

RDU-S Rack Data Unit

User Manual

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Chapter 1 Overview

This chapter gives a brief introduction to the appearance, indicators, ports, technical specifications and options of RDU-S rack data unit (data unit for short).

1.1 Product Introduction

The data unit is an intelligent acquisition system developed by Emerson to monitor the environment in rack and IDC machine room. It is also suitable for other applications, such as small base station environment monitoring, power equipment & environment monitoring in telecom machine room, power grid monitoring and bank ATM machine monitoring. When configured with a proper sensor or proper sensors, it can detect corresponding electric signals and non-electric signals in real time. The small profile design makes it suitable for installation in small space in the rack.

1.1.1 Appearance

The appearance of the data unit is shown in Figure 1-1.



Figure 1-1 Appearance

1.1.2 Indicators

The indicators are located on the front panel, as shown in Figure 1-2. Their descriptions are listed in Table 1-1.





Silkscreen	Definition	Color	Status	Descriptions
DO1 DO2	Delay autout indiactors	Vallow	On	The relay is closed
001, 002	Relay output indicators	Tenow	Off	The relay is open
POWER	Power indicator	Croon	On	The data unit is powered on normally
TOWER	T Ower indicator	Gleen	Off	The data unit is not powered on
	Alarm indicator		On	The data unit has an critical alarm
ALARM		Red	Blinking	The data unit has an warning alarm
			Off	The data unit is starting up or normal
RUN	Running indicator	Green	Blinking	The data unit is operating normally
			Off	The data unit is starting up
TH_BUS	TH_BUS communication	Groop	Blinking	The data unit is receiving or sending data
	indicator	Gleen	Off	The data unit is not receiving or sending data
	Serial port indicators	Green	Blinking	The serial port is receiving or transmitting data
	Senai port indicators		Off	The serial port is not receiving or transmitting data

Table 1-1	Indicator descriptions

1.1.3 Ports

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The ports of the data unit are located on the front panel, as shown in Figure 1-3.



Figure 1-3 Port position

The definitions, functions and features of the ports are listed in Table 1-2.

Table	1-2	Port descriptions
i aoio		

Silkscreen	Port	Functions and features
100-240V ~ Input	Power input port	Adopt power socket to feed power to the data unit. The power input
100-2401 - 11-00		range is 100Vac ~ 240Vac
DO1, DO2	Relay ports	Output relay status
12V	12Vdc power output port	Feed power to external sensor (12Vdc power)
GND	12Vdc power ground port	12Vdc power ground
Micro SD	Micro SD card slot*	Support 2G, 4G or 8G Micro SD card to store video information and
		configuration file
		Provide two A type ports of 2.0 standard; capable of recognizing
USB1, USB2	USB ports	standard U disk, getting USB camera image and connecting GPRS
		Modem
USB CONFIG	USB CONFIG port	Display the current IP and restore the default password



Silkscreen	Port	Functions and features	
сти	Ethernet port (P 1/5 port)	10M/100M, half/full-duplex self-adaptive; cable auto-crossing function;	
		supportive of IEEE802.3 protocol	
	DI1 DI2 DI3 ports (R 1/15 ports)	Connect to digital sensors. Each port can connect up to four digital	
DI1, DI2, DI3		sensors	
TH_BUS	IRM sensor port (RJ45 port)	Connect to IRM series temperature sensor, temperature & humidity	
		sensor	
COM1, COM2	Serial ports (RJ45 ports)	COM1 serial port is compatible with RS485, RS422 and RS232	
		communication modes; COM2 serial port is compatible with RS485 and	
		RS232 communication modes	
Q	1-wire sensor port (RJ45 port)	Connect to 1-wire sensor	
Note*: After unplugging and plugging the Micro SD card, the data unit must be restarted to read the data			

Except for the Ethernet port, the pin definitions of the RJ45 ports are listed in Table 1-3.

D's No	RJ45 ports					
Pin No.	📡 (1-wire)	DI1, DI2, DI3	TH_BUS	COM1	COM2	
1	VCC (5Vdc)	12Vdc	12Vdc	R+	NC	
2	1-wire signal	NC	NC	R-	NC	
3	NC	D1	NC	TXD	TXD	
4	NC	GND	GND	GND	GND	
5	NC	GND	NC	GND	GND	
6	NC	D2	NC	RXD	RXD	
7	NC	D3	D+	T+/D+	D+	
8	GND	D4	D-	T-/D-	D-	

Table 1-3 Pin definitions of RJ45 ports

1.2 Technical Specifications

1.2.1 Input Specifications

The input specifications of the data unit are listed in Table 1-4.

		10010	i input op comoutorio	
Input parameters		Corresponding port	Measurement accuracy	Descriptions
1-wire sensor input	1-wire signal	1-wire sensor port	The final accuracy is determined by the used sensor	Capable of measuring temperature and humidity. The 1-wire sensor can also be connected with the digital signal from water sensor, door magnet sensor, and so on
Digital signal input		DI1, DI2, DI3 ports	-	Capable of measuring the digital signal from door magnet sensor, smoke sensor and infrared sensor
PDU input		Serial ports	-	Capable of connecting Switched PDU, Metered PDU and Mps PDU
IRM sensor input		IRM sensor input IRM sensor port		Capable of measuring temperature and humidity

Table 1-4 Input specifications

1.2.2 Output Specifications

The output specifications of the data unit are listed in Table 1-5.

Table 1-5 Output specifications

Output parameters		Specification	Descriptions	
	Route number	Two routes	Supportive of two triggering modes: level mode	
Relay output	Output contact	Relay normally open contact output	and pulse mode	
	Contact capacity	5A/24Vdc; 5A/220Vac		



4 Chapter 1 Overview

Output parameters		Specification	Descriptions	
Sensor power output	12Vdc output	11.5Vdc ~ 12.5Vdc, maximum output current: 0.8A	The output current is the total current which the sensor power can provide. The total power consumption of 12Vdc power does not exceed 10W	
USB port output	1	Maximum output current: 500mA	-	

1.2.3 Ambient Specifications

The ambient specifications of the data unit are listed in Table 1-6.

Table 1-6 Ambient specifications

Item	Requirement		
Application location	Indoor		
Working temperature*	0°C ~ 45°C		
Relative humidity	5%RH ~ 95%RH (non-condensing)		
	Dust: compliant with GR-63 indoor standard. No corrosive gas, flammable gas, oily mist, steam,		
working environment	water drops or salt		
Air pressure	70kPa ~ 106kPa		
Storage temperature	-40°C ~ +70°C		
Cooling	Natural cooling		
Note*: It is the working temperature of the data unit, not including the sensors connected with it. Make sure that the used sensors			
will not be damaged within the temperature range			

1.2.4 Mechanical Specifications

The mechanical specifications of the data unit are listed in Table 1-7.

Table 1-7 Mechanical specifications

Table 1-8 Options

Dimensions ($L \times W \times H$)	Weight
440mm × 44.2mm × 55mm	≤ 1.5kg

1.3 Options

The options of the data unit are listed in Table 1-8.

Classification	Optional model		
	1. ER-ST01P infrared sensor (RJ45 port)		
	2. EE-SD01S smoke sensor (RJ45 port)		
	3. ER-DR02J door magnet sensor (RJ45 port)		
	4. EW-WT01B water sensor (RJ45 port)		
	5. IRM-S01W (5m, 10m) water sensor(RJ45 port)		
Digital sensors	6. SN-TH temperature & humidity sensor (RJ45 port)		
	7. SN-2D door dry contact sensor (RJ45 port)		
	8. SN-3C dry contact sensor (RJ45 port)		
	9. IRM-S01T intelligent temperature sensor (RJ45 port)		
	10. IRM-S02TH intelligent temperature/humidity sensor (RJ45 port)		
	11. SN-L leak detection sensor (RJ45 port)		
Polov connectore	1. SL79LED stroboscopic alarm (two cables, non-RJ45 port)		
Relay connectors	2. HX-F8502 acousto-optic alarm (two cables, non-RJ45 port)		
Comoroa	1. KS-188 USB camera		
Cameras	2. ICAM-01 camera (with PTZ control)		
	1. IDS-08 5cm simple installation support		
	2. Mushroom head magic paste		
Installation options of sensors	3. 16mm gummed magic paste		
	4. CT3Y 3cm round magnet		
	5. RJ45 three-way connector		

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Chapter 2 Installation

This chapter expounds the installation preparation, installation tools and installation method of the data unit.

2.1 Installation Preparation

Notes

To avoid personnel injury and damage to the device in installation and use of the data unit, take the following precautions:

- Never put the data unit in watery places and always prevent liquid from entering the data unit.
- In installation and connection, wear anti-static clothing and an anti-static wrist strap; if anti-static clothing and anti-static wrist strap are not available, wash your hands instead and dry them before installation and connection.
- Arrange the wires properly. Do not put any heavy objects on the wires or stamp the wires.
- Ground the data unit properly.
- Always cut off the power before performing any hardware operation.

Operating environment

The data unit must be installed indoors. The temperature and humidity should meet the product specifications (see Table 1-6).

EMI

For EMI purpose, take the following measures:

- Do not connect the working ground of the data unit to ground of electrical power equipment or lightning ground. Instead, place them away from each other as far as possible.
- Keep the data unit away from large-power radio transmitters, radar transmitters and high-frequency large current electrical equipment.
- Take electromagnetic shielding measures if necessary.

Heat dissipation

The heat dissipation requirements of the data unit are given as follows:

- Keep the data unit as far as possible from heat sources.
- Keep at least 10mm clearances around the data unit for adequate heat dissipation.

2.2 Installation Tool

The installation tools of the data unit are listed in Table 2-1.

Table 2-1 Installation tools

Tool	Specification		Tool	Specification
Crimping pliers for network cable	Standard		Slotted screwdriver	100mm, 200mm
Electrician diagonal cutting pliers	150mm	1	Wire cutter	Maximum 300mm ²
Electrician long nose pliers	150mm	1	Digital multimeter	Three and a half digit
Crossed screwdriver	100mm, 200mm	1	Drill	With a Φ6 aiguille

2.3 Installing Data Unit

The data unit can be installed in a standard 19" rack through hangers (accessories) or a round hanger (accessory). It can also be mounted on the wall through hangers.

2.3.1 Installation Hole Position

The hangers are installed on the side panels and the round hanger is installed on the back panel or top panel. The installation holes on the panels are shown in Figure 2-1.



Figure 2-1 Positions of installation holes

The installation holes (1) and (2) (also two installation holes on the right panel) are used for installing the hangers and the installation holes $(3) \sim (10)$ are used for installing the round hanger.

2.3.2 Installing The Data Unit In A Standard 19" Rack

Installing the data unit through hangers

1. Fasten two hangers respectively to both sides of the data unit with M3 screws, as shown in Figure 2-2.



Figure 2-2 Installing hangers (rack mounting)

The completed status is shown in Figure 2-3.



- 2. Put the data unit onto the guide rails in the rack and push it into the rack completely.
- 3. Wrench M6 screws into the fixing holes (see Figure 2-3) of the hangers to fasten the data unit onto the rack.

