- **Clear History Data:** Empty the data log only.
- **Clear Event Log:** Empty the event log only.
- **Clear Energy Data:** Empty the energy log and energy compare log.
- **Save Data Interval:** The time interval after which a data entry is recorded.
- **Save Energy Interval:** The time interval after which an energy/ energy compare entry is recorded.



5.1.3 About

Information

Go to **Monitor** → **About** → **Information** to see the version of your InsightPower SNMP IPv6 for EnviroStation and other information about OpenSSL toolkit and license.

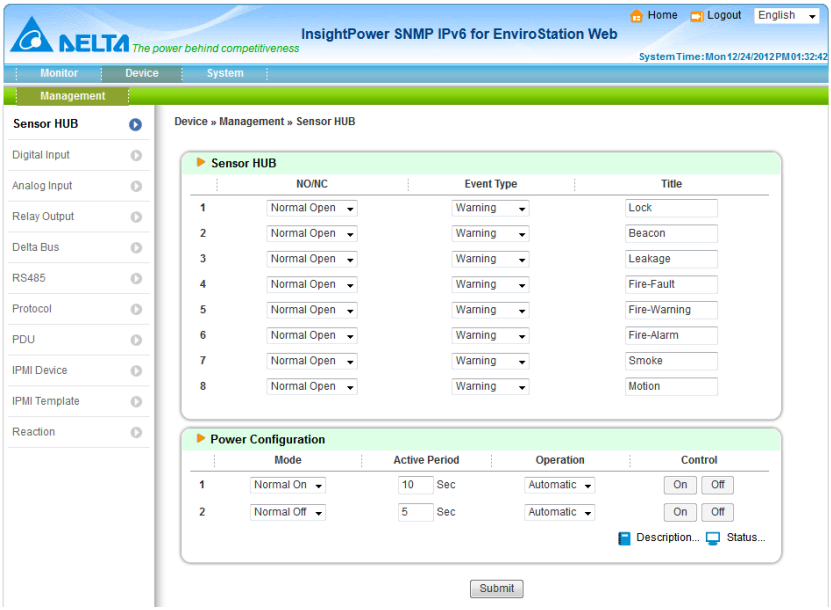


5.2 Device

5.2.1. Management

The InsightPower SNMP IPv6 for EnviroStation Web allows detailed configurations for Sensor HUB, Digital Input, Analog Input, Relay Output, Delta Bus, RS485, Protocol, PDU, IPMI Device, IPMI Template and Reaction.

❍ Sensor HUB

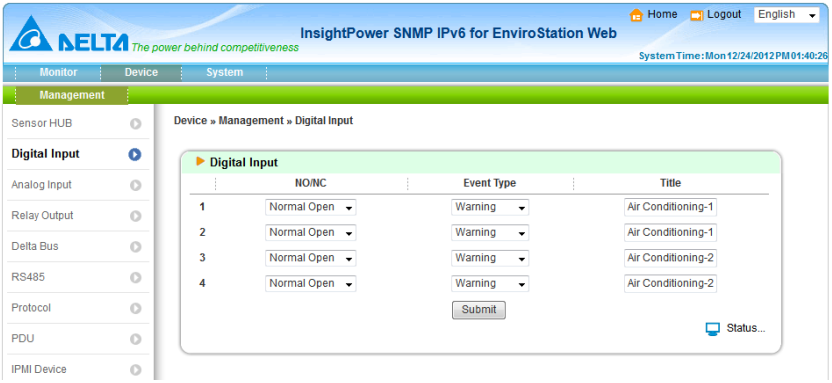


- **NO/ NC**: It means Normal Open or Normal Close. If Normal Open is selected, an event is triggered when 1. Dry Contact is closed or 2. Wet Contact is provided with 5~24Vdc. If Normal Close is selected, an event is triggered when 1. Dry Contact is open, or 2. Wet Contact is provided with <1.5Vdc. Please see the following table:

Digital Value	Dry Contact	Wet Contact
1	Close	5~24Vdc
0	Open	< 1.5Vdc

- **Event Type**: It allows you to individually determine sensor alarm levels. Reactions will only be triggered when Warning or Alarm is selected.
- **Title**: You can entitle devices for identification.
- **Power Configuration**: If **Normal Open** is selected, the EnviroStation supplies 12Vdc or 24Vdc power to Sensor HUB. If **Manual** is selected and **Off** button is clicked, the power is cut off. You can also set up **Reaction** (please see ***5-2-1 Management- Reaction***) to automatically cut off the power. Power is cut off during the period of time specified in the **Active Period** box. Power resumes after the given duration. If the specified **Active Period** is 0, power does not resume.

Digital Input



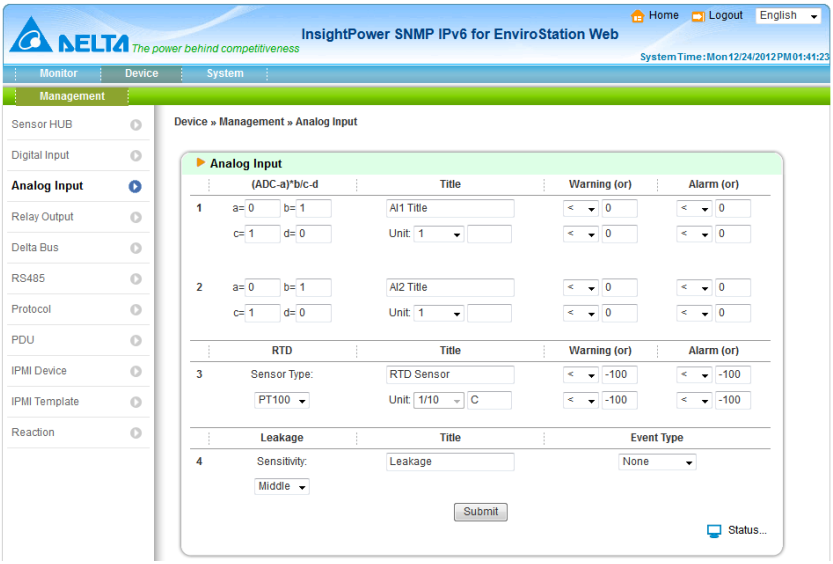
- **NO/ NC**: If Normal Open is selected, an event is triggered when 1. Dry Contact is closed, or 2. Wet Contact is provided with 5~24Vdc. If Normal Close is selected, an event is triggered when 1. Dry Contact is open, or 2. Wet Con-tact is provided with < 1.5Vdc.

Digital Value	Dry Contact	Wet Contact
1	Close	5~24Vdc
0	Open	< 1.5Vdc

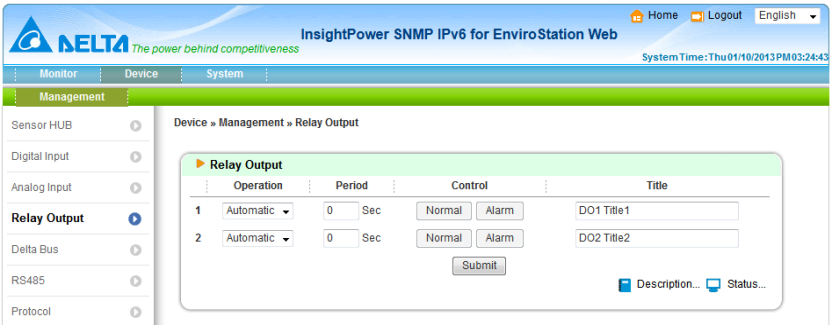
- **Event Type**: It allows you to individually determine the Alarm levels for sensors. Selecting Alarm or Warning triggers reactions.
- **Title**: You can entitle devices for identification.

Analog Input

- **Formula**: AI (Analog Input) 1 and AI2 are designed for general Analog In-puts, each can be connected to a voltage (0~10Vdc) or current (0~20mA) source. EnviroStation translates the ADC (Analog-to-digital converter) values according to the following formula: (ADC-a)*b/c-d. You can select the unit scale and define the unit string for the translated values.
- **Title**: You can entitle devices for identification.
- **Warning / Alarm**: You can set event type to Warning or Alarm.
- **RTD**: The AI3 is designed to connect an RTD device. You can define the conditions when reactions are triggered for Warning and Alarm levels.
- **Leakage**: The AI4 is designed to connect a leakage sensor. You can select the sensor sensitivity and Event Type.



Relay Output



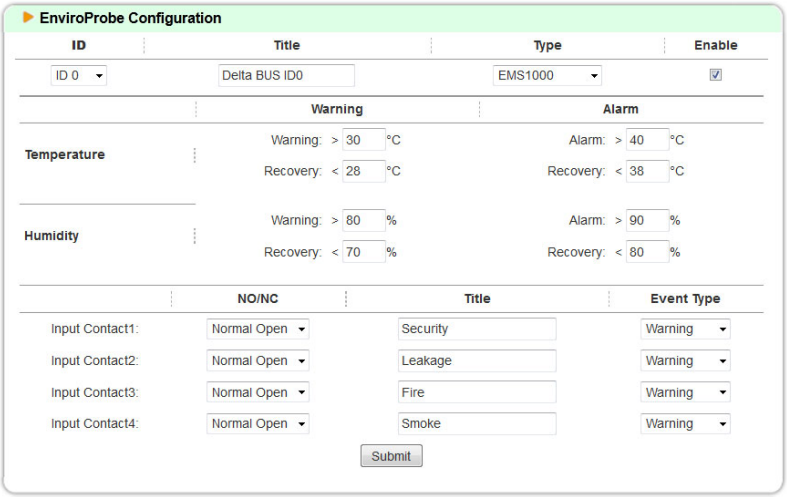
- **Operation**: Select **Automatic** to enable automatic linking between a specific relay output and **Reaction** (please see ***5.2.1 Management - Reaction***). Select **Manual** to set the specific relay output status by clicking the **Normal** and **Alarm** buttons.
- **Period**: The relay output changes its status during the period of time specified in the **Period** box. The original relay output status resumes after the given duration. If the specified **Period** is 0, the original relay output status does not resume automatically unless you manually click the **Normal** button or set up **Reaction** (please see ***5.2.1 Management - Reaction***).
- **Title**: You can entitle devices for identification.

