

Liebert® RDU-A-G2

User Manual

RDU-A G2 智能监控单元

用户手册

资料版本 V4.50 归档时间 2016-01-22 BOM 编码 31013076

RDU-A G2 Intelligent Monitoring Unit

User Manual

VersionV4.50Revision dateJan 22, 2016BOM31013076

艾默生网络能源有限公司为客户提供全方位的 技术支持,用户可与就近的艾默生网络能源有 限公司办事处或客户服务中心联系,也可直接 与公司总部联系。

艾默生网络能源有限公司

版权所有,保留一切权利。内容如有改动,恕 不另行通知。

艾默生网络能源有限公司

地址: 深圳市南山区科技工业园科发路一号

邮编: 518057

公司网址:

www.emersonnetworkpower.com.cn

客户服务热线: 4008876510

E-mail: enpc.service@emerson.com

Emerson Network Power provides customers with technical support. Users may contact the nearest Emerson local sales office or service center.

Copyright © 2014 by Emerson Network Power Co., Ltd.

All rights reserved. The contents in this document are subject to change without notice.

Emerson Network Power Co., Ltd.

Address: No.1 Kefa Rd., Science & Industry Park, Nanshan District 518057, Shenzhen China

Homepage: www.emersonnetworkpower.com.cn

E-mail: overseas.support@emerson.com

目	录

第一章 产品简介	1
1.1 新老版本硬件功能差异	1
1.2 部件说明	1
1.2.1 RDU-A G2 主机	1
1.2.2 扩展卡	4
1.3 主要功能	5
1.4 技术指标	6
1.4.1 环境指标	6
1.4.2 机械指标	7
1.4.3 性能指标	7
1.4.4 产品认证	7
第二章 硬件安装	8
2.1 安装准备	8
2.1.1 注意事项	8
2.1.2 环境要求	8
2.1.3 空间要求	8
2.1.4 安装工具	8
2.2 安装 RDU-A G2 主机	9
2.2.1 机械安装	9
2.2.2 电气连接	9
2.3 安装扩展卡及传感器附件	
2.3.1 安装扩展卡	
2.3.2 安装智能传感器	10
2.3.3 安装物理传感器	11
第三章 RDU-A G2 的 Web 界面	12
3.1 登录准备	
3.1.1 检查 IP 地址连通性	
3.1.2 检查浏览器版本	
3.1.3 检查浏览器设置	
3.2 登录 RDU-A G2	
3.2.1 授权开机	16
3.2.2 登录页面	16
3.2.3 取回密码	17

3.3 RDU-A G2 主页	17
3.3.1 按位置浏览	
3.3.2 按设备浏览	
3.3.3 校时链接	20
3.3.4 解除超时	20
3.3.5 注销登录	21
3.3.6 实时告警提醒设置	21
3.4 菜单项	21
3.4.1 机房信息	
3.4.2 空调群控	25
3.4.3 能耗管理	29
3.4.4 告警管理	
3.4.5 数据管理	
3.4.6 配置管理	
3.4.7 系统设置	
3.4.8 帮助信息	
第四章 维护	
4.1 恢复默认设置	
4.2 常见问题处理	
附录一 缩略词	63
附录二 标准配置清单	64

第一章 产品简介

□□ 注意

按照 FCC 法规的 15 部分,本设备经测试发现符合 A 级数字设备限制。这些限制旨在设备运行于商业环境时,合理保护 环境不受有害干扰。本设备产生、使用、并能够辐射无线电频率,如果不按照指导手册进行安装和使用,可能会对无线 通讯产生有害干扰。在居民区使用该设备可能会产生有害干扰,届时需要用户自费校正干扰。

RDU-A G2 智能监控单元(简称 RDU-A G2)可实现 Web 访问、数字量输入/输出、模拟量输入/输出、传感器、UPS、空 调和 PDU 等设备的接入,满足 TCP/IP、RS232/485 组网方式的要求,能根据各种应用场合的具体要求进行灵活配置。本章主要介绍 RDU-A G2 与 RDU-A 的硬件功能差异,及其部件说明、主要功能和技术指标。

1.1 新老版本硬件功能差异

RDU-A G2 与 RDU-A 的硬件功能差异见表 1-1。

功能差异	RDU-A	RDU-A G2	
电源输入	1路外置电源	2路内置电源,支持只接入1路和同时接入2路	
扩展插槽	仅支持1个扩展括缚 并且日能控入IBM-4COM 卡	支持2个扩展插槽,每个扩展槽都可插入	
扩展插槽 (X文持1个扩展插槽,并且只能接入IRM-4COM卡		IRM-4COM \ddagger 、IRM-8DIAI \ddagger 、IRM-8DOAO \ddagger	
网口	单网口且 IP 只能为手动设置	双网口且 IP 并支持 DHCP 动态获取	
BM (估感 照接) 最大仅支持接入 28 个节点(28 个节点包含产品自带的		昌士支持控入 32 个 <u>带</u> 占	
IKIN 夜恋猫按八	DOOR1、DOOR2、WATER、SMOKE 口的节点设备)	取入文村按八52千月点	
	1 个 是十亿可控 》 1 个 USB Modem	2个,最大可支持接入1个USB Modem和1个摄	
	1, 取八区可按八1, 650 Wodelli 线顶除大	像头,或者2个摄像头	

表1-1 RDU-A G2 与 RDU-A 硬件功能差异

1.2 部件说明

RDU-A G2 包括 RDU-A G2 主机以及选配件 IRM-4COM 卡、IRM-8DIAI 卡和 IRM-8DOAO 卡。

1.2.1 RDU-A G2 主机

RDU-A G2 主机的外观和接口如图 1-1 所示。





图1-1 RDU-A G2 外观和接口图

输入电源

RDU-AG2 主机后面板有 2 路隔离的电源输入,位置如图 1-1 所示,电源输入参数见表 1-2。

表1-2 电源输入参数

电源	输入	范围	接口
	电压	100Vac~240Vac	
交流输入	电流	<1A	C14 带防脱落
	频率	45Hz~66Hz	

指示灯

RDU-AG2 主机后面板有 2 个指示灯,位置如图 1-1 所示,其定义见表 1-3。

表1-3 后面板指示灯定义

丝印	颜色	状态	描述
Power1	绿色	点亮	RDU-A G2 电源 1 带电
Foweri		熄灭	RDU-A G2 电源 1 断电
Power2 绿色	点亮	RDU-A G2 电源 2 带电	
	>~tr []	熄灭	RDU-A G2 电源 2 断电

RDU-AG2 主机前面板上有 3 个指示灯,位置如图 1-1 所示,其定义见表 1-4。

表1-4 前面板指示灯定义

丝印	颜色	状态	描述	
Power1	绿色	点亮 RDU-A G2 电源 1 带电		
	576 🗅	熄灭	RDU-A G2 电源 1 断电	
Power2	经布	点亮	RDU-A G2 电源 2 带电	
	576 🗅	熄灭	RDU-A G2 电源 2 断电	
Run/Alarm	绿色/红色	绿色	无告警	
	21 0/ 11 0	红色	生螫	

复位按钮

持续按下复位按钮(丝印为 Reset)4秒,待运行/告警灯熄灭后松手,RDU-A G2将在系统重启后恢复 IP 地址及密码为 出厂默认值,默认值见表 1-6。

调试口

RDU-AG2 主机提供1路调试口(USB 端口,位置如图 1-1 所示),采用 USB 通信方式,通信参数见表 1-5。

表1-5 调试口通信参数

参数	波特率	数据位	奇偶校验位	停止位
数值	115200bps	8位	无	1位

USB 接口

RDU-A G2 主机提供 2 路 USB-A 型插座接口,可接入指定型号的摄像头或 USB Modem,位置如图 1-1 所示。

网口

RDU-AG2 主机提供2路网络接口,采用10/100M 自适应的以太网口,位置如图1-1所示,网口默认配置见表1-6。

表1-6 网口默认配置参数

参数 网卡号	IP 地址	子网掩码	默认网关		
网卡1 (eth0)	192.168.0.254	255.255.255.0	192.168.0.1		
网卡2 (eth1)	192.168.1.254	255.255.255.0	192.168.1.1		
备注: Web 浏览器登录的密码恢复为 "emerson"					

继电器输出口

RDU-A G2 主机提供 2 路继电器输出口 DO1 和 DO2, 位置如图 1-1 所示, 其参数见表 1-7。

表1-7 继电器输出口参数

继电器输出口	输出	范围	接口	接口	
	电压	11V~14V		1. DO 输出,可接入告警灯;	
DO1/DO2	总电流	≪0.2A	RJ45	 2.两个端口最大总功率可支持 2.4W; 3.支持短路保护功能 	

数字量输入口

RDU-AG2 主机提供4路数字量输入口,位置如图1-1所示,其参数见表1-8。

表1-8	数字量输入	口电性能参数

丝印	定义	额定输出电压	输出电流(总)	最大输出功率(总)	端口过载保护
DI1	门磁1接口				
DI2	门磁2接口	$\pm 12 \text{Vdc}$	<0.24	2 AW	古娃过我促护
Smoke1	烟雾接口1	+ 12 v de	<0.2A	2.4 W	又的过程体制
Smoke2	烟雾接口 2				

传感器接口

RDU-A G2 主机提供 2 路传感器接口,包含 4 个 RJ45 接口,位置如图 1-1 所示,其参数见表 1-9。

表1-9 传感	器接口电	气参数
---------	------	-----

丝印	定义	额定输出电压	输出电流(总)	最大输出功率(总)	端口过载保护
Sensor1	第1路传感器接口	$\pm 12 \text{Vdc}$	<044	4.8W	支持过载保护
Sensor2	第2路传感器接口	+ 12 v de	≪0.4A	4.0 W	又们是我你护

该接口采用 RS-485 通信方式,用于接入 Emerson 智能温湿度传感器、智能温度传感器、智能数字量扩展传感器,通信 参数见表 1-10。

表1-10 传感器接口通信参数

参数	波特率	数据位	奇偶校验位	停止位
数值	9600bps	8位	无	1位

串口

RDU-A G2 主机提供 3 个独立串口: 串口 1、串口 2 和串口 3 (串口 3 包含 2 个 RJ45), 位置如图 1-1 所示。 该接口采用 RS-485/232C(自适应)通信方式,通信参数见表 1-11。

表1-11 串口通信参数

参数	波特率	数据位	奇偶校验位	停止位
数值	1200bps, 2400bps, 4800bps, 9600bps, 19200bps (可选)	5至8位	Even/Odd/None/Mark/Space	1~2 位
注: 不支持字长5位、僖	亭止位2位的组合方式			

1.2.2 扩展卡

IRM-4COM卡(选配)

IRM-4COM 卡提供 4 个串口,支持以 RS232/RS485 通讯方式接入用户设备(RS284/RS232C 线序自适应),其外观如图 1-2 所示。



图1-2 IRM-4COM卡

IRM-4COM 卡的指示灯定义见表 1-12。

表1-12 IRM-4COM 卡指示灯定义

丝印	颜色	状态	描述
Power	绿色	点亮	IRM-4COM 板带电
		熄灭	IRM-4COM 板掉电
COM5~COM8	黄色	闪烁	有数据收发
		熄灭	无数据收发

IRM-8DIAI 卡(选配)

IRM-8DIAI 卡提供 8 路数字量或模拟量输入接口(数字量和模拟量自适应),支持数字量/模拟量输入,其外观如图 1-3 所示。



图1-3 IRM-8DIAI卡

IRM-8DIAI卡的接口定义见表 1-13。

表1-13 IRM-8DIAI 卡接口定义

接口名称	接口类型	丝印	定义
数字量或模拟量输入1~8	RJ45 接口	DI/AI1~DI/AI8	数字量输入无源干结点; 模拟量输入 0~5V 或 4mA~20mA

IRM-8DOAO 卡(选配)

IRM-8DOAO 卡提供八路数字量或模拟量输出接口(数字量和模拟量自适应),支持数字量/模拟量输出,其外观如图 1-4 所示。



图1-4 IRM-8DOAO卡

IRM-8DOAO 卡的接口定义见表 1-14。

表1-14 IRM-8DOAO 卡接口定义

接口名称	接口类型	丝印	定义
約字号武措切号絵山1~.9	DI45 控口	$DO/AO1 \sim DO/AO8$	数字量输出:常开触点+常闭触点
数于里以快IX里栅山1~~0	KJ45 按口	D0/A01~D0/A08	模拟量输出: 0~10V

RDU-A G2 及扩展卡线序定义

RDU-AG2及扩展卡线序定义见表 1-15。

表1-15 RDU-A G2 及扩展卡线序

RJ45	DO	DI/Smoke	Sensor	COM	DOAO 卡	DIAI 卡
1	12V	12V	12V	RTS	$0 \sim 10 \text{V}$	12V
2	12 V	12 V	12 V	NC	0 10 1	
3	常闭	NC	NC	TXD	常闭	AI_I
4	脱落检测	脱落检测	GND	GND GND	脱落检测	脱落检测
5	GND	GND		GIVE	GND	GND
6	常开	DI	NC	RXD	常开	DI
7	COM	DI	D+	D+	COM	DI
8	NC	NC	D-	D-	NC	AI_V
注:						
1. RJ45 端口	的线序排列为缺口向	下,从左到右依次为1~	~8;			

2. D+、D-为RS485 差分信号的两种电平;

3. NC: Not Connected

1.3 主要功能

RDU-AG2的主要功能见表 1-16。

表1-16 RDU-A G2 主要功能

主要功能		说明			
设备监控	实现对机房环境的	实现对机房环境的视频监视和对不同智能设备的数据采集和处理,并且通过 Web 界面控制智能设备			
穴调群坊	按照一定的规则,	监控和调度参与群控的各台空调,以达到降低空调能耗、延长空调整体寿命、避免群组空			
工	调间竞争运行的目	目的			
能耗管理	支持功率模式和电	目能模式的 PUE 及系统负载百分比的统计,并能显示其实时值和历史数据			
	当前告警	实时告警显示、进行当前告警确认			
	历史告警	历史告警查询			
		1. 可根据用户要求进行定制, 自定义告警通知内容;			
生敬答田		2. 用户可以选择通知方式接收不同设备的不同级别的告警信息;			
口言日生	生敬诵加而罢	3. 通知方式包括电子邮件、短消息、电话和 RDU 多媒体语音通知系统;			
	口言也从癿且	4. Email 支持 SSL 功能;			
		5. 提供告警测试功能,测试用户是否接收到告警提醒信息;			
		6. 根据用户配置定时发送系统运行状态			

主要功能		说明				
告警管理	告警联动	 1. 可根据用户要求进行定制; 2. DOI 告警输出; 3. 可以结合设备信号,参数和告警来控制设备; 				
		 4. 有如下逻辑组件: 1) AND 代表与 5) GT 代表大于 	 2) OR 代表或 6) LT 代表小于 	 3) NOT 代表非 7) DS 代表延时 	4) XOR 代表异或	
	设备数据	设备主要数据查询			•	
粉据管理	历史数据	历史数据查询				
	日志数据	日志数据查询				
	清除数据	清除历史数据和日志	数据			
配置管理	设备管理	 可动态添加、修改和删除设备,最多支持7个智能设备的添加; 可安装卸载设备类型,支持第三方设备接入 				
	设备信号配置	在线修改设备名称、信号名称和告警级别				
	批量配置	上传、下载配置文件及系统文件				
	监控单元	采集 RDU-A G2 系统	信息			
	网络设置	 IP、子网掩码、网关、DNS 等相关网络信息设置; 上层监控系统 RDU-M 机房管理器访问 RDU-A G2 的权限设置; 远程服务设置 				
	用户管理	增加、修改和删除用。	户信息			
系统设置	时间校准	校准 RDU-A G2 实时	时钟			
	恢复默认	重启 RDU-A G2 和恢复默认配置				
	站点信息设置	在线修改站点信息				
	授权码管理	通过授权码完成 RDU	-AG2功能和接入能力	的扩展		
	系统升级	在线升级应用程序				
	标题栏设置	设置 Web 页面上方的标题和 Logo 图片				
帮助信息	关于 RDU-A G2	显示 RDU-A G2 的产	品序列号、特征码及版	运本信息,并提供用户 手	手册及工具软件的下载	

1.4 技术指标

1.4.1 环境指标

RDU-AG2的环境指标见表 1-17。

表1-17 环境条件

项目	要求
使用场所	通常为数据中心或者计算机房,一般有空调环境
工作温度	-10° C $\sim+60^{\circ}$ C
相对湿度	5%RH~95%RH, 无冷凝
使用环境	尘埃满足 GR-63 的室内标准。无腐蚀性气体、可燃性气体、油雾、水蒸气、滴水或盐分等
大气压力	70kPa~106kPa
存储温度	$-40^{\circ}C \sim +70^{\circ}C$
冷却方式	自然冷
配电网络	TT/TN
防护等级	IP20

1.4.2 机械指标

RDU-AG2的机械指标见表 1-18。

表1-18 机械指标

对外型号	度量	数值	误差
IRM-HOST2	高度	43mm	$<\pm0.5$ mm
	宽度	440mm	<±1 mm
	深度	311mm	$<\pm 1 \text{ mm}$
	重量	<8kg	
IRM-4COM IRM-8DIAI IRM-8DOAO	高度	20mm	$<\pm 0.5$ mm
	宽度	158mm	$<\pm 1 \text{ mm}$
	深度	199mm	$<\pm 1 \text{ mm}$
	重量	<1kg	

1.4.3 性能指标

RDU-A G2 的性能指标见表 1-19。

表1-19 性能指标

接入部件	线缆标准	接入距离(单位:m)	最大接入数量/接入点
SENSOR1 口接入节点	标准4类双绞线	≤100	16 ^[1]
SENSOR2 口接入节点	标准4类双绞线	≤100	16 ^[2]
DI口接入节点	标准4类双绞线	≤100	4 ^[3]
DO 口接入节点	标准4类双绞线	≤100	2 ^[4]
通过串口组网支持的设备类型数量	/	/	11 ^[5]
通过网络(TCP IP/SNMP)组网支持	/	/	16[6]
的设备类型数量	7	/	10
支持接入智能设备数量	标准4类双绞线(串口)	≪100 (串口)	32 ^[7]

注:

[1]: 温度、温湿度、门磁、水浸、4DI 自身、4DO 自身、DO 设备等每个传感器或设备按照1个节点计算,烟感和红外每个传感器 按照4个节点计算;只能接入组内地址为1设备;

[2]: 接入能力同[1],但只能接入组内地址为2的设备;

[3]: DI包括机身自带DI1、DI2、Smoke1、Smoke2四个接口;

[4]: 声光告警灯有两路接入点 DO1、DO2, 两路接入点亦可作为两路开关量输出以做它用;

[5]: 通过串口组网, 3个默认串口 +4 (4COM 扩展卡)*2, 最大支持 11 种设备类型;

[6]: 通过网络组网(TCP IP/SNMP)组网,标准支持接入16种设备类型,通过购买可扩展至32种设备类型;

[7]: RDU-A G2 标准版本支持接入 16 个智能设备,不包括默认设备、8DIAI 及 8DOAO 设备。其中,单个 COM 级联接入设备数量 不超过 4 个。通过购买可扩展至 32 个智能设备

1.4.4 产品认证

RDU-AG2 满足 CE 宣称。

第二章 硬件安装

本章介绍 RDU-A G2 的硬件安装,主要包括安装准备,安装 RDU-A G2 主机,安装扩展卡及传感器等附件。

2.1 安装准备

2.1.1 注意事项

安装 RDU-A G2 时,应注意以下事项,以避免出现意外事故对人身及设备造成伤害。

- 对 RDU-AG2 的所有安装操作,都必须在断电情况下进行
- 确保外部设备接入到正确的 RDU-A G2 端口
- 在安装过程中,安装人员需佩戴防静电手腕
- 妥善布线,确保没有重物压在电源线上,不要踩踏线缆

2.1.2 环境要求

运行环境

RDU-A G2 必须安装在室内。具体要求参见表 1-17。

防静电

为了将静电影响降到最低点,需要采取下列措施:

- 机房内保持适当的温度和湿度(参见表 1-17)
- 当人体接触电路板前,应佩戴防静电手腕,穿防静电工作服。如果在现场无防静电手腕和防静电工作服,则需用水将 手部冲洗干净,并擦干

抗干扰

为了抗干扰,需要采取下列措施:

- 避免将 RDU-A G2 工作地和电力设备的接地装置或防雷接地装置合用,两者尽可能远离
- 远离强功率无线电发射台、雷达发射台、高频大电流设备
- 必要时采取电磁屏蔽的方法

2.1.3 空间要求

- ●将 RDU-A G2 放置在远离热源的地方
- 建议将 RDU-A G2 安装在 19 英寸标准机柜中,在设备周围,至少留有 10mm 的空间,确保有足够的散热空间。

2.1.4 安装工具

安装工具见表 2-1。

工具名称	规格型号	用途
螺丝刀 (十字)	100mm、200mm	安装 RDU-A G2 主机挂耳、扩展槽挡板等
数字万用表	3位数字显示	检测电气连接

表2-1 安装工具

2.2 安装 RDU-A G2 主机

2.2.1 机械安装

RDU-AG2 主机采用机柜式安装。

安装步骤如下:

1. 确认安装机柜已被固定好, 机柜内外没有影响安装的障碍物。

2. 用所附 M4 螺钉将挂耳固定在 RDU-A G2 主机两侧, RDU-A G2 的挂耳支持两种安装方式:前端安装和后端安装,分 别如图 2-1 和图 2-2 所示。



3. 用 M6 浮动螺母将 RDU-A G2 主机通过两侧的挂耳固定在机架上。

2.2.2 电气连接

RDU-AG2 主机电气连接步骤如下所示:

1. 根据供电端接口类型选择 C14 或国标线缆(RDU-AG2 附件),取出对应的电源线,一端连接到 RDU-AG2 主机的电源输入接口,并将如图 2-3 所示的防脱扣卡上。



图2-3 电源防脱扣示意图

2. 确保连线正确后,电源线另外一端插头接入供电电源。

RDU-AG2 主机提供双电源备份供电,可选择一路供电或两路供电。输入电压: 100Vac~240Vac,频率: 45Hz~66Hz。

2.3 安装扩展卡及传感器附件

□ 注意

IRM-4COM/IRM-8DIAI/IRM-8DOAO 扩展卡为选配件,用户可选择是否购买安装。

2.3.1 安装扩展卡

扩展卡包括 IRM-4COM、IRM-8DIAI 和 IRM-8DOAO,安装步骤如下:

拆除 RDU-A G2 主机前面板上扩展槽(Slot1 或 Slot2)的挡板,将扩展卡插入 RDU-A G2 对应扩展槽内,并拧紧两侧螺 钉,如图 2-4 所示。



图2-4 扩展卡安装示意图

2.3.2 安装智能传感器

智能传感器包括: IRM-S01T 智能温度传感器(简称 IRM-S01T)、IRM-S02TH 智能温湿度传感器(简称 IRM-S02TH)、 IRM-S04DI Phoenix 接口智能数字量输入传感器(简称 IRM-S04DI)和 IRM-S04DIF RJ45 接口智能数字量输入传感器(简称 IRM-S04DIF),其外观如图 2-5 所示。



安装步骤

智能传感器的安装步骤参见对应智能传感器的用户手册: IRM-S01T 参见《IRM-S01T 智能温度传感器用户手册》; IRM-S02TH 参见《IRM-S02TH 智能温湿度传感器用户手册》; IRM-S04DI 参见《IRM-S04DI Phoenix 接口智能数字量输入传感器用户手册》; IRM-S04DIF 参见《IRM-S04DIF RJ45 接口智能数字量输入传感器用户手册》。

2.3.3 安装物理传感器

物理传感器包括:烟雾传感器、水浸传感器、红外传感器和门磁传感器。

烟雾、水浸、红外和门磁传感器有两种安装方式:

- 直接接入 RDU-A G2 后面板上的 DI 接口(丝印为 DI1、DI2、Smoke1 和 Smoke2,每个口可任意接入烟雾、水浸、红 外和门磁的一种),接线线序见表 1-15。
- 通过 IRM-S04DI 或 IRM-S04DIF 接入 RDU-A G2:将传感器接入 IRM-S04DI 或 IRM-S04DIF 的数字量输入口,接线线 序参见《IRM-S04DI Phoenix 接口智能数字量输入传感器用户手册》或《IRM-S04DIF RJ45 接口智能数字量输入传感 器用户手册》。

第三章 RDU-A G2 的 Web 界面

本章详细介绍如何通过 Web 登录 RDU-A G2 及 RDU-A G2 的相关功能。包括登录准备、登录 RDU-A G2、RDU-A G2 主 页以及菜单项。

3.1 登录准备

为保证 RDU-A G2 页面功能的正常使用,请参照本节内容选择并设置浏览器选项。

3.1.1 检查 IP 地址连通性

通过 Web 登录 RDU-A G2 前请首先确认 RDU-A G2 的 IP 地址,并测试其连通性。有关测试方法,参见 4.2 常见问题处理一节中的问题 5。

3.1.2 检查浏览器版本

建议使用的浏览器版本包括: IE10 或 IE11。

3.1.3 检查浏览器设置

检查 IE 常规设置

双击 IE 图标运行该软件,点击菜单工具->Internet 选项,点击常规页签中的设置(S),将检查所存网页的较新版本选择 为每次访问网页时(E)检查,如图 3-1 所示。

Internet 选项	8 23
常规 安全 隐私	内容 连接 程序 高级
Internet 临时文件和历史记录设置	了一个小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小小
Internet 临时文件 Internet Explorer 存储网页、图像和媒体的副本以便则	大方
	使用默认值(?) 使用空白页(8)
● 每次的间网页的 (E) ● 每次启动 Internet Explorer 时(S) ● 自动(A)	录、Cookie、保存的密码和网页
◎ 从不 (N)	2记录 (₩)
要使用的磁盘空间(8 - 1024MB)(D): 50 🔶 (推荐: 50 - 250MB)	- 删除 @) 设置 (S)
当前位置: C:\Users\194351\AppData\Local\Microsoft\Windows\T Internet Files\	emp(
移动文件夹 (M) 〕 查看对象 (D) 〕 查看文件 (V)	示的方式。 设置 (I)
历史记录	
指定 Internet Explorer 保存您访问过网站列表的天数	
网页保存在历史记录中的天数 (K): 20 🍨	· · · · · · · · · · · · · · · · · · ·

图3-1 常规设置

检查 IE 代理设置

1. 双击 IE 图标运行该软件,点击菜单工具→Internet 选项,然后选择连接页签,弹出如图 3-2 所示页面。

Internet 💈	远		-	-	-	? 🗙
常规	安全	隐私	内容	连接	程序	高级
	要设置	Interne	t 连接,	单击"讨	2置"。	设置(U)
拨号利	口虚拟专用	网络设置				
						添加(D)
						添加 VPN(P)
						删除(R)
如果	要为连接醒	记置代理服	绣器,诸	§选择"i	5置"。	设置(S)
 ● か ● か 	\不进行拨 √论网络连 ∲终拨打默	号连接(C) 接是否存 认连接(0)) 在都进行)	拨号(₩)		
当	前默认连拍	8: 无				设置默认值(E)
局域P LAN	函(LAN)设 设置不应	置 用到拨号)	车接。对	干拨号设	罟,单	局域网设署(I.)
击上	面的"设	置"按钮。	- 21 - X1	1 100 - 5 00	ш, т	Marght J of HI (11)
				确定	ļ	取消 应用(A)

图3-2 选择**连接**页签

2. 如图 3-2 所示的页面中,点击局域网设置(L),弹出如图 3-3 所示页面。

局域网(LAN)设置
自动配置 自动配置会覆盖手动设置。要确保使用手动设置,请禁用自动配置。
☑ 自动检测设置(A)
🔲 使用自动配置脚本(S)
地址(R)
代理服务器
□为 LAN 使用代理服务器(这些设置不用于拨号或 VPN 连接)(X)
地址(E):
☑ 对于本地地址不使用代理服务器(B)
确定 取消

图3-3 局域网设置

3. 咨询您所在网络的网络管理员,询问其是否需要进行代理配置及配置方法,如果无需代理请不要勾选任何选项。

检查 IE 安全设置

1. 双击 IE 图标运行该软件,点击菜单工具→Internet 选项,然后选择安全页签,弹出如图 3-4 所示页面。

Int	ernet 🖞	顷						?	X
	常规	安全	隐私	内容	连接	程序	高级		
	选择一	个区域以	查看或更改	安全设置	¦°∙				
	6)		~	/	\bigcirc			
	Inte	rnet	本地 Intranet	受信伯	的站	受限制的	沾		
		受信任	的站点					站点(S	
	\checkmark	该区域 站。	包含你确信	「不会损害	[你的计	算机或文的	♯的网 ─		
	该区均	该区域 或的安全纲	中有网站。 &别(L) —						_
	该区	区域的允讨 中	¥级别: 全	部					
			· 下载潜在 不下载未	不安全内 签名的 /	容前提 \ctive}	示 : 控件			
	-								
	□ 启用 Int	目保护模式 ernet E	式(要求重新 xplorer)	新启动 (P)	自定义	级别(C)	. 默	认级别(D	
					闲	所有区域	重置为默i	人级别(R)	
					确定		测消	应用	(A)
			जि		- - - - -				

图3-4 安全设置1

RDU-A G2 智能监控单元 用户手册

2. 如图 3-4 所示,选择**受信任的站点**,点击自定义级别(C),弹出如图 3-5 所示对话框。

安全设置 - 受信任的站点区域
设置
NET Framework
A AML 浏览器应用程序
🛃 XPS 文档
● 月田 ● 月田
→ With XAML
◎ 禁用
□ 旋示 ■ WET Framework 相关组件
最 带有清单的权限的组件
*在重新自动你的计算机后生效
重 重 方 中低 ▼ 重 置 (E)
「路会」「取当」
第二

图3-5 安全设置 2

- 3. 如图 3-5 所示,将**重置自定义设置**选为"中低",并点击**重置(E)**按钮结束重置自定义设置。
- 4. 如图 3-6 所示,设置启用**文件下载**。

Internet 选项	? X
常规 安全 隐私 内容 连接 程序 高级	12
选择一个区域以查看或更改安全设置。	
Internet 本地 受信任的站 受限制的站 Intranet 点 点	
本地 Intranet	
该区域适用于在你的 Intranet 上找到的所有网 站。	安全设置 - 本地 Intranet 区域
	设置
该区域的允许级别:全部	会 結果
□ · · · · · · · · · · · · · · · · · · ·	
□ - 大多数內容运行时都沒有提示 - 不下載未签名的 ActiveX 控件 不下載未签名的 ActiveX 控件 	2 下载 2 文件下载
	◎ 奈用
□ 启用保护模式(要求重新启动 Internet Explorer)(P)	· 一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一
将所有区域重置	◎ 启用
	◎ 提示 88. 用户身份验证
确定	
	*在重新启动你的计算机后生效
	重蛋自定义设置 重需为 一天夜 (四))((本)
	王並/5 [甲啮 (默认值) ▼ 重直(E)
	如用 定 4 火 月

图3-6 启用文件下载

5. 如图 3-7 所示,设置启用对未标记为可安全执行脚本的 ActiveX 控件初始化并执行脚本。



图3-7 启用 ActiveX 控件

6. 如图 3-8 所示,将 RDU-A G2 的 IP 地址添加到可信站点的列表中。

Internet 选项	S
常规安全隐私内容。	车接 程序 高级
选择要查看的区域或更改安全设置。	
Linternet 本地 可信言	
可信站点 该区域包含您信任对您的计: 文件没有损害的网站。	算机或 <u>站点 (S)</u>
该区域中有网站。	可信站点
自定义 自定义设置 一要更改设置,请单击 - 要使用推荐的设置,	✓ 可以添加和删除该区域的网站。该区域中的所有网站都使用区域的安全设置。 将该网站添加到区域(0): 天地(4)
□ 启用保护模式 (要求重新启动 □ 自定义纲	192.168.0.254 家幼姐 W 网站 (*):
*	http://*.emrsn.org https://*.emrsn.org
确f	□对该区域中的所有站点要求服务器验证(https:)(5)

图3-8 添加可信站点

3.2 登录 RDU-A G2

3.2.1 授权开机

1. 首次登录 RDU-A G2 时,启动 IE,在地址栏中输入 RDU-A G2 的 IP 地址(LAN1 默认 IP 为 192.168.0.254; LAN2 默 认 IP 为 192.168.1.254),弹出授权开机页面,如图 3-9 所示,若未出现授权开机页面,参见 4.2 *常见问题处理*中的问题 5 进行处理。

EMERSON. Network Power	RDU-A G2智能监控单元
	特征码: 165d-6d52-b1fb 开机密码: 确定 取消 请授权调试工程师拨打客服电话获取开机密码 艾默生网络能源客户服务电话 400-887-6510
序列号:[210231167521]	32810013] 硬件版本:[A01] 软件版本:[4.00] Alpha 1
200	© Emerson Group 版权所有 99 Copyright, 2014 by Emerson Group

图3-9 授权开机页面

- 2. 拨打艾默生网络能源客户服务电话: 400-887-6510, 提供特征码至客服人员, 即可获取开机密码。
- 3. 在开机密码文本框里输入获得的开机密码,点击确定按钮,若开机密码正确,系统自动跳转到登录页面(见图 3-10)。

3.2.2 登录页面

1. 启动 IE,在地址栏中输入 RDU-A G2 的 IP 地址,出现登录页面,如图 3-10 所示,若未出现登录页面,参见 4.2 常见问题处理中的问题 5 进行处理。



深海蓝 图3-10 RDU-A G2 登录页面

2. 在登录页面中,点击■或■选择喜欢的主题风格,■代表清澈蓝;■代表深海蓝,如图 3-10 所示。

3. 输入用户名和密码(默认用户名: admin,默认密码: emerson)并单击**登录**按钮,弹出主页如图 3-12 所示。如果正确输入用户名和密码后,仍然无法访问主页,参见 3.1.3 检查浏览器设置,对 IE 浏览器重新进行设置。

3.2.3 取回密码

若忘记用户密码,可在登录页面,单击忘记密码按钮,屏幕显示取回密码页面,如图 3-11 所示。

EMERSON. Network Power	RDU-A G2智能监控单元
	请输入用户名 您的密码将会发送至您设置的邮箱或手机 用户名:
	取回密码 返回登录

图3-11 取回密码页面

输入您的用户名,单击取回密码按钮,您的密码会发送到您之前设置的邮箱或手机,点击返回登录按钮取消操作。

□ 注意

1. 您只有事先在**短信模块和邮件服务器配置**页面正确设置了邮件或短信参数,才能收到系统发出的密码,具体的设置 方法见 3.4.4 告警管理中的告警通和配置。

2. 取回的密码是系统随机产生的新密码,请成功登录后自行进行修改。

3.3 RDU-A G2 主页

RDU-A G2 主页分为按设备浏览和按位置浏览,登录成功后,默认显示为按位置浏览,如图 3-12 所示。

3.3.1 按位置浏览

如图 3-12 所示,点击菜单项上方按位置浏览选项卡,在右侧的显示区将显示按位置浏览页面,用户可以根据机房设备的物理位置自定义显示一个平面布局图用于集中显示,经过简单的配置后,效果如图 3-12。



点击图 3-12 中**设置信号**按钮使主页进入设置状态,如图 3-13 所示。



图3-13 设置页面

主页进入设置状态后,设置方法如下:

1. 背景设置

点击**设置背景**按钮,弹出如图 3-14 所示页面。

- 点击**浏览...**按钮选择背景图片,选定之后,**预览**区将显示预览效果。
- 点击**上传**按钮,完成上传之后,主页将显示该背景图片。



图3-14 设置背景

□ 注意

只允许上传.gif、.jpg 及.bmp 格式的图片, 最大 500K。

2. 显示设置

点击显示设置按钮,弹出如图 3-15 所示页面。

- 选择**信号显示方式: 鼠标悬浮、始终显示**。
- 选择**设备图标**是否显示。

●选择设备名称后,该设备的信号将显示在下方的方框内,用户可根据需要选择要显示的设备信号,但最大不超过4个。



图3-15 显示设置

□ 注意

1. 信号显示方式和设备图标显示方式对当前所选设备有效,不同设备可单独设置不同的显示方式。

2. 设置温湿度和 DI 信号的显示方式时,选择"其他设备及传感器"进行统一设置。

3. 自定义设备位置

主页进入设置状态后,在主页上显示的设备(信号)图标可按住鼠标左键进行自由拖拽。

4. 重置

点击**重置**按钮,恢复按位置浏览页面到初始化状态。

5. 保存配置

点击**保存配置**按钮,完成所有配置的保存并返回到浏览状态。

6. 返回浏览

点击**返回浏览**按钮,由配置状态返回到浏览状态。

□ 注意

1. 除上传背景外,只有在保存配置后,所有的配置才能生效并显示。

2. 除上传背景外,如果配置完毕后直接点击返回浏览,所有的配置信息会丢失。

3.3.2 按设备浏览

如图 3-12 所示,点击菜单项上方按设备浏览选项卡,在右侧的显示区将显示按设备浏览页面,通过简单配置后,页面会按设备类型显示相应的信息,如图 3-16 所示。

有关具体配置方法,参见 3.3.1 按位置浏览一节中显示设置按钮相关内容的介绍。



□□ 注意

- 1. 温湿度和 4DI 在按设备浏览页面中仅显示整体状态。
- 2. 其他设备最多配置 4 个信号用于在页面上个性化显示。

3.3.3 校时链接

页面左下方显示 RDU-A G2 系统时间, 单击 RDU-A G2 系统时间, 会跳转至时间校准页面, 有关具体操作, 详见 3.4.7 系统设置一节中的时间校准。

3.3.4 解除超时

当页面超过15分钟没有操作时,页面将变成不可控状态,如图3-17所示。

EMERSON Network Power		Welcome	Liebert, RDU-A G2 Performance Monitoring
按设备浏览 按位置测	ē 可控状态: (顧務)(副約	🔺 1 📕 1 😡 0	🌲 欢迎登录RDU-A G2系统: admin[注销]
机房信息 -	环境里 (2)		^
+ 环境里	ENV_TH	ENV_4DI	
+ 空调 • 神频监视	ш# •	E#	
空调群控 +	空调 (1)		
能耗管理 +	AC DM52000.1		
告攀管理 +	AC_DME3000_1 加载中		
数据管理 +			
配置管理 +			



点击【解除】超时后,出现如图 3-18 所示的输入框,输入密码后,大约 5 秒后可控状态恢复正常。



图3-18 用户安全验证对话框

3.3.5 注销登录

点击主页右上角注销链接,出现如图 3-19 所示提示框,点击确认后可安全退出。



3.3.6 实时告警提醒设置

实时告警显示列表默认收缩于页面底部,可参照图 3-12 进行如下操作:

- 1. 点击查看当前告警手动弹出实时告警显示列表;
- 2. 勾选自动弹出复选框使实时告警列表在告警产生时自动弹出;
- 3. 勾选告警声音复选框使系统在有告警的时候通过浏览器播放告警声音。

当实时告警被全部确认后,已开启的告警声音会自动停止,直到有新的告警产生。

3.4 菜单项

在 RDU-A G2 主页中,菜单项包括**机房信息、空调群控、能耗管理、告警管理、数据管理、配置管理、系统设置**和**帮助** 信息。

3.4.1 机房信息

点击左边的**机房信息**菜单,将出现子菜单,根据**按设备浏览**和按位置浏览两种选择分别按设备类型和设备位置进行分类 并显示,点击具体的设备会在右侧显示该设备的相关信息,包括**设备总览、采集信号、控制信号、设置信号、告警信号**。

□ 注意

1. 机房信息中 ENV-TH 设备为虚拟设备,表示 RDU-AG2 机身上接入的所有温度及温湿度传感器且该名称不可变更。

2. 视频监视子菜单默认不显示,当用户接入视频设备后,该菜单会自动显示。

设备总览

选择设备总览页签,点击编辑按钮可自定义总览页面,如图 3-20 所示。



在编辑状态,点击 🥏 图标可恢复默认;点击 💌 图标批量配置同类型其他设备;点击 🕥 图标进行保存;点击 🔊 图标 将页面转换为浏览状态。

□□ 注意

1. 设备总览页面根据不同的设备类型有不同的默认控件显示方式,点击恢复默认图标即恢复到此状态。

2. 某些类型的设备拥有特定的状态图,这些状态图不可删除且不可配置,仅能更新状态图位置信息,例如空调、UPS等。

采集信号

点击采集信号页签,可进入采集信号页面显示选定设备的采集信号,如图 3-21 所示。

EMERSON Network Power	N.	Welcome Liebert. Performance Mor							
按设备浏览 按(位置浏览	可控状态: 允许		A 1	1	0	🚨 欢迎登录RDU-A G2系统: admin[注销]		
机房信息	-	设备总览	采集信号 控制信号	设置信号	告警信号				
		ENV_TH (TH_SE	NSOR)						
· Liv_III		序号	信号名			值	采集时间		
+ Rack1		1	温度11			26.8°C	2014-03-25 16:48:57		
• 初新监初		2	湿度11			25.6%	2014-03-25 16:48:57		
		3	温度21			28.3°C	2014-03-25 16:48:57		
空调群控	+	4	湿度21			15.9%	2014-03-25 16:48:57		
能耗管理	+	5	温度32			27.9°C	2014-03-25 16:49:08		
告邀管理	+	6	湿度32			44.7%	2014-03-25 16:49:08		



1. 如果某个信号处于告警状态则该信号所在行显示为红色。

2. 用户可单击相应的信号名进行修改或恢复默认,如图 3-22 所示。

。像改信号名称				26.50
ii 🕐	输入新的信 [。] <mark>温度11</mark>	号名称:		
5	đ	角定	取消	恢复默认
	图3-22 亻	多改信	号名称	

□□ 注意

- 针对 ENV-TH 和 ENV-4DI 设备有如下说明:
- 1. 修改采集信号的名称后,控制信号、设置信号和告警信号名称会联动修改;
- 2. 控制信号、设置信号和告警信号页面禁止修改信号名称。