Installing the data unit through a round hanger

1. Fasten the round hanger onto the top panel or back panel of the data unit with an M3 screw, as shown in Figure 2-4.



Figure 2-4 Installing round hanger

2. Hang the data unit onto the vertical pole in the rack through the round hanger.

2.3.3 Installing The Data Unit On The Wall

1. Fasten two hangers respectively to both sides of the data unit with M3 screws, as shown in Figure 2-5.

	Note
The ins	tallation direction of the hangers in wall mounting mode is opposite to that in rack mounting mode.



Figure 2-5 Installing hanger (wall mounting)

2. Use a drill (aiguille: Φ 6) to drill four holes (depth: 70mm) on the wall according to the dimensions in Figure 2-6 and knock four plastic expansion pipes into the holes.



Figure 2-6 Hole dimensions (unit: mm)

3. Put the data unit in the position, and wrench self-tapping screws into the plastic expansion pipes through the fixing holes of the hangers to fix the data unit on the wall.



Chapter 3 Connection

This chapter expounds the connection of the data unit, including connection notes, and connecting the sensor ports, serial ports, relay port and multiple signals of RJ45 ports.

3.1 Connection Notes

The connection notes are given as follows:

1. The power and external signals that are connected to the data unit must be SELV circuits. The isolation and insulation must be enhanced between them and the power grid.

2. When making RJ45 port cables, pay attention to the pin definitions to avoid wrong connection. For the pin definitions, refer to Table 1-3 and the pin definition figures of the RJ45 ports in this chapter.

3.2 Connecting Sensor Ports

Note

Refer to the corresponding sensor instructions to carry out the installation and wiring operation.

Before sent to the data unit, the site signals should be transformed into electrical signals by sensors. The data unit provides six sensor ports (silkscreen: DI1, DI2, DI3, TH_BUS and \Im) to connect the sensors.

- The 1-wire sensor port (silkscreen: (S)) is supportive of 1-wire sensor.
- The DI1, DI2 and DI3 ports are supportive of digital sensors, including infrared sensor, water sensor, door magnet sensor, smoke sensor, and so on.
- The IRM sensor port (silkscreen: TH_BUS) is supportive of IRM series sensor, including temperature sensor and temperature & humidity sensor.

If the used sensor needs 12Vdc power, the 12Vdc power output port (see Figure 1-3) of the data unit can be used.

3.2.1 Connecting 1-Wire Sensor Port

The 1-wire sensor port (silkscreen:) is used to connect the SN-TH temperature & humidity sensor, SN-2D door dry contact sensor, SN-3C dry contact sensor or SN-L leak detection sensor.

Port position

The positions of the 1-wire sensor ports are shown in Figure 3-1.



Figure 3-1 Positions of 1-wire sensor ports

Pin definition

The pin definition of the 1-wire sensor port is described in Figure 3-2.



Figure 3-2 Pin definition of 1-wire sensor port

Connection method

Use a standard network cable with RJ45 connectors on both ends, insert one end into the 1-wire sensor port, and insert the other end into the RJ45 port of SN-TH temperature & humidity sensor, SN-2D door dry contact sensor, SN-3C dry contact sensor or SN-L leak detection sensor.

3.2.2 Connecting DI1, DI2 And DI3 Ports

The DI1, DI2 and DI3 ports are used to connect the digital sensors.

Port position

The positions of the DI1, DI2 and DI3 ports are shown in Figure 3-3.



Figure 3-3 Positions of DI1, DI2 and DI3 ports

Pin definition

The pin definition of the DI1, DI2 and DI3 ports is shown in Figure 3-4.



Figure 3-4 Pin definition of DI1, DI2 and DI3 ports

Connection method

Note

1. It is recommended to use the auxiliary sensors shown in Figure 3-5. If you want to connect other types of sensors, make the connection cables according to the port pin definition in Figure 3-4 and then connect them.

2. Both vibration sensor and water sensor use D3 channel. If the vibration sensor is selected, it cannot share the same digital sensor port with the water sensor.

3. The line sequence (see Figure 3-4 for detailed definition) of the DI1, DI2 and DI3 ports is fixed. The types of the sensors connected to a port cannot be the same.

If the digital sensor (with a connection cable in factory) recommended by Emerson is connected, insert the RJ45 connector of the connection cable into the DI1, DI2 or DI3 port.

The recommended sensors are shown in Figure 3-5.





Figure 3-5 Recommended sensors

Connecting multiple signals of RJ45 ports

DI1, DI2 and DI3 ports can be connected with multiple signals simultaneously.

When a port is connected to multiple signals, RJ45 three-way connectors (optional) are required for transferring according to the signal amount. Use standard straight network cables to cascade-connect the signals in daisy chain mode and then connect them with the corresponding port. Figure 3-6 indicates the connection method that DI1 port is connected with infrared sensor, door magnet sensor and smoke sensor.



Figure 3-6 Connecting multiple sensors

When a port is connected with multiple signals simultaneously, you must note that the line sequence conflict of the signals cannot occur. For example, the DI1 port can be connected with four sensors simultaneously. The recommended sensors include smoke sensor, door magnet sensor, water sensor and infrared sensor. If the DI1 port is connected with vibration sensor and water sensor simultaneously, signal conflict will occur, resulting in signal acquisition failure, because both sensors use the DI3 channel.

3.2.3 Connecting IRM Sensor Port

The IRM sensor port (silkscreen: TH_BUS) is used to connect the IRM series temperature sensor and temperature & humidity sensor.

Note

The address range of the IRM series temperature sensor and temperature & humidity sensor is 10, 11, 12, 13, 20, 21, 22 and 23; besides the above addresses, the address range of the IRM series temperature sensor also includes 30, 31, 32, 33, 40, 41, 42 and 43.

Port position

The position of the IRM sensor port is shown in Figure 3-7.



Figure 3-7 Position of IRM sensor port

Pin definition

The pin definition of the IRM sensor port is shown in Figure 3-8.



Figure 3-8 Pin definition of IRM sensor port

Connection method

Use a standard network cable with RJ45 connectors on both ends, insert one end into the IRM sensor port, and insert the other end into the RJ45 port of IRM series temperature sensor or temperature & humidity sensor.

3.3 Connecting Serial Ports

The serial ports (silkscreen: COM1, COM2) are used to connect Emerson serial PDU.

Port position

The positions of the serial ports are shown in Figure 3-9.



Figure 3-9 Positions of serial ports

Pin definition

The pin definitions of the serial ports are shown in Figure 3-10.



Figure 3-10 Pin definitions of serial ports

Connection method

When Emerson serial PDU is required to be monitored by the data unit, use standard Cat5 cable to connect the RS485 port of PDU with the serial port of the data unit. If multiple PDUs need to be monitored, use standard Cat5 cable to connect the Link port of the upper PDU with the RS485 port of the lower PDU in daisy chain mode, as shown in Figure 3-11.





Note

At most eight Emerson serial PDUs can be monitored by the data unit through the serial ports (COM1 and/or COM2).

3.4 Connecting Relay Ports

Port position

The positions of the relay ports are shown in Figure 3-12.



Figure 3-12 Positions of relay ports

Connection method

When the relay output specification reaches 5A/24Vdc, connect the required cables with the relay ports (silkscreen: DO1, DO2). The relay of the data unit is normally open passive dry contact. Properly arrange the wiring according to the site conditions.

Note

Pay attention to the port silkscreen before connection to avoid the wrong connection. Otherwise, the device may be damaged.

Chapter 4 Parameter Setting

This chapter introduces the parameter setting, including connecting data unit with computer, setting HyperTerminal, powering on, logging onto data unit, setting IP address and restarting data unit.

4.1 Connecting Data Unit With Computer

A computer is a must for commissioning the data unit. Therefore, before commissioning the data unit, connect the data unit with the computer using a standard network cable and set the communication parameters through the computer.

4.2 Setting HyperTerminal

This section takes Windows XP as an example to illustrate how to set HyperTerminal.

After the network cable is connected, set the HyperTerminal according to the following procedures:

1. Click Start -> Programs -> Accessories -> Communications -> HyperTerminal, and the HyperTerminal interface pops up, as shown in Figure 4-1.

Connection Description	? 🗙
New Connection	
Enter a name and choose an icon for the connection:	
Name:	
Loon:	
冬 🗟 🗞 🗠 🚳	8
	>
OK Car	ncel

Figure 4-1 Connection description interface

2. Type the name 'RDU-S' in the Name field and click OK, as shown in Figure 4-2.

🧞 RDU - S	;
Enter details for	the host that you want to call:
<u>H</u> ost address:	
Port nu <u>m</u> ber:	23
Connect using:	TCP/IP (Winsock)
	COM1
	LEP/IE IW/insock1

Figure 4-2 Connect to interface 1

le	
	Ь
F	ž
S	ö
NS	2
ā	

3. Select 'TCP/IP (Winsock)' in the Connect using field, as shown in Figure 4-3.

Connect To	? 🛛
RDU-9	i.
Enter details for	the host that you want to call:
Host address:	192. 168. 0. 10
Port number:	23
-	
Connect using:	TCP/IP (Winsock)
	OK Cancel

Figure 4-3 Connect to interface 2

4. As shown in Figure 4-3, type the host address (factory default IP: 192.168.0.10) and port number, and click **OK** to complete the HyperTerminal setting.

4.3 Powering On

After the communication cable connection between the data unit and the computer, and the HyperTerminal setting are completed, you can power on the data unit.

4.3.1 Checking Before Powering On

Ensure the following items before powering on the data unit:

- 1. The power cable and communication cable are connected properly.
- 2. The power supply voltage meets the device requirement.
- 3. The HyperTerminal setting is completed.

Note

Before powering on the device, confirm the location of the power input port (see Figure 1-3) to make sure that the power can be cut off in time in case of an accident.

4.3.2 Checking After Powering On

Insert the power cable to power on the data unit and check that:

1. The indicators (see Figure 1-2) of the data unit are working normally.

See Table 1-1 for the descriptions of the indicators during normal operation. If the indicators work abnormally, check the cable connection and the working status of the base site to which the data unit is connected.

2. The information displayed on the HyperTerminal is normal.

If no information is displayed, check that the connection between the data unit and the computer, and HyperTerminal settings are correct.

You can log onto the data unit through the HyperTerminal after the above checks.



4.4 Logging Onto Data Unit

The logging procedure is shown in the following figure.

Emerson Network Power Co., Ltd. Linux/armv4tl 2.6.24

RDU-S login: rduadmin Password:

Linux 2,6,20

Copyright 2006. Emerson Network Power Co., Ltd. All Rights Reserved.

****	*****	The model	is	RDU	*****	
***	************	*********	***:	*****	******************************	****
×						*
×	Copyright(c)	2007-2009, E	mer	son Ne	etwork Power Co., Ltd.	*
×		ALL RIG	HTS	RESER	RVED	*
×						*
*	Welcome t	o RDU (Rack	Data	a Unit	t)	*
*						*
*					Version 1.0	*
*					2008,12	*
***	************	***********	***	*****	******	****

RDU_admin#

The detailed procedures are given as follows:

1. Power on the data unit. After it starts up normally, the HyperTerminal will display RDU-S login:.

2. Type the user name 'rduadmin' and press the Enter key, and the HyperTerminal will prompt Password:.

3. Type the password 'rduadmin' following **Password:**, and the HyperTerminal will display the command prompt **RDU_admin#**.