Delta Bus

The EnviroStation communicates with EnviroProbes through the Delta Bus. There are three types of EnviroProbes, (1) EnviroProbe (EMS1000), (2) EnviroProbe 1100 (EMS1100) and (3) EnviroProbe 1200 (EMS1200). The Delta Bus page varies according to different types of EnviroProbes. Please see below:

- **For EnviroProbe (EMS1000):**

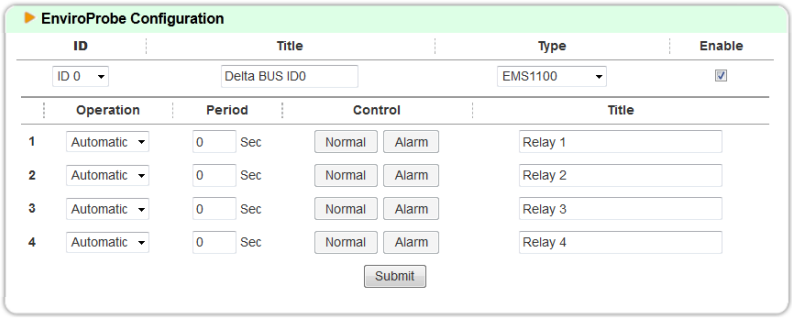
  The EnviroProbe (EMS1000) provides one temperature/ humidity sensor and four digital outputs. In this page, select an **ID** first and then set up **Title** and **Type**. Click **Enable** if you wish to enable the device. Please note that the **ID** means the ID No. you set up for your EnviroProbe (EMS1000) using its ID DIP switches (please see ***3.3 EnviroProbe***). You can set up **Warning** and **Alarm** conditions for the temperature/ humidity sensor, and define each input contact's **NO/ NC**, **Title** and **Event Type**.



- **For EnviroProbe 1100 (EMS1100)**

  The EnviroProbe 1100 (EMS1100) provides four digital outputs. In this page, select an **ID** first and then set up **Title** and **Type**. Click **Enable** if you wish to enable the device. Please note that the **ID** means the ID No. you set up for your EnviroProbe 1100 (EMS1100) using its ID DIP switches (please see ***3.3 EnviroProbe***). You can set up each digital output's **Operation**, **Period** and **Title**. Select **Automatic** to enable automatic linking between a specific digital output and **Reaction** (please see ***5.2.1 Management - Reaction***). Select **Manual** to set the specific digital output status by clicking the **Normal** and **Alarm** buttons.

  The digital output changes its status during the period of time specified in the **Period** box. The original digital status resumes after the given duration. If the specified **Period** is 0, the original digital status does not resume automatically unless you manually click the **Normal** button or set up **Reaction** (please see ***5.2.1 Management - Reaction***).



- **For EnviroProbe 1200 (EMS1200)**

  The EnviroProbe 1200 (EMS1200) provides two analog inputs, one analog output and one water-leakage detection. In this page, select an **ID** first and then set up **Title** and **Type**. Click **Enable** if you wish to enable the device. Please note that the **ID** means the ID No. you set up for your EnviroProbe 1200 (EMS1200) using its ID DIP switches (please see ***3.3 EnviroProbe***). You can set up the following:

  1) Analog Input

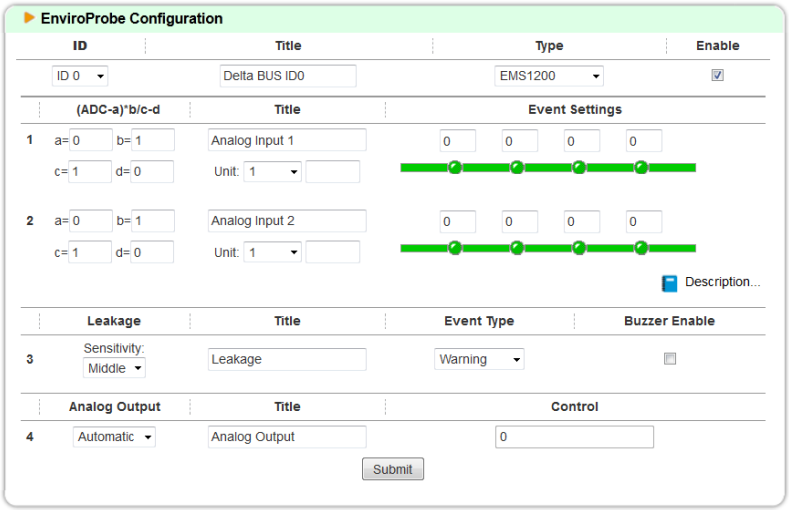
  Set up each analog input's **((ADC-a)*b/c-d)**, **Title** and **Event Settings**. Click the color bar in **Event Settings** to change event types for different thresholds of analog inputs. Green, yellow, and red mean normal, warning, and alarm events respectively.

  2) Leakage

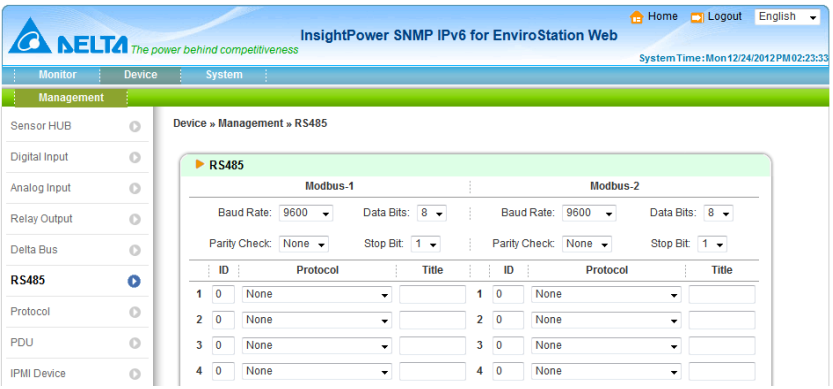
  Set up leakage's **Sensitivity**, **Title** and **Event Type**. If you check the **Buzzer Enable** box, the EnviroProbe 1200 (EMS1200) will enable buzzer when it detects water leakage.

  3) Analog Output

  Set up analog output (**Automatic** or **Manual)**, **Title** and **Control**. If **Manual** is selected, **Reaction** (please see ***5.2.1 Management - Reaction***) won't be able to control analog output.



RS485

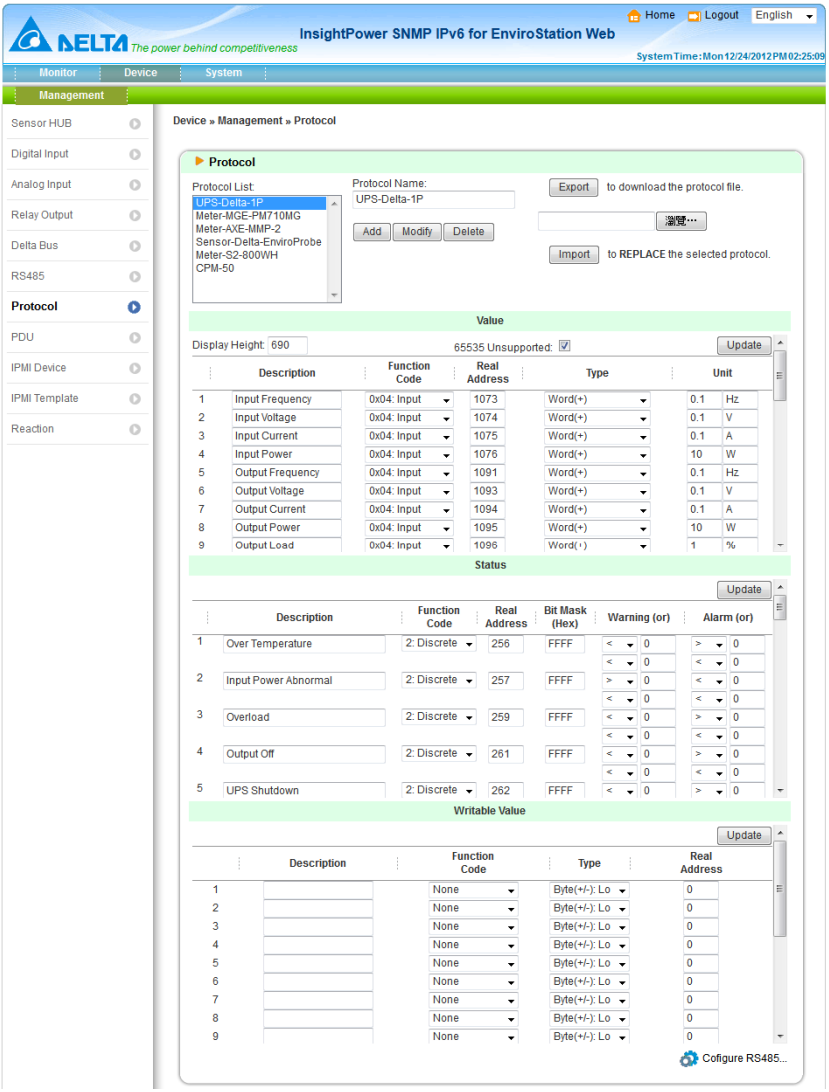


There are two RS485 ports on the rear panel, each port can be configured with a different baud rate, data bits, parity and stop bit. EnviroStation communicates with up to 16 Modbus devices in an RS485 port. You can individually select protocol for each Modbus device from the dropdown menu.