控制信号

点击控制信号页签,进入控制信号页面显示选定设备的控制信号,如图 3-23 所示。

EMERS Network Pr	SON. ower				Welcome		Liebert. RDU - Performance Monitorin				
按设备浏览	按位置浏览	可控状态:		A 1	0	0 🕖		۵.	欢迎登录: admin[注销]		
机房信息	-	设备总	总览 采集信号 控制信号	号 设置信号	告警信号						
-		ENV_TH (T	H_SENSOR)								
• ENV_II	1	序号	信号名	值		控制时间	设置值	ī	设置		
+ Rack1		1	清除传感器通信失败告警	清阳	ŝ		清除	~	设置		
空调群控	+										

图3-23 控制信号

1. 点击设置按钮对该设备进行控制。

2. 针对控制信号的名称(ENV-TH 和 ENV-4DI 除外),用户可点击选择相应的信号名进行修改或恢复默认,如图 3-23 所示。

设置信号

点击设置信号页签,进入设置信号页面显示选定设备的设置信号,如图 3-24 所示。

EMERS Network Pr	SON. ower			Liebert. RDU-A G2 Performance Monitoring				
按设备浏览	按位置浏览	可控状态: 允许		A 1	1	0	▲ 欢迎登录RD	J-A G2系统: admin[注销]
机房信息	-	设备总览	采集信号 控制信号	设置信号	告警信号			
		ENV_TH (TH_SEN	ISOR)					~
• ENV_II	1	序号	信号名		值	设置时间	设置值	设置
+ Rack1		1	所有温度告警上限		35.0deg.C			
		2	所有温度告警下限		0.0deg.C			
 视频监管 	9.	3	所有湿度告警上限		80.0%RH			
空调群校	+	4	所有湿度告警下限		10.0%RH			
Totalit		5	温度11告警回差		2.0deg.C			
能耗管理	+	6	温度11告警上限		35.0deg.C			
生態管理	-	7	温度11告警下限		5.0deg.C			
Heet	•	8	湿度11告警回差		5.0%RH			
数据管理	+	9	湿度11告警上限		80.0%RH			
和黑管理		10	湿度11告警下限		10.0%RH	esteriler.		
HELELE		11	温度21告警回差		2.0deg.C			
系统设置	+	12	温度21告警上限		20.0deg.C			

图3-24 设置信号

1. 可针对信号进行批量设置,且每次最大批量设置 16 个信号。

2. 针对**设置信号**的名称(ENV-TH 和 ENV-4DI 除外),用户可点击选择相应的信号名进行修改或恢复默认,如图 3-22 所示。

□ 注意

除 ENV-TH 设备仅显示有效的设置信号外,其余设备显示该设备所有的设置信号。

告警信号

点击告警信号页签,可进入告警信号页面显示选定设备的告警信号,如图 3-25 所示。

EMERS Network Po	SON. ower		We	lcome		Liebert, RDU-A G2 Performance Monitoring		
按设备浏览	按位置浏览	可控状态: 允许	<u>∔</u> 1	1 🔒 0	🚨 欢迎	/登录RDU-A G2系统: admin[注销]		
机房信息	-	设备总览	采集信号 控制信号 设置信号	告警信号				
		ENV_TH (TH_SEN	ISOR)					
• ENV_I	1	序号	信号名	当前告警级别	新告響级别	设置		
+ Rack1		1	温度11高温告警	紧急告警	紧急告警 ✔			
		2	温度11低温告警	紧急告警	緊急告警 ∨			
• 视频监袖	R.	3	温度11失效告警	紧急告警	緊急告警 ✔			
		4	温度11通信失败告警	重要告警	重要告警 🗸			
空调群控	+	5	湿度11高湿告警	紧急告警	緊急告警 ∨			
能耗管理	+	6	湿度11低湿告警	紧急告警	緊急告警 ∨			
11- 111-111-111		7	湿度11失效告警	紧急告警	緊急告警 ✔			
告警管理	+	8	温度21高温告警	紧急告警	「紧急告警 ✔			
数据管理	+	9	温度21低温告警	紧急告警	「紧急告警 ✔			
		10	温度21失效告警	紧急告警	緊急告警 ✔			
配置管理	+	11	温度21通信失败告警	重要告警	重要告警 🗸			
系统设置	+	12	湿度21高湿告警	紧急告警	緊急告警 ∨			
		13	湿度21低湿告警	紧急告警	緊急告警 ✔			
帮助信息	+	14	湿度21失效告警	紧急告警	緊急告警 ∨			
		15	温度32高温告警	紧急告警	緊急告警 ∨			
		16	温度32低温告警	紧急告警	緊急告警 ∨			
		17	温度32失效告警	紧急告警	緊急告警 ∨			
		18	温度32通信失败告警	重要告警	重要告警 🗸			
		19	湿度32高湿告警	紧急告警	緊急告警 ∨			
		20	湿度32低湿告警	紧急告警	紧急告警 ∨			
		21	湿度32失效告警	紧急告警	緊急告警 ✔			

图3-25 告警信号

1. 可针对告警信号的级别进行批量设置,每次最大批量设置 16 个信号。

2. 针对**告警信号**的名称(ENV-TH 和 ENV-4DI 除外),用户可点击选择相应的信号名进行修改或恢复默认,如图 3-22 所示。

□ 注意

ENV-TH 设备仅显示有效的告警信号外,其余设备显示该设备所有的告警信号。

视频监视

点击机房信息菜单下的视频监视子菜单,弹出如图 3-26 所示页面。

EMER: Network	SON. Power		V	Velcome		Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控状态: 允许	A1		0	💄 欢迎登录RDU-A G2系统: admin[注销]
机房信息	-	机房视频监视				
• ENV_1	гн					
+ Rack1						
• 视频监	视					
空调群控	+					12
能耗管理	+			1111		
告警管理	+					
数据管理	+				and the t	
配置管理	+				1	
系统设置	+		/ 1			
帮助信息	+			12 帧/秒 🗸		■ 刷新速度: 12 帧/秒 ∨ ■ ■ 11 個 下載
		\checkmark				Long Arts and
			图3-26	视频监视		

RDU-A G2 支持两路 USB 摄像头,图标 ♀♀♀用于调节摄像头的转向; ☆ ■ ___50 № ■ 用于调节图像的亮度; ① ■ __50 № ■ 用于调节图像的对比度; 刷新速度可通过下拉框进行选择,同时支持**抓图**和下载功能。

□ 注意

1. 调节摄像头转向功能只针对 RDU-AG2 专用的具有转向功能的摄像头;

2. 使用视频监视功能时,请检查确认是否安装 JRE (Java Runtime Environment,版本要求为 1.5.0 及以上)。

3.4.2 空调群控

空调群控功能是按照一定的规则,监控和调度参与群控的各台空调,以达到降低空调能耗、延长空调整体寿命、避免群 组空调间竞争运行的目的。

在 RDU-A G2 主页中,点击左边空调群控菜单,可见 2 个子菜单,包括:运行状态和群控设置。

运行状态

点击空调群控菜单下的运行状态子菜单,弹出如图 3-27 所示页面。

EMERS Network Po	ON.				Welcor	me				Liebe Performance	rt. RDU-A G2 e Monitoring
按设备浏览	按位置测览	可控状态:	允许	A 1		8	0			🚨 欢迎登录RDU-A G	2系统: admin[注销]
机房信息	+	空调群控	运行状态								
		群组名称	接入方式	空调名称	设备状态	是否运行	上次切换原因	是否告警	是否参与轮巡	关联传感器名称	主备机属性
空调群控	-		协议接入	AC_DME3000_1	启用	空调通信失败	轮巡	告警	是	温度11; 湿度11;	主机
 运行状态 	5	TADA	协议接入	AC_DME3000_2	启用	空调通信失败	轮巡	告警	是	-	主机
		TIVIAV	协议接入	AC_DME3000_3	启用	空调通信失败	轮巡	告響	是		主机
• 群控设置	ĩ		协议接入	AC_DME3000_4	启用	空调通信失败	轮巡	告響	是		主机
能耗管理	+										
告警管理	+										
数据管理	+										
配置管理	+										
系统设置	+										
帮助信息	+										

图3-27 运行状态页面

运行状态页面显示了所有空调群组中空调的主要运行参数。

群控设置

□ 注意

RDU-A G2 的空调群控功能分为两个版本:标准版本和授权版本。标准版本具有 RDU-A G2 标准软件所配置的空调群控功能;授权版本则是用户另行购买后发放的软件版本。

1. 群控参数设置

点击空调群控菜单下的群控设置子菜单,弹出群控参数设置页面,标准版如图 3-28 所示,授权版如图 3-29 所示。

EMERS Network P	ON.			Welco	ome			Li	ebert, RDU-A G2 formance Monitoring
安设备浏览	按位置浏览	可控状态: 允许		A 1	8	0			RDU-A G2系统: admin[注销
机房信息	+	空调群控设置 [标准版]							
空调群校	_	空调群组:	群组参数设置	空调参数设置	ĩ				
Losant		[1] TMW	群组名称	TMW					
 运行状态 	2		群控模式	○ 单机 ● 群拍	ž				
 	5		群控逻辑	☑ 轮巡逻辑 ☑	主备逻辑 🗹	层叠逻辑 ✔ 竞争逻	辑 🗹 相关传感器	昏逻辑	
能耗管理	+		空调最少运行数目	1					
生物检测			空调最短运行时长	30 分	钟 (5~180分钟)			
HART			枪巡逻辑						
数据管理	+		轮巡数目	1					
配置管理	+		轮巡周期模式	 按天轮巡 按周轮巡 	周期间隔 轮巡时段	1 天 星期── ✔	轮巡时间 [00:00 🗸	
系统设置	+		- 层叠逻辑和竞争逻辑-						
帮助信息	+		回风温度设定点 回风温度偏差设定 回风湿度设定点 回风湿度偏差设定	20.0 °C 5.0 °C 40.0 %	(15~30°C) (1~5°C) (20~60%) (1~10%)				
			相关传感器逻辑 空调开机温度 空调关机温度	25.0 °C					
							重置空调	状态	手动轮巡一次
						增加群组		修改群组	删除群组

图3-28 群控参数设置页面(标准版)

EMERSO Network Pov	ON. wer			W	/elcome					Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控状态: 允许		<u>A</u> 19	🔢 14		1			🚨 欢迎登录RDU-A2系统: admin[注销]
机房信息	+	空调群控设置 I授权版, 4	台空调可接入]							
空调群控	_	空调群组:	群组参数设置	空调参数设置						
)=/=4.b+		• [1] TMW	群组名称	TMW						
• 121747/28		 单击新建空调群组 	群控模式	◎ 单机 ●	 群控 					
・耕控设置			群控逻辑	 轮巡逻辑] 主备逻辑 🔽	层叠逻辑	竞争逻	量 🔲 相关传	感器逻辑	
能耗管理	+		空调最少运行数目	1						
告警管理	+		空调最短运行时长	5 分:	钟 (5~180分钟)					
数据管理	+		一轮巡逻辑							
and the block of			轮巡数目	1						
民工民福	+		轮巡周期模式	 按天轮巡 按周轮巡 	周期间隔 轮巡时段	星期一	1 天 マ	轮巡时间	00:00	•
系统设置	+		- 尼泰语提和辛争语提-		10020000					
			回风温度设定点	21.0 °C	(15~30°C)					
			回风温度偏差设定	2.0 °C	(1~5°C)					
			回风湿度设定点	40.0 % (2	20~60%)					
			回风湿度偏差设定	5.0 % (1~10%)					
			- 相关传感器逻辑							
			空调开机温度	25.0 °C						
			空调关机温度	17.0 °C						
							重罪	空调状态		手动轮巡一次
									偿加难组	修改群组 删除群组
									AR NUMBER	USERVICE I ALL UNDER STATE

图3-29 群控参数设置页面(授权版)

关于 RDU-A G2 群控功能说明如下:

标准版本只支持 1 个空调群组,默认为[1]TMW,不提供增加和删除群组功能并且群组名称不可变更,授权版本则不受 此限制。

在授权版本中点击空调群组列表中的单击创建空调群组链接,可以增加新的空调群组,在完成群组参数配置后点击增加 群组按钮保存设置,此时在左边的空调群组列表中会出现增加的群组。

群组参数设置页面的参数说明详见表 3-1;

在空调参数设置页面增加、修改或删除群组中的空调,请参见本节中的2. 空调参数设置;

在授权版本中选择**空调群组**列表中需要修改的空调群组,与增加群组步骤类似,在群组参数设置页面修改群组参数,在 空调参数设置页面设置群组中的空调参数,完成修改后,点击**修改群组**按钮,保存设置; 在授权版本中选择**空调群组**列表中需要删除的空调群组,点击**删除群组**按钮,保存设置。

群组参数 默认值 下限值 上限值 备注 标准版本 授权版本 单机(0):群组各空调单独运行; 群控模式 单机 单机(0) 群控(1) 群控(1):群组各空调参与群组 $\sqrt{}$ $\sqrt{}$ 逻辑运算 空调最少运行数目 群组空调数量 1 1 / \checkmark 空调最短运行时长 单位:分钟 30 5 180 $\sqrt{}$ 回风温度设定点 20 15 单位: ℃ 30 $\sqrt{}$ $\sqrt{}$ 回风温度偏差设定 5 1 5 单位: ℃ \checkmark $\sqrt{}$ 回风湿度设定点 40%20%60% $\sqrt{}$ / 回风湿度偏差设定 5% 1% 10% \checkmark 轮巡数目 运行数量和备机数量二者中取小值 1 1 $\sqrt{}$ 按天轮巡 按天轮巡、按周轮巡 轮巡周期模式 / $\sqrt{}$ \checkmark 周期间隔 1 1 99 按天轮巡模式 \checkmark \checkmark 按周轮巡模式 轮巡时段 1 7 星期一、星期二、星期三、星期四、 \checkmark \checkmark 1 星期五、星期六、星期日 轮巡时间 00:00 00:00 23:00 \checkmark \checkmark /

表3-1 群组参数设置页面参数

群组参数	默认值	下限值	上限值	备注	标准版本	授权版本				
手动轮巡一次	否	否	是	调试用	\checkmark	\checkmark				
重置空调状态	否	否	是	初始化空调状态	\checkmark	\checkmark				
空调开机温度	25	15	30		\checkmark	\checkmark				
空调关机温度	17	15	30		\checkmark	\checkmark				
注: √选中的版本表示其可配置										

□□ 注意

1. 若需要 RDU-A G2 授权版本,请联系艾默生客户服务中心购买,联系电话: 4008876510。

2. 标准版本默认只支持4台艾默生 DME 系列空调。

3. RDU-AG2 最大支持 8 个群组。

2. 空调参数设置

点击空调群控菜单下的群控设置子菜单,然后点击空调参数设置页签,弹出空调参数设置页面,如图 3-30 所示。

EMERSON Network Power		Welcome					Liebe	Liebert, RDU-A G2 Performance Monitoring	
按设备浏览 按位置浏览	可控状态: 允许		<u>A</u> 19		0		🚨 欢迎登录RI	OU-A2系统: admin[注销]	
机房信息 +	空调群控设置 授权版,4台	1空调可接入]							
☆调群応 -	空调群组:	群组参数设置	空调参数设置						
	• [1] TMW	空调索引 接入方式	空调名称	关联4DO信号	是否参与轮巡	主备机属性	关联开关机信号	关联故障状态	
 ・ 运行状态 	 单击新建空调群组 	1 协议接入 0 协议接入	AC_DME3000_0		是	王机	-		
・群控设置		2 协议接入	AC_DME3000_1	-	 是	<u>土</u> 11. 各和	-		
能耗管理 +		4 协议接入	AC_DME3000_2		是	备机	-		
生物管理 土									
HUBAL ,		编辑空调信息							
数据管理 +		 协议接入 			◎ DI接入				
配置管理 -		空调索引	1		空调名称				
 设备管理 		空调设备	AC_DME3000_0	•	关联开关机信号	号 一请选择设备-	- *	Ŧ	
。识友信旦而罕		■ 关联4DO控制器	请选择4DO控制	100 160	关联故障状态	请选择设备-		▼	
* 以面信与颜血		是否参与轮巡	● 是 ◎ 否		主备机属性	◉ 主机 ◎	备机		
・批単配置									
系统设置 -		关联温湿度传感器:	🔲 全选		空调故障告警任	言号: 🔲 全选			
• 监控单元		温度01 [ENV_TH	11]		📃 通信故障		*		
. 网络汽车		□ 湿度01 [ENV_TH 回 湿度11 (ENV_TH)	11] 141		□ 高压报警		=		
* 网络坟血		☑ 温度11[ENV_TH	inj i1]		■ 風圧服要				
・用户管理		温度31 [ENV_TH	11]		■ 低温报警				
・时间校准		□ 湿度31 [ENV_TH □ 温度52 [ENV_TH	11] 121		□ 高速报警				
・恢复默认		□ 湿度52 [ENV_TH	12]		■ 电源故障	报警			
• 站点信息设置						*	-		
・授权码管理					增加空调	修改空调	删除空调		
・系统升级						100 La pit in		A #9 25	
・ 标题栏设置						增加群组	118次群组 删	泺駻组	

图3-30 空调参数设置页面

在空调参数设置页面中,用户可增加、修改和删除群组中的空调。

● 增加空调操作步骤如下:

1) 从空调设备下拉框中选择需要群控的空调;

2) 在空调索引栏中,输入空调在该群组中的索引(默认索引会从1开始自增);

3)设置**关联温湿度传感器**,每个空调最大允许关联 5 个温湿度传感器(包括温湿度最大 10 个信号)。关联传感器中最 高温度高于空调开机温度时,如果该空调当前运行状态为关闭,则启动该空调;最高温度低于空调关机温度时,如果该 空调当前运行状态为运行,则关闭该空调。

4)设置**空调故障告警信号**,即产生哪些告警信号就判断该空调故障或不可用。每个空调最大允许设置 15 个故障告警信 号,默认故障告警信号为:高温告警、高压锁定、低压锁定和排气锁定;

5)点击**增加空调**按钮增加空调即可完成增加空调操作,空调基本信息也会显示在页面上方列表中。

□□ 注意

设置的空调索引不能大于该群组空调数目。

● 修改空调操作步骤如下:

1) 在空调列表中选择需要修改的空调,可修改空调索引,温湿度传感器关联和空调的故障告警信号。

2)完成修改之后,点击修改空调按钮即可完成修改空调操作,空调基本信息也会显示在页面上方列表中。

● 删除空调操作步骤如下:

在空调列表中选择需要删除的空调,点击**删除空调**按钮即可完成删除空调操作,空调基本信息也会从页面上方列表中删除。

□ 注意

对空调参数修改完毕后,需点击修改群组按钮(如果是新建群组时点击增加群组按钮)使其生效,否则切换页面后数据 会丢失。

3.4.3 能耗管理

能耗管理会按照用户自定义的规则显示实时和历史能耗数据,以达到帮助用户分析机房整体能耗的目的。

在 RDU-A G2 主页中,点击左边能耗管理菜单,可见 3 个子菜单,包括:实时能耗、历史记录和能耗设置。

实时能耗

点击**能耗管理->实时能耗**子菜单,会根据用户自定义的能耗设置(详见本节中的*能耗设置*),显示实时 PUE 和实时系统 负载率,如图 3-31 所示。



历史记录

点击能耗管理->历史记录菜单,会显示系统中记录的历史数据,如图 3-32 所示。

EMERS Network Po	ON.			Welco	me	Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控状态:	允许	▲ 34	🖬 26 🛛 😡 0	L 欢迎登录RDU-A G2系统: admin[注诮]
机房信息	+	历史能耗	查询			
		序号	实时PUE	负载率	时间:	采集模式
空调群控	+	1	2.42	0	2014-03-26 09:35:26	功率模式
能耗管理	-					
• 实时能相	E					
• 历史记录	ł					
• 能耗设置	1					
				图3-32 能耗管理	历史记录	

□ 注意

- 1. RDU-AG2 最大记录并显示 1000 条能耗历史记录。
- 2. 当用户进行过能耗设置后,系统会根据用户的配置每间隔24小时保存一次记录。
- 3. 当用户未进行能耗统计设置时,系统不会保存能耗记录。
- 4. 当用户进行了能耗统计设置而未进行系统负载百分比设置时,系统仍会保存能耗记录,但负载率将一直为0。

能耗设置

点击能耗管理->能耗设置子菜单,会显示如图 3-33 所示页面。

EMERSO Network Power	N.		Welc	ome		Liebert, RDU-A G2 Performance Monitoring		
设备浏览 按	位置浏览	可控状态: 允许	<u>A</u> 1	4 🕠 0		📥 欢迎登录: admin[注销]		
机房信息	+	能耗统计设置						
空调群控	+	PUE统计模式	● 功率模式	○ 电能模式				
影纸管理	_	✓ IT类设备能耗						
8646 6 42		序号 运算符 设备名称	信号名	称	选项			
• 实时能耗		1 + MPDU_MPS_1	有功功	率	冊修余			
• 历史记录		2 + MPDU_MPS_2	有功功	率	冊修余			
 能耗设置 		+ V MPDU_MPS_1	✔ 有功5	カ率 ~	添加			
告警管理	+	□ 动力环境类设备能耗						
数据管理	+							
の苦管理	+	☑ 所有设备						
HALL BAL		序号 运算符 设备名称	信号名	称	选项			
系统设置	+	1 + AMM_YD2025_1	A相有	功功率	冊修余			
帮助信息	+	+ V MPDU_MPS_1	✔ 有功1	bæ 🗸	添加			
						保存		
		系统负载百分比设置						
		额定总功率	100 kv	/				
			1	1.[请选择设备 💙				
		实时功率数据信号	2	~	\mathbf{v}			
			3请选择设备	\sim	\checkmark			
						保存		