Note

```
Both the user name and the password are case-sensitive.
```

4.5 Setting IP Address

After logging onto the command line, use the command 'setip' first to set the IP address of the data unit. The detailed setting procedures are given as follows:

1. Type 'setip' following the command prompt **RDU_admin#** and press the Enter key, as shown in the following figure.

RDU_admin#setip Please input IP_address[10,163,162,150]:10,163,162,151 Please input Subnet_mask[255,255,255,0]:255,255,0 Please input Default_gateway[10,163,162,1]:10,163,162,1 Are you sure to set IP: 10,163,162,151 Netmask: 255,255,255,0 Default Gateway: 10,163,162,1 ? Y/N [N]y Your current setting has been modified! Please telnet RDU with the new IP address now! System will reboot automatically after save (y/n) operation! please relogin RDU,if you will use other command! Are you want to save it ? Y/N [N]y

2. Respectively type the new IP address, sub_net mask and default gateway in **Please input IP_address**, **Please input Subnet_mask** and **Please input Default_gateway**.

3. Type 'Y' or 'N' under Y/N [N] according to the system prompt.

Typing 'N' will cancel the settings. Typing 'Y' will confirm that the network parameters are set successfully, then the system will prompt whether to save these network parameters.



Note

After the network parameters are set, the system will prompt whether to save them. If 'Y' is typed, the system will maintain the network parameters and reboot automatically; otherwise, the system will retrieve the factory default IP address after 5 minutes.

4.6 Restarting Data Unit

Use the command 'reboot' to restart the data unit after all parameters are set. The detailed procedures are given as follows:

1. Type 'reboot' following the command prompt **RDU_admin#** and press the Enter key, as shown in the following figure.

RDU_admin#reboot Are you sure to reboot the system? Y/N [N]y

2. Type 'Y' or 'N' according to the system prompt.

Typing 'Y' will restart the data unit; typing 'N' will cancel the restarting operation.

Chapter 5 Software Operation

This chapter expounds the software operation of the data unit, including login, logout and detailed operation descriptions of Monitor, Control, Configure, Events, History and System Information interfaces.

ĺ	1	Note						
J	ava VI	.6 or above is	s required	for proper	function	of the	software	

5.1 Login

The login procedures are given as follows:

1. Type the IP address of the data unit in the address bar of Internet Explorer browser and press the Enter key to enter the login interface, as shown in Figure 5-1.

Liebert. RDU-S Performance Monitoring		EMERSON Network France
	Liebert RDU-S Liegen Partie Lief Tarrier Mar Tarrier Tarrier Partierent Liegen Tarrier	
	Capyright 2018, Erneson Network Provet Co., LML Al Highly Reserved.	

Figure 5-1 Login interface

2. Select the correct user name (default: 'admin') from the **User Name** drop-down list and type the correct password (default: 'emerson') in **Password**, and click **Login** to enter the software operation interface.

Note

1. Both the user name and the password are case-sensitive.

2. On one computer, only one user is allowed to log in the system at a time.

3. The system only supports IE7 or IE8 browser.

The default interface after login is the Monitor interface, as shown in Figure 5-2.

PROM
DIS

5.2 Monitor Interface Operation Description

After the user name and password are verified, you can enter the Monitor interface, as shown in Figure 5-2.

iebert. RDU-S				EMERSON					
rformance Monitoring	onitor	or Control Configure Events History System Information					Network Power		
RDU-S	Envi	ronmental	PDU	Camera					
User: admin []ocout]		Temperat	ure Sensors				12		
Iser level: Administrator	-0	Humidity	Sensors						
2010-11-17 17:41:57	a 🧿 Input Contacts								
RDU-S IP Address: 10.163.162.137		Output Re	elays						
automantal commission				Eve	nts		Event History)		
nvironmentar coupe and	SN	Alarm	Time		Sensor	Name	Severity		
Temperature Sensors	1					Weine -			
i Humidity Sensors	2								
Lanua Contents	3								
input Contacts	4	_							
2010/04/2010/02/2010/01	-								
Output Relays	7								
- DO1	4								
- EO2	9								
	10								
	11								

Figure 5-2 Monitor interface

The structure tree in **Environmental** displays the devices connected with the data unit, including temperature sensor, humidity sensor, input contacts (digital sensor), output relays (relay port output). The operation area provides three tabs and you can click a tab to enter the corresponding operation interface.

- Set temperature sensor and humidity sensor, and view the working status of input contacts & output relays and the last alarms through the **Environmental** tab.
- View and set the working status of the PDU through the **PDU** tab.
- View and set the working status of the cameras through the **Camera** tab.

5.2.1 Environmental

Click the **Environmental** tab in the operation area, and the interface shown in Figure 5-2 will appear. You can set the temperature sensors and humidity sensors, and view the working status of the input contacts & output relays and the events through the interface.

Temperature sensor

1. Setting temperature parameter

1) Click the **Temperature Sensor** node in the **Monitor** structure tree, and the window shown in Figure 5-3 will appear.

	persente	1.00.012			1.99.6/8	
Temp		A 89.0 P	Ter	np	15.0 P	
	44	65.6 78.4	97		4 97	
SN Temp1			SN	Temp2		

Figure 5-3 Temperature sensor window

2) Double-click one sensor histogram to enter the edit mode; meanwhile, the serial number of the sensor is visible, as shown in Figure 5-4.



Figure 5-4 Setting mode of temperature sensor

3) Drag the mouse to set the high and low thresholds and double-click the sensor name ('SN Temp1' shown in Figure 5-4) to change it. The length of the sensor name is up to 10 characters.

The red, yellow and green areas on the histogram respectively indicate alarm, warning and normal range.

4) After setting, click **Apply** to confirm the setting.

Clicking **Cancel** will cancel the preceding setting.

If the temperature setpoint exceeds the normal range, the histogram will turn yellow or red; if it is within the normal range, the histogram will turn green, as shown in Figure 5-5.



2. Displaying sensor information

Move the mouse to one sensor histogram, and a prompt box, displaying sensor name and sensor location, will appear, as shown in Figure 5-6.

SN Temp3	
SN Temp3 Locatio	n1
SN Temp3 Locatio	n2
SN Temp3 Locatio	n3
SN Temp3 Locatio	n4

Figure 5-6 Prompt box

Humidity sensor

The operation of the humidity sensor is the same as that of the temperature sensor.

Input contacts

Click the Input Contacts node in the Monitor structure tree, and the figure shown in Figure 5-7 will appear.

You can view the working status of the connected digital sensors. If the working status (**Open** or **Closed**) of the digital sensor is displayed in black, it indicates that the digital sensor is normal and does not detect any alarm; if the working status is displayed in red, it indicates that the digital sensor detects an alarm or alarms.



Figure 5-7 Input contacts window

Output relays

Click the Output Relays node in the Monitor structure tree, and the figure shown in Figure 5-8 will appear.

This window displays the working status of the devices connected to the relay port. For example, the icon of **DO1** (indicator alarm) turning red indicates that it generates an alarm.



Figure 5-8 Output relays window



Double click the icon of DO1 or DO2 to configure the output status of DO sensor, as shown in the Figure 5-9.

DO1 Control	
DO1 Output: On	
Confirm Cancel	

Figure 5-9 DO control window

Event list

The monitor interface will display the latest 20 events in the event list, including **High Critical**, **Low Critical**, **Critical**, **High Warning**, **Lows of Comms** and **Normal** events.

If you want to clear the **Loss of Comms** events in the event list, click the **Comms Loss Reset** button in the SN DI Sensor Configure window shown in Figure 5-46.

		Eve	nts	Event History>:
SN	Alarm	Time	Sensor Name	Severity
÷.	*	2010-11-28 15:34:19	SerialT41	High Warning
2	*	2010-11-28 15:34 11	SN Temp4	High Warning
3	0	2010-11-28 15:34:03	SN Temp5	Normal
4	0	2010-11-28 15:29:50	D(1-4	Critical
5		2010-11-28 15:04:46	SN Temp5	High Warning
6	۲	2010-11-28 15:04:44	SN 3D-2	Critical
7	0	2010-11-28 15:04:44	SN 3D-1	Critical
0	0	2010-11-29 15:04:44	SN 2D-2	Critical
9	0	2010-11-28 15:04:44	SN 2D-1	Critical
10	0	2010-11-28 15:04:44	SN 1D-2	Critical
11	0	2010-11-28 15:04:44	SN 1D-1	Critical
12	0	2010-11-28 15:04:20	Branch24 relay state(SW)	ON
13	0	2010-11-28 15:04:20	Branch23 relay state(SW)	ON
14	0	2010-11-28 15:04:20	Branch22 relay state(9W)	ON
15	0	2010-11-20 15:04:20	Branch21 relay state(SW)	OFF
16	0	2010-11-20 15:04:20	Branch20 relay state(SW)	OFF
17	0	2010-11-28 15:04 20	Branch19 relay state(SW)	OFF
18	0	2010-11-28 15:04:20	Branch18 relay state(SW)	OFF
19	0	2010-11-28 15:04:20	Branch17 relay state(SW)	OFF
20	0	2010-11-28 15 04 20	Branch16 relay state(SW)	OFF

Figure 5-10 Event list

5.2.2 PDU

Click the **PDU** tab in the operation area to enter the **PDU** interface, as shown in Figure 5-11.

Liebert. RDU-S Performance Monitoring		_	EMERSON. Network Power				
	Monitor	Control	Configure	Events	History	System Information	
RDU-S	Envi	ronmental	PDU	Camera			
liser: admin [locaut]	Notes: If	you have confi	gured PDU,please	select PDU on	the left.		
User level: Administrator RDU-S System Time: 2010.11.18 14:44:52 RDU-S IP Address: 10.163.162.137							
PDU							
B PDU							
a \$4							
👄 so							
👄 M2							
			Figure 5	-11 PDL	l tab		

DISCONTINUED

If there are PDUs connected, click the one you would like to monitor in the structure tree, the PDU page shown in Figure 5-12 will appear. The data unit supports three types of PDU: metered PDU, switched PDU and Mps PDU, through RS485 serial protocol provided by Emerson.

Liebert. RDU-S	RDU-S						EMERSO	EMERSON	
erformance Monitoring	Monitor	Control	Configure	Events	History	System Information	Network Pow	wer	
RDU-S	Envir	onmental	PDU	Camera					
User: admin [logout]	Sig	nul 🔤 🚛	Event	Control					
User level: Administrator	Alarm	Narm Signal Name		Value		Unt	Time		
2010.11.18 11:17:35	0	Total Load		0.0		A	2010-11-18 11:17:37		
RDU-S IP Address:	0	Percent of Load		0.0		5	2010-11-18 11:17:37		
10.163.162.137	0	Voltage Van		217.0		v	2010-11-18 11:17:37		
	0	Appare	nt Power	0	0	VA	2010-11-18 11:17:37		
PDU	0	Ad	dress	2	0		2010-11-18 11:17:37		
E POU	0	Upper lo	ad current	16	.0	A	2010-11-18 11:17:37		
	0	Lower is	ad current	.0.	0	A.	2010-11-18 11:17:37		
	0	PDU (rategory	65	.0		2010-11-18 11:17:37		
= 80	0	POU output	t port number	24	.0.		2010-11-18 11:17:37		
🚍 M2	0	Total k	oad state	1	0		2010-11+18 11:17:37		
526									

Figure 5-12 PDU page

Metered PDU

For metered PDU, click **Signal** tab and **Event** tab to check the status of PDU and abnormal events; Click **Control** tab to set the address, upper load current and lower load current of the PDU. The tabs are shown in Figure 5-13.