If a suitable protocol cannot be found, you can manually define a special Mod-bus protocol. Please see ***5.2.1 Management - Protocol.***

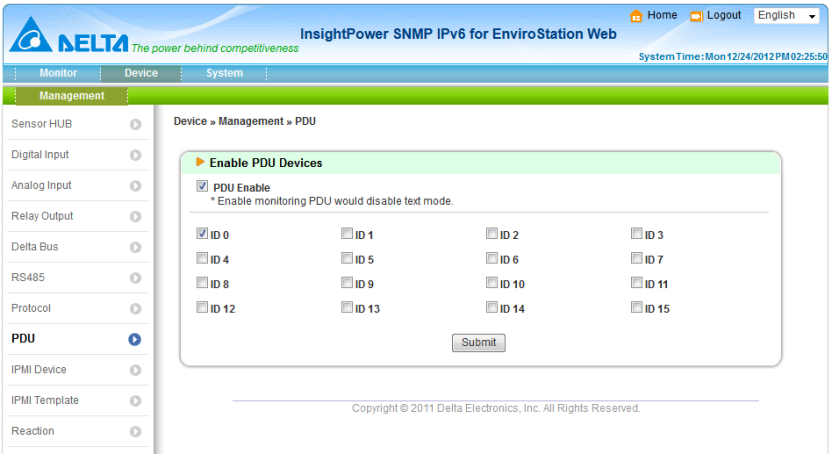
Protocol

In this page, you can add, modify or delete protocols. You can also export or import protocols from files for backup purposes. Each protocol contains 32 values and 32 statuses.



PDU

After you check the **PDU Enable** box to enable monitoring PDU feature, please use the provided RJ45-DB9 cable to connect the EnviroStation and your PDU. Connect the RJ45 to the EnviroStation's console port and connect the DB9 to the PDU's RS232-2 port. For installation information, please refer to ***3.9 PDU Installation***. Please note that, once you check the **PDU Enable** box, the text mode will be disabled. After you select PDU ID No. and click Submit, the EnviroStation will monitor the PDU units accordingly.



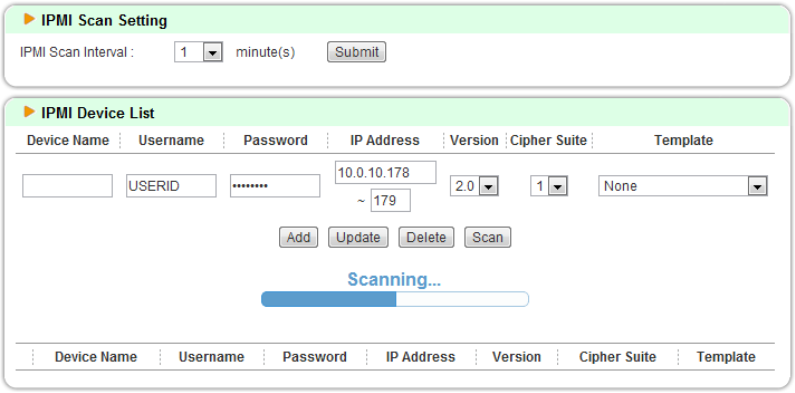
IPMI Device

- **IPMI Scan Setting**

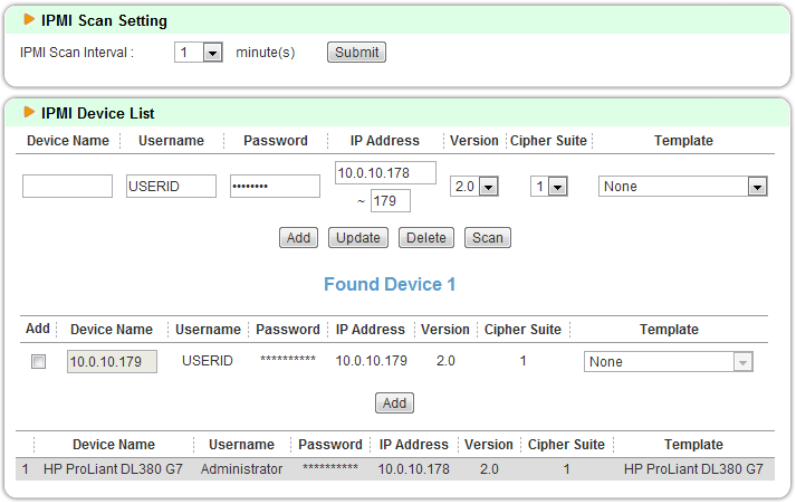
  You can set up **IPMI Scan Interval** here. After setup, all IPMI devices will be scanned when the scan time is due.

- **IPMI Device List**

  You can enter the **Device Name**, **Username**, **Password**, **IP Address**, **IPMI Version**, **Cipher Suite** and **IPMI Template** in this page. Click **Add**, **Update** or **Delete** to add, modify or delete an IPMI device's configuration. You can also add an IPMI device if you enter **Username**, **Password**, **IP Address**, **IPMI Version**, **Cipher Suite** and click the **Scan** button.



Device scan result will appear after the scan process is done. You can add a device that you would like to monitor if you check the **Add** box, give a device name, specify its template, and then click the **Add** button.

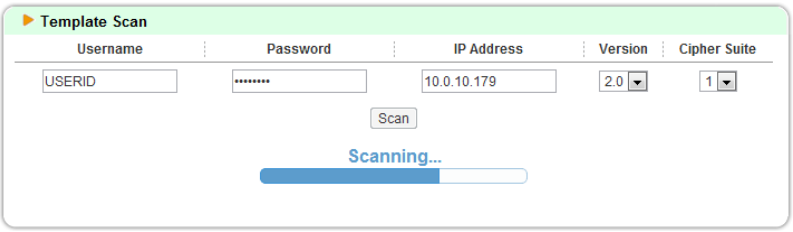


IPMI Template

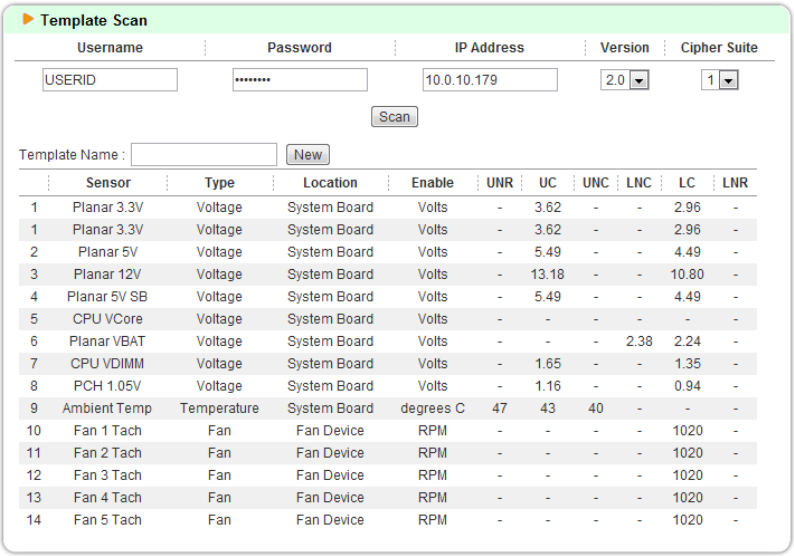
You can add and delete an IPMI template in this page. You can also modify the IPMI template to decide how many sensors that you want to monitor.

- **Template Scan**

  To scan an IPMI template, you have to enter the **Username**, **Password**, server's **IP Address**, **IPMI version** and **Cipher Suite**. After clicking the **Scan** button, the system will start the template scan.



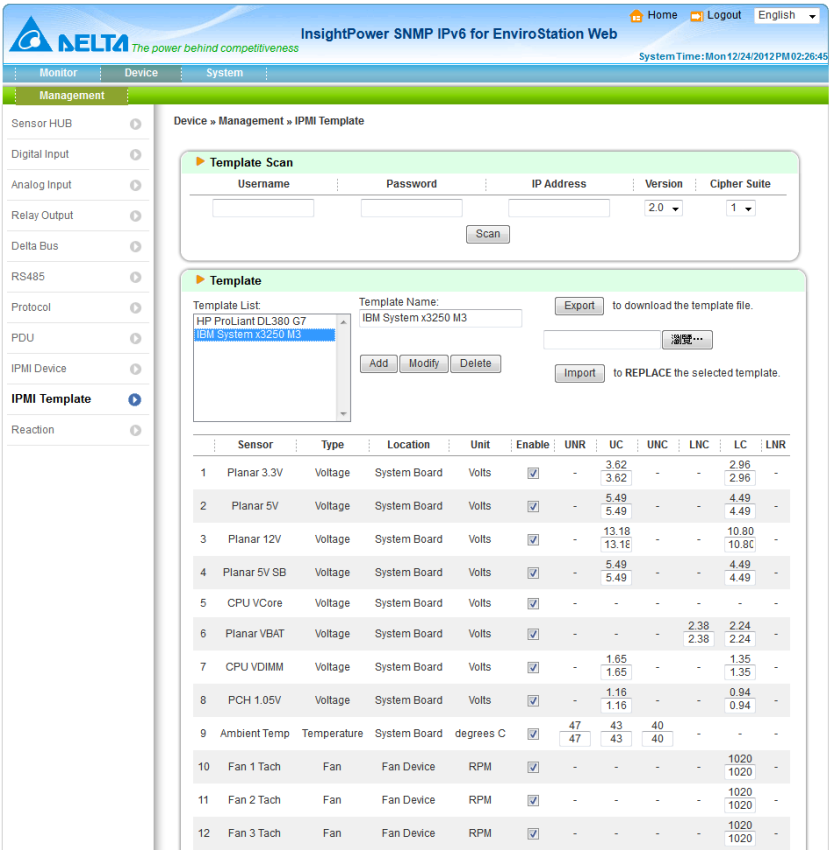
After scanning, all sensors will be shown in this page. You can specify the template name and click the **New** button to create a new IPMI template.