图3-33 能耗设置

1. 能耗统计设置

1)用户需选择两种能耗类型完成能耗统计,为方便表述,定义A=IT类设备能耗,B=动力环境类设备能耗,C=所有设备能耗,则规则如下:

如果配置统计 A 和 B,则 PUE=(A+B)/A;

如果配置统计 A 和 C,则 PUE=C/A;

如果配置统计 B 和 C,则 PUE=C/(C-B);

其中,每种能耗类型最大可配置 10 个信号,每个信号可选择加减运算符。A, B 和 C 的值分别为其配置的信号值的算术和。

2) 功率模式或电能模式。

● 功率模式

在功率模式中,系统会在当天 00:00:00 至次日 00:00:00 每间隔 8 小时统计一次设备功率的瞬时值,并在统计三次后计算 一次平均值作为当天功率 PUE。例如:

第一次统计 IT 设备功率为(A1)8kW,所有设备总功率为(B1)10kW。

第二次统计 IT 设备功率为(A2)9kW,所有设备总功率为(B2)11kW。

第三次统计 IT 设备功率为(A3)7kW,所有设备总功率为(B3)10kW。

则当天 PUE 为:(B1+B2+B3)/(A1+A2+A3)

● 电能模式

在电能模式中,系统会在当天 00:00:00 至次日 00:00:00 每间隔 8 小时统计一次设备在此时段内使用的电能值,并在统计 三次后计算一次平均值作为当天电能 PUE,统计方式类似功率模式。

□ 注意

1. 用户进行能耗统计配置当天系统会计算自配置时刻起至次日 00:00:00 的系统次数和统计值,并以此求平均值作为配置当天的 PUE 值。

2. 如果选择**功率模式**则设备能耗需选择功率信号;反之,如果选择**电能模式**则设备能耗需选择电能信号。

2. 系统负载百分比设置

用户可配置实时功率数据信号及额定功率计算系统负载百分比,其规则如下:

系统负载百分比=实时功率 / 额定功率

其中:实时功率为页面实时功率数据信号右方三个功率信号之和。

3.4.4 告警管理

告警管理提供针对告警集中管理功能,使用户可以自定义告警通知及告警联动规则,并可在此完成历史告警的查询功能。 在 RDU-A G2 主页中,点击左边告警管理菜单,可见 4 个子菜单,包括:当前告警、历史告警、告警通知配置和告警联动。

当前告警

点击告警管理菜单下的当前告警子菜单,或参见 3.3.6 实时告警提醒设置,可弹出当前告警显示列表,如图 3-34 所示。
E	MERS Network Po	ON. wer					Welco	me				Liebert. Performance Mo	RDU-A G2 onitoring
按设	备浏览	按位置浏览	可控状。	态: 允许			A1	8	0 🌔		🚨 欢	印登录RDU-A G2系统	admin[注销]
	机房信息	+								☑ 环境里 ☑ Rack1	☑ 空调 ☑ UPS	设置信号	<u>^</u>
	空调群控	+											
	能耗管理	+		AC_DM	E30 BAC_DMI	E30 🖾AC_E	ОМЕЗО 🛄 АС_	DME30 🛤	AC_PEX_1	AC_CM+_1	UPS_ITA1	UPS_ADAP	
	告警管理	-											
	• 当前告署	ş 🔰										-	
	• 历史告警	ş						-			32		
	• 告警通知	置酒					i 2821		温度32	• 星度11		0	
	• 告警联动	,			i 温度11	总 温度21							
	数据管理 配置管理	+		E				•	-				
	系统设置	+		所有告警	▲紧急告警	■ 重要告警	● 一般告警						*
	帮助信息	+	序号	告警级别	设备名称	告	警信号	触发值		告警时间		告警确认	^
			1	重要告警	UPS_ADAPT	「PM_1 通	信失败告警	1975		2014-03-26	19:33:47	未确认	
			2	重要告警	AC_PEX_1	<u>ì</u> Ē	信失败告警	822		2014-03-26	19:33:04	未确认	
			3	重要告警	AC_DME300	00_4 通	信失败告警	-		2014-03-26	19:31:38	未确认	
			4	重要告警	AC_DME300	10_3 通	信失败告警			2014-03-26	09:31:10	未确认	
			5	重要告警	AC_DME300	10_2 通	信失败告警	877		2014-03-26	J9:30:41	未确认	
			6	重要告警	UPS_ITA16_	1 通	i信失败告警	12		2014-03-26	19:30:32	未确认	~
RDU-	A G2系统时	间: 2014-03-26	6 10:08:14								▲ 查看当前告鉴	✔ 自动弹出	✓ 告警声音

图3-34 当前告警

1. 当前告警可通过点击告警列表上方的页签按告警等级显示系统当前的告警。

2. 点击未确认按钮,进行告警确认,已确认的告警将不再参与告警联动,且告警通知只发送一次。

3. 当鼠标光标位于已确认链接上时,会悬浮显示该告警确认信息,鼠标光标移走后自动消失,如图 3-35 所示。

	🚨 所有告警	▲ 紧急告警 🔲 重	要告警 ●一般告警			-
序号	告警级别	设备名称	告警信号	触发值	告警时间	告警确认
1	重要告警	UPS_ADAPTPM_1	通信失败告警		相关设备: UPS_ADAPTPM_1	已确认
2	重要告警	AC_PEX_1	通信失败告警		信号名:通信失败告警 告警级别:重要告警	未确认
3	重要告警	AC_DME3000_4	通信失败告警		采集时间: 2014-03-26 09:33:47 确认人: admin	未确认
4	重要告警	AC_DME3000_3	通信失败告警		确认时间: 2014-03-26 10:09:07 2014-03-26 09:31:10	未确认
5	重要告警	AC_DME3000_2	通信失败告警		2014-03-26 09:30:41	未确认
6	重要告警	UPS_ITA16_1	通信失败告警		2014-03-26 09:30:32	未确认

图3-35 确认信息

历史告警

点击告警管理菜单下的历史告警子菜单,查看历史告警记录。选择一个设备(例如"所有设备"),并设置开始时间(例如"2014-03-26 00:00:00")和截至时间(例如"2014-03-26 23:59:59")。然后点击查询按钮,将列出开始时间到截至时间 里的所有告警记录,包括的信息有:序号、设备名称、信号名称、告警级别、触发值、开始时间、确认人、确认时间和 结束时间,如图 3-36 所示。

点击下载查询结果按钮还可下载查询结果。

EMERS Network Po	ower				V	Velcome				Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控制	状态: 允许		🔺 42	II 34	. 🔒 1		🚨 欢迎登	录RDU-A G2系统: admin[注销]
机房信息	+	历史	告警查询 请在5分钟	内下载查询结果。 最大	显示条数为50	0条,请使用恰当的参	:数!			^
空调鲜捡	•	设备名	3称:	所有设备	~					
TOWNT	•	开始即	t间:	2014-03-26 00:00:00		截至时间:	2014-03-26 23	59:59 📠		
能耗管理	+							查询	章不	t查询结果
告警管理	-	序号	设备名称	信号名称	告警级别	触发值	开始时间	确认人	确认时间	结束时间
• 当前告薯	š.	1	UPS_ADAPTPM_1	并机线故障	紧急告警		2014-03-26 10:11:29			2014-03-26 10:12:04
• 历史告望	ĸ	2	AC_DME3000_2	高湿报警	重要告警		2014-03-26 10:10:59		-	2014-03-26 10:11:19
- DZHE	×	3	AC_DME3000_2	电源缺相报警	重要告警	-	2014-03-26 10:10:59			2014-03-26 10:11:19
 告警通先 	出國語	4	AC_DME3000_2	排气锁定告警	重要告警		2014-03-26 10:10:59			2014-03-26 10:11:19
 告警联志 	h	5	UPS_ITA16_1	功率模块5异常	紧急告警		2014-03-26 10:10:58			2014-03-26 10:11:13
		6	UPS_ITA16_1	并机板故障	紧急告警		2014-03-26 10:10:58			2014-03-26 10:11:13
数据管理	+	7	UPS_ITA16_1	电池1充电器故障	紧急告警		2014-03-26 10:10:58			2014-03-26 10:11:13
忍害管理	+	8	UPS_ITA16_1	主路相序反	重要告警		2014-03-26 10:10:58			2014-03-26 10:11:13
PROLE IN CE		9	UPS_ITA16_1	邻机请求转旁路故障	一般告警	-	2014-03-26 10:10:58			2014-03-26 10:11:13
系统设置	+	10	UPS_ITA16_1	功率模块5异常	紧急告警	-	2014-03-26 10:09:39		-	2014-03-26 10:09:53
把助台中		11	UPS_ITA16_1	并机板故障	紧急告警		2014-03-26 10:09:39			2014-03-26 10:09:53
祁助信息	+	12	UPS_ITA16_1	电池1充电器故障	紧急告警		2014-03-26 10:09:39			2014-03-26 10:09:53
		13	UPS_ITA16_1	主路相序反	重要告警		2014-03-26 10:09:39			2014-03-26 10:09:53

图3-36 历史告警查询

告警通知配置

1. 用户告警通知配置

点击**告警管理**菜单下的**告警通知配置**子菜单,弹出如图 3-37 所示页面。用户可以选择采用哪些通知方式接收哪些设备的 哪一级别告警通知,同时用户可以选择告警通知信息的语言类型,并自定义告警内容(默认包括设备名称、告警描述、 告警时间和告警状态)。

点击**保存配置**按钮完成告警配置。当告警产生时会通过配置的通知方式通知用户。

□□ 注意

1. 用户首先必须选择通知方式,页面下方的告警通知配置表方可编辑;

2. 选择所有设备时,所有设备同时被配置相同的告警级别;

3. 选择低级别告警时,此级别以上级别告警将全部选中;

4. 选择某个设备的同时,最高级别告警紧急告警默认被选中。

EMERS Network Po	ON. wer			Welcome			Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控状态: 允许	A 1	1 🛄 8	0	🚨 R	次迎登录RDU-A G2系统: admin[注销]
机房信息	+	用户告警通知配置	短信模块和邮件服务器配置	系统状态定时通知配置			
空调群控	+	提示:告警在未结束时,系	统将每隔4小时发送一次告警通知,	,最多发送3次。			~
		用户名: a	dmin [管理页] V				
能耗管理	+	邮件地址:					
4- 10 MS 100		电话号码:					
百誉目理		语言类型: (〇 英文 🔍 中文				
 当前告響 	ş.	通知方式: [🗌 邮件地址 🔲 短信	□ 电话			
• 历史告讐	ş	自定义告警通知内容:	🛛 设备名称 🛛 🖌 告警描述	✔ 告警时间 ✔ 告警	犬态 □ 告警级别	□ 站点名称 □ :	站点IP
• 告警通知	國置		所有设备 已使用设备类型		紧急告警	重要告	警 一般
1 10 10			ENP_RDU-A[DUMMY]				
* 百善軟 4.	J		ENP_AC_DME3000[COM]				
数据管理	+		ENP_AC_PEX[COM]				
配置管理	+		ENP_AC_CM+[COM]				
			ENP_UPS_ADAPTPM[COM]				
系统设置	+		ENP_UPS_ITA16_20K[COM]				
帮助信息	+		ENP_ENV_4DI[SENSOR]				
			ENP_ENV_TH1[SENSOR]				
			ENP_ENV_TH2[SENSOR]				
			保存配置				

图3-37 用户告警通知配置

2. 短信模块和邮件服务器配置

点击告警管理菜单下的告警通知配置子菜单,然后点击短信模块和邮件服务器配置页签,弹出如图 3-38 所示页面。

EMERS Network P	SON. ower				Welcome			Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控状态: 允许		A 1	1 0	0		
机房信息	+	用户告警通知配置	短信模块和邮件服	务器配置系	统状态定时通知配置			
空调群物	+	● 短信模块配置	注意:短信模块可以安装	在COM1或USB端	旧上。)			
LOTIT		端口类型: USB	~					
能耗管理	+	短信模块: 未配						
告警管理	-	通信参数: 4608	00,n,8,1					
 当前告報 	警						保存配置]
 历史告報 	亁	〇 RDU多媒体语	音通知系统配置					
4-10-20	len av 192	服务器IP: (.0.0.0					
• H & m)	744 E LEL	端口号:	3393					
 告警联步 	ŝb	接收告警结束消息:	e v	•				
数据管理	+						保存配置	
配置管理	+	邮件服务器配置						-
系统设置	+	邮件服务器: web	nail.emersonnetwork.com	cn				
Nov of all	· ·	端口号: 25			SSL			
帮助信息	+	邮件用户名: RDU	-A					
		邮件密码:						
		发件箱地址: RDU	-A@emersonnetwork.com	I.cn				
						恢复默认	保存配置]
		□ 告警邮件信息	显器					J
		联系方式: San	ce@emersonnetwork.com	1.00				
		*(示/)氏. 381	07CE10	i.un				
		加約电頃. 4000	070310				但去那里	1
							市村町五	

图3-38 短信模块和邮件服务器配置

在图 3-38 所示页面中,用户可进行**短信模块配置**或 RDU 多媒体语音通知系统配置进行短信或电话的告警通知提醒,也 可进行**邮件服务器**配置使系统通过邮件进行告警通知的提醒,同时,可通过告警邮件信息配置修改产品服务信息。其配 置步骤如下:

- 短信模块配置
- 1)根据需要通过串口1或 USB 端口接入短信 MODEM,然后选择端口类型,页面会自动显示通信参数;
- 2) 根据接入短信 MODEM 的型号选择短信模块的类型 (GSM);
- 3) 设置短信 MODEM 的通信参数;
- 4) 点击保存配置按钮,保存当前用户的短信模块配置。

□ 注意

1. 如通过串口接入短信 MODEM, 使用前将短信 MODEM 通信参数设置为 "9600,n,8,1"。

2. 如通过 USB 端口接入短信 MODEM, 短信 MODEM 的通信参数采用默认值即可。

- RDU 多媒体语音通知系统设置
- 1) 在服务器 IP 处输入服务器 IP 地址;
- 2) 在端口号处输入端口号, 默认为 13393;
- 3)点击保存配置按钮,保存多媒体语音通知系统配置。
 - 邮件服务器配置
- 1) 在邮件服务器处输入服务器 IP 地址或域名;
- 2) 在对应栏输入端口号、邮件用户名、邮件密码和发件箱地址;
- 3) 点击保存配置按钮,保存当前用户的邮件服务器配置。

□ 注意

- 1. 端口号默认为 25, 当选择启用 SSL 时, 端口号自动变为 465;
- 2. 默认使用艾默生邮件服务器;
- 3. 使用 SSL 时, 需确保邮件服务器支持 SSL 功能。
 - ●告警邮件信息配置
- 1) 在联系方式处输入服务中心的邮件地址;
- 2) 在服务电话处输入服务中心的电话号码。
- 3)点击保存配置按钮,保存修改后的告警邮件信息配置。
- 3. 系统状态定时通知配置

点击告警管理菜单下的告警通知配置子菜单,然后点击系统状态定时通知配置页签,弹出如图 3-39 所示页面。

EMER: Network F	50N. Power		Welcome		Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控状态: 允许	A1 🛄 0.	0	♣ 欢迎登录: admin[注销]
机房信息	+	用户告警通知配置	短信模块和邮件服务器配置 系统状态定时通知配置	1	
空调群控	+	用户名:	admin [管理员] V		
能耗管理	+	启用系统状态通知:	□ 启用		
		电话号码:	++)·		
告警管理	-	邮件地址:	-		
 当前告 	警	通知方式:			
• 历中告	邀	发送语言:	中文		
U) CH	-	发送周期模式:	◎周 ●天 ◎时		
・告警通	知配置	发送间隔设置:	1 天		
 告響联 	志力	发送时间设置:	11:00 🗸		
数据管理	+				保存

图3-39 系统状态定时通知配置

□ 注意

1. 系统状态定时通知配置须与用户告警通知配置配合使用,否则无法选择用户名、通知方式以及发送语言;

2. 对于系统状态定时通知,不支持电话通知方式;

3. 系统状态定时通知是指给用户发送当前 RDU-AG2 整个系统的运行状态,即正常或告警状态。

1) 在用户告警通知配置页面完成并保存发送用户、通知方式以及发送语言的设置;

2)在系统状态定时通知配置页面可选择是否启用系统状态通知;

3)当启用系统状态通知勾选为启用时,在系统状态定时通知配置页面依次设置发送周期模式(默认:天)、发送间隔设

置(默认:1天)和发送时间设置(默认:开始时间)。

4) 点击保存配置按钮,保存系统状态通知配置。

告警联动

点击告警管理菜单下的告警联动子菜单以获得告警联动的功能,弹出如图 3-40 所示页面。

EMERS Network Po	ion. wer		Welcome					
按设备浏览	按位置浏览	可控状态: 允许	A1 💵8 🤇) 0 🔺	≿迎登录RDU-A G2系统: admin[注销]			
机房信息	+	告警联动						
		□ 启动DO1告警输出						
空调群控	+	<u>上會校</u> 输入1	输入2	tatil tatil	输出			
能耗管理	+	运算行 设备名称/寄存器 信号类型 信	号名 设备名称/寄存器 信号类型 信号	● 参 致1 参致2 号名	중 信号类型 信号名 信号值			
告鑿管理	_							
HUDA			添加	保存生效				
 当前告望 	Ż							
 历史告響 	ş	符号含义						
 告警通知 	雷雷	1:R代表寄存器	例: R(Register_ID); 0 = < Register_ID	<= 99				
		2:P代表参数	例: P(The Value)					
・告警联动	b	3:SET代表设置命令	例:SET Parameter1 _ Output					
赦保管理		4:AND代表与	例: AND Input1 Input2 Output					
\$2,110 10 12	•	5:OR代表或	例: OR Input1 Input2 Output					
配置管理	+	6:NOT代表非	例: NOT Input1 Output					
10 14 MI 10		7:XOR代表异或	例: XOR Input1 Input2 Output					
条领设直	+	8:GT代表大于	例: GT Input1 _ Parameter1 Paramete	ar2 Output				
帮助信息	+	9:LT代表小于	例: LT Input1 _ Parameter1 Parameter	r2 Output				
		10:DS代表延时	例:DS Input1 _ Parameter1 _ Output					
		限制						
		所有輸出信号值必须是校举类型,并且不能是告	警信号。 LT和GT命令的输入信号值只能是F	,U或L类型				

图3-40 告警联动配置 1

● DO1 告警输出功能

如勾选**启动 DO1 告警输出**,继电器将单独控制 DO1 口的输出,如果系统有告警产生并且告警未确认,继电器闭合;如 果系统无告警或者所有告警已被确认,继电器断开,此时 DO1 不再参与联动告警。

● 联动功能

如图 3-40 所示,符号含义列表展示了所有命令及其用途。点击添加按钮增加新的告警联动表达式,如图 3-41 所示。

送算行 受音名称寄存器 信号共型 信号 協士 信号 信号 協士 信号 信号 協士 信号 信号 信号 協士 (日) (1) (1) (1) (1) (1) <th(1)< th=""> <th(1)< th=""> (1)</th(1)<></th(1)<>		7-000	474	1042 5			1.64			<u></u>	Let				
运算符 ●信号 ●输入I寄存器 信号类型 信号名 ●信号 ●输出寄存器 设备名称寄存器 信号类型 信号名 设备名称寄存器 信号名 信号值 OR ●信号 ●输入I寄存器 信号4 Montoring Unit 控制信号 【号类型 设备名称寄存器 信号类型 信号名 设备名称寄存器 信号类型 信号名 Montoring Unit 告響信号 ROU-A 故障	警联动配置	运异	设备名称寄存器	§ 信号类3	型信号名	设备名称	寄存器	信号类型	信号名	金銀工	参到2	设备	名称/寄存器	信号类	型
运算符 ●信号 ●输出寄存器 设备名称寄存器 信号类型 信号名 设备名称寄存器 信号名 信号值 OR ●信号 ●输入寄存器 信号名 Value Montoring Unit Value Value QR ●信号 ●输入寄存器 信号名 信号名 ●信号 ● QB ●信号 ●输入寄存器 信号名 ●信号 ● ● QB ●信号 ● ● ● ● ● UB ● ● ● ● ● UB ● ● ● ● ●															
设备名称寄存器 信号类型 信号名 设备名称寄存器 信号名 信号如 信号值 Montoring Unit ・ 告警信号 、 RDU-A 故障 、 Montoring Unit ・ 控制信号 、 OR ・ ● ● ● </td <td>运</td> <td>算符</td> <td>◎ 信号 ◎ 输入1寄存</td> <td>732</td> <td></td> <td></td> <td>◉ 信号</td> <td>◎ 輸出寄存</td> <td>22</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	运	算符	◎ 信号 ◎ 输入1寄存	732			◉ 信号	◎ 輸出寄存	22						
Monitoring Unit 告警信号 RDU-A 故障 Monitoring Unit 控制信号 本 OR 设备名称:留存器 信号类型 信号名 Monitoring Unit * 告警信号 RDU-A 故障			设备名称/寄存器	信号类型	信号	名	设备名科	你寄存器	信号类型		信号名		信号值		
OR ● 信号 ● 输入2寄存器 设备名称/寄存器 信号类型 信号名 Monitoring Unit ◆ 告警信号 ▼ RDU-A 故障			Monitoring Unit 👻	告警信号 ▼	RDU-A 故障	•	Monitoring	g Unit 👻 👻	控制信号 🔻	·		•			
设备名称·寄存器 信号类型 信号名 Monitoring Unit → 告響信号 → RDU-A 故障 →	OR	-	④信号 ◎ 输入2寄存	738											
Monitoring Unit → 告答信号 → RDU-A 故障 →			设备名称/寄存器	信号类型	信号	名									
			Monitoring Unit 🛛 👻	告警信号 ▼	RDU-A 故障	•									
						~00/UN		4X/H							