Envir	onmental PDU	Camera			
Sig	nal Event	Control			
Alarm	Signal Name	Value	Unit	Time	
0	Total Load	0.0	A	2011-02-05 16:48:57	^
0	Percent of Load	0.0	%	2011-02-05 16:48:57	
0	Voltage Van	225.0	V	2011-02-05 16:48:57	
0	Apparent Power	0.0	VA	2011-02-05 16:48:57	
0	Address	0		2011-02-05 16:48:57	
0	Upper load current	5.5	A	2011-02-05 16:48:57	
0	Lower load current	0.0	A	2011-02-05 16:48:57	
0	PDU category	65		2011-02-05 16:48:57	
0	PDU output port number	8		2011-02-05 16:48:57	
0	Total load state	1		2011-02-05 16:48:57	
0	Rated load	10.0	A	2011-02-05 16:48:57	
0	Rated voltage	250.0	V	2011-02-05 16:48:57	

Signal tab

Envir	onmental	PDU	Camera					
Sig	nal E	vent	Control					
Alarm	EventNam	ie i	Severity	Event Meaning	State	Trigger Value	Start Time	
0	Total Load	1	0	Normal	1	1	2011-02-05 16:46:31	^

Event tab



Environmen	tal PDU Came	ra		
Signal	Event Contro			
Operation	Control Name	RealValue	MaxValue	MinValue
-	Setting Address	0	99	0
-	Setting Upper load current	5.5	99.0	0.0
The second se	Setting Lower load current	0.0	99.0	0.0

Control tab

Figure 5-13 Tabs of metered PDU

In the **Control** tab, click the icon in the **Operation** column to set the address or threshold for metered PDU, as shown in Figure 5-14.

Setting /	Address	Setting Upper load current
submit	cancel	submit cancel
	Setting Low	ver load current
	submit	cancel
	submit	cancel

Figure 5-14 PDU setting windows

Switched PDU

For switched PDU, the PDU page is shown in Figure 5-15.

Liebert. RDU-S	Ionitor	Control	Configure	RDU-S	History	System Information		EMERSON Network Power
RDU-S	Envi	ronmental	PDU C	lamera				
Hear admin (Insut)	PDU							
User level: Administrator				29	6			
RDU-S System Time: 2011 02 05 15-24-18		Loa	d: 🚺			Total Current:	0.4 A	
RDU-S IP Address:						Voltage:	219.0 V	
10.163.162.188						Power:	87.6 W	
PDU PDU Switch PDU1				Outlet Outlet1 Outlet2 Outlet3 Outlet4 Outlet5 Outlet5 Outlet5 Outlet7 Outlet8 Outlet9 Outlet10 Outlet11 Outlet12 Outlet12 Outlet13	Status OFF ON ON ON ON ON ON ON ON ON ON ON ON ON	Control Tum Off Tum Off		
								More>>

Figure 5-15 PDU page (switched PDU)

The items in Figure 5-15 are described in Table 5-1.

Table 5-1	Switched PDU	setting item	descriptions
-----------	--------------	--------------	--------------

Item	Descriptions
Outlet	Out port of the Switched PDU
Status	The current ON/OFF status of the Switched PDU out port
Control	Click Turn On and Turn Off to control the On/Off status of the Switched PDU output port

Click **More>>** on the lower right corner to enter the detailed information window, which also has three tabs: **Signal**, **Event** and **Control**, as shown in Figure 5-16.

Enviro	onmental PDU	Camera			
Sigr	nal Event (Control			
Alarm	Signal Name	Value	Unit	Time	
0	Total Load	0.4	А	2011-02-05 16:21:35	^
0	Percent of Load	2.0	%	2011-02-05 16:21:35	
0	Voltage Van	217.0	V	2011-02-05 16:21:35	
0	Apparent Power	86.8	VA	2011-02-05 16:21:35	
8	Branch1 relay state	OFF		2011-02-05 16:21:35	
0	Branch2 relay state	ON		2011-02-05 16:21:35	
0	Branch3 relay state	ON		2011-02-05 16:21:35	
0	Branch4 relay state	ON		2011-02-05 16:21:35	

Signal tab

Envir	ronmental	PDU	Camera					
Sig	gnal Eve	nt	Control					
Alarm	EventName		Severity	Event Meaning	State	Trigger Value	Start Time	
8	Total Load		2	Low Critical	1	3	2011-02-05 16:05:35	^
8	Branch1 relay stat	te	2	OFF	1	1	2011-02-05 16:05:35	
0	Branch2 relay stat	te	0	ON	1	2	2011-02-05 16:05:35	
0	Branch3 relay stat	te	0	ON	1	2	2011-02-05 16:05:35	
0	Branch4 relay stat	te	0	ON	1	2	2011-02-05 16:05:35	
0	Branch5 relay stat	te	0	ON	1	2	2011-02-05 16:05:35	

Event tab

Environmen	ital PDU Came	ra			
Signal	Event Contro	ł			
Operation	Control Name	RealValue	MaxValue	MinValue	
The second secon	Setting Address	11	99	0	^
4	Setting Upper load current	14.3	99.0	0.0	
-	Setting Lower load current	2.0	99.0	0.0	

Control tab

Figure 5-16 Detailed information window

In the **Control** tab, the setting method of switched PDU is the same as that of metered PDU (see Figure 5-14).



Note

1. Setting address in the **Control** tab will change the address of switched PDU and metered PDU, and thus lose the communication between the PDU and the data unit.

2. To build the communication between the PDU and the data unit, the same address should be configured on the configure interface, please refer to *PDU* in *5.4 Configure Interface Operation Description* for detailed method.

Mps PDU

The Mps PDUs are divided into different models depending on the PDU length and whether each outlet can be controlled, and the interface of each model differs. The following takes one model as an example to introduce the interface of Mps PDU, which contains three tabs. Click **Signal** tab and **Event** tab to check the status of PDU and abnormal events; Click **Control** tab to set upper load current and lower load current of the PDU. The tabs are shown in Figure 5-17.

Enviro	onmental PDU	Camera		
Sigr	nal Event	Control		
Alarm	Signal Name	Value	Unit	Time
0	Communication Status	Normal		2011-12-09 14:34:49
0	Voltage	218.0	V	2011-12-09 14:34:49
0	Total Current	1.1	А	2011-12-09 14:34:49
0	Branch1 Current	0.0	А	2011-12-09 14:34:49
0	Branch2 Current	0.0	А	2011-12-09 14:34:49
0	Branch3 Current	1.1	А	2011-12-09 14:34:49
0	Active Power	0.0	kW	2011-12-09 14:34:49
0	Apparent Power	0.2	kVA	2011-12-09 14:34:49
0	Power Factor	0.0		2011-12-09 14:34:49
0	Frequency	50.0	Hz	2011-12-09 14:34:49
0	Load Current (%)	3.4	%	2011-12-09 14:34:49
0	Power Consumption	0.0	kWhr	2011-12-09 14:34:49
0	Rated Current	32.0	А	2011-12-09 14:34:49

Signal tab

Enviro	onmental PDU Camera									
Sigr	Signal Event Control									
Alarm	EventName	Severity	Start Time							
0	Grid Voltage Low Limit	Normal	2011-12-08 09:55:08	~						
0	Grid Voltage High Limit	Normal	2011-12-08 09:55:08							
0	Load Total Current Low Limit	Normal	2011-12-08 09:55:08							
0	Load Total Current High Limit	Normal	2011-12-08 09:55:08							
0	Branch1 Load Current Low Limit	Normal	2011-12-08 09:55:08							
Ø	Branch1 Load Current High Limit	Normal	2011-12-08 09:55:08							
0	Branch2 Load Current Low Limit	Normal	2011-12-08 09:55:08							
0	Branch2 Load Current High Limit	Normal	2011-12-08 09:55:08							
0	Branch3 Load Current Low Limit	Normal	2011-12-08 09:55:08							
0	Branch3 Load Current High Limit	Normal	2011-12-08 09:55:08							
0	Communication Status	Normal	2011-12-08 09:55:08							

Event tab

Environmen	ital PDU Came	ra		
Signal	Event Contro			
Operation	Control Name	RealValue	MaxValue	MinValue
	Load Voltage Low Limit	101	240	90
-	Load Voltage High Limit	240	240	90
	Load Current Low Limit	0	32	0
	Load Current High Limit	31	32	0
	Branch1 Load Total Current Low Limit	0	16	0
2	Branch1 Load Total Current High Limit	16	16	0
	Branch2 Load Total Current Low Limit	0	16	0
2	Branch2 Load Total Current High Limit	16	16	0
	Branch3 Load Total Current Low Limit	0	16	0
-	Branch3 Load Total Current High Limit	16	16	0

Control tab

Figure 5-17 Tabs of Mps PDU

In the **Control** tab, click the icon 述 in the **Operation** column to set the thresholds for metered PDU.

5.2.3 Camera

1. Click the Camera tab in the operation area to enter the Camera interface, as shown in Figure 5-18.



Figure 5-18 Camera interface

2. Extend the **USB Camera** node. Click **All Camera**, and camera1 and camera2 images will be displayed simultaneously in the interface, as shown in Figure 5-18. Click **Camera1** or **Camera2**, and the corresponding camera image will be displayed in the interface.

Different display modes have the same control buttons, as shown in Figure 5-19. Through operating them, you can turn up/down/left/right direction of the camera, regulate the brightness and contrast, set the frame frequency, record video, replay video, capture the picture and preview the image. The **Record** button will turn to **Stop** after the recording action is initiated and click the **Stop** button to stop recording, as shown in Figure 5-19.

A Note

If **Rewriting** is ticked, when the SD card is full, the foremost records will be covered by the newly-taken pictures and videos.



Figure 5-19 Control buttons

The capture picture list and the preview window are shown in Figure 5-20 and Figure 5-21 respectively.