	Sensor	Type	Location	Enable	UNR	UC	UNC	LNC	LC	LNR
1	Planar 3.3V	Voltage	System Board	Volts	-	3.62	-	-	2.96	-
1	Planar 3.3V	Voltage	System Board	Volts	-	3.62	-	-	2.96	-
2	Planar 5V	Voltage	System Board	Volts	-	5.49	-	-	4.49	-
3	Planar 12V	Voltage	System Board	Volts	-	13.18	-	-	10.80	-
4	Planar 5V SB	Voltage	System Board	Volts	-	5.49	-	-	4.49	-
5	CPU VCore	Voltage	System Board	Volts	-	-	-	-	-	-
6	Planar VBAT	Voltage	System Board	Volts	-	-	-	2.38	2.24	-
7	CPU VDIMM	Voltage	System Board	Volts	-	1.65	-	-	1.35	-
8	PCH 1.05V	Voltage	System Board	Volts	-	1.16	-	-	0.94	-
9	Ambient Temp	Temperature	System Board	degrees C	47	43	40	-	-	-
10	Fan 1 Tach	Fan	Fan Device	RPM	-	-	-	-	1020	-
11	Fan 2 Tach	Fan	Fan Device	RPM	-	-	-	-	1020	-
12	Fan 3 Tach	Fan	Fan Device	RPM	-	-	-	-	1020	-
13	Fan 4 Tach	Fan	Fan Device	RPM	-	-	-	-	1020	-
14	Fan 5 Tach	Fan	Fan Device	RPM	-	-	-	-	1020	-

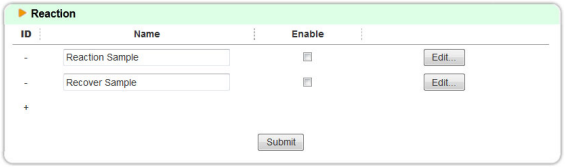
- **Template**

  A new template will be shown on the template list after you click the **New** button. All sensors belonged to the new template are disabled (default). You can enable a specific sensor by checking its **Enable** box. You can also enable several sensors that you like and group them into a new template by giving a new template name in the **Template Name** column**.** After clicking the **Add** button, the new template name will be added into the template list. You can also **Modify** or **Delete** a template name. To export a template file, please click the **Export** button and save the file as a new file. To import a template file, click the **Browse** button, find the specific template file, and then click the **Import** button to import the IPMI template file.



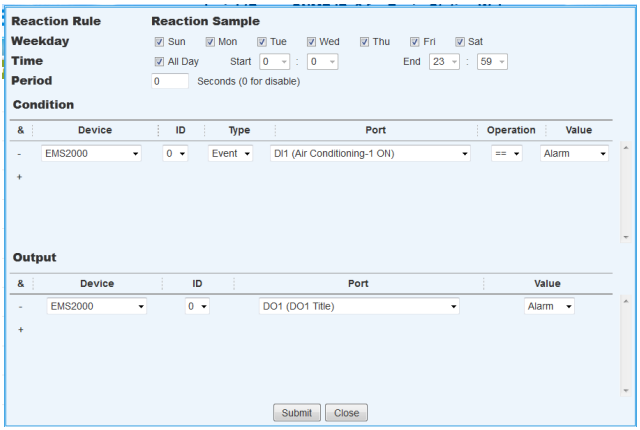
Reaction

User can add (click **+**), modify and delete (click **-**) reaction items in this page. Click **Edit** to setup **Reaction Rule**. EnviroStation supports up to 64 reaction items.



Reaction Rule includes settings of **Weekday**, **Time**, **Condition** and **Output**. When each situation/ condition is met, corresponding outputs will be enabled.

1. **Weekday & Time:** Set up time.
2. **Period:** After setting up the **Period**, the EnviroStation will regularly execute the **Reaction Rule**. If the **Reaction Rule**'s all conditions are met, there will be corresponding outputs. If the **Period** is 0 and the **Reaction Rule**'s all conditions are met for the 1st time, corresponding outputs will occur. However, after the 2nd time (included), there will be no corresponding outputs.
3. **Condition:** Set up **Device**, **ID**, **Type**, **Port**, **Operation** and **Value**. Click **+** or **-** to add or delete a condition. You can set up at maximum 16 conditions.
4. **Output:** Set up **Device**, **ID**, **Port** and **Value**. Click **+** or **-** to add or delete an output. You can set up at maximum 16 outputs.

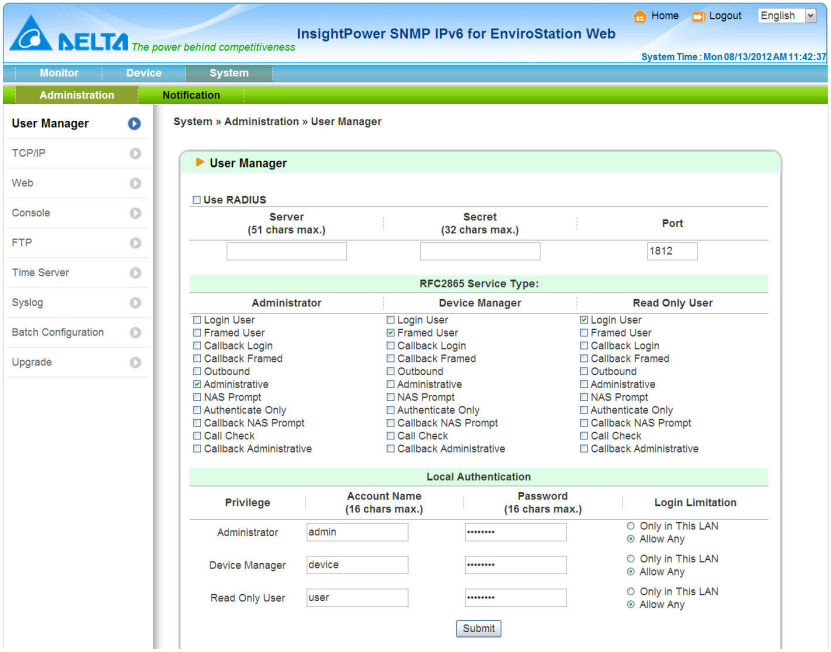


5.3 System

5.3.1. Administration

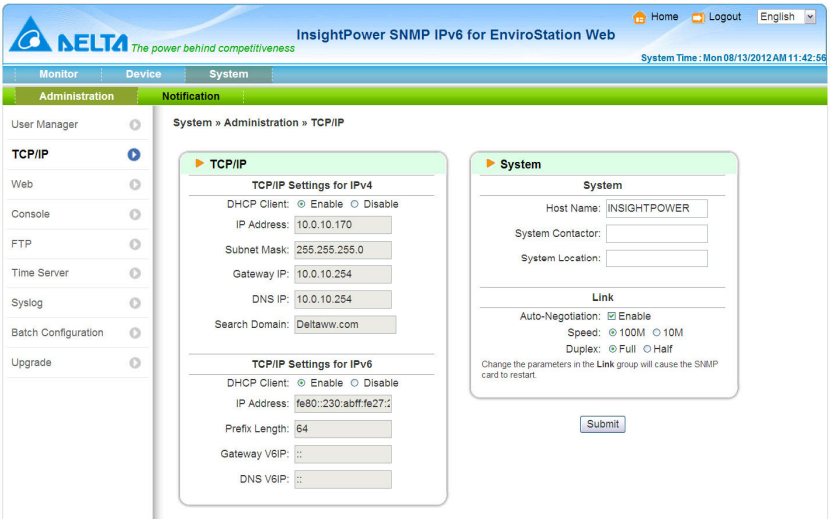
❍ User Manager

The EnviroStation supports RADIUS. Check the **Use RADIUS** box, key in required information including Server, Secret and Port (default: 1812) and click **submit** to enable RADIUS. You can define service types for Administrator, De-vice Manager and Read Only User. If RADIUS is disabled, you can still manage the Account Name, Password and Login Limitation for Local Authentication.



TCP/ IP

Set IPv4 and IPv6 addresses and fill in system information in this page. Please refer to the descriptions below.



- **IPv4 (TCP/ IP Settings for IPv4)**

  1) **DHCP Client**: Enable/ disable DHCP. If enabled, DHCP server automatically assigns an IP address to the EnviroStation.

  2) **IP Address**: The IP address in dotted format (e.g. 192.168.1.100).

  3) **Subnet Mask**: The Subnet Mask for your network (e.g. 255.255.255.0).

  4) **Gateway IP**: The IP address for network gateway in dotted format (e.g. 192.168.1.254).