图3-41 告警联动配置 2

首先,选择一个运算符,例如,"OR",表达式为"信号 1[输入 1 寄存器]或信号 2[输入 2 寄存器]=信号 3[输出寄存器]"。 其次,当表达式中的输入或输出参数选择为**信号**时,应先在**设备名**下拉列表中选择设备名,然后在**信号类型**下拉列表中 选择信号类型,最后在**信号名**下拉列表中选择信号名称,信号 1、2、3 可能是 RDU-A G2 中可利用的任意信号。 最后,当表达式中的参数选择为**寄存器**时,需要选择相应寄存器的名称,如 R(0)、R(1)等,如图 3-42 所示。

告警联动配置	运算征	守 设备名称/寄存	器 信号:	类型 信号名 访	设备名称寄存器 信号类	型 信号名	参数1 参数2	设备名称/寄存器	信号类型
Ìž	國符	◎ 信号 (◎ 输入13	夺存器		 信号 輸出寄存 	器			
		设备名称/寄存器	信号类型	信号名	设备名称/寄存器	信号类型	信号名	信号值	
	R(0)				Monitoring Unit 👻	控制信号 ▼		·	
0	OR ▼ ◎ 信号 ◎ 输入2寄存器								
		设备名称/寄存器	信号类型	信号名					
		R(0) -							
添加 取消									

图3-42 告警联动配置 3

点击**添加**按钮添加新告警联动表达式,否则点击**取消**按钮。

若点击**添加**按钮,则如图 3-43 所示,告警联动表达式已添加,点击**保存生效**按钮使之生效。点击**删除**按钮将告警联动表达式删除,并点击**保存生效**按钮使之生效。

EMERS Network P	SON. ower		Welcome	Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览		🔺 1 📕 8 🔒 0	】
机房信息	+	告警联动		
-2-10 M 12-		□ 启动DO1告警输出		
空调群控	+	_{行首符} 输入1	输入2	谷坳4 谷坳9
能耗管理	+	运身们 /寄存器 信号类型 信号名	3. 设备名称/寄存器 信号类型 信号名	多奴1 多奴2 设备名称/寄存器 信号类型 信号名 信号值
告鑿管理	_	OR Monitoring Unit 告警信号 当前后着 阻塞	警 ENV_TH1 告警信号 温度11局 温告警	AC_DME3000_1 控制信号 远程开机 否 删除
• 当前告報	整		添加	保存生效
• 历史告朝	警			
 告警通外 	田配置	符号含义		
- 牛教府:	ah an	1:R代表寄存器	例: R(Register_ID); 0 = < Register_ID <= 9	99
• 日 書 軟 4	-	2:P代表参数	例:P(The Value)	
数据管理	+	3:SET代表设置命令	例:SET Parameter1 _ Output	
		4:AND代表与	例: AND Input1 Input2 _ Output	
配置管理	+	5:OR代表或	例: OR Input1 Input2 _ Output	
系统设置	+	6:NOT代表非	例: NOT Input1 Output	
		7:XOR代表异或	例: XOR Input1 Input2 _ Output	-
帮助信息	+	8:GT代表大士	例: GT Input1 _ Parameter1 Parameter2 C	Dutput
		9:LT代表小士	例: LT Input1_Parameter1 Parameter2 O	Dutput
		10:DS代表延时	例: DS Input1 _ Parameter1 _ Output	
		限制		at ک mi
		所有制工信亏值必须定权牵奕型,开且不能是告警1	信亏。 LI和GI節受的输入信号值只能是F,U购	(나옷깦

图3-43 告警联动配置 4

告警联动中各运算符的用法请参见表 3-2。

表3-2 告警联动运算符用法

运算符	输入 1	输入 2	参数 1	参数 2	输出	表达式
SET	/	/	P1	/	Sout/Rout	SETP1_Output
AND	Sin1 /Rin1	Sin2 /Rin2	/	/	Sout/Rout	Sin1 [Rin1] AND Sin2 [Rin2]=Sout [Rout]
OR	Sin1 /Rin1	Sin2 /Rin2	/	/	Sout/Rout	Sin1 [Rin1] OR Sin2[Rin2]=Sout [Rout]
NOT	Sin1 /Rin1	/	/	/	Sout/Rout	Sin1 [Rin1] NOT=Sout [Rout]
XOR	Sin1 /Rin1	Sin2 /Rin2	/	/	Sout/Rout	Sin1 [Rin1] XOR Sin2[Rin2]=Sout [Rout]
СТ	Sin1 /Din1	/	D1	D2	Sout/Pout	Sin1 [Rin1]>P1 时, Sout [Rout]=1;
01	SIII1 / KIII1	/	F I	F2	Sout/Kout	Sin1 [Rin1] <p1-p2 [rout]="0</td" sout="" 时,=""></p1-p2>
IТ	Sin1 /Din1	/	D1	D2	Sout/Pout	Sin1 [Rin1] <p1 [rout]="1;</td" sout="" 时,=""></p1>
	Sin1 /Rin1	/	Pl	P2	Sout/Rout	Sin1 [Rin1]>P1+P2 时, Sout [Rout]=0

输入 1	输入 2	参数 1	参数 2	输出	表达式					
Sin1 /Rin1	/	P1	/	Sout/Rout	Sin1 [Rin1] DS P1 输出到 Sout [Rout]					
1. Sin1、Rin1、Sin2、Rin2、P1、P2、Sout、Rout 分别指代信号 1、输入 1 寄存器、信号 2、输入 2 寄存器、参数 1、参数 2、信号										
3、输出寄存器;										
2. 逻辑运算符 AND/OR/NOT/XOR/DS 的输入信号只能选择告警信号;										
3. 算术运算符 GT/LT 的输入信号值只能是浮点型、整型或长整型;										
4. 输出信号可以为控制信号或设置信号										
	输入 1 Sin1 /Rin1 Rin1、Sin2、Rin 存器; 算符 AND/OR/M 算符 GT/LT 的 号可以为控制信	输入1 输入2 Sin1 /Rin1 / Rin1、Sin2、Rin2、P1、P2、S 存器; 算符 AND/OR/NOT/XOR/DS 的算符 GT/LT 的输入信号值只能 号可以为控制信号或设置信号	输入1 输入2 参数1 Sin1 /Rin1 / P1 Rin1、Sin2、Rin2、P1、P2、Sout、Rout 存器: 算符 AND/OR/NOT/XOR/DS 的输入信号 算符 GT/LT 的输入信号值只能是浮点型 号可以为控制信号或设置信号	输入1 输入2 参数1 参数2 Sin1 /Rin1 / P1 / Rin1、Sin2、Rin2、P1、P2、Sout、Rout 分别指代存器: 算符 AND/OR/NOT/XOR/DS 的输入信号只能选择 算符 GT/LT 的输入信号值只能是浮点型、整型或计号可以为控制信号或设置信号	输入1 输入2 参数1 参数2 输出 Sin1 /Rin1 / P1 / Sout/Rout Rin1、Sin2、Rin2、P1、P2、Sout、Rout 分别指代信号1、输入1寄存器; 算符 AND/OR/NOT/XOR/DS 的输入信号只能选择告警信号;					

下面是告警联动的应用实例。

例1:

若需接入 RDU-A G2 系统的温湿度传感器 11 出现高温告警时点亮告警灯。假设告警灯安装在 DO1 接口,则可通过以下 配置完成此告警联动功能。

表达式: [温度 11 高温告警] DS P(3) [RDU-A DO1][闭合]

配置方法如图 3-44 所示。其含义为当温度 11 产生高温告警时,延时 3 秒钟后触发 RDU-A DO1 闭合,从而点亮告警灯。

运算符 ● 信号 ○ 输入1寄存器 参数1 ● 信号 ○ 输出寄存器 设备名称寄存器 信号类型 信号名 p(3) 设备名称寄存器 信号类型 信号名 信号值
运算符 ● 信号 ○ 输入1寄存器 ※数1 ● 信号 ○ 输入1寄存器 ※数2 ● 信号 ○ 输出寄存器 2. 设备名称寄存器 信号类型 信号名 P(3) 设备名称寄存器 信号类型 信号名 信号值
· · · · · · · · · · · · · · · · · · ·
ENV_TH1 「告警信号 マ」 温度11高温告警 「ENV_4DI 「控制信号 マ」 RDU-A DO1 」 闭合

图3-44 告警联动配置实例 1

例 2:

若机柜的前门或后门打开,则点亮告警灯。假设 RDU-A G2 的 DI1 和 DI2 接口分别连接着机柜的前后门磁传感器,告警 灯安装在 DO1 接口,则可通过以下配置完成此告警联动功能。

表达式: [RDU-A DI1 告警] OR [RDU-A DI2 告警]=[RDU-A DO1] [闭合]

配置方法如图 3-45 所示。其含义为当告警信号 RDU-A G2 DI1 开或 RDU-A G2 DI2 开产生告警时, 触发 RDU-A G2 DO1 闭合, 从而点亮告警灯。

告答联动	2	5.异行 设备名称唐	存器 信号	类型 信号名	设备名	称/寄存器	信号类型	信号名	梦 켗1	设	备名称/寄存器	信号类型	信号名器
	运算符	◎ 信号 ◎ 输入1寄存	788			● 信号 ()) 输出寄存	8					
P		设备名称 寄存器	信号类型	信号名		设备名称	寄存器	信号类型	信号名		信号	值	
		ENV_4DI -	告警信号 ▼	RDU-A DI1告警	•	ENV_4DI	-	控制信号 ▼	RDU-A DO1	•	闭合	•	
	OR 👻	④信号 ◎ 输入2寄存	7-25										
		设备名称/寄存器	信号类型	信号名									
-		ENV_4DI -	告警信号 ▼	RDU-A DI2告警	-								
					·#+n			-ate					
					深加		- 現	H					

图3-45 告警联动配置实例 2

3.4.5 数据管理

数据管理为用户提供各种类型的历史数据和日志的查询服务。

在 RDU-A G2 主页中,点击左边的数据管理菜单,可见 4 个子菜单,包括:设备数据、历史数据、日志数据和清除数据。

设备数据

点击数据管理菜单下的设备数据子菜单,弹出如图 3-46 所示页面,其包含设备信息列表和 SNMP MIB 导出两个子页面。

1. 设备信息列表

如图 3-46 所示的页面中列出了所有设备的主要信息,点击下载设备信息按钮可下载查询结果。

EMERS Network Po	ON.		W	Liebert. RDU-A G2 Performance Monitoring	
按设备浏览	按位置浏览	可控状态: 允许	A1	8 😡 0	🊨 欢迎登录RDU-A G2系统: admin[注销]
机房信息	+	设备信息列表	SNMP MIB 导出		
de Matthe		设备信息列表请在5	分钟内下载设备信息。		
空调群经	+				下新识条件自
能耗管理	+				1、99, 10, 曲 16, 23,
		序号	设备类型	设备名称	设备位置
告警管理	+	1	ENP_ENV_TH1[SENSOR]	ENV_TH1	Rack1
劫据管理	_	2	ENP_ENV_TH2[SENSOR]	ENV_TH2	Rack1
		3	ENP_ENV_4DI[SENSOR]	ENV_4DI	Rack1
• 设备数据	N .	4	ENP_AC_DME3000[COM]	AC_DME3000_1	Rack1
 历史数据 	R	5	ENP_AC_DME3000[COM]	AC_DME3000_2	Rack1
		6	ENP_AC_DME3000[COM]	AC_DME3000_3	Rack1
・日志数排	B	7	ENP_AC_DME3000[COM]	AC_DME3000_4	Rack1
• 清除数据	E	8	ENP_AC_PEX[COM]	AC_PEX_1	Rack1
		9	ENP_AC_CM+[COM]	AC_CM+_1	Rack1
配置管理	+	10	ENP_UPS_ITA16_20K[COM]	UPS_ITA16_1	Rack1
系统设置	+	11	ENP_UPS_ADAPTPM[COM]	UPS_ADAPTPM_1	Rack1

图3-46 设备数据列表

2. SNMP MIB 导出

如图 3-47 所示,可选择导出所有设备 MIB 信号或按设备类型导出 MIB 信息,选择好后点击**下载设备信息**即可完成 MIB 信息的导出。

EMERS Network Po	ON. wer		Welcome									
按设备浏览	按位置浏览	可控状态: 允许		A1	8	0 🕒		▲ 欢迎登录RDU-A G2系统: admin[注销]				
机房信息	+	设备信息列表	SNMP MIB 导出									
空调群控	+	SNMP MIB 导出										
能耗管理	+	● 导出所有设备	○ 按设备类型	导出 设备类型	ENP_RDU-A[DUMMY] V	下载设备信息					
告警管理	+											
数据管理	-											
 设备数据 	1											
• 历史数排	4											
・日志数排	5											
• 清除数排	ŝ											
			图3-4	7 SNMP	MIB 信息	导出						

□ 注意

如果未获取 SNMP 服务授权, SNMP MIB 导出页面将不会显示, 如需获取 SNMP 服务授权, 请联系艾默生客户服务中 心购买, 联系电话: 4008876510。

历史数据

点击数据管理菜单下的历史数据子菜单,弹出如图 3-48 所示页面,内有历史数据和历史曲线两个子选项卡。

EMERS Network P	SON. ower				Liebert, RDU-A G2 Performance Monitoring					
按设备浏览	按位置浏览	可控状态: 允	许	A1	8	0 🌔		۵	欢迎登录RDU-A G2	系统: admin[注销]
机房信息	+	历史数	据 历史曲线		New Jac Pers 24, 17, doi: doi:10.	1.				
空调群控	+	历史数据宣	问请任5分钟内下载宣词结果。 载:	大显示余额入500余	,请使用信当的参数	Į!				^
能耗管理	+	设备名称: 开始时间:	所有设备 V 2014-03-26 00:00:00 III	查询类型: 截至时间:	历史数据 2014-03-26 23	:59:59				
告警管理	+						查询		下载	
数据管理	-	序号	设备名称	信号名		值	单位	时间		
20.55.44.4		1	Monitoring Unit	系统运行状态		告警		2014-03-	-26 00:14:45	
• 1反首 剑 :	結	2	ENV_TH2	温度32		25.10	deg.C	20 <mark>14-</mark> 03-	-26 00:15:35	
• 历史数	R.	3	ENV_TH2	湿度32		46.60	%RH	2014-03-	-26 00:15:35	
 日志数1 	居	4	ENV_TH1	温度11		23.80	deg.C	2014-03-	-26 00:16:24	
		5	ENV_TH1	湿度11		27.40	%RH	2014-03-	-26 00:16:24	
* 宵林纵1	6	6	ENV_TH1	温度21		25.00	deg.C	20 <mark>14-</mark> 03-	-26 00:16:24	
配置管理	+	7	ENV_TH1	湿度21		18.90	%RH	2014-03-	-26 00:16:24	
		8	Monitoring Unit	系统运行状态		告警	227	2014-03-	-26 01:14:43	
系统设置	+	9	ENV_TH2	温度32		25.10	deg.C	2014-03-	-26 01:15:49	
悲助信息	+	10	ENV_TH2	湿度32		46.20	%RH	2014-03-	-26 01:15:49	
+19 PO 119 764		11	ENV_TH1	温度11		23.50	deg.C	2014-03-	-26 01:16:33	

图3-48 历史数据

1. 历史数据

如图 3-48 所示,选择一个设备名(例如,"所有设备"),选择查询类型(例如,"历史数据")并设置开始时间和截至时间(例如,从 2014-03-26 00:00:00 到 2014-03-26 23:59:59),然后点击**查询**按钮,将列出开始时间到截至时间里的所有历史数据。点击**下载查询结果**按钮下载所有查询结果。

2. 历史曲线

如图 3-49 所示,选择一个设备名(例如,"ENV_TH1"),选择查询类型(例如,"温度 11")并设置开始时间和截至时间 (例如,从 2014-03-26 00:00:00 到 2014-03-26 23:59:59),然后点击**生成曲线**按钮,如果查询到历史数据,则会按信号生 成历史曲线。



图3-49 历史曲线

日志数据

点击数据管理菜单下的日志数据子菜单,弹出如图 3-50 所示页面。

EMERS Network Po	ON. wer			Liebert, RDU-A Performance Monitoring	G2 J					
按设备浏览	按位置浏览	可控状态: 允	iμ		A 1	8	0		欢迎登录RDU-A G2系统: admin[注	[销]
机房信息	+	日志数据查讨	间 请在5分钟内 下载查询结	吉果 最大显示	示条数为500条,请	使用恰当的参数!				
		查询类型:	用户操作日志	~						
空调群控	+	开始时间:	2014-03-26 00:00:00		截至时间:	2014-03-26 23:	59:59 💼			
能耗管理	+							and and	てまわた3回24 回	
生物停田								当印	卜甄宣闻结果	
古雲自理	-	序号	用户名	时间		操作内容				
数据管理	-	1	admin	2014-0	3-26 09:05:52	登录成功				
		2	admin	2014-0	3-26 09:21:26	登录成功				
 设备数据 		3	admin	2014-0	13-26 09:28:31	登录成功				
• 历史数据	1	4	admin	2014-0	3-26 09:29:39	登录成功				
,日主海北	2	5	admin	2014-0	3-26 09:31:14	登录成功				
- LI 10 392 3		6	admin	2014-0	3-26 09:33:45	登录成功				
• 清除数据		7	admin	2014-0	13-26 09:45:53	登录成功				
and BB data and		8	admin	2014-0	3-26 09:48:08	登录成功				
就更是藉	+	9	admin	2014-0	3-26 09:48:34	安装授权码成功	: 39B8M882FZ7	7CJ7JGA6HC. 错误码 0		
系统设置	+	10	admin	2014-0	3-26 10:07:37	登录成功				
		11	admin	2014-0	3-26 10:14:50	登录成功				
帮助信息	+	12	admin	2014-0	3-26 10:29:40	登录成功				
		13	admin	2014-0	3-26 10:30:45	安装授权码成功	: SQN10YNPZ0	IF0TQVV818H. 错误码 0		
		14	admin	2014-0	3-26 10:31:08	安装授权码成功	: SVV4EK3GJJI	H3TXB329GK. 错误码 99		
		15	admin	2014-0	3-26 10:34:47	登录成功				

图3-50 日志数据

在图 3-50 所示页面中,选择查询类型(例如,"用户操作日志")并设置开始时间和截至时间(例如,从 2014-03-26 00:00:00 到 2014-03-26 23:59:59),然后点击**查询**按钮,将列出开始时间到截至时间里的所有用户操作日志。点击**下载查询结果**按钮下载所有查询结果。

□□ 注意

查询类型为"系统日志"或"驱动日志"时,点击**查询**按钮后查询结果不会显示在页面上,而会直接以压缩包的形式下载。

清除数据

点击数据管理菜单下的清除数据子菜单,弹出如图 3-51 所示页面。

EMERS Network Po	ON. wer			Liebert, RDU-A G2 Performance Monitoring			
按设备浏览	按位置浏览	可控状态: 允许		_A1	8	0	🌲 欢迎登录RDU-A G2系统: admin[注销]
机房信息	+	清除数据					
空调群控	+	请选择清除数据类型:	历史告警 历史数据		清除		
能耗管理	+		统计数据 控制日志 系统日志				
告警管理	+						
数据管理	-						
• 设备数据	5						
• 历史数据	4						
 日志数据 	ş						
・清除数期	1						