3 USO Comere Capture Picture List	His root Internet Explorer		C C B
Pile Edit View Pavorites Tools He			R.
0	Diseach traverse @ @.	300043	
Address (@ Mtp.//10.163.362.151(Mtps.es	Pcanera-1	All and a second se	M 🗊 Ge 🛛 Linia 💆
LICD Video 1 Continu	Distance List		0
USB video I Capture	e Pictures List		
			Colleta
File Name	Date-Time	Size(Byte)	
20101101 140540 1 100	11/01/2010 14:05:40	3849	
20101101 140603 1 100	11/01/2010 14:06:03	3845	
[] 20101121 141539 1 pg	11/21/2010 14:15:39	8517	
D 20101122 144001 1 00	11/22/2010 14:40:01	3259	
C 20101122 172422 1 100	11/22/2010 17:34:33	3495	
20101122 172458 1 km	11/22/2010 17:34:58	3475	
20101122 173956 1.000	11/22/2010 17:35:56	3465	
D 20101122 173644 1 mg	11/22/2010 17:36:44	3465	
C 20101129 132111 1.00	11/29/2010 13:21:11	10397	
D 20101129 132110 1.00	11/29/2010 13:21:10	10419	
20101129 132125 1 100	11/29/2010 13:21:25	10379	
0			D Internet

Figure 5-20 Capture picture list



Figure 5-21 Picture preview window

The record video list and the record video replay window are shown in Figure 5-22 and Figure 5-23 respectively.



a) us	8 Camera Record Video List - Micros	oft Internet Explorer		
File	Edit View Favorites Tools Help		D	
0	bad 💭 - 🗷 🖻 🚱 🔑	Search 🎇 Favorites 🙆 🔗	🍣 🖂 🛄 🗱 🦓	
Addre	SS all http://10.163.162.151/kstwideo.esp?ca	amera=1		👻 🔁 Go Links
IB	SB Camera 1 Record	Video List		
0	5D Camera 1 Record	VIGCO LIST		
				delete
	File Name	Date-Time	Size(Byte)	
	Cameral M 20101101140634.sm4	11/01/2010 14:06:52	710062	
	Camera1 M 20101105100454.sm4	11/05/2010 10:05:00	187240	
	Cameral M 20101120141049.sm4	11/20/2010 14:11:42	1949993	
	Cameral M 20101121140716.sm4	11/21/2010 14:08:05	4090445	
	Cameral M 20101122134147.sm4	11/22/2010 13:44:42	5637452	
	Camera1 M 20101122143751.sm4	11/22/2010 14:37:59	269422	
	Cameral M 20101122155005.sm4	11/22/2010 15:51:16	2451103	
	Camera1 M 20101122155416.sm4	11/22/2010 16:05:10	22431727	
	Cameral M 20101122170424.sm4	11/22/2010 17:04:29	167440	
	Cameral M 20101122170500.sm4	11/22/2010 17:05:04	149943	
	Camera1 M 20101122170514.sm4	11/22/2010 17:05:19	160532	
) Do	ne		01	internet

Figure 5-22 Record video list



Figure 5-23 Record video replay window

Note

1. Do not pull out the SD card during recording.

2. For alarm event, the recording time is two minutes at most; for manual recording, the recording time is 15 minutes at most.

5.3 Control Interface Operation Description

Click the Control tab to enter the Control interface, as shown in Figure 5-24.



Liebert. RDU-S				RDU-S			EMERSON
Performance Monitoring	Monitor	Control	Configure	Events	History	System Information	Network Power
RDU-S	Rebox	t					
User: admin [logout] User level: Administrator RDU-S System Time: 2010.12.09.14:39:43 RDU-S IP Address: 10.163.162.188					Rebon		
Control							
Reboot							
Digital Output Control							
Firmware Upgrade							
Configuration File							
Restore Factory Defaults							
		Copyrigh	t 2010. Emerson f	letwork Power	Co., Ltd. Al Ro	itts Reserved.	

Figure 5-24 Control interface

Reboot

1. Click the Reboot node in the Control interface, and the figure shown in Figure 5-25 will appear.

Rebot	
Rebot	

Figure 5-25 Reboot window

2. Click **Reboot**, and the data unit will be restarted.

Digital output control

1. Click the Digital Output Control node in the Control interface, and the figure shown in Figure 5-26 will appear.

Digital Output Control		
	DO1 Output	
	D02 Output: Of	
	Афрђу	

Figure 5-26 Digital output control window

Select the control mode (including 'On' and 'Off') in DO1 Output and DO2 Output, and click Apply.

Firmware update

1. Click the **Firmware Update** node in the **Control** interface to upgrade the firmware file of the data unit, and the window shown in Figure 5-27 will appear.

Firmware Upgrade		
	Firmware Upgrade Upload	

Figure 5-27 Updating window

2. Click **Browse...**, select the firmware update file (firmware.rdus) of the data unit in the pop-up **Select file** dialogue box and click **Upload** to update the firmware update file (firmware.rdus) into the data unit.

Configuration file

1. Click the **Configuration File** node in the **Control** interface to upgrade the configuration file of the data unit, and the window shown in Figure 5-28 will appear.

lek Hara to down load Confirmation
and there are a seen that a second process
browse. Upload

Figure 5-28 Configuration file window

2. Click **Browse...**, select the configuration file of the data unit in the pop-up **Select file** dialogue box and click **Upload** to update the configuration file into the data unit.

Restore factory defaults

Click the **Restore Factory Defaults** node in the **Control** interface to restore the system default setting, and the window shown in Figure 5-29 will appear.

Restore	
	Restore

Figure 5-29 Restore factory defaults window

Click Restore to restore the system default setting.

5.4 Configure Interface Operation Description

Click the **Configure** tab to enter the **Configure** interface, as shown in Figure 5-30.

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5	-
=	5
<	\simeq
	\neg
12	-
5	O
<u> </u>	2
I U	~
S	
_	

Liebert. RDU-S Performance Monitoring	Marine	Control	A	RDU-S	History		EMERSON Network Power
	Monitor	Control	Configure	Events	History	System Information	
RDU-S	Netw	ork					
User: admin [logout] User level: Administrator		Co	btain IP address	automatically		©Use the following IF	address
RDU-S System Time: 2010-12-09 13:23:31			IP Addres	s:		10.163.162.188	
RDU-S IP Address: 10.163.162.188			Sub net Ma	isk:		255.255.255.0	
Configure	1		Default Gate	way:		10.163.162.1	
Network			MAC Addre	1951		00-09-F5-04-32-1F	
Email						Apply	
SMS							
SNMP							
Time							
Users							
Sensors							
PDU							
Auto Logout							
Change Password							
		Copyrigh	t 2010. Emerson M	etwork Power	Co., Ltd. All Rig	ghts Reserved.	

Figure 5-30 Configure interface

Network

Click the **Network** node, and the window shown in Figure 5-31 will appear.

You can set the IP address through the window. Two methods are available:

• Select Obtain IP address automatically (DHCP), and click Apply to complete the configuration.

Note

- 1. If DHCP is selected, there are two conditions as follows:
- 1) The system cannot obtain the IP address in five minutes, the IP address will be restored as 192.168.0.10.

2) The system obtains the IP address in five minutes, and then the system will be restarted automatically. Wait five minutes, and then you can view the dynamic IP address in the 'Current_DHCP_IP.txt' file in the background computer that is connected to the data unit through the USB CONFIG port.

2. Before using the DHCP service, please check that the DHCP server has been started normally, or else, the DHCP can not be used normally.

• Select **Use the following IP address**, type IP address, subnet mask and gateway in the textbox, and click **Apply** to complete the configuration.

O Obtain IP address automatically	Use the following IP address
1P Address:	10.163.162.167
Sub net Mask:	255.255.255.0
Default Gateway:	10.163.162.1
MAC Address:	00-09-#5-02-AB-#2

Figure 5-31 Network window

Email

Click the Email node, and the window shown in Figure 5-32 will appear.

You can configure the Email sending function, including Email server IP address, port, using SSL or not, and Email addresses of sender & receiver, and separately test the Email serving function of the data unit through the window. Email server port default: If SSL is not used, the port number is 25; If SSL is used, the port number is 465.

- If you have not modified the port number, when you check or uncheck SSL, the port number will be switched between 465 and 25.
- If you have set other port number manually, when you check or uncheck SSL, the port number will always be the user-defined value, not being changed.

1. SMTP server

Click the SMTP Server tab, and the window shown in Figure 5-32 will appear.

As shown in Figure 5-32, type the corresponding configuration values of the parameter items and click **Apply** to complete the configuration.

Server SMTP Server IP Address: I92.166.0.4 SMTP Server Port: 465 SSL Confirm Identity Email Account: User1 Email Password: From Address: User1@gmail.com	SMTP Server	Recipients	e	
SMTP Server IP Address: 192.168.0.4 SMTP Server Port: 865 SSL Confirm Identity Erral Account: User1 Erral Password: From Address: User1@grai.com	Server			
SMTP Server Port: 465 SSL IV Confirm Identity Imail Accounts Imail Accounts Email Accounts Imail Accounts Imail Accounts Email Password: Imail Accounts Imail Accounts From Address: Imail Imail Accounts Imail Accounts	SMTP Server IP Ad	dress:	192.166.0.4	
Confirm Identity Email Accounts Email Password: From Address:	SMTP Server Port:		465 SSL 🕑	
Email Accounts users Email Password: From Address: User1@gmail.com	Confirm Iden	bty		
Email Password:	Email Account	2	useri	
From Address: User1@gmail.com	Email Passwor	d:		
	From Address:		user1@gmai.com	
Apply			Apply	

Figure 5-32 SMTP server window

- 2. Recipients
- 1) Click the **Recipients** tab, and the window shown in Figure 5-33 will appear.

SMTP Server	Recipients	Test	
Recipient Addres	S		
support@emersonne	etwork.com.cn		
Enable emails fo	r all events Apply		
Add Recipient			Delete

Figure 5-33 Recipients window

2) Click Add Recipient, and the figure shown in Figure 5-34 will appear.

SMTP Server	Recipients	Test	
Recipient Addres	5		
support@emersonne	twork.com.cn		
Enable emails fo	all events Apply		
Add Recipient			Delete
Recipient Address:	Res	et	Cancel

Figure 5-34 Adding recipient window

3) Type the Email address in Recipient Address and click Apply. Adding recipients is completed.

Clicking Reset can re-type the E-mail address, and clicking Cancel can cancel the adding operation.

4) Select one Email address and click **Delete**, and the Email address will be deleted.

Note

1. At most eight Email addresses can be added.

2. If **'Enable emails for all events**' is ticked, the system will send you an Email under any event (generated by all sensors) except the event generated by the third party intelligent devices, for example, PDU.

3. Test

Click the Test tab, and the window shown in Figure 5-35 will appear.

SMTP Server	Recipients	Test	1
Test			
Prom Address:	RDUS	Emerponiliet	t w
Recipient Address:	sufeig	gemersonn	
Test Message:	Germé 1	est from HD	15
	T	iit]	

Figure 5-35 Test window

Click Test, the data unit will send a test Email to the recipient address.

SMS

Click the **SMS** node, and the window shown in Figure 5-36 will appear.

You can set the SMS function of the data unit through the interface, including receiving the SMS reminding function through SMTP mode (note that the mobile phone is required to apply mobile mailbox function), receiving SMS sending function through Wireless Modem and adding & deleting phone numbers.

1. Wireless Modem

Click the Wireless Modem tab, and the window shown Figure 5-36 will appear.



Wireless Modem	Configure Phone
Configure	
To:	13577328345
Test Message:	SMS Test.
	Test

Figure 5-36 GPRS Modem window

3. Phone numbers

1) Click the Configure Phone tab, and the window shown in Figure 5-37 will appear.

Configure Phone		
umbers		
	Delete	
	Configure Phone	Configure Phone umbers

Figure 5-37 Phone numbers window

2) Click Add Recipients, and the window shown in Figure 5-38 will appear.

Wireless Modem	Configure Phone		
Configure Phone Nu	umbers		
13577328345			
Add Reopienta		Delste	
Configure Phone:	Reset	Cancel	

Figure 5-38 Adding phone number window

3) Type a new phone number in the textbox after **Configure Phone** and click **Apply**.

4) Select a phone number and click **Delete**, and the number will be deleted.