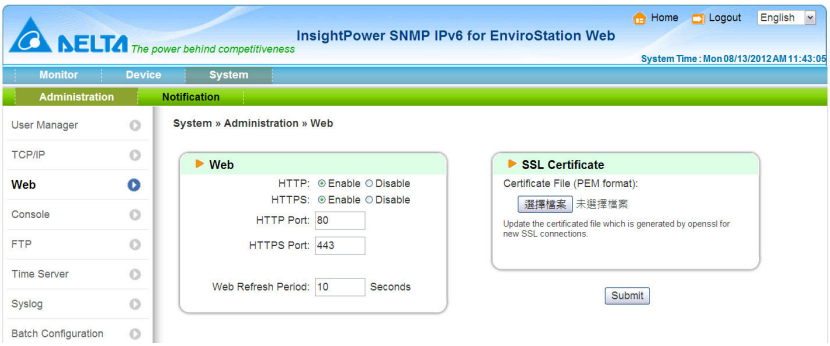
  5) **DNS IP**: The IP address Domain Name Server in dotted format (e.g. 192.168.1.1).

  6) **Search Domain**: If the Host Name you provided cannot be found, the system appends the search domain to your Host Name.

- **IPv6 (TCP/ IP Settings for IPv6)**
  1) **DHCP Client**: Enable/ disable DHCP. If enabled, DHCP server automatically assigns an IP address to the EnviroStation.
  2) **IP Address:** The IPv6 address.
  3) **Prefix Length:** The prefix length for the IPv6 address.
  4) **Gateway V6IP:** The IP address for the IPv6 network gateway.
  5) **DNS V6IP:** The IP address for the IPv6 domain name server.
- **System**
  1) **Host Name:** The SNMP Host Name on the network.
  2) **System Contactor:** System contact information .
  3) **System Location:** System location information.
- **Link**
  1) **Auto-Negotiation:** Enable/ disable automatic transfer rate (10/ 100M bps) negotiation.
  2) **Speed:** If Auto-Negotiation is disabled, you can specify the transfer rate.
  3) **Duplex:** If Auto-Negotiation is disabled, you can specify the duplex mode.

Web

This allows Administrator to enable/ disable HTTP/ HTTPS communication protocols.



- **Web**

  1) **HTTP**: Enable/ disable HTTP connection.

  2) **HTTPS**: Enable/ disable HTTPS connection.

  3) **HTTP Port**: Assign an HTTP port number (default: 80).

  4) **HTTPS Port**: Assign an HTTPS port number (default: 443).

  5) **Web Refresh Period**: Web refresh update interval.

- **SSL Certificate**

  1) To ensure connection security between the EnviroStation and the connecting workstation, SSL certificates can be used to encrypt and secure the integrity of transmitting data.

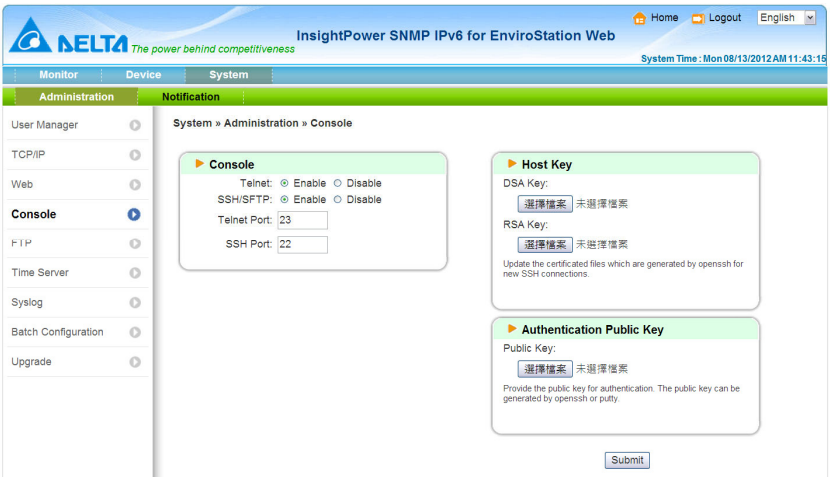
  2) **Certificate File**: It allows you to replace your own SSL certificate file. The EnviroStation supports PEM format which is generated by OpenSSL. Click Choose File to upload a certificate file.

NOTE:

For more information regarding generating a private SSL certificate file, please refer to ***Chapter 7: Troubleshooting Q12***, or visit http:// www.openssl.org/.

Console

This page allows you to enable or disable Telnet/ SSH communication protocols and replace DSA/ RSA keys.

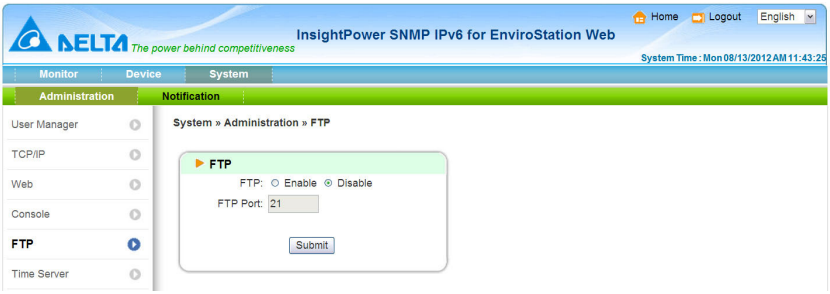


- **Telnet:** Enable/ disable Telnet connection.
- **SSH/ SFTP:** Enable/ disable SSH/ SFTP connection.
- **Telnet Port:** Assign a Telnet port number (default: 23).
- **SSH Port:** Assign an SSH protocol port number (default: 22).
- **Host Key:**

  DSA/ RSA Key: This allows you to replace your own SSH keys. The EnviroStation supports key files generated by OpenSSH. Please refer to ***Chapter 7: Troubleshooting Q13***.

FTP

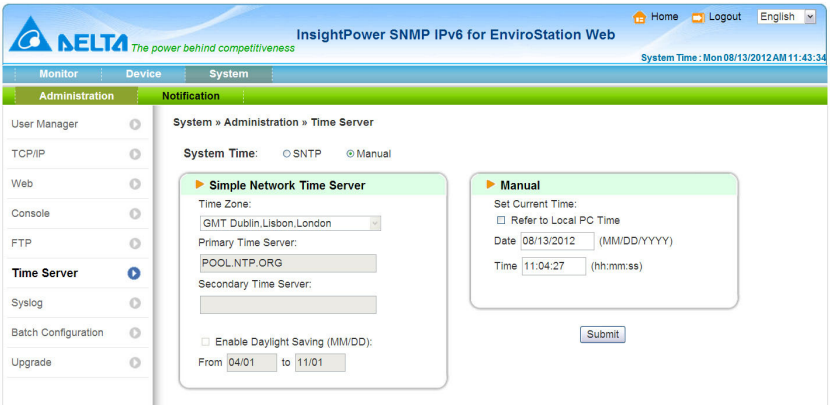
This allows you to enable/ disable FTP communication Protocol.



- **FTP:** Enable/ disable FTP connection.
- **FTP Port:** Assign an FTP port number (default: 21).

Time Server

You can manually set the time and date, or enable automatic time synchronization with SNTP servers. Please note that if the SNTP server is not responsive, the event and data log will not register even when SNTP is enabled.



- **Simple Network Time Server**

  1) **Time Zone**: From the dropdown menu, select the time zone for the location where the EnviroStation is located.

  2) **Primary/ Secondary Time Server**: Two time servers can be added. Every 60 minutes, the EnviroStation synchronizes with the first responding server.

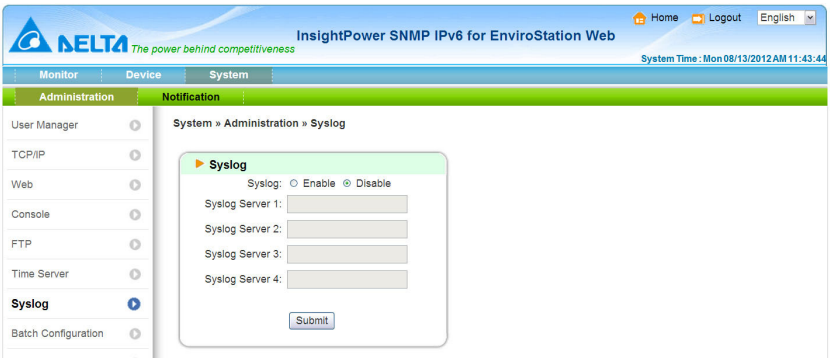
  3) **Enable Daylight Saving**: Check to enable daylight saving time. During this period, the EnviroStation adjusts time forward one hour.

- **Manual**

  If a time server is not accessible, you can still manually set time and date. Please note that every time you restart EnviroStation's network module, time and date is reinstated to previous assigned settings.

Syslog

Syslog is used to store event log on remote syslog servers. This will not affect the local event log.



Batch Configuration

The EnviroStation provides batch configuration to allow quick and effortless setup on multiple EnviroStations and SNMP devices. You can duplicate settings by exporting configuration files from the devices that you have successfully configured, and import the configuration files on other devices.

- **System Configuration**

  The **System Configuration** includes settings saved in the **Management** and **Administration** tabs. To download a configuration file, simply click **Download**. To upload a configuration file, click **Choose File**, select the file you wish to upload, and click **Upload**.

  NOTE:

  If the IP address is static and you wish to copy settings to other devices on the same LAN, you must manually remove the following line **IP=xxx.xxx.xxx.xxx** under the [System] section from the exported configuration file. You can open the configuration file with text editors such as Notepad and WordPad. (To modify/ assign IP address for the EnviroStation, please see ***Chapter 4: System Configurations***).