图3-51 清除数据

图 3-51 所示页面中,用户可以选择"历史告警",然后点击**清除**按钮清除所有历史告警。同样地,用户可以清除下拉框中的其他任何可获得的数据。

3.4.6 配置管理

在 RDU-A G2 主页中,点击左边的配置管理菜单,可见 3 个子菜单,包括:设备管理、设备信号配置和批量配置。

设备管理

1. 添加/修改/删除设备

点击**配置管理**菜单下的设备管理子菜单,弹出如图 3-52 所示页面。

EMER	RSON. rk Power					We	elcome				Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置》	间览	可控制	代态: 允许	<u>A</u> 1		8	0		🚨 欢迎]登录RDU-A G2系统: admin[注销]
机房信	息	+		添加/修改/删除设备 安装	御載设备类型 资;	主信息					
			提示:	请在完成修改后,点击[保存]使	配置生效。						
空调群	控	+	序号	设备类型	设备名称		设备位置	设备地址	模块地址	端口号	通信参数
能耗管	理	+	2	ENP_ENV_TH1[SENSOR]	ENV_TH1		Rack1	1	0	SENSOR1	9600,n,8,1
d- title bits	. 100		3	ENP_ENV_TH2[SENSOR]	ENV_TH2		Rack1	1	0	SENSOR2	9600,n,8,1
日参店	理	+	4	ENP_ENV_4DI[SENSOR]	ENV_4DI		Rack1	2	0	SENSOR2	9600,n,8,1
数据管	理	+	5	ENP_AC_DME3000[COM]	AC_DME3000_1		Rack1	1	0	COM1	19200,n,8,1
	_		6	ENP_AC_DME3000[COM]	AC_DME3000_2		Rack1	2	0	COM1	19200,n,8,1
配置管	理	-	7	ENP_AC_DME3000[COM]	AC_DME3000_3		Rack1	3	0	COM1	19200,n,8,1
• 设备	i管理		8	ENP_AC_DME3000[COM]	AC_DME3000_4		Rack1	4	0	COM1	19200,n,8,1
	合日期里		9	ENP_AC_PEX[COM]	AC_PEX_1		Rack1	2	0	COM2	9600,n,8,1
* 収留	信ち降血		10	ENP_AC_CM+[COM]	AC_CM+_1		Rack1	1	0	COM2	1200,n,8,1
 批量 	置。置		11	ENP_UPS_ITA16_20K[COM]	UPS_ITA16_1		Rack1	1	0	COM3	9600,n,8,1
			12	ENP_UPS_ADAPTPM[COM]	UPS_ADAPTPM_1		Rack1	2	0	COM3	9600,n,8,1
条领设	а а	+									
帮助信	息	+	修改词	2 置							
			设备梦	호型:		~	设备名称:				
			端口を	÷: [~	设备地址:		模块地址:	0	
				· · · · · · · · · · · · · · · · · · ·			通信编制,		be record	-	
			122,100,12	7m.		~) 四 首 20 30 ;				
								添加设备		修改设备	删除设备
			保存西	2罟							
			PETTE					 1			
								保存配置			

图3-52 添加/修改/删除设备

图 3-52 所示的页面中,用户可以添加/修改/删除设备信息,方法如下:

- 添加设备
- 1)选择设备类型;

2) 在设备名称的文本框里输入设备名称,或使用默认的设备名称;

3)选择设备类型后,端口号的下拉框中将自动列出此设备类型的默认端口号;如未选择设备类型,端口号不可选择;

4) 在设备地址的文本框里输入设备地址,设备地址必须是从1到XX的阿拉伯数字,并且同一端口号下的设备地址不允许重复。有些设备类型不需要输入设备地址,此时,设备地址的文本框将变为灰色,并且不可编辑。当一种设备有多个模块时,需要添加模块地址,模块地址必须是从1到XX的阿拉伯数字,并且一种设备下的模块地址不允许重复;

5) 选择或输入设备位置;

6) 在**通信参数**的文本框里输入通信参数,在设备类型确定的情况下,通信参数的文本框上会显示通信参数的提示语, 其中包括该设备类型通信参数格式和默认通信参数;

7) 点击添加设备按钮,弹出如图 3-53 所示信息,同时在设备列表中增加一条设备信息;

消息	Rack1	×
添加设备) 请点击[保	成功, 存配置]使配置生效!	
图3-5	3 提示信息 1	

8) 点击保存配置按钮,弹出如图 3-54 所示信息;



图3-54 提示信息 2

若点击**取消**按钮,新添设备无效;若点击确定按钮,弹出用户安全验证对话框,如图 3-18 所示。 9)输入当前用户的登录密码,点击确定按钮,校验通过后将跳转到系统重启界面,如图 3-55 所示;

EMERSON. Network Power	欢迎使用
系统正在重新启动	カ,主页将被刷新 術候
图3-55 系统	

系统重启后,新添加的设备生效。

10) 重新登录 RDU-A G2 Web 系统,新添加的设备将显示在设备管理页面的列表中。

□□ 注意

系统默认可以添加 16 个智能设备,不包含 RDU-A G2 自身、ENV-TH、ENV-4DI、8DIAI 卡和 8DOAO 卡,通过授权可 扩展接入能力。如需扩展接入能力,请联系艾默生客户服务中心购买,联系电话:4008876510。

- 删除设备:
- 1) 在设备列表中选择需要删除的设备;
- 2) 点击删除设备按钮将设备删除;
- 3) 点击保存配置按钮使删除设备生效,具体操作与增加新设备相同。

□ 注意

点击删除设备按钮前,如果更改了此设备的相关信息,则该设备不能删除。

- 修改设备:
- 1) 在设备列表中选择需要修改的设备;
- 2) 修改设备信息;
- 3) 点击修改设备按钮修改设备信息;
- 4) 点击保存配置按钮使修改设备生效,具体操作与增加新设备相同。

在**添加/修改/删除设备**页面进行了添加、修改或删除操作后,未点击**保存配置**按钮使配置生效,在离开该页面时会弹出 提示信息如图 3-56 所示,提示用户保存配置。



图3-56 提示信息 3

□ 注意

保存配置按钮可以一次性保存所有操作结果。

2. 安装/卸载设备类型

点击**配置管理**菜单下的**设备管理**子菜单,然后点击**安装/卸载设备类型**页签,弹出如图 3-57 所示页面。

EMERS Network Po	ON wer			Wel	come			Li Per	ebert , RDU-A G2 formance Monitoring
按设备浏览	按位置浏览	可控状态: 允许		<u>A</u> 1	8 🔝	0 🌔		🚨 欢迎登录	RDU-A G2系统: admin[注销]
机房信息	+	添加/修改/删除;	设备 安装/卸载设备类型	资产信息					
空调群控	+	选择安装包:		浏览	(查看帮助)		安装		^
能耗管理	+	卸载设备类型							
		序号 E	安装设备类型列表				驱动版本		卸载设备类型
告警管理	+	1 E	NP_PDU_STS[COM]				1.8		卸载
数据管理	+	2 E	NP_PDU_STS[SNMP]				1.8		卸载
配置管理	-	3 E	NP_AMM_YD2025[COM]				1.8		卸载
 设备管理 	Į	4 E	NP_MPDU_MPS[COM]				1.8		卸载
 设备信号 	雷罟	5 E	NP_AC_DME3000[COM]				1.8		使用中
 批量配置 	t	6 E	NP_AC_PEX[COM]				1.8		使用中
系统设置	+	7 E	NP_AC_PEX[SNMP]				1.8		卸载
帮助信息	+	8 E	NP_AC_CM+[COM]				1.8		使用中
		9 E	NP_AC_CM+[SNMP]				1.8		卸载
		10 E	NP_AC_DME3000[SNMP]				1.8		卸载
		11 E	NP_AC_XDP[COM]				1.8		卸载
		12 E	NP_AC_CRV[COM]				1.8		卸载
		13 E	NP_UPS_ITA5_10K[COM]				1.8		卸载
		14 E	NP_UPS_ITA5_10K[SNMP]				1.8		卸载
		15 E	NP_UPS_UH11[COM]				1.8		卸载
RDU-A G2系统时	间: 2014-03-20	6 10:45:22					<u>* 宣看</u>	当前告警	【 自动弾出 ✔ 告響声音

图3-57 安装/卸载设备类型

点击**浏览...**按钮,可以从本地目录上传驱动配置包(iru 文件格式),点击安装按钮,安装新的设备类型。

□ 注意

系统支持的设备类型数量与系统剩余空间和驱动配置包本身大小有关,但最多不超过 64 个。

页面右下部分显示已安装设备的设备类型信息,点击**卸载**按钮,弹出确认对话框,如图 3-58 所示。



图3-58 确认对话框

点击确定按钮,弹出用户安全验证对话框,如图 3-18 所示。输入当前用户的登录密码,点击确定按钮,即可卸载相应的 设备类型。

□ 注意

1. 安装时,如果设备类型存在,且设备驱动版本高于待安装的驱动时,将无法重复安装该设备类型;

2. 如果安装包没有版本信息或者版本信息与软件版本不匹配,也无法安装该设备类型;

3. 如果有设备使用此设备类型,卸载按钮将变为灰色,显示使用中,无法卸载该设备类型。

3. 资产信息

点击配置管理菜单下的设备管理子菜单,然后点击资产信息页签,弹出如图 3-59 所示页面。

EMERS Network P	SON. Power				Weld	come		Lie	bert, RDU-A G2 mance Monitoring
按设备浏览	按位置浏览	可控状态	态: 允许		Å1	0 🕛 0		2	欢迎登录: admin[注销]
机房信息	+	ž	忝加/修改/删除设备	安装/卸载设备类型	资产信息				
空调群态	+	提示: i	清在完成修改后,点击	[保存配置]使配置生效。					
Teanur		设备ID	设备名称	设备型号	设备厂家	设备条码	启用日期	过保日期	用户编码
能耗管理	+	1	Monitoring Unit		-	27.0	-	1.000	=
生物等用		2	ENV_TH1	200		21	-		
口品居住		3	ENV_TH2				-		-
数据管理	+	4	ENV_4DI	 8			-		
配置管理	-								
		修改资言	产信息						
 ・设备管: 	理	设备型원	₹			设备厂家			
 设备信 	号配置	设备条研	9 -			用户编码			
・批量配	置	启用日期	41			过保日期			
系统设置	+						确定		
帮助信息	+	保存配法	置						
							保存配置		

图3-59 资产信息

资产信息可设置**设备型号、设备厂家、设备条码、用户编码、启用日期**和**过保日期**六类信息; 任意选择一个设备则相应的资产信息即显示在页面下方的输入框内;

修改后点击确定按钮,修改后的结果将显示在页面上方的列表内;

全部修改完毕,点击保存配置按钮对资产信息进行保存。

□ 注意

如果是新添加的设备,其默认的资产信息为"--"。

设备信号配置

点击**配置管理**菜单下的**设备信号配置**子菜单,弹出如图 3-60 所示页面。

EMERS Network Po	EMERSON. Network Power				Liebert, RDU-A G2 Performance Monitoring			
按设备浏览	按位置浏览	可控状态:	允许		A.1	8	0	🚨 欢迎登录RDU-A G2系统: admin[注销]
机房信息	+	修改	女设备名	修改信号				
六调群位		序号	设备名	3称			新设备名称	设置
T (4) 4+1X	•	1	ENV_	TH1				
能耗管理	+	2	ENV_	TH2				
告警管理	+	3	ENV_	4DI				
劫据管理	+	4	AC_D	ME3000_1				
		5	AC_D	ME3000_2				
配置管理	-	6	AC_D	ME3000_3				
 设备管理 	Ŧ	7	AC_D	ME3000_4				
• 设备信号	号配置	8	AC_PI	EX_1				
・批量配置	Ē.	9	AC_C	M+_1				
ズはたい見思		10	UPS_	ITA16_1				
杀硫成盂	+	11	UPS_	ADAPTPM_1				
帮助信息	+							

图3-60 修改设备名

图 3-60 所示的页面中,用户可以修改设备名称。输入新的设备名称后,点击设置按钮进行批量设置。

□□ 注意

设备名称和信号名称字符可以是英文字母、数字、空格和下划线,其它字符无效。

点击修改信号,弹出如图 3-61 所示页面。

EMERS Network Po	ON.		Liebert, RDU-A G2 Performance Monitoring	
按设备浏览	按位置测览	可控状态: 允许	🗚 1 🛄 8 😡 0	🌲 欢迎登录RDU-A G2系统: admin[注睄]
机房信息	+	修改设备名 修改信号		
空调群控	+	设备类型: ENP_RDU-A[DUMMY]	 ✓ 信号类型: 采集信号 ✓ 	
能其管理	•	序号 信号名	新信号名	设置
8676 IS AL	•	1 系统运行状态		
告警管理	+	2 当前运行配置		
数据管理	+			
配置管理	-			
 设备管理 	₽			
• 设备信号	計配置			
 批量配置 	1			

图3-61 修改信号

图 3-61 所示的页面中,用户可以按设备类型修改信号名称信息和告警信号的告警级别。选择**设备类型**和**信号类型**,输入 新的信号名,点击**设置**按钮进行批量设置。

□ 注意

1. 对于 ENV-TH 和 ENV-4DI, 系统具有信号名称联动修改功能,即修改采集信号名称,相应的控制信号、设置信号和 告警信号名称随之修改,因此该页面只对采集信号提供修改信号名称功能。

2. 在此修改的信号名称将作为设备默认的信号名称使用。

批量配置

点击**配置管理**菜单下的**批量配置**子菜单,弹出如图 3-62 所示页面。

EMERS Network Pr	SON. ower		Liebert, RDU-A G2 Performance Monitoring			
按设备测览	按位置测览	可控状态: 允许	A 1	8	0	🌲 欢迎登录RDU-A G2系统: admin[注销]
机房信息	+	RDU-A G2 系统批量配置				
空调群控	+	从本地计算机上传文件到RDU-A G2中(查 文件路径:	看 帮助) 浏览			上传
能耗管理	+	从RDU-A G2下载文件到本地计算机中(查	看帮助)			
告警管理	+					下载
数据管理	+					
配置管理	-					
• 设备管H	Ŧ					
 设备信号 	号配置					
・批単配	5					

图3-62 批量配置

用户可执行**上传**和下载操作,完成系统批量配置。

□ 注意

1. 只有 admin 用户才有执行批量配置的权限,如果无法执行批量配置,请点击查看帮助获取帮助信息。

2. 批量配置的文件下载到本地后是加密的。

3.4.7 系统设置

在 RDU-A G2 主页中,点击左边的**系统设置**菜单,可见 7 个子菜单,包括:监控单元、网络设置、用户管理、时间校准、 恢复默认、站点信息设置、授权码管理、系统升级和标题栏设置。

监控单元

监控单元子菜单是针对 RDU-A G2 系统自身的信号进行设置,包括采集信号、设置信号和告警信号,如图 3-63 所示。

EMERS Network Pr	ON.			Liebert, RDU-A G2 Performance Monitoring				
按设备浏览	按位置浏览	可控状态: 允许		A.1	📕 B 🛛 🕗 O		💄 欢迎登录RDU-A G2系统: admin[注销]	
机房信息	+	采集信号	设置信号 告警信号					
		Monitoring Unit (ENP_RDU-A[DUMMY])					
空调群控	+	序号	信号名	4		值	采集时间	
能耗管理	+	1	系统运行	伏态		告警	2014-03-26 10:49:59	
告警管理	+	2	当前运行			当前配置	2014-03-26 10:34:36	
数据管理	+							
配置管理	+							
系统设置	-							
 监控单列 	τ							

图3-63 监控单元(采集信号)

关于监控单元中**采集信号、设置信号、告警信号**三个页签的操作方法,参见 3.4.1 机房信息。

□ 注意

在设置信号页签中如果设置当前告警阻塞为"阻塞",则出现当前告警时阻塞告警,这种情况下:

- 1. 当前告警中除当前告警阻塞告警外,其余全部结束;
- 2. 当前告警阻塞的"阻塞"设置在 24 小时后自动解除。

网络设置

1. IP 设置

点击系统设置菜单下的网络设置子菜单,弹出如图 3-64 所示页面。

EMERS Network Po	ON.			Liebert, RDU-A G2 Performance Monitoring				
按设备浏览	按位置浏览	可控状态: 允许	A1	8	0	🌲 欢迎登录RDU-A G2系统: admin[注销]		
机房信息	+	网络设置 访问控制 SNMP设置	远程服务设置					
空调群控	+	RDU-A G2 IP设置 当前设备网卡数量 2						
能耗管理	+	○ IP地址设置 (网卡1 MAC: 00:09:F5:03:77:88) ○ 自动获取IP地址						
告警管理	+	 使用静态IP地址 IP地址: 10.163.236.69 子网摘码: 	255.255.0.0		默认网关: 10.163.236.1	☑ 是否配置此网卡		
数据管理	+	IP地址设置 (网卡2 MAC: 00:09:F5:03:77:89)						
配置管理	+	 ● 自动获取IP地址 ● 使田務态IP地址 						
系统设置	-	IP地址: 192.168.1.254 子网掩码:	255.255.0.0		默认网关: 10.163.236.1	☑ 是否配置此网卡		
 ・ ・ ・	ū	DNS地址设置						
• 网络设置	Ť	● 自动获取DNS地址						
• 用户管理	ł	 ● 使用静态DNS地址 DNS1: DNS2: 						
• 时间校》	È							
 恢复默i 	(保有	参数		

图3-64 IP 设置

RDU-A G2 提供 DHCP 动态获取和手动静态设置两种 IP 设置方式,同时支持 DNS 域名解析。

如图 3-64 所示的页面中,用户可以配置的网络参数如下: IP 获取方式**及地址、子网掩码、默认网关、DNS1**(首选 DNS 服务器)和 DNS2(备用 DNS 服务器)。修改网络参数之后,点击保存参数按钮使参数生效。

□ 注意

1. 如果网卡1和网卡2都选择使用静态 IP 地址的话, DNS 地址不能自动获取。

2. 修改 IP 地址之后,用户需用新网络地址重新登录 RDU-A G2, 默认跳转至网卡1的 IP 地址。

2. 访问控制

点击系统设置菜单下的网络设置子菜单,然后点击访问控制页签,弹出如图 3-65 所示页面。

EMERSON. Network Power		Liebert, RDU-A G2 Performance Monitoring	
按设备浏览 按位置测览	可控状态: 允许	🛦 1 🛄 8 🕠 0	▲ 欢迎登录RDU-A G2系统: admin[注 褃]
机房信息 +	网络设置 访问控制 SNMP设置	远程服务设置	
空调群控 +	访 问 控制 易增管理器 访问权限设置		
能耗管理 +	○ 不需要验证,任何易睿管理器可直接访问该系	充	
告警管理 +	● 需要验证,只允许列表中列出的易睿管理器访	可该系统	
数据管理 +			设置 刷新连接状态
配置管理 +	选择 易睿管理器 IP 易睿管理器 IP:	访问类型 访问类型: 易睿管理器 ✔	是否使用代理 连接状态 使用代理 否 ✓
系统设置 -			
• 监控单元			添加访问者 删除访问者
 网络设置 	代理服务器设置		
• 用户管理	地址	类型 Socks4 ✔	端口
• 时间校准	帐号	密码	
• 恢复默认			保存

图3-65 访问控制

添加访问者时,在易睿管理器 IP 文本框中输入新的易睿管理器 IP 地址,点击添加访问者按钮完成配置。

□ 注意

- 1. 系统最多可以添加3个易睿管理器 IP 地址。
- 2. 如果在添加访问者时选择使用代理,则还需对代理服务器进行配置。

3. SNMP 设置

点击**系统设置**菜单下的**网络设置**子菜单,然后点击 SNMP 设置页签,可对 SNMP 代理进行配置,RDU-A G2 系统的 SNMP 代理支持 V2 和 V3 两种版本:

如图 3-66 所示, SNMP V2 的具体设置方法如下:

- 1) 设置 NMS IP (SNMP 代理数据接收端的主机 IP 地址);
- 2) 设置是否发送 Trap: "允许"、"禁止";
- 3) 其它参数保持默认值。

EMERSON Network Power		Welcome									Liebert, RDU-A G2 Performance Monitoring			
按设备浏览	按位置浏览	可控状态: 允许			A1	8 🛄	0 🌔			🚨 欢迎登	录RDU-A G2系统: ;	admin[注诮]		
机房信息	+	网络设置	访问控制	SNMP设置	远程服务设	E								
空调群控	+	SNMP设置 序号 NMS IP	Trap 级别	协议类型 读	通讯字 1	写通讯字	用户名	用户类型	认证类型	加密类型	认证算法密码	加密算法密码		
能耗管理	+	修改设置												
告警管理	+	协议类型	SNMP	V2 O SNN	IP V3									
数据管理	+	NMS IP	0.0.0				Trap 级别	3	亡许	~	Trap测试			
配置管理	+	读通讯字	public				写通讯字	P	rivate					
系统设置	-							增加		修改		删除		
• 监控单5	ī													
 网络设置 	£													

图3-66 SNMP(V2)设置

如图 3-67 所示, SNMP V3 的具体设置方法如下:

- 1) 设置 NMS IP (SNMP 代理数据接收端的主机 IP 地址);
- 2) 选择是否 Trap 发送: "允许"、"禁止";
- 3) 设置**用户名**;
- 4)选择用户类型:"认证并加密"、"认证不加密"、"不认证不加密";
- 5) 选择**认证类型:** "MD5"、"SHA";
- 6) 选择加密类型: "DES";
- 7) 自定义设置认证算法和加密算法的密码。

□ 注意

1. 在 SNMP V2 的基础上, SNMP V3 加入了用户认证和加密策略;

- 2. 如果用户类型选择了"不认证不加密"策略,则认证类型和加密类型下拉框变灰,无法进行设置;
- 3. 现阶段加密类型只支持"DES";

4. 用户需自定义 8 个字符以上的认证和加密密码,并且该密码必须与 SNMP 代理数据接收端的主机设置的密码相同, 否则无法解密接收。

完成参数设置后,点击增加按钮,即可增加 NMS;

如需修改 NMS 设置,选中需要修改的 NMS,修改设置,然后点击修改按钮保存设置;