	Note
At mos	st eight phone numbers can be added.

SNMP

Click the **SNMP** node, and the window shown in Figure 5-39 will appear.

SNMP								
NMS IP	Version	Traps Port	Read Community	Write Community	User Name	Authentication Protocol	Privacy Protocol	
142.100.7.6	V2C	162	public	private	522	12	£	Test
142.100.7.61	V2C	167	public	private	0.1		÷	Test
142.100.7.250	V3	162	5	đ	-	HD5	DES	Test
With the set Beat Send Heart Beat Send Heart Beat Delate Add Delate								

Figure 5-39 SNMP window



1. Adding NMS

1) Click Add, the window shown in Figure 5-40 will appear.

0.163.160.94 V2C 162 public private	NMS IP Version	Traps Port	Read Community	Write Community	User Name	Authentication Protocol	Privacy Protocol	
 ✓ Send Heart Beat 5 (1 ~ 1500) mins Apply Contract Enable traps for all events Apply Add Delete O SNMP V2c O SNMP V3 NMS IP: Traps Port: 162 	0.163.160.9 <mark>4</mark> V2C	162	public	private	50-	•	- (Test
Enable traps for all events Apply Add Delete SNMP V2c SNMP V3 NMS IP: Traps Port: 162	Send Heart Beat:	5 (1	~ 1500) mins 🛛	pply				
Add Delete SNMP V2c SNMP V3 NMS IP: Traps Port: 162	Enable traps for al	events [Apply					
SNMP V2c SNMP V3 NMS IP: Traps Port: 162		Ad	d			Delete		
NMS IP: Traps Port: 162	۲	SNMP V	2c		0	SNMP V3		
		NMS IP:			Tra	ps Port: 162	1	
Read Community: public Write Community: private	Read Con	munity: p	ublic		Write Con	nmunity: private		

Figure 5-40 Adding new NMS

- 2) Select Enable traps for all events and click Apply to send traps for all events.
- 3) Select SNMP V2c, type a new NMS IP address in NMS IP and keep other parameters in default.
- 4) Click Apply, the setting is successful; Click Cancel, the setting is cancelled.
- 5) Select SNMP V3, the window shown in Figure 5-41 will appear.

NMS ID Version	Traps	Read	Write	User	Authentication	Privacy	
NING IF VEISION	Port	Community	Community	Name	Protocol	Protocol	
10.163.160.94 V2C	162	public	private	1	8	- [Tes
Send Heart Beat: 5	(1	~ 1500) mins 🛛	pply				
Enable traps for all e	events [Apply					
	Add				Delete		
0 S	NMP V	2c		$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	5NMP V3		
ı	MS IP:			Trap	s Port: 162		
User	Name:						
Authentication Pr	otocol M	D5	*	Privacy Pr	otocol DES	~	
Authentication Passp	hrase: au	thpass		Privacy Passp	hrase: privpass		

Figure 5-41 Select SNMP V3

- 6) Click Apply, the setting is successful; Click Cancel, the setting is cancelled.
- 2. Deleting NMS

Select one NMS and click **Delete**, and the NMS will be deleted.

Note

1. At most 20 NMSs can be added.

2. If 'Enable emails for all events' is ticked, the system will send you an Email under any event (generated by all sensors) except the event generated by the third party intelligent devices, for example, PDU.

Time

Click the Time node, and the window shown in Figure 5-42 will appear.

You can calibrate the system time of the data unit through the window, including automatically getting local time and getting time through NTP server. You can also set the calibration interval through the NTP server, and select the **Time Zone**. In addition, you can disable and enable **Daylight Saving Time** (DST) by the following method:

- Select **Disable** to disable **Daylight Saving Time**.
- Select Automatically adjust clock for daylight saving time only when '-5:00 ~ -8:00' is selected for Time Zone.
- Select Manual Set, you can set DST Start Time, DST End Time DST and Adjust Hours.

Manual	Get Local Time	
Data	2010-05-14	
Time:	14:51:38	
O NTP Server		
Primary NTP Server:		
Secondary NTP Server:		
NTP server connection interval:	mins	
Time Zone		
Time Zone: 00.00 Dublin. Lisb	n, Landon 🔗 💌	
Daylight Saving Time		
 Disable Automatically 	djust clock for daylight saving time O Manual Set	
DST Start Time:	Jan e On tat Min e at	
DST End Time:	Jan On Test in Liber. In Ab	
DST Adjust Hours:		
	Apply	

Figure 5-42 Time window

Users

Click the Users node, and the window shown in Figure 5-43 will appear.

Users	
User Name	User Level
reader	Read Only
manager	Manager
admin	Administrator
Add	Nodfy Delete

Figure 5-43 User window

1. Adding new user.

1) Click Add, and the window shown in Figure 5-44 will appear.



User Name		Us	er Level
reader		R	ad Only
manager		1	anager
admin		4dr	sinistrator
Add	Modify		Delete
User Name		Password	
User Level:	Administrator 💌	Confirm	

Figure 5-44 Adding new user window

2) Type a new user name in **User name**, select the authority for the new user in **Authority** and type the password respectively in **Password** and **Confirm**.

3) Click Apply.

At most three users of administrator level, five users of Manager level and five users of Reader level can be added.

2. Deleting user.

Select the user to be deleted and click Delete.

Sensors

1. Click the Sensors node, and the window shown in Figure 5-45 will appear.

DI Sensor Configure SN DI Sensor		Configure SN DI Sensor Configure TH Sensor Configure		ligure		
Sensor C	Configure					
DI	Enable	Disable	10	Туре	State	Name
D11-1	Enable	*	Smoke	×	Notmally Open 🛞	011-1
D11-2	Enable	~	Deer	-	Normally Cheered	011-2
011-3	Enable	2	Leak	~	Numberly Open	011-3
011-4	Enable	1	Notion	3	Hormally Closes	011-4
012-1	Disable	*	Smoke	*	Hormally Option	.012-1
012-2	Disable	*	Door		Normally Closed 14	012-2
012-3	Disable	4	Leak	*	Terrotally Open	012-3
007-4	Disable	*	Motion		Normally Closed -	012-4
013-1	Disable	*	Smoke	*	Notmally Open	013-1
013-2	Disable	*	Doot		Hotmally Closed Se	013-2
012-3	Disable	~	Lear	4	Harmali Oben	013-3
003-4	Disable	~	Hation		Normally Cleaned Av	00-4

Figure 5-45 DI sensor configure window

Note

For third-party equipment, 'Custom' must be selected in the Type column in the DI sensor configure window.

2. Select the DI Sensor Configure tab, and the window shown in Figure 5-45 will appear.

You can enable or disable the DI channels, and set the DI type and name of the DI channels. Click **Apply** to complete the configuration.

3. Click the SN DI Sensor Configure tab, and the window shown in Figure 5-46 will appear.

You can enable or disable the SN DI channels, and set the SN DI type and name of the SN DI channels. Click **Apply** to complete the configuration. Click the **Comms Loss Reset** button to clear the **Loss of Comms** events in the event list.

DI Sensoi	r Configure	SN D	I Sensor Configure	TH Sensor Configure	
SN DI Sen	sor Configure				
DI	Enable/Disal	ble	State	Name	Address
SN 1C-1	Disable	*	Normally Open 👻	SN 1C-1	-
SN 1C-2	Disable	*	Normally Open 👻	SN 1C-2	-
SN 1C-3	Disable	*	Normally Open 👻	SN 1C-3	-
SN 2C-1	Disable	*	Normally Open 🐱	SN 2C-1	-
SN 2C-2	Disable	*	Normally Open 🐱	SN 2C-2	-
SN 2C-3	Disable	*	Normally Open 👻	SN 2C-3	-
SN 3C-1	Disable	*	Normally Open 👻	SN 3C-1	-
SN 3C-2	Disable	*	Normally Open 👻	SN 3C-2	-
SN 3C-3	Disable	*	Normally Open 👻	SN 3C-3	-
SN 1D-1	Disable	*	Normally Close 👻	SN 1D-1	-
SN 1D-2	Disable	*	Normally Close 🐱	SN 1D-2	-
SN 2D-1	Disable	*	Normally Close 🐱	SN 2D-1	-
SN 2D-2	Disable	*	Normally Close 🐱	SN 2D-2	-
SN 3D-1	Disable	*	Normally Close 👻	SN 3D-1	-
SN 3D-2	Disable	~	Normally Close 🐱	SN 3D-2	-
SN-L	Disable	~	Normally Open 👻	SN-L	-
	Apply		Cancel	Comms Loss Reset	

Figure 5-46 SN DI sensor configure window

Note

1. At most three SN-3C dry contact sensors, three SN-2D door dry contact sensors and one SN-L leak detection sensor can be configured.

2. The serial numbers of the sensors will be displayed in the Address column automatically.

4. Select the TH Sensor Configure tab, and the window shown in Figure 5-47 will appear.

You can set the positions of the temperature and humidity sensors. Click Apply to complete the configuration.

Location 1	Location 2	Location 3	Location 4	Address
emp3 Location1	SN Temp3 Location2	SN Temp3 Location3	5N Temp3 Location4	EA000000038EA242
	Location 1 emp3 Location1	Location 1 Location 2 emp3 Location1 SNI Temp3 Location2	Location 1 Location 2 Location 3 emp3 Location1 SH Temp3 Location2 SH Temp3 Location3	Location 1 Location 2 Location 3 Location 4 emp3 Location1 SN Temp3 Location2 SN Temp3 Location3 SN Temp3 Location4

Figure 5-47 TH sensor configure window

Note

1. At most ten SN-TH temperature & humidity sensors can be configured.

2. The serial numbers of the sensors will be displayed in the Address column automatically.

3. At most eight IRM series temperature sensors and eight IRM series temperature & humidity sensors can be connected with the system. After NForm is connected, when IRM series sensors are used, the system supports at most ten temperature monitoring points and eight humidity monitoring points. The address range of the ten temperature monitoring points is 10, 11, 12, 13, 20, 21, 22, 23, 30 and 31. The temperature monitoring points beyond this address range will not be displayed in the NForm.

PDU

Click the PDU node, and the window shown in Figure 5-48 will appear.

PDU Device					
lanage PDU					
Туре	Name	Port	Address	Parameter	Device ID
SwitchedPDU	SW	COM1	12	9600,n,8,1	19900002
Curterly all DOLL	SW11	COM1	11	9600.n.8.1	19900003

Figure 5-48 PDU management window

Click **Add** to configure PDU and the windows shown in Figure 5-49 will appear. Click **Modify** to revise the PDU setting by selecting the PDU you want to revise. Click **Delete** to delete the configured PDU.

PDU Device							
Manage PDU							
Туре	Name	Port	Address	Parameter	Device ID		
SwitchedPDU	SW	COM1	12	9600,n,8,1	19900002		
SwitchedPDU	SW11	COM1	11	9600,n,8,1	19900003		
	Type: SwitchedPDU V Name:						
	Port: COM1	~	Address:	(0 ~ 9	99)		
P	arameter: 9600,n,8,1						
	Add		Cance	el			

Figure 5-49 Adding PDU

Note

1. The address to be input should be the same as that of serial PDU you want to monitor. The address and current will be displayed alternately on the LED display screen of the PDU for your reference.