- **SNMP Configuration**

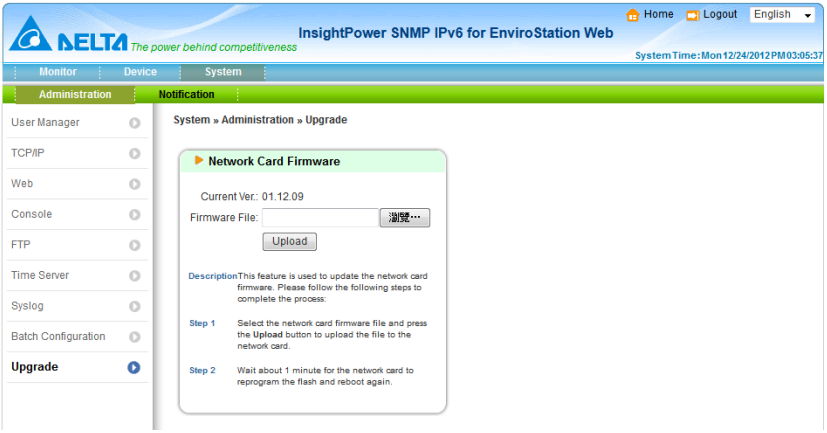
  The **SNMP Configuration** includes settings in the **Notification** tab. To download a configuration file, simply click **Download**. To upload a configuration file, click **Choose File**, select the file you wish to upload, and click **Upload**.

  NOTE:

  If you need to modify the command lines, please do not delete the unmodified ones. They should be left intact to assure the integrity of the configuration file.

Upgrade

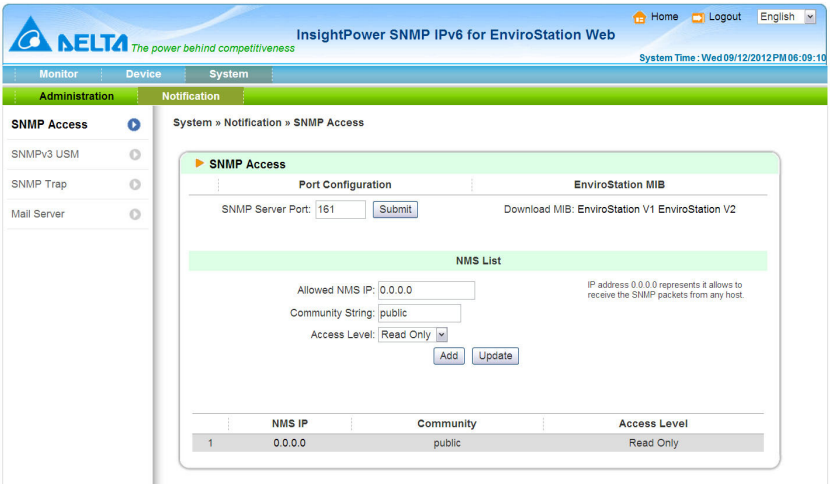
Check for latest firmware upgrades at http://59.125.232.140/en/index.aspx. A firmware upgrade to your EnviroStation can be performed within just a few clicks. Click **Choose File** to select a valid firmware package from your directory, then click **Upload**. The upgrade process should take about one minute to complete.



5.3.2. Notification

SNMP Access

The EnviroStation supports SNMP protocol and SNMP NMS (Network Management System), which are commonly used to monitor network devices for conditions that call for administrative attention. To prevent unauthorized access, you can specify the NMS IP addresses that are allowed to access with their respective Community Strings and access levels. The maximum number of IP entries is 256.

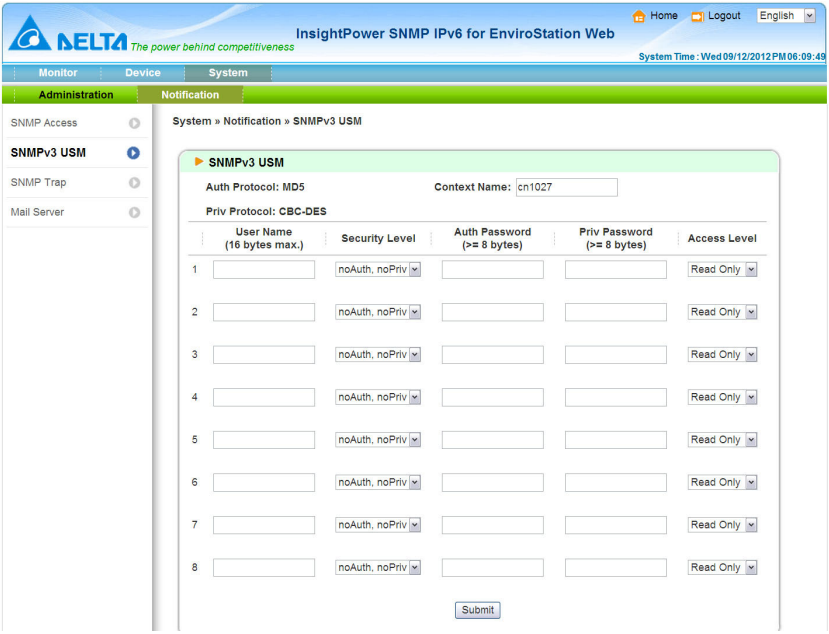


NOTE:

If IP address **0.0.0.0** is enlisted, the NMS IP access restriction is ignored. EnviroStation checks the Community Strings to identify the access level and permission according to your setting.

SNMPv3 USM

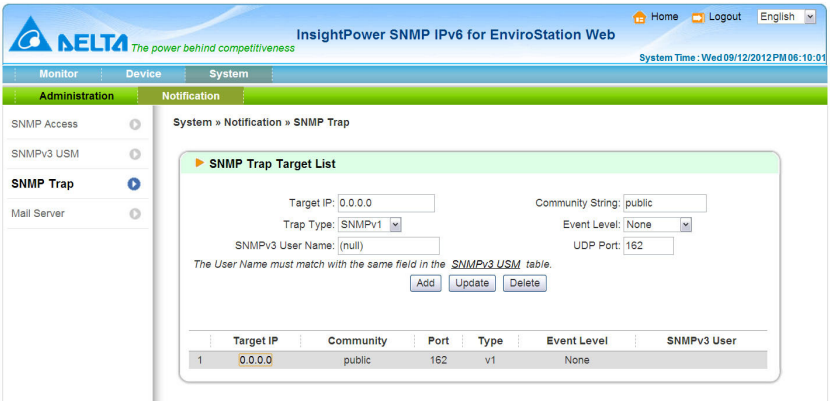
SNMPv3 offers features such as the encryption of packets and authentication to improve security. The SNMPv3 USM (User Session Management) allows you to assign eight User Names whose access is granted via SNMPv3 protocol. You can also define their respective Security Levels, Auth Passwords, Priv Passwords and Access Level.



SNMP Trap

SNMP Trap alerts users to event occurrences in your monitored environment. To enable SNMP Trap, you must add Target IP addresses to the Target IP list. Specify the Community String, Trap Type, Event Level, SNMPv3 User Name and UDP Port, then click **Add**.

You can determine what event notifications should be sent to the Target IP(s) from **Event Level**. Three Event Levels are listed as follows:



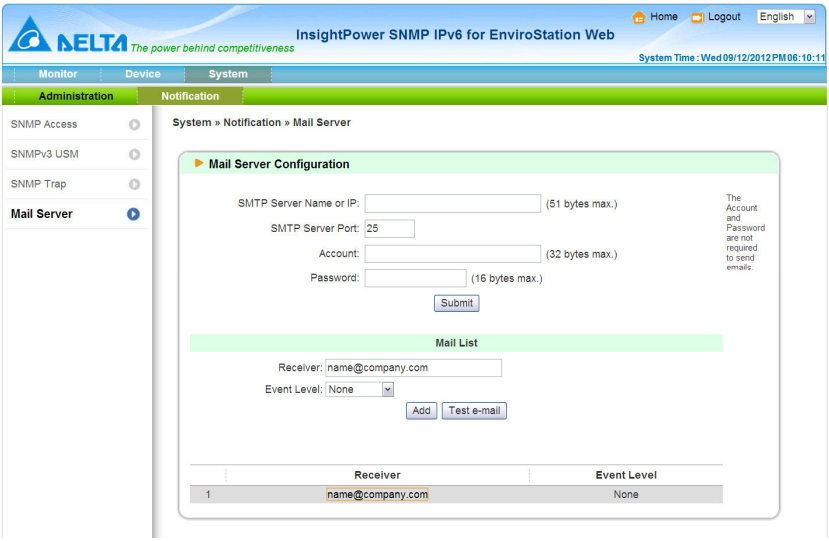
- **Information:** All event notifications are sent to the target address.
- **Warning:** Both Warning and Alarm event notifications are sent to the target address.
- **Alarm:** Only Alarm event notifications are sent to the target address.

Mail Server

You can set up an SMTP Server and specify a list of E-mail recipients who will receive notifications when events occur. The maximum number of recipients is 256.

NOTE:

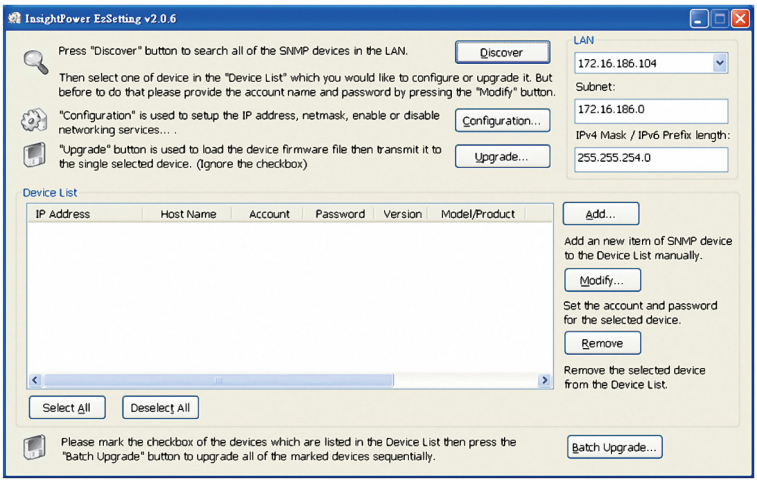
If a DNS server is not available in the network, you need to manually assign an SMTP server address to enable E-mail notification.