如需删除 NMS,选中需要删除的 NMS,然后点击删除按钮删除 NMS。

EMERSON Network Power				L	Liebert, RDU-A G2 Performance Monitoring				
按设备浏览	按位置浏览	可控状态: 允许		A1 8	0 🥥		🚨 欢迎登	录RDU-A G2系统: a	admin[注销]
机房信息	+	网络设置	访问控制 SNMP设置	远程服务设置					
六词就位		SNMP设置							
工 (9) (4+ 1)		序号 NMS IP	Trap 级别 协议类型 读通	讯字 写通讯字	用户名 用户类型	2 认证类型	加密类型	认证算法密码	加密算法密码
能耗管理	+	纳马马平							
告警管理	+	协议类型	O SNMP V2 SNMP	V3					
数据管理	+	NMS IP	0.0.0.0		Trap 级别	允许	~	Trap测试	
忍害管理	+	用户名			用户类型	认证并加密	~		
HALLESC		认证类型	MD5 🗸		加密类型	DES	~		
系统设置	-	认证算法密码			加密算法密码				
 ・ 监控単元 ・ 网络设置 					增加		修改		刪除

图3-67 SNMP(V3)设置

□ 注意

RDU-A G2 默认不提供 SNMP 代理服务, 若需要 SNMP 服务授权, 请联系艾默生客户服务中心购买, 联系电话: 4008876510。

4. 远程服务器设置

点击系统设置菜单下的网络设置子菜单,然后点击远程服务设置页签,弹出如图 3-68 所示页面。

EMERS Network Po	SON. ower		Welcome						
按设备测览	按位置浏览	可控状态: 允许	A1	B 8 😡 0	🌋 欢迎登录RDU-A G2系统: admin[注销]				
机房信息	+	网络设置 访问控制 SNMP	设置 远程服务设置						
空调群控	+	远程服务设置							
能耗管理	+	远程服务操作类型: ● 远程服务请求	○ 取消远程服务	○ 本地主机更换					
告警管理	+	客户名称:							
数据管理	+	远程服务客户联系人: admin 电话:	~						
配罟管理	+	E-mail: -							
系统设置	-	报表生成周期: 月	×		确定				
 监控单元 	t	服务系统通信参数设置							
 网络设置 用户管理 	£	远程服务系统电话 18706720516							
 时间校准 	ŧ	远程服务系统Email RemoteService@)emersonr						
 恢复默り 	٨	远程服务系统IP 0.0.0.0 0.0.0.0 0.0.0.0 0.							
 站点信息 授权码管 	會理				确定				

图3-68 远程服务设置

远程服务设置包括**远程服务请求、取消远程服务**及**本地主机更换**三个部分,同时用户可对远程服务系统的通信参数进行 设置。

- 远程服务请求:用于建立远程托管关系
- 1)在客户名称文本框中输入自定义的客户名称;
- 2)选择远程服务客户联系人,当联系人选定时,会显示相应的电话及 Email;

□ 注意

远程服务客户联系人需事先在系统设置->用户管理中进行设置,且必须提供电话或者 Email,否则无法进行托管请求。 具体设置方法参见本节中的用户管理。

- 3)选择**报表生成周期:"**月"、"季度";
- 4) 点击确定按钮发送远程托管请求。
 - 取消远程服务:用于取消已经建立的托管服务

选择取消远程服务,点击确定按钮发送命令取消当前的远程服务。

```
□ 注意
```

取消远程服务只在已建立远程托管服务的前提下有效,否则点击确定按钮会提示失败。

●本地主机更换:用于远程服务中本地主机的更换

当建立远程服务的主机要退出,但又想保留已经建立的远程服务关系时,用户需更换本地主机加入远程服务,具体的设置方法同**远程服务请求**,此外加入被替换主机的硬件序列号即可。

5. 安全设置

只有管理员才能浏览和配置安全设置。

点击系统设置菜单下的网络设置子菜单,然后点击安全设置页签,弹出如图 3-69 所示页面。

EMERSON Network Power		Welcome	Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控状态:允许 🔒 🚺 🚺 🕕 0	
机房信息	+	网络设置 访问控制 远程服务设置 安全设置	
空调群控	+	安全设置	
		Web访问方式 ● HTTP (80端口) ● HTTPS (443端口) 保存	
能耗管理	+	Web访问安全策略	
告警管理	+	启用安全策略	
th technoli		用户密码有效期 90 天	
数据官理	+	账户锁定时间 5 分钟	
配置管理	+	12.77	
系统设置	-	TiAl	
 监控单元 网络语言 	t		

图3-69 安全设置

安全设置的内容包括 Web 访问方式和 Web 访问安全策略两个部分。

● Web 访问方式:选择访问 Web 页面可采用的协议是 HTTP 还是 HTTPS。默认为 HTTP 协议。选择后,点击**保存**按钮,浏览器提示用户等待,如图 3-70 所示。

EMERSON	
Network Power	
	保存成功! 正在重启Web服务器
	请等待15秒

图3-70 系统重启 Web 服务器

等待的时间到达后,浏览器显示新的访问超链接,如图 3-71 所示。点击其中的超链接,即可出现以新的 Web 访问方式 启动的用户登录界面。



图3-71 显示新的 Web 访问连接

□ 注意

只有在 Web 访问方式采用 HTTPS 的情况下, 才允许移动终端 APP 连接 RDU-A G2。

● Web 访问安全策略:选择是否启用 Web 访问安全策略。默认为启用。

Web 访问安全策略包括 4 个部分:账户锁定策略、登录验证码、密码复杂度策略、密码过期策略。

1) 账户锁定策略:

同一个有效用户连续登录失败 5 次后,不可再输入密码进行登录操作,只有等到指定的时间过后,才可以继续登录。admin 账户不会被锁定。

管理员可将目前处于锁定状态的账户进行重置解锁。具体操作步骤参见下一节用户管理中的解锁。

锁定时间的长短可以在图 3-69 中**账户锁定时间**编辑框中配置,默认为 5 分钟。

2) 登录验证码:

用户登录时,一旦输入了错误的用户名或密码,系统立即显示一个验证码,要求下一次登录时必须输入此验证码,如图 3-72 所示。



图3-72 登录要求输入验证码

3) 密码复杂度:

用户密码长度至少为6个字符;密码中至少包含以下字符中的两种:大写英文字符(A~Z),小写英文字符(a~z),数字(0~9)和非字母字符(!,\$,#,%等)。

启用 Web 访问安全策略时,不影响已有用户帐户的密码,但新建用户账户或修改已有用户密码时,新密码必须符合此复杂度要求。

4) 密码过期策略:

用户账户密码从被创建或修改时刻开始,在指定时间之内有效。有效时间长度可以在图 3-69 中**用户密码有效期**编辑框中 配置,范围为 0~999 天,默认 90 天。0 天表示密码永不过期。

密码有效时间长度对除 admin 之外的所有其他账户适用, admin 账户密码永不过期。

管理员可以刷新某个帐户的有效期,新的有效期从设置的时刻开始,至有效时间长度到达为止。具体操作步骤参见下一 节**用户管理**中的**刷新有效期**。

用户管理

点击系统设置菜单下的用户管理子菜单,弹出如图 3-69 所示页面。

EMERS Network P		Welcome								Liebert , RDU-A G2 Performance Monitoring				
按设备浏览	按位置浏览		可控状				A 1	1 0	0 🌔			٥	欢迎登录	: admin[注销]
机房信息	+	^	Web,	用户管理										
			选项	用户名		用户权限	电子邮件	电话号码		绑定手机序列号	1	账户至期时	间	锁定状态
空调群控	+		$^{\circ}$	admin		管理员				44DBC75		永久有效		正常
能耗管理	+		0	emerson		工程师	-	12345		5420ACF875,7	6XD8C008	2016-04-12	13:35:37	正常
告警管理	+													
数据管理	+		编辑展 用户名] 户信息 4:				权	限:	操作	灵	~		
配置管理	+		密码:					确	认密码:					
系统设置	-		电话号	;码:				短信电话告	警通知测试					
 ・	ī.		邮件地	btil:				电子邮件告望	廖通知测试					
• 网络设置	王		绑定手	机序列号:						可用于移动客户	□端访问。最多	可填写2个序列号	号,序列号;	之间请以","分隔。
・用户管理	₽		账户到	期时间:	::			刷新有效期	解锁					
• 时间校;	<u>۴</u>								增	加用户	修改	(用户	00	除用户

图3-73 用户管理

图 3-73 所示页面中,用户可以增加用户,修改用户和删除用户。

- 增加用户
- 1. 在用户名的文本框里输入用户名;
- 2. 选择用户的权限;
- 3. 配置用户密码,密码不能为空,且至少6位字母或数字;
- 4. 在确认密码文本框中重复输入密码;
- 5. (可选)输入用户电话号码,电话号码可以使用以下数字和字符: 0123456789、+;
- 6. (可选) 输入邮件地址;

7. (可选)输入允许通过移动终端 APP 访问 RDU-A G2 的移动终端的序列号;

8. 点击增加用户按钮,将弹出用户安全验证对话框,如图 3-18 所示。输入当前用户的登录密码,点击确定按钮,增加 新用户。

□ 注意

- 1. 用户名只能使用英文字母、数字以及-和_,并且首字符必须为字母或数字。
- 2. 如果启用了 Web 访问安全策略, 对密码有更多的要求, 参见"安全设置"一节。
- 3. 允许最多输入两个绑定手机序列号,以逗号分隔。
- 4. 如果未输入绑定序列号,则系统会绑定最先两个从 APP 登录的移动设备的序列号。
- 5. 绑定后,系统只允许所绑定的移动终端从 APP 访问 RDU-A G2。如果要重新绑定,只需修改或删除绑定序列号即可。

● 删除用户

- 1. 在用户名单中选择需要删除的用户;
- 2. 点击删除用户按钮,将弹出确认对话框,如图 3-74 所示。



图3-74 确认对话框

3. 点击**确定**按钮,将弹出用户安全验证对话框,如图 3-18 所示。输入当前用户的登录密码,点击**确定**按钮,将所选用 户删除。

	注意
admin	用户不可删除。

● 修改用户

1. 在用户名单中选择需要修改的用户;

2. 修改用户信息;

3. 点击**修改用户**按钮,将弹出用户安全验证对话框,如图 3-18 所示。输入当前用户的登录密码,点击确定按钮,使修 改后的用户信息生效。

登录 RDU-A G2 的用户可分为 4 个用户组,他们分别具有不同的安全级别和用户权限,具体信息参见表 3-3。

表3-3 用户安全级别

安全级别	用户组	用户权限
		管理员拥有全部权限:发送控制命令到智能设备;浏览、控制、修改参数;上传
A 级	管理员	和下载文件;修改、增加、删除用户信息;空调群控参数设置;系统固件升级;
		修改账户有效期;解锁已锁定的用户帐户
D 472	工程価	工程师拥有以下权限:发送控制命令到智能设备;浏览、控制、修改参数;下载
B 4X	山北王川	文件;修改自身用户信息(账户有效期和锁定状态除外)
C 级	操作员	操作者可发送控制命令到智能设备
D 级	浏览者	所有用户均能浏览设备信息

在图 3-73 所示页面中,选择当前用户,可以进行短信/电话告警通知测试和电子邮件告警通知测试。

使用该测试功能前,需先对当前用户进行短信模块和邮件服务器配置,具体信息参见 3.4.4 告警管理中的告警通知配置。

● 短信/电话告警通知测试

输入**电话号码**,点击**短信/电话告警通知测试**按钮,测试当前用户的电话号码是否接通。若用户收到测试短信和电话,表示测试成功。否则测试失败,请检查当前用户的电话号码是否正确,短信 MODEM 连接是否正确。

● 电子邮件告警通知测试

输入**邮件地址**,点击**电子邮件告警通知测试**按钮,测试当前用户的邮箱地址是否正确。若收到测试邮件,表示测试成功, 否则测试失败,请检查以上信息是否输入正确。

● 刷新有效期

如果启用了 Web 访问安全策略,界面上会显示所选用户的账户到期时间。管理员点击刷新有效期按钮,即可为所选用户 刷新新的密码有效期,新的有效期起止时间参见网络设置一节 Web 访问安全策略中的密码过期策略。

● 解锁

如果启用了 Web 访问安全策略,对于已锁定的账户,管理员点击**解锁**按钮,即可为其解锁。参见网络设置一节 Web 访问安全策略中的账户锁定策略。

□□ 注意

增加、修改用户时,必须输入电话号码或邮件地址,否则无法完成设置。

时间校准

点击**系统设置**菜单下的**时间校准**子菜单可以校准时钟。图 3-75 所示页面中,RDU-A G2 可以从时间服务器上自动获取时间。依次输入**主服务器和从服务器**的 IP 地址,输入**校时间隔**、选择**时区和校时协议类型**,然后点击**设置**按钮使得设置生效。

EMERS Network Po	SON. ower			We	lcome		Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控状态: 允许		A1	8	0 🥥	🌲 欢迎登录RDU-A G2系统: admin[注销]
机房信息	+	时间校准					
空调群校	+	设置时区:	+08:00 (北京,香港特别行	i政区)	~		
TANUT		○ 从以下时间	服务器自动获取时间:				
能耗管理	+	主服务器:	0.0.0.0				
告警管理	+	从服务器:	0.0.0				
林福德加		校时间隔:	1	小时			
叙信日 理		校时协议类型	◎ TP协议(RFC868)	● NTP协议(RFC1	305)		
配置管理	+	上次成功同步时间	-				
系统设置		下次预计同步时间	(22)				
		使用当前时	间校时 获取本机时间	3			
 ・	t	日期:	2014/03/26				
 网络设置 	路	时间:	10:57:16				
• 用户管理	Ŧ						设置
 时间校/ 	Ê.						

图3-75 时间校准

RDU-A G2 也可以获取本机时间,选择**使用当前时间校时**并点击**获取本机时间**按钮来获得本机时间,然后点击**设置**按钮 使新时间生效。

山 注意

时间校准默认选择使用当前时间校时。

恢复默认

点击系统设置菜单下的恢复默认子菜单,弹出如图 3-76 所示页面。

EMERS Network Po	ON.		Wel	come		Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控状态: 允许	A 1	8	0	🚨 欢迎登录RDU-A G2系统: admin[注销]
机房信息	+	恢复默认				
空调群控	+	重新启动RDU-A G2系统。				
4K.45.80: 10						重启RDU-A G2
能耗官埋	+	恢复默认配置,系统将恢复为出厂	配置并清除所有历史数据,恢复默认	配置后系统将重	启。	
告警管理	+					恢复默认
数据管理	+					
配置管理	+					
系统设置	-					
 ・	ū					
 网络设置 	-					
• 用户管理	P					
 时间校3 	É					
 恢复默i 	ι]					

图3-76 恢复默认

点击重启 RDU-A G2 按钮,实现系统重启。

点击恢复默认按钮,恢复 RDU-A G2 至默认设置。

□ 注意

如果用户使用恢复功能, RDU-A G2 会恢复原始配置方案。在恢复操作之后,请确认等待 1 分钟再通过网络重新进入 RDU-A G2 以使其进行完整的初始化工作。

站点信息设置

点击系统设置菜单下的站点信息设置子菜单,弹出如图 3-77 所示页面。

EMERS Network Pr	ON.			Wel	come		Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控状态: 分	¢¥	A1	8	0	🌲 欢迎登录RDU-A G2系统: admin[注诮]
机房信息	+	站点信息设	置				
空调群控	+	站点信息	信息内容			新信息内容	收置
		站点名称	RDU-A G2				
能耗管理	+	站点位置	Xi'an				
告警管理	+	站点描述	RDU-A G2				
数据管理	+						
配置管理	+						
系统设置	-						
 监控单列 	ī						
 网络设置 	5						
• 用户管理	20 11 12						
 时间校: 	Ê						
 恢复默i 	λ						
• 站点信息	息设置						

图3-77 站点信息设置

如图 3-77 所示,用户可以修改 RDU-A G2 的站点信息,包括站点名称、站点位置和站点描述。

授权码管理

点击系统设置菜单下的授权码管理子菜单,弹出如图 3-78 所示页面。

EMERS Network Po	ON.		W	elcome	Liebert. RDU-A G2 Performance Monitoring
设备浏览	按位置浏览	可控状态: 允许	A 1	B 8 🕠 0	🚨 欢迎登录RDU-A G2系统: admin[注销]
机房信息	+	授权码管理			
-2		软件版本:	V 4.00 Alpha 1		
空调群控	+	序列号:	21023116752132810013		
能耗管理	+	特征码:	165d-6d52-b1fb		
		输入授权码:		(格式示例: XXXX-XXXX-XXXX-XXXX-XXXX-X	XXXX)
告警管理	+				保在
数据管理	+				175-12
		序号	授权码	功能名称	内容描述
配置管理	+	1	0000-0000-0000-0000	最大接入设备数量	16 unit(s).
系统沿署	-	2	39B8-M882-FZ7C-J7JG-A6HC	空调群控	6 units
Mester for the		3	SQN1-0YNP-Z0F0-TQVV-818H	空调群控	1 unit
• 监控单元	ē	4	SVV4-EK3G-JJH3-TXB3-29GK	SNMP代理	Enabled
 网络设置 	<u>-</u>				
rea ala dete all					
 用尸管均 	2				
• 时间校准	Ē				
・恢复默认	(
• 站点信息	设置				
・授权码管	?理				

图3-78 授权码管理

在**授权码管理**页面,用户可完成受限权限的授权(如 SNMP 服务)和已有授权查看功能,当用户获取授权码后,在授权 码输入框输入合法的授权码,点击**保存**按钮完成安装。RDU-A G2 的可授权的功能见表 3-4。

表3-4 RDU-A G2 授权功能概述

授权功能	描述
空调群控	授权空调群控版本及参与空调群控空调数,可授权接入最大32台空调参与群控
SNMP 服务	授权开放 SNMP 代理服务
最大设备接入数量	授权扩展最大设备接入数量,可扩展至 32 个设备

□ 注意

1. 部分功能的授权码安装成功后必须重启系统后才会生效。

2. 接入 IRM4-COM 扩展卡后,最大设备接入数量将自动增加 4。

系统升级

点击系统设置菜单下的系统升级子菜单,弹出如图 3-79 所示页面。

EMERS Network Po	ON. wwer		Weld	ome		Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控状态: 允许	A 1	8	0	▲ 欢迎登录RDU-A G2系统: admin[注诮]
机房信息	+	系统升级				
空调群控	+	选择安装包:	浏览	(查看帮助)	安装	
能耗管理	+					
告警管理	+					
数据管理	+					
配置管理	+					
系统设置	-					
 监控单列 	ē					
 网络设置 	1					
 用户管理 	ŧ					
 时间校3 	Ė					
・恢复默い	C. C.					
• 站点信息	设置					
• 授权码管	寶理					
 系統升編 	ş					

图3-79 系统升级

图 3-79 所示的页面中,点击**浏览...**按钮从本地目录下载升级包(.rdu 文件格式),然后点击安装按钮,进行固件升级。

□ 注意

RDU-AG2 支持增量升级功能。

标题栏设置

点击系统设置菜单下的标题栏设置子菜单,弹出如图 3-80 所示页面。

EMERS Network Po	ON. wer		Welcome	Liebert, RDU-A G2 Performance Monitoring
按设备浏览	按位置浏览	可控状态: 允许	A1 💵8 😡0	🚨 欢迎登录RDU-A G2系统: admin[注销]
机房信息	+	标題栏设置		
空调群控	+	系统标题:		确定
能耗管理	+	图片路径:	浏览 (查看帮助)	上传恢复默认
告警管理	+			
数据管理	+	预览:		
配置管理	+			
系统设置	-			
 监控单元 	Ē.			
 网络设置 	1			
• 用户管理	2			
 时间校准 	E			
・恢复默し	L.			
• 站点信息	设置			
• 授权码管	理			
• 系统升级	ž			
・ 标題栏で	置			

图3-80 标题设置

图 3-80 所示的页面中,用户可上传系统 Logo 图片替换页面右上方的 Logo 图片,点击**浏览...**按钮,选择需要上传的 Logo 图片,然后点击**上传**按钮将文件上传到 RDU-A G2。只允许上传[.gif]或[.bmp]或[.jpg] 或[.png]格式的图片到 RDU-A G2 里,且图片大小不超过 500K。点击**恢复默认**按钮可以恢复默认 Logo 图片。

用户也可修改页面正上方的系统标题 Welcome。在系统标题文本框里输入自定义系统标题,点击确定按钮使之生效。

3.4.8 帮助信息

在 RDU-A G2 主页中,点击左边的帮助信息菜单,可见1个子菜单:关于 RDU-A G2。

关于 RDU-A G2 页面显示 RDU-A G2 的软件版本、序列号、特征码等信息并提供用户手册和工具软件的下载链接,如 图 3-81 所示。

EMERS Network Pr	SON. ower	Welcome				Liebert. RDU-A G2 Performance Monitoring		
接设备浏览	按位置浏览	可控状态: 允许	A 1	1 8	0	🚨 欢迎登录RDU-A G2系统: admin[注销]		
机房信息	+	关于 RDU-A G2						
		软件版本:	V 4.00 Alpha 1					
空调群控	+	序列号:	21023116752132810013					
能耗管理	+	特征码:	165d-6d52-b1fb					
告警管理	+	RDU-A G2 用户手册	点击此处下载RDU-A G2用户手册(PDF	-)				
数据管理	+	工具软件下载	点击此处下载USB调试驱动程序					
間古官理	+			© Emersor				
系统设置	+			2009 Copyright, 2	014 by Emerson Group			
帮助信息	-							
・ 关于 RE	0U-A G2							

图3-81 关于 RDU-A G2

第四章 维护

本章介绍 RDU-A G2 的维护,包括恢复默认设置和常见问题处理。

4.1 恢复默认设置

恢复默认设置可通过软件和硬件两种方式完成。

有关软件恢复,参见 3.4.7 系统设置一节中的恢复默认。

硬件恢复包括恢复 RDU-A G2 管理员密码(默认用户名: admin,密码: emerson)和 RDU-A G2 的 IP 地址(有关默认 IP 地址,参见 *1.2.1 RDU-A G2 主机*一节中的 *网口*)。方法为:持续按下复位按钮(见图 4-1)4秒,待运行/告警灯熄灭 后松手, RDU-A G2 将在系统重启后恢复 IP 地址及密码。



图4-1 复位按钮

4.2 常见问题处理

问题 1: RDU-A G2 主机上电后,电源指示灯怎么不亮?