2. After finishing all actions such as adding, modifying and deleting, click **Apply** to enable all the settings and the system will be rebooted.

Auto logout

Click the Auto Logout node, and the window shown in Figure 5-50 will appear.

Type the time, such as '15' (the setting range is 0min ~ 15min), in **Auto logout (mins)** and click **Apply**. You may set the value as '0', and the system will never logout automatically.

If you do not have any operation on the WEB interface within 15 min, it will automatically exit and return to the login interface (see Figure 5-1).

Auto Logout		
Auto logout (mins)	mins(input 0 to avoid automatically logout)	

Figure 5-50 Auto logout window

Change password

Click the **Change Password** node, and the window shown in Figure 5-51 will appear.

Type the old password in **Current Password**, and the new password respectively in **New Password** and **Confirm**, and click **Apply**.

irrent Password:		
ew Password:		
onfirm:	······	1

Figure 5-51 Changing password window

5.5 Events Interface Operation Description

Click the Events tab to enter the Events interface, as shown in Figure 5-52.

Liebert RDU-S				RDU-S			EMERSON
Performance Monitoring		Monitor Co	ntrol Configure	Events History	System Info	rmation	Network Power
RDU-S	SN	Condition 1	Relation	Condition 2	Relation	Condition 3	Output
User: admin [topset] User: tevel: Administrator RDU-S System Time: 2010-10-14 20:09-20 RDU-S IP Address: 55.163.162.167	4	011-1		611.2 	Celete_	81.3	604 IO
Events	1						
Digital Input Actients							
Temp & Hum Actions							
Event History							
Clear Event History							
22 22	202		Crowight 2015. Emerson N	ietwork Power Co., Ltd. Al	Rafits Removed		

Figure 5-52 Events interface

Digital input actions

Click the **Digital Input Actions** node, and the figure shown in Figure 5-53 will appear.

You can configure the output mode of alarm events for the digital sensors through the interface. When an alarm is generated, you can select the alarm output mode according to the severity of the alarm event, including EventLog, Email, SMS, Camera USB, Relay out and SNMP TRAPS.

SN	Condition 1	Relation	Condition 2	Relation	Condition 3	Output	
1	D11-1	to	D11-2	Qr.	011-3	001	6
			Add	Delete			
	SN 1C-1	or 💘	SN 10-3 💌	6t 💌	SN 1C-3	Email Republic Sufe Demonstration Common Commo	
		Apply			Can	cel	
		Figure 5-53	Configuration ir	nterface of alarr	m notification		

DISCONTINUED

Note

- 1. At most 64 alarm events can be configured.
- 2. The logical operation ('and', 'or') will be processed from left to right.
- 3. Several Email addresses can be selected by clicking them one by one.

Temp & Hum

Click the **Temp & Hum** node, and the window shown in Figure 5-54 will appear.

You can configure the output mode of alarm events for the temperature and humidity sensor through the interface. When an alarm is generated, the system can selectively output it according to the alarm class. The output mode includes Email (Email notification), Camera USB (video through USB Camera) and DO (audible and visual alarm through the relay).

SN	Temp & Hum	1	Level		Output	
1	SN Temp1		W		001 002	
2	SN Temp3		c		Camera1 142.100.7.250	
		Add	Delete			
	Shi Temp2 💌	Warning 🛩	DO1 DO2 Cameral Comeral	Email 💌	eufei@emersonnetwork.com.cn sanes@emersonnetwork.com.cn	
	Apply	1			Cancel	

Figure 5-54 Temp & Hum action window

Note

Among the selections in SN Temp2 , the sensor whose name is 'SN Temp XX' or 'SN Hum XX' belongs to 1-wire mode; the sensor whose name is 'SerialTXX' or 'SerialHXX' belongs to RS485 mode.

Event history

Click the Events History node, and the figure shown in Figure 5-55 will appear.

You can view the alarm records, including critical alarm, warning and notification in the interface. You can click **Time** to list the events in time sequence.

iebert. RDU-S			RDU-	S		EMERSC
erformance Monitoring		Monitor Contro	Configure Events	History	System Information	Airturick Pow
RDU-S	Epot	CEVFIE				
And the second s	= 0(1891)		3	Critical	
User level: Administrator	51	Tamé	Sensor liame	Seven	ty Trigger Value	Stet
RDU-S System Time:	,	1996-01-81 38 29-28	SV/Teru I	Lees of D	-412	
2010-10-14 20:10:26 RDU-5 IP Address	2	2010-05-27.17.18.00	Di Tanyi	Less of D	-411	
10.163.162.167	1	2010-08-27 17:18:49	Dievet	1000 07 02	-11	85
		2010-09-27 21 20 81	SV-Tangit	migh (c) i	UF 124	
Events	1.	2010-09-27 21 27 38	Sti Hunt	Lass of G	-413	845
Dinital Input Actions		2016-09-27-21-27:55	ShiTang1	Less and	inte	
orgital input actions		260)		W	arning	
Temp & Hum Actions	SN.	Tame	Sensor Name	Seven	ty Trigger Value	Creat
Theread Miletoney	1.	1886-01-01-02-02-40	Sh Tangi	high liter	11 II I	
manufacture.	2	1986-01-01-00-09-26	Un Terry f	rep clar	NG 27.8	4
Clear Event History	2	1995-01-01-02-12-44	SkTerul	rip lite	111.	
Contraction of the second second		1000-01-01 21 20-02	Si7ergi	Page 194	HS	4
		2010-09-27 17 19:29	Sh Teng I	Page 11ar	wq 811	4
	4.	2010-06-27 21 13 13	SN Tangi	righ rise	124 E	
	- 01	(1892)		No	tification	
	51	Time	Sensor Name	Seret	ty Trigger Value	SWE
		2010-09-27 21-25:00	Di Teru I	Sarra	E4	
	1	2010-05-21 21 21 21 99	21 +u+1	tarra	19.7	Refs
	1	2010-05-27 23 38:48	31 Hurt	. Aures	é – 192	8%
		2210-09-27 23 45:42	\$2t Hund	him	54.0	Refs.
	1	2010-05-27 22 48 16	Divari	larte	6 BA.8	Refs.
	4	2015-89-20 10-01 10	Skiwumt	Same	842	Derts.

Figure 5-55 Event history window

Click the **Export CSV File** button to export the history events in CSV format and the figure shown in Figure 5-56 will appear.

History Sample Data List -	Microsoft Internet E	xplorer		
File Edit View Favorites II	pois Heip			
🕞 Back - 🕥 - 💌 👔	🚺 🏠 🔎 Search	🛧 Favorites 🙆 🔗 •	🍓 🖂 🗾 🛍 🦓	
Address 🙆 http://10.163.162.151	/historyxml.esp		~	🔁 Go Links 🎽
Sensor History Notes: Click the file nar	Open Open in New Window Save Target As Print Target	t file. If you use IE br	owser to save file, please modi	ify file
extension to CSV .	Cut Copy Copy Shortcut			Delete
File Name	Paste	Time	Size(Byte)	
Sensor Event History 1	Add to Favorites	(2010 13:47:55	37706	
Sensor Event History 2.	Properties	/2010 13:47:55	59	
http://10.163.162.151/sensor/Se	nsor_Event_History_2.cs	/	🛐 🛛 🔮 Inte	rnet

Figure 5-56 File list window

Right-click the file to be exported, and select the command. For example, select 'Save Target AS...' to save the file.

Clear event history

1. Click the Clear Event History node, and the window shown in Figure 5-57 will appear.

Clear Event History

Figure 5-57 'Clear Event History' window

2. Click Clear Event History, and the historical events will be cleared.

5.6 History Interface Operation Description

Click the History tab to enter the History interface, as shown in Figure 5-58.

Chart

Click the **Chart** node to enter the historical data interface in chart mode, as shown in Figure 5-58. The chart of two sensors will be displayed by default.

After the sensor types on upper side of the interface are selected, the corresponding chart will appear. Figure 5-58 shows the historical data charts after all sensor types are selected.

Clicking NEXT and SPRE buttons can scroll down and up the historical data charts.



Figure 5-58 Historical data interface in chart mode

Table

1. Getting historical data

Click the **Table** node to enter the historical data interface in table mode, as shown in Figure 5-59. You may click **Time**, **Name**, **Value** and **Unit** to list the data in the corresponding sequence respectively.

iebert RDU-S		RDU-	S	EMERSO
erformance Monitoring	Monitor Contr	of Configure Events	History System Information	Network Power
RDU-S	Table			
User: admin [logost] User level: Administrator RDU-5 System Time:	Export CEV/Fix			(Errer) sana (merk)
2010-18-14 20:13:05 BDULS IP Address	Time	fame:	Value	Unit
10.163.162.167	2010-19-14 10.01.04	811 Tampi 4	42.95	
ANALISA CARDA	2210-10-10-10-10-10-00	In Tenal	79.40	+
No.	2015-15-14 18.11.18	Its Tarrait	75.42	W
natory	2010-10-10 10:21:05	Sti Tendo	11.10	*
E Chart	2010-10-14 10-21-00	Bhi Tampé	80.90	
Chart	2010-10-14 10:01 58	the Tainut	78.88	
II Table	2010-10-14 10 21 20	\$11 Taripa	82.00	
	2010-10-14 18 41 81	Sti Tarroll	78.80	
Table .	2010-10-14 10 41 21	311 Tanjai	10.00	
Class Mistage Data	2010-19-14 10 01 81	an fampl	88.99	4
Contact History Data	2010-10-14 10-01-07	\$117amp4	82.48	
	2010-02-14 10:01 07	Stines.	41,00	245
	2010-19-14 17-01.88	Its Tangil	78.80	4
	2010-10-14 17 21 86	215 Tarlord	80.00	-
	2010-10-10-10-00	All munit	38.30	845
	2010/13-14 17:11:88	Di Terul	78.89	
	2210-10-14 11 11.49	314 Tempe	81.92	
	2010-10-14 17 11:00	21 Part 1	16.80	84%
	2010-10-14 17 22 20	85 Tanut	21.42	÷
	2012-12-14 17 22 20	In Tartor	75.00	
	2010-10-14 17 22 90	Bit furt	41.90	200
	2010-10-14 17 32 21	2174103	79.00	Ψ.
	2818-1614 17:32:31	Sti Tenpà	84.90	
	2010-19-14 17 32 01	Et ment	240.0	



2. Export CSV file

Click Export CSV File to export the historical data. The exported historical data will be saved in local computer.

Interval

1. Click the Interval node, and the window shown in Figure 5-60 will appear.

Interval	
Log data Interval time (mins): 10 [1 ~ 1440]	
Acciv	
Numerical de la constante de l	

Figure 5-60 Interval window

2. Type the interval and click Apply, and the interval of the acquisition data is changed.

Clear history data

1. Click the Clear History Data node, and the window shown in Figure 5-61 will appear.

Clear History Data		
	Clear History Data	

Figure 5-61 'Clear History Data' window

2. Click Clear History Data, and the historical data will be cleared.

5.7 System Information Interface Operation Description

Click the System Information tab to enter the System Information interface, as shown in Figure 5-62.

You can view the version information of the system and hardware through the interface. You can also define the **Site Name** according to your preference by inputting the name and clicking **Apply**.