- **SMTP Server Name or IP**: If a Host Name is entered, a DNS IP should be added in TCP/ IP. Please see ***5.3.1 Administration – TCP/ IP***.
- **Account**: The mail server login account.
- **Password**: The mail server login password.
- **Receiver**: The recipients' E-mail addresses.
- **Event Level**: Select the Event Level that when triggered, an E-mail notification is sent to the corresponding recipient.
  1) **Information**: All event notifications are sent to the target address.
  2) **Warning**: Warning and Alarm event notifications are sent to the tar-get address.
  3) **Alarm**: Only Alarm event notifications are sent to the target address.

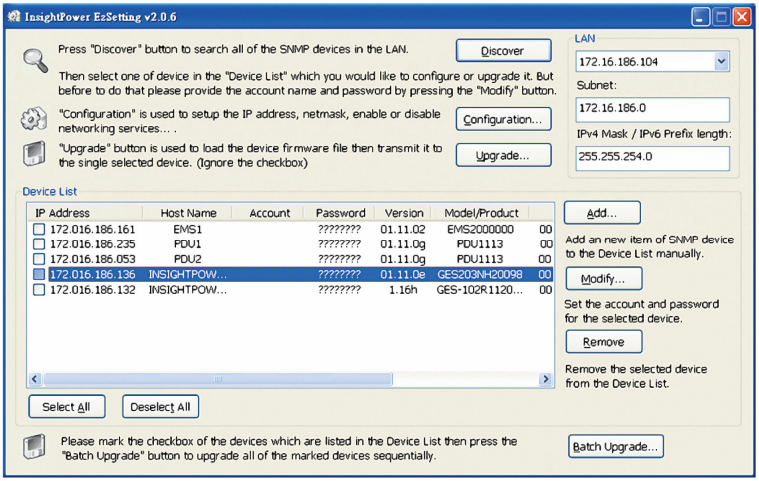
Chapter 6 : SNMP Device Firmware Upgrade

With the provided program **EzSetting**, you can effortlessly perform a firmware upgrade for SNMP devices via LAN. Please refer to the following instructions.

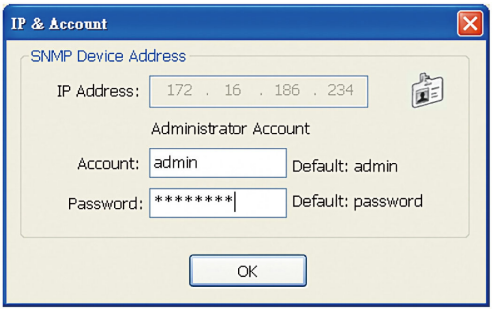


Step 1 The subnet mask allows you to refine the device discovery range in the specified subnets. Make sure the SNMP device you wish to upgrade is in the subnet that is specified. If it is not, please modify the subnet and subnet mask.

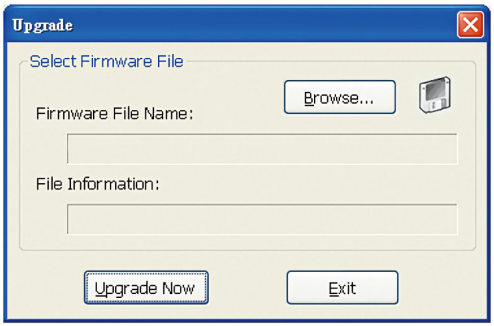
Step 2 Click **Discover**. A list of SNMP devices is shown.



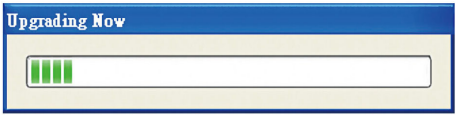
Step 3 Select a device from the Device List, click **Modify**, and key in Administrator account and password.



Step 4 Click **Upgrade**. The upgrade dialog box pops up. Click **Browse** to select a valid firmware binary file. Verify the firmware version listed under File Information, and then click **Upgrade Now** to continue.



Step 5 The upgrade process should take about 20 seconds.



Step 6 When the upgrade is completed, the following dialog box appears. It takes about 1 minute for the device to reboot.

Chapter 7 : Troubleshooting

Q1. How to set up an SNTP server on my workstation for EnviroStation to synchronize?

To enable SNTP services in Windows XP, go to **Start** → **Control Panel** → **Add/ Remove Programs** → **Add/ Remove Windows Components** → **Networking Services** → check **Simple TCP/ IP Services** → **OK**. To enable time synchronization, you need to set SNTP time server addresses in **Time Server**. Please refer to ***Chapter 4: System Configurations***.

Q2. How to make sure that network connection is established between my workstation and EnviroStation?

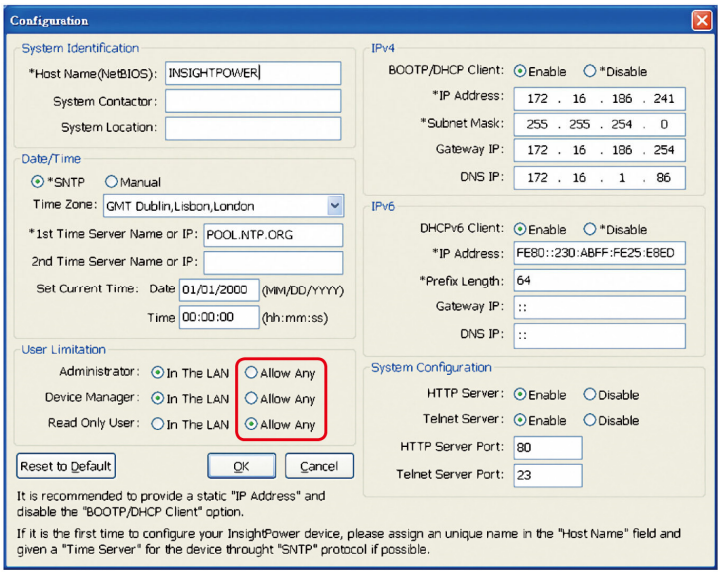
To check connection between the EnviroStation and workstation, in Windows please launch DOS prompt mode (**Start** → **Run** → key in **cmd** and press enter). In Linux, launch Shell. Enter the following command: **ping Host Name** (default: InsightPower). If the connection is correctly established, you should be able to receive replies from the EnviroStation.

```
C:\>ping 172.16.186.230

Pinging 172.16.186.230 with 32 bytes of data:
Reply from 172.16.186.230: bytes=32 time=2ms TTL=64
Reply from 172.16.186.230: bytes=32 time=2ms TTL=64
Reply from 172.16.186.230: bytes=32 time=2ms TTL=64
Reply from 172.16.186.230: bytes=32 time=4ms TTL=64

Ping statistics for 172.16.186.230:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 4ms, Average = 2ms


C:\>
```

Q3. I can access the login page, but cannot log in to the InsightPower SNMP IPv6 for EnviroStation Web.

Please check the IP addresses of the EnviroStation and the workstation you are trying to log in to. The cause could be they are not connected to the same LAN. In that case, launch **EzSetting** and change **User Limitation** settings to

Allow Any. Please see the following figure.

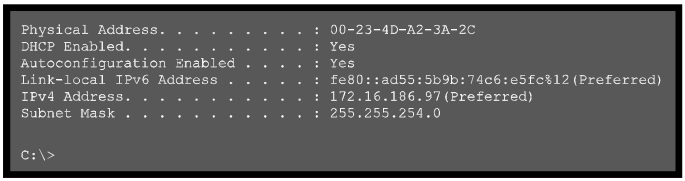


Q4. Unable to connect the EnviroStation via its Host name?

If you assign a new static IP address to the EnviroStation, you may need to re-fresh the NetBIOS table so that it corresponds with the new one. Although Windows updates its NetBIOS table periodically, you can still manually force it to refresh by entering the following command **nbtstat –R** in DOS prompt mode or shell. After that, you can now connect to the EnviroStation by its Host Name. Please also ensure that the Host Name assigned to the EnviroStation does not exceed 16 bytes.

Q5. How to check my workstation's IP address?

For Windows, please enter **ipconfig /all** in DOS prompt mode. For UNIX, please enter **ifconfig** in shell. You should be able to check your IP and MAC (Physical Address) now.



Q6. Unable to ping the EnviroStation from my workstation?

If the **EnviroStation** is non-responsive, check the following:

1) If the green LED indicator on the **EnviroStation** is OFF, check if the network cable is correctly connected from the **EnviroStation** to the router or hub.

2) If the green LED indicator is ON, the current IP address could be unreachable. Manually assign a valid IP address to the **EnviroStation**.

3) If the green LED indicator flashes and (1) your network configuration includes a DHCP server, make sure the DHCP service is working properly; (2) Otherwise, make sure the assigned IP is not already taken on the network. Please note that if the current configuration is not useable, the **EnviroStation** will reset to default IP settings (IPv4 address: 192.168.1.100/ net mask: 255.255.255.0/ gateway: 192.168.1.254).

4) If the problem persists, use a network cable to cross link your **EnviroStation** and the workstation. Ping the **EnviroStation**'s default or static IP address, according to your configurations. If a ping response is successfully received, indicating that the **EnviroStation** is working properly. Check your network equipment. If not, contact your local dealer or service personnel for assistance.

Q7. Unable to perform an SNMP Get command?

Refer to ***5.3.2 Notification*** to check SNMP settings. Make sure that the workstation's IP address is added to the NMS IP list with Read or Read/ Write access. The community string on the workstation and the SNMP IPv6 must match.

Q8. Unable to perform an SNMP Set command?

Refer to ***5.3.2 Notification*** to check SNMP settings. Make sure that the workstation's IP address is added to the NMS IP list with Read or Read/ Write access. The community string on the workstation and the SNMP IPv6 must match.

Q9. Unable to receive SNMP trap?

Refer to ***5.3.2 Notification*** to check SNMP Trap settings. Make sure that the workstation's IP address is added to the Target IP list.

Q10. Forgot Administrator's account and password?

You can reset Administrator's account and password via text mode. Refer to ***4.4 Configuring through COM Port*** to establish a COM port connection with the EnviroStation. When the login information is prompted, key in **rstadmin** within 30 seconds and press **enter**. The Administrator account and password are now reset to default (admin/ password).

Q11. How to enable IPv6 in Windows XP?

If you are operating in Windows XP, please enable IPv6 first (click **START** → **RUN**, and enter **ipv6 install**). The EnviroStation supports IPv6, therefore, no additional configuration is required. However, please note that IPv6 is automatically disabled if an identical LLA (Local-link Address) already exists in the LAN. Also, when the IPv4 and IPv6 settings coexist, IPv4 is used as the primary IP address for the EnviroStation.

To learn more information regarding IPv6 compatibility, please visit IETF (http://tools.ietf.org/html), or **IPv6 Ready Logo Program** (http://www.ipv6ready.org).

Q12. How to generate a private SSL (Secure Socket Layer) certificate file (in PEM format) for HTTP connection?

To ensure connection security between the EnviroStation and your browser, you can create your own SSL certificate file in Linux. Please download and in-stall OpenSSL from http://www.openssl.org, launch shell and enter the following command to create your own certificate file:

openssl req –x509 –nodes –days 3650 –newkey rsa:1024 –keyout cert.pem –out cert.pem

1) Answer the prompted questions. Proceed as directed by the messages. Once it is completed, a file named **cert.pem** is created in the current working directory.

2) Upload **cert.pem** on the InsightPower SNMP IPv6 for EnviroStation Web. Please refer to ***5.3.1 Administration – Web***.

Q13. How to generate DSA and RSA keys for SSH?

For Linux:

1) Please download and install OpenSSH from http://www.openssh.org.

2) Launch shell and enter the following command to create your own keys: Please ignore it when prompted to provide passphrase.

   DSA Key:ssh-keygen –t dsa

   RSA Key:ssh-keygen –t rsa

3) Upload DSA and RSA key files on the InsightPower SNMP IPv6 for EnviroStation Web. Please refer to ***5.3 Administration – Console*** for more information.

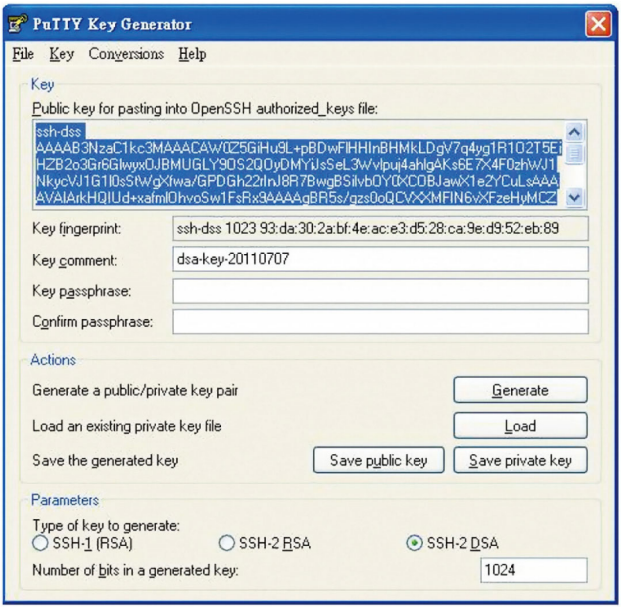
For Windows:

1) Please download and install PuTTY from http://www.putty.org.

2) Run **puttygen.exe** from the installed directory.

3) Select **SSH-2 RSA** from the Parameters area and click **Key** → **Generate key** pair to generate an RSA key.

4) Select **Conversions** → **Export OpenSSH Key** and assign a file name to the RSA key. Please ignore it when prompted to provide key passphrase.



5) Select **SSH-2 DSA** from the Parameters area and select **Key** → **Generate key pair** to generate a DSA key.

6) Select **Export OpenSSH Key** from **Conversions** and assign a file name to the DSA key. Please ignore it when prompted to provide key passphrase.

7) Copy the generated key from the text box, paste in a text editor and save as a text file.

8) Upload the DSA/ RSA/ Public key files to the InsightPower SNMP IPv6 for EnviroStation Web. Please refer to ***5.3 Administration – Console*** for more information.

Q14. How to upload configuration / firmware / key files via SSH/ SFTP?

To quickly configure your SNMP IPv6, you can upload the files via SSH/ SFTP. The SNMP IPv6 automatically imports your settings after the files are uploaded to the designated directories. Refer to the following table:

Directory	Files
\config_snmp	snmp.ini
\config_system	configure.ini
\ssh_dsa	DSA Key
\ssh_rsa	RSA Key
\ssh_pubkey	Public Key
\upgrade_snmp	EnviroStation firmware upgrade package (binary)
\upgrade_device*	Device's firmware upgrade package (binary)

* Appears on specific devices only.

Upload files to their respective directories. Make sure the filenames do not contain non-English characters to avoid read error. Overwrite existing files if prompted by your SFTP client.

Q15. How to test SNMPv3 in Linux?

Before you can access the SNMP OID (Object Identifier) via SNMPv3 protocol, the SNMPv3 USM table must be organized. Please refer to ***5.3.2 Notification – SNMPv3 USM*** for more information.

To test SNMPv3 in Linux, launch shell and key in the following command:

snmpwalk -v 3 -u <user> -l authPriv -A <password> -X <pass-word> -n <context name> -t 3 <ip> 1.3.6.1.2.1.1.1.0

-v：1 for SNMPv1, 3 for SNMPv3.

-l： Follow the security levels. They are: noAuthNoPriv, authNoPriv and authPriv.

-u：The user name which is assigned from SNMPv3 USM table.

-A：The Auth Password which is assigned from SNMPv3 USM table.

-X：The Priv Password which is assigned from SNMPv3 USM table.

-n：The Context Name which is assigned from SNMPv3 USM table.

-t： Timeout in seconds.

<ip>： The IP address of the EnviroStation.

<oid>：The next available SNMP OID (For example: 1.3.6.1.2.1.1.1.0). Please refer to the RFC1213 MIB.

Q16. Why EnviroStation cannot monitor PDU devices?

Monitoring PDU devices is disabled (EnviroStation default). To monitor PDU devices, please use the InsightPower SNMP IPv6 for EnviroStation Web (**Device → Management → PDU**) to reset the default setting. Please refer to ***Chapter 5: InsightPower SNMP IPv6 for EnviroStation Web***.

Appendix A : Specifications

Item	Model	Part no.
	EMS2000	EMS2000000
Input		
Power Input	100 ~ 240 Vac, 1.2A, 50/60 Hz	
Digital Input	Wet Contact signal: Alarm Voltage:5 ~ 24 Vdc Dry Contact signal: Normal: Off (open circuit) Alarm: On (short circuit)	
Analog Input	Input Voltage: 0 ~ 10V Input Current: 0 ~ 20 mA	
RTD	Range: 0 ~ 50°C Accuracy: ± 1°C with 3-wire PT100	
Leakage	Detect Voltage < 1V (alarm signal with S-1FP leak sensor)	
Network Connection	RJ45 jack connector	
Output		
Sensor HUB	+ 12V, 0.8A (max) + 24V, 1.0A (max) One port limit 0.6A	
Delta Bus	+ 12V, 0.8A (max)	
Relay Outputs	26 Vdc (max), 0.8A (max)	
Physical		
Size (W×D×H)	440 × 157 × 44 mm	
Weight	2.4 kg	
Environmental		
Operating Temperature	0 ~ 45°C	
Storage Temperature	- 20°C ~ 60°C	
Operating Humidity	0 ~ 90% RH (non-condensing)	

NOTE:

1. Refer to the rating label for the safety rating.
2. All specifications are subject to change without prior notice.

Appendix B : Warranty

Seller warrants this product, if used in accordance with all applicable instructions, to be free from original defects in material and workmanship within the warranty period. If the product has any failure problem within the warranty period, Seller will repair or replace the product at its sole discretion according to the failure situation.

This warranty does not apply to normal wear or to damage resulting from improper installation, operation, usage, maintenance or irresistible force (i.e. war, fire, natural disaster, etc.), and this warranty also expressly excludes all incidental and consequential damages.

Maintenance service for a fee is provided for any damage out of the warranty period. If any maintenance is required, please directly contact the supplier or Seller.

WARNING:

The individual user should take care to determine prior to use whether the environment and the load characteristic are suitable, adequate or safe for the installation and the usage of this product. The User Manual must be carefully followed. Seller makes no representation or warranty as to the suitability or fitness of this product for any specific application.

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