_iebert. RDU-S	RDU-S						EMERSON
erformance Monitoring	Monitor	Control	Configure	Events	History	System Information	Network Power
RDU-S	Syste	im Informatio	n	5.P.			
User: admin [togout]		System Type:	RDU-S				
User level: Administrator RDU-S System Time:		Software Versio	n: RDU-S V1.8	6 804			
2011.12.09 16:26:47 RDU-S IP Address:		Hardware Versi	on: RDU-SV12	0			
10.163.162.170		SN.	041081549	1.0	-		
System Information		Site rearrie	RDD-S	14	eeti j		
System Information							
		Copyrigh	t 2010. Emerson N	letwork Powe	Co., Ltd. All Re	phta Reserved.	



5.8 Logout

Click the **logout** button on the upper left corner of the interface or the exit button on the upper right corner of the interface to exit the software.

Chapter 6 Troubleshooting

The chapter introduces the troubleshooting of the data unit.

See Table 6-1 for the troubleshooting.

Table 6-1 Troubleshooting

Fault phenomenon	Treatment
After the data unit is powered on, the power	
indicator is off and the running indicator (see	Check that the host board is powered on
Figure 1-2) is not blinking	
After the network cable is connected, the	1. Check that the network cable is normal.
indicator on the Ethernet port is off	2. Check that the device in upper network is working normally
	1. Check that no obstructs exit in the Micro SD card slot.
No response occurs after the Micro SD card is	2. Check that the Micro SD card is inserted in place. It is recommended to
insorted	insert it again.
Inserteu	3. Restart the data unit. After unplugging and plugging the Micro SD card, the
	data unit must be restarted to read the data
No response occurs after the corresponding	1. Check that the sensor is working normally.
No response occurs after the corresponding	2. Check that the configuration file is configured correctly.
Sensor is connected	3. Check that the channel used by the sensor does not have conflict
	1. Check the model number of GPRS Modem, and make sure that the modem
SMS message error without response	being used is supported by the system.
	2. See supported modem list in RDU brochure
	1. Check the model number of PDU. Make sure that it is Serial Switched PDU,
No communicating for PDU	Serial Metered PDU or Serial Mps PDU.
	2. Check address of the PDU

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Appendix 1 Command Lines

This appendix introduces the command lines of the data unit.

1. Overview

The data unit provides command lines, which include a series of configuration commands. You can run commands to configure and manage the device. The command lines provide the function of helping, loading, uploading files, testing, changing password and command setting.

The command lines provide the following features:

- Support simple command line editing function.
- Type '?' or 'help' to get online help information at any moment after logging.
- Provide the relative commissioning information help to diagnose network malfunction.
- Support key word input mode. You only need to input part of the key word related to a command and the shell can recognize the command, for example, to run the command 'lookstatus', just type 'look'.

2. Main Command Lines

(1)? or help

Type '?' or 'help' under the command prompt **RDU_admin#** and press the Enter key to get the help information, as shown in the following figure.

help	Show this information
download	Download files to RDU work dir, Delete files in RDU work dir
logout	Logout from RDU
password	Change password
reboot	Reboot RDU system
ipview	Show ip parameter
setip	Set IP address, netmask and default gateway
test	View startup self-test log, network and serial ports
show	Show product information
lookstatus	Show system status,show net status
stoprdu	Stop rdu application
startmod	Start dhep
stopmod	Stop dhep
setrelay	Set relay1 and relay2
setrtc	Set real time clock
version	View the version information of RDU

(2) Download

The download command is used to download the software or delete the files and subdirectory under the data unit directory.

Type 'download' under the command prompt RDU_admin# and press the Enter key, as shown in the following figure.

RDU_admin#download

RDU download function Please make sure the file size is under 2M Bytes! Before operating, you should stop application program first! O) Print this menu 1) Download firmware.rdus files and decompress to RDU directory 2) Delete all the files in RDU directory 3) Exit DOWNLOAD> Command (0 for help):

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You can type '0' ~ '4' to realize the different operation functions:

- Type '0' and press the Enter key: show the download command interface.
- Type '1' and press the Enter key: download software package (firmware.rdus) (with recommended size of no more than 2M) and decompress to RDU directory.
- Type '2' and press the Enter key: delete all contents in the directory of data unit.
- Type '3' (or 'q') and press the Enter key: exit the download command and return to the main interface of command line. If you do not have any operation for the command within five minutes, the software will automatically exit and return to the main interface of command line.

Note

1. If you log onto the data unit through a remote terminal or HyperTerminal, and 1 or 2 is selected, the system will display: rz ready. Type 'sz file' to your modem program. Then you can choose a file to download by selecting **Send** -> **Send File** and send the file using the zmodem protocol.

2. If you log onto the data unit through RS232 serial port, you can download files through data unit configuration port; if you logs into the data unit through a remote terminal, you can download files through Ethernet port. It is recommended to use a network that offers a high speed.

3. After a file is downloaded, upload the file to check if the download is successful.

4. For upgrading the firmware successfully, command 2 (Delete all the files in RDU directory) should be processed before command 1 (Download firmware.rdus files and decompress to RDU directory).

(3) Logout

The logout command is used to exit the data unit.

Type 'logout' under the command prompt RDU_admin# and press the Enter key to exit the system.

(4) Password

The password command is used to change the logging password.

Type 'password' under the command prompt RDU_admin# and press the Enter key, as shown in the following figure.

You can type the new password under the command prompt Enter new password:

RDU_admin#password Changing password for rduadmin Enter the new password (Recommendation: 5-8 characters) Please use a combination of upper and lower case letters and numbers. Enter new password:

(5) Reboot

The reboot command is used to restart the data unit.

Type 'reboot' under the command prompt **RDU_admin#** and press the Enter key, as shown in the following figure. Type 'y' or 'Y' and press the Enter key, and the data unit will be restarted.

RDU_admin#reboot Are you sure to reboot the system? Y/N [N]

(6) Ipview

The ipview command is used to display the IP parameters.

Type 'ipview' under the command prompt RDU_admin# and press the Enter key, as shown in the following figure.

RDU_admin#ipview

current IP address :142.100.6.157 current IP mask :255.255.254.0 current IP default gateway:142.100.6.1

RDU_admin#

(7) Setip

The setip command is used to set the network parameters, such as IP address, mask and default gateway.

Type 'setip' under the command prompt **RDU_admin#** and press the Enter key, as shown in the following figure.

RDU_admin#setip Please input IP_address[10.163.162.151]: Type the IP address, mask and default gateway of the device following the instructions and press the Enter key, the new network parameters can take effect immediately.

(8) Test

The test command is used to test the network, serial port and display self-test information.

Type 'test' under the command prompt **RDU_admin#** and press the Enter key, as shown in the following figure. RDU_admin#test

RDU_test> Command (O for help):

You can type '0' ~ '5' to realize the different operation functions:

- Type '0' and press the Enter key: show the test command interface.
- Type '1' and press the Enter key: view start-up self-test information.
- Type '2' and press the Enter key: ping to network test.
- Type '3' and press the Enter key: start serial port test.
- Type '4' and press the Enter key: stop serial port test.
- Type '5' (or 'q') and press the Enter key: exit the test command and return to the main interface of command line. If you do not have any operation for the command within five minutes, the software will automatically exit and return to the main interface of command line.

(9) Show

The show command is used to display the product information.

Type 'show' under the command prompt **RDU_admin#** and press the Enter key, as shown in the following figure.

```
RDU_admin#show
Emerson Network Power Co.,Ltd
RDU Product--Rack Data Unit
```

(10) Lookstatus

The lookstatus command is used to display the system status and network status.

Type 'lookstatus' under the command prompt RDU_admin# and press the Enter key, as shown in the following figure.

RDU_admin#lookstatus

RDU_lookstatus> Command (0 for help):

You can type '0' ~ '3' to realize the different operation functions:

- Type '0' and press the Enter key: show the lookstatus command interface.
- Type '1' and press the Enter key: show the system status, as shown in the following figure.



```
RDU_lookstatus> Command (0 for help): 1
```

final cpu result: occupancy=100% final flash result: occupancy=85% final memory result: occupancy=128%

• Type '2' and press the Enter key: show the network status, as shown in the following figure.

RDU_lookstatus> Command (0 for help): 2

***	*****	*****	*********	**********	******	******	*****	*****
*******		Netflow		***************************************				
Rx:	43799563 bytes	485281 packets	0 errs	0 drop	0 fifo	0 frame	0 compressed	2592 multicast
Tx:	4697512 bytes	42480 packets	0 errs	0 drop	0 fifo	0 frame	0 compressed	0 multicast
The	netflow is 0.305	664 KByte/s						
***	*****	******	******	*********	*********	*****	****	*****

RDU_lookstatus> Command (0 for help):

• Type '3' (or 'q') and press the Enter key: exit the lookstatus command interface and return to the main interface of command line.

(11) Startmod

The startmod command is used to start the DHCP service command.

Type 'startmod' under the command prompt RDU_admin# and press the Enter key, as shown in the following figure.

RDU_admin#startmod

RDU_startmod> Command (O for help):

You can type '0' ~ '2' to realize the different operation functions:

- Type '0' and press the Enter key: show the startmod command interface.
- Type '1' and press the Enter key: start the DHCP client service.
- Type '2' (or 'q') and press the Enter key: exit the startmod command interface and return to the main interface of command line. If you do not have any operation for the command within five minutes, the software will automatically exit and return to the main interface of command line.

1. Upon the first startup of the system, a static IP address is assigned to the system, with DHCP disabled. Once the DHCP is started, a dynamic IP address is obtained each time the system starts. You can disable DHCP with the command stopmod.

2. If DHCP is enabled, there are two conditions as follows:

1) The system cannot obtain the IP address in five minutes, the IP address will be restored as 192.168.0.10.

2) The system obtains the IP address in five minutes, and then the system will be restarted automatically. Wait five minutes, and then you can view the dynamic IP address in the 'Current_DHCP_IP.txt' file in the background computer that is connected to the data unit through the USB CONFIG port.

3. Directly pressing the Enter key will leave the previous value unchanged.

(12) Stopmod

The stopmod command is used to stop the DHCP client service.

Type 'stopmod' under the command prompt RDU_admin# and press the Enter key, as shown in the following figure.

Note

RDU_admin#stopmod

```
    stop DHCP client service
    Exit
```

RDU_stopmod> Command (0 for help):

You can type '0' ~ '2' to realize the different operation functions:

- Type '0' and press the Enter key: show the stopmod command interface.
- Type '1' and press the Enter key: stop the DHCP client service.
- Type '2' (or 'q') and press the Enter key: exit the stopmod command and return to the main interface of command line.

(13) Setrtc

The setrtc command is used to set the real time clock.

Type 'setrtc' under the command prompt RDU_admin# and press the Enter key, as shown in the following figure.

(14) Version

The version command is used to show the device version information, including hardware version information and software version information.

Type 'version' under the command prompt RDU_admin# and press the Enter key, as shown in the following figure.

```
RDU_admin#version
Emerson Network Power Co.,Ltd
RDU Product--Rack Data Unit
U-Boot version 1.1.6
Linux version 2.6.24 (g92278@localhost.localdomain)
Gcc version 4.0.0 (DENX ELDK 4.1 4.0.0)
Filesystem version 1.04
RDU_admin#
```

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121	