答: 请检查电源线缆连接是否正确。

问题 2: 插入 IRM-4COM\IRM-8DIAI\IRM-8DOAO 扩展卡后, POWER 灯不亮或者串口不工作,如何处理?

答: POWER 灯不亮,请检查扩展卡是否插偏或完全插入;如果插入正常,RDU-AG2 会自动完成重启动作,如果RDU-AG2 没有重启,请尝试重新插入扩展卡。

问题 3: 如何处理串口通信不正常?

答: 首先,请确认设备通讯模式是否匹配, RDU-A G2 机身串口及扩展板串口为 RS-232/RS-485 自适应串口;其次,请确认通信参数的配置是否正确。

问题 4: 如何处理继电器输出口不能正常控制用户设备?

答: 请检查用户设备端子线序是否正确, 具体信息见表 1-15。

问题 5:在 RDU-A G2 通信正常情况下,为什么没有出现 RDU-A G2 的登录页面?

答:出现以上问题有三种解决措施:

第一步: 请确认 IP 地址正确性。

RDU-AG2有两块网卡,请确认网线是否插错接口。

如果是静态 IP 地址,有关 RDU-A G2 的默认 IP 值,参见 1.2.1 RDU-A G2 主机一节中的 网口;如果已经设置为 DHCP 方式获取 IP,请参见 问题 6 查看当前 IP。

第二步: 请确认 IP 地址的连通性。

确认 IP 地址连通性可使用 PING/ping 命令,方法如下:

1) 点击左下角 3 图标,在 2 框中输入"cmd",如图 4-2 所示。



图4-2 输入"cmd"

2) 按下回车键,将弹出图 4-3 所示页面。在命令行输入"ping"和 IP 地址,(例如 ping 10.163.162.135) 查看是否通信 成功。

📾 C:\WINDOWS\system32\cmd.exe	 ×
Microsoft Windows XP [版本 5.1.2600] <c> 版权所有 1985-2001 Microsoft Corp.</c>	-
C:\Documents and Settings\Administrator>ping 10.163.162.135	
Pinging 10.163.162.135 with 32 bytes of data:	
Reply from 10.163.162.135: bytes=32 time=18ms TTL=63 Reply from 10.163.162.135: bytes=32 time<1ms TTL=63 Reply from 10.163.162.135: bytes=32 time<1ms TTL=63 Reply from 10.163.162.135: bytes=32 time<1ms TTL=63 Ping statistics for 10.163.162.135: Packets: Sent = 4 Received = 4 Lost = 0 (02 Loss)	
Approximate round trip times in milli-seconds: Minimum = Oms, Maximum = 18ms, Average = 4ms	
C:\Documents and Settings\Administrator>	
C:\Documents and Settings\Administrator>	
	-

图4-3 通信测试

第三步:如果经过上述两步还是未能使网络连通,请使用机身上复位按钮恢复默认 IP。

第四步:参见 3.1 登录准备完成相关操作。

问题 6: 设置 DHCP 后,如何查看当前 IP 地址?

答:在设置 DHCP 后, 需通过串口的形式访问 RDU-A G2 用于获取当前 IP 地址, 方法如下:

第一步: 参见 3.4.8 帮助信息,下载调试口(Console)的 USB 驱动,安装至用户计算机。

第二步:通过 RDU-A G2 主机包装中的 USB 电缆连接 RDU-A G2 机身 Console 口和电脑 USB 接口,并利用串口工具(如 SecureCRT)连 RDU-A G2。

第三步:输入用户名 "rduadmin"和密码 "emerson"登录 RDU-A G2 系统,输入命令 setip1 并键入回车,查看网卡1 的 IP 地址、子网掩码和网关。网卡2 的网络参数查看方法与网卡1 类似,输入命令为 setip2,如图 4-4 所示。

***	******
<u>\$</u>	*
 Copyright(c) Emerson Group, All rights reserved. 	*
* 2009 Copyright, 2013 by Emerson Group	4
*	4
* Welcome to RDU	×
Ŷ	8
* Version 1.0	\$
* 2013.06	4
****	******
RDU_admin#setip1 Please input IP_address[10.163.236.56]: Please input Subnet_mask[255.255.0.0]: Please input Default_gateway[10.163.236.1]: Nothing has been changed! RDU_admin#setip2 Please input IP_address[192.168.1.254]: Please input Subnet_mask[255.255.255.0]: Nothing has been changed!	
图4-4 查看网络参数	

问题 7: 如何进行传感器故障排查?

故障现象 1: 智能传感器无显示,且不能显示在 RDU-A G2 网页上。

答:按以下步骤进行排查:

1)确认智能传感器是否接入 RDU-A G2 的 SENSOR 口,同时组内地址为 1 的只能接入 SENSOR1,组内地址为 2 的只能接入 SENSOR2;

2)检查接入线缆是否完好,接头压线是否完好,以及是否是直通网线;

3)检查智能传感器是否正常;

4) 确保传感器地址不为 00;

5) 如接入多个智能传感器,确保传感器地址不重复,并按照步骤2、3逐个排查。

故障现象 2: 智能传感器告警灯常亮。

答:将智能传感器返回艾默生各地办事处服务中心维修。

故障现象 3: RDU-A G2 历史告警中有智能传感器频繁通信失败告警。

答:检查网线卡扣是否完好无损,检查网线连接是否有松动。

问题 8: 用户已选择深海蓝主题,但浏览 RDU-A G2 的 Web 界面时,页面仍然为清澈蓝主题,如何处理?

答:点击[当前用户]注销按钮,返回登录界面,点击 图标选择深海蓝主题,重新登录系统即可。

问题 9:告警产生后,没有接收到邮件或短信通知,或在告警没有结束情况下,邮件或短信通知次数少于 3,怎么处理? 答:按以下步骤进行排查:

1)请检查短信模块和邮件服务器配置是否正确,参见 3.4.4 告警管理中的告警通知配置;

2) 如果没有接收到短信通知,请确认电话卡是否已欠费停机;

3)如果没有接收到邮件通知,请点击菜单数据管理->日志数据,查询告警通知发送日志是否有发送邮件失败的记录。如 果有,则表示网络忙或邮件服务器通信忙。

附录一 缩略词

AC	Alternating Current	交流
CA	Critical Alarm	紧急告警
DC	Direct Current	直流
DI	Digital Input	数字输入
IE	Internet Explorer, a Web browser developed by Microsoft@	微软开发的网页浏览器
FAQ	Frequently Asked Questions	常见问题处理
FTP	File Transfer Protocol, used to transfer large chunks of data	文件传输协议,用于传输大量数据
HTML	Hypertext Mark-Up Language, used to create Web pages	超文本链接标示语言,用于创建网页
HTTP	Hypertext Transfer Protocol, used to convey HTML	超文本传输协议,用于链接 HTML
JRE	Java Runtime Environment	Java 运行环境
LED	Light Emitting Diode	发光二极管
Linux	A UNIX-like operating system with open source, developed under	一种带有开放源码的 UNIX 操作系统,
	Free Software Foundation (FSF)	由免费软件基金会开发
LLP	Local Language Package	本地语言包
LUI	Local User Interface	本地用户接口
MA	Moderate Alarm	重要告警
NA	No Alarm	无告警
LA	Low Alarm	一般告警

附录二 标准配置清单

序号	项目描述	数量	单位
1	RDU-A G2 智能监控单元	1	EA
2	《RDU-A G2 智能监控单元安装调试手册》	1	EA
3	小五金件21 英寸挂耳	2	EA
4	小五金件RDU 线卡	2	EA
5	电线电缆-IEC60320 C13 Plug-IEC60320 C14	2	EA
	Plug-H05VV-F-3C-1mm^2-Black-2000mm-EU	2	
6	小五金件挂耳	2	EA
7	采购成套电缆-UH52SA1SL2-UH52SA1Z UPS 电源 USB 电缆-ROHS	1	EA
8	采购成套电缆UHRK1S241SL62-UHRK1S241Z-2KVA/输入电缆-ROHS	2	EA
9	标准件-GB819.1-2000-十字槽沉头螺钉 M4×10	6	EA
10	成套或其它标签合格证标签	1	EA

附录三 有毒有害物质或元素标识表

	有毒有害物质或元素					
部件名称	铅	汞	镉	六价铬	多溴联苯	多溴联苯醚
	Pb	Hg	Cd	Cr ⁶⁺	PBB	PBDE
制成板	×	0	0	0	0	0
线缆	×	0	0	0	0	0
〇:表示该有毒有害物质在该部件所有均质材料中的含量在 SJ/T-11363-2006 规定的限量要求以下;						
×:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 规定的限量要求						
艾默生网络能源有限公司一直致力于设计和制造环保的产品,我们会通过持续的研究来减少和消除产品中的有毒有害物质。以下部						
件或者应用中含有有毒有害物质是限于目前的技术水平无法实现可靠的替代或者没有成熟的解决方案:						
1. 制成板含有铅; 2. 线缆含有铅						
关于环保使用期限的说明:本产品的环保使用期限(已标识在产品本体),是指在正常使用条件和遵守本产品的安全注意事项的情						
况下,从生产日起本产品含有的有毒有害物质或元素不会对环境、人身和财产造成严重影响的期限						
适用范围: RDU-A G2 智能监控单元						

Contents

Chapter 1 Product Introduction	1
1.1 Hardware Function Difference Between New And Old Version	1
1.2 Component Descriptions	1
1.2.1 RDU-A G2 Host	1
1.2.2 Expansion Card	4
1.3 Main Functions	5
1.4 Technical Specifications	6
1.4.1 Environment Specifications	6
1.4.2 Mechanical Specifications	7
1.4.3 Performance Specifications	7
1.4.4 Product Certificate	7
Chapter 2 Hardware Installation	8
2.1 Installation Preparation	8
2.1.1 Note	
2.1.2 Environmental Requirement	
2.1.3 Space Requirement	
2.1.4 Installation Tool	
2.2 Installing RDU-A G2 Host	9
2.2.1 Mechanical Installation	9
2.2.2 Electrical Connection	9
2.3 Installing Accessories Of Expansion Cards And Sensors	
2.3.1 Installing Expansion Cards	
2.3.2 Installing Intelligent Sensors	
2.3.3 Installing Physical Sensors	
Chapter 3 Web Page Of RDU-A G2	
3.1 Login Preparation	
3.1.1 Checking IP Address Connectivity	
3.1.2 Checking Browser Version	
3.1.3 Checking Browser Setting	
3.2 Log In RDU-A G2	
3.2.1 Authorizing Boot-Strap	
3.2.2 Login Page	
3.2.3 Getting Password	
3.3 Homepage Of RDU-A G2	
3.3.1 Viewing By Location	
3.3.2 Viewing By Device	
3.3.3 Time Calibrating Link	21

3.3.4 Clearing Time-Out	21
3.3.5 Logout	22
3.3.6 Real-Time Alarm Pop-Up Setting	22
3.4 Menu Items	22
3.4.1 Data Center	22
3.4.2 AC TeamWork	26
3.4.3 Energy Consumption	31
3.4.4 Alarm Management	
3.4.5 Data & History	
3.4.6 Device Options	45
3.4.7 System Options	51
3.4.8 Help	60
Chapter 4 Maintenance	61
4.1 Restoring Default Setting	61
4.2 FAQ	61
Appendix 1 Abbreviation	64
Appendix 2 Standard Configuration List	65
Chapter 1 Product Introduction

Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

RDU-A G2 intelligent monitoring unit (RDU-A G2 for short) can realize Web accessing, digital input/output, analog input/output and connections with equipment such as sensor, UPS, air conditioner and PDU. It can meet the requirements of TCP/IP, RS232/485 networking modes and can be flexibly configured according to various application conditions.

This chapter introduces hardware function difference between the RDU-A G2 and the RDU-A, component descriptions, main functions and technical specifications.

1.1 Hardware Function Difference Between New And Old Version

The hardware function difference between the RDU-A G2 and the RDU-A is given in Table 1-1.

Function difference	RDU-A	RDU-A G2
Power input	One route of external power	Two routes of external power, supportive of connecting only one route and connecting both routes
Expansion slot	Supportive of only one expansion slot, which is exclusively for IRM-4COM card	Supportive of two expansion slots, which can be inserted with IRM-4COM card, IRM-8DIAI card and IRM-8DOAO card
Network port	Single network port, and the IP can only be manually set	Duel network ports, supportive of DHCP dynamic addressing
IRM sensor connection	Only 28 nodes (including the node devices connected to the provided DOOR1, DOOR2, WATER, SMOKE ports) can be connected at most	At most 32 nodes can be connected
USB port	One piece, which can be connected with only one USB Modem or camera at most	Two pieces, which can be connected with one USB Modem plus one camera or two cameras

Table 1-1 Hardware function difference between the RDU-A G2 and the RDU-A

1.2 Component Descriptions

RDU-A G2 includes RDU-A G2 host and options: IRM-4COM card, IRM-8DIAI card and IRM-8DOAO card.

1.2.1 RDU-A G2 Host

The appearance and interfaces of RDU-A G2 host are shown in Figure 1-1.



Figure 1-1 Appearance and interfaces of RDU-A G2

Input power

The rear panel of RDU-A G2 host provides two routes of isolated power input, as shown in Figure 1-1. See Table 1-2 for the power input parameters.

Table 1-2	Power input parameters
-----------	------------------------

Power	Input	Range	Interface
	Voltage	100Vac ~ 240Vac	
AC input	Current	< 1A	C14 with anti-disengaging design
	Frequency	45Hz ~ 66Hz	

Indicators

The rear panel of RDU-A G2 host provides two indicators, as shown in Figure 1-1. See Table 1-3 for their definitions.

 Table 1-3
 Definitions of indicators on the rear panel

Silk print	Color	Status	Description
Power1	Green	On	Power 1 of RDU-A G2 is live
FOWEIT	Oreen	Off	Power 1 of RDU-A G2 is off
Power2	Green	On	Power 2 of RDU-A G2 is live
T OWEIZ	Green	Off	Power 2 of RDU-A G2 is off

The front panel of RDU-A G2 host provides three indicators, as shown in Figure 1-1. See Table 1-4 for their definitions.

The indicator description of the RDU host is shown in Table 1-4.

 Table 1-4
 Definitions of indicators on the front panel

Silk print	Color	Status	Description
Power1	Green	On	The power 1 of the RDU is live
		Off	The power 1 of the RDU is off
Power2	Green	On	The power 2 of the RDU is live
		Off	The power 2 of the RDU is off

Silk print	Color	Status	Description
Run/Alarm Green/F	Green/Red	Green	No alarm
	Green/Red	Red	Alarm

Reset button

Press and hold the reset button (silk print: Reset) for four seconds, release your hand until the run/alarm indicator turns off, the IP address and password of the RDU-A G2 will be restored to factory defaults after the system restarts. See Table 1-6 for the defaults.

Console port

The RDU-A G2 host supplies a console port (USB port, see Figure 1-1 for its position), which adopts USB communication mode. The communication parameters are given in Table 1-5.

Table 1-5	Communication	parameters	of console	port

Parameter	Baud rate	Bit	Parity	Stop bit
Value	115200bps	8 bits	None	1 bit

USB port

The RDU-A G2 host supplies two USB-A type socket ports for connecting camera or USB Modem of designated model. Its position is shown in Figure 1-1.

Network port

The RDU-A G2 host supplies two network ports which adopt 10/100M self-adaptable Ethernet ports. Its position is shown in Figure 1-1. See Table 1-6 for default configuration of the network ports.

Table 1-6	Default configuration	parameters of t	he network ports
	J		

Parameter Network card	IP address	Subnet mask	Default gateway	
Network card 1 (eth0)	192.168.0.254	255.255.255.0	192.168.0.1	
Network card 2 (eth1)	192.168.1.254	255.255.255.0	192.168.1.1	
Note: The login password of the Web browser will be restored to 'emerson'				

Note. The login password of the web browsel will be restored to en

Relay output port

The RDU-A G2 host supplies two relay outputs: DO1 and DO2. Their positions are shown in Figure 1-1. See Table 1-7 for their parameters.

Parameter	Value	Range	Port	Usage
	Voltage	11V ~ 14V		 DO output, and it can connect to an alarm lamp;
DO1/DO2	Total current	≤ 0.2A	RJ45	 The total power of the two ports is supportive of up to 2.4W; Supportive of short-circuit protection function

Table 1-7 Relay output port parameter

Digital input port

The RDU-A G2 host supplies four digital input ports. Their positions are shown in Figure 1-1. See Table 1-8 for their parameters.

Silk print	Definition	Rated output voltage	Output current (total)	Maximum output power (total)	Overload protection of the port
DI1	Door status 1 port				
DI2	Door status 2 port	12\/dc	≤ 0.2A	2.4W	Supportive of
Smoke1	Smoke port 1	+12 VUC			overload protection
Smoke2	Smoke port 2				

Sensor port

The RDU-A G2 host supplies two routes of sensor ports, which include four RJ45 interfaces. Their positions are shown in Figure 1-1. See Table 1-9 for their parameters.

Silk print	Definition	Rated output voltage	Output current (total)	Maximum output power (total)	Overload protection of the port
Sensor1	First route of sensor port	+12\/dc	≤ 0.4A	4.8W	Supportive of overload protection
Sensor2	Second route of sensor port	+12 Vuc			

 Table 1-9
 Electric parameters of sensor port

The port adopts RS-485 communication mode, used to connect Emerson intelligent temperature & humidity sensor, intelligent temperature sensor and intelligent digital expansion module. See Table 1-10 for its communication parameters.

Table 1-10	Communication parameters of sensor port

Parameter	Baud rate	Bit	Parity	Stop bit
Value	9600bps	8 bits	None	1 bit

COM port

The RDU-A G2 host supplies three independent COM port, namely, COM1, COM2 and COM3 (COM3 includes two RJ45 interfaces). Their positions are shown in Figure 1-1.

The port adopts RS-485/RS-232C (adaptive) communication mode. See Table 1-11 for the communication parameters.

 Table 1-11
 Communication parameters of COM port

Parameter	Baud rate	Bit	Parity	Stop bit
	1200bps, 2400bps,			
Value	4800bps, 9600bps,	5 ~ 8 bits	Even/Odd/None/Mark/Space	1 ~ 2 bits
	19200bps (optional)			
Note: The combination	mode of 5-bit word size ar	nd 2-bit stop bit is not sup	ported	

1.2.2 Expansion Card

IRM-4COM card (optional)

The IRM-4COM card provides four series ports, which support connecting user equipment (RS284/RS232C line sequence is adaptive) in RS232/ RS485 communication mode. Its appearance is shown in Figure 1-2.



Figure 1-2 IRM-4COM card

See Table 1-12 for the indicator definition of IRM-4COM card.

 Table 1-12
 Indicator definition of IRM-4COM card

Silk print	Color	Status	Description
Power	Green	On	IRM-4COM card is powered on
1 Ower	Oleen	Off	IRM-4COM card is powered off
COM5 ~ COM8	Yellow	Blinking	Data received and sent
		Off	No data received or sent

IRM-8DIAI card (optional)

The IRM-8DIAI card supplies eight digital / analog input interfaces (digital and analog are adaptive), which support digital/ analog input. Its appearance is shown in Figure 1-3.



Digital/analog inpat i

Figure 1-3 IRM-8DIAI card

See Table 1-13 for the interface definition of IRM-8DIAI card.

Table 1-13 Interface description of IRM-6DIAI card	Table 1-13	Interface description of IRM-8DIAI card
--	------------	---

Interface	Туре	Silk print	Definition
Digital / analog input 1 ~ 8	RJ45 interface	DI/AI1 ~ DI/AI8	Digital input: passive dry contact; Analog input: 0 ~ 5V or 4mA ~ 20mA

IRM-8DOAO card (optional)

The IRM-8DOAO card supplies eight digital / analog output interfaces (digital and analog are adaptive), which support digital/ analog output. Its appearance is shown in Figure 1-4.



Figure 1-4 IRM-8DOAO card

See Table 1-14 for the interface definition of IRM-8DOAO card.

Table 1-14 Interface description of IRM-8DOAO card

Port	Туре	Silk print	Definition
Digital / analog input 1 ~ 8	RJ45 interface	DO/AO1 ~ DO/AO8	Digital output: normally-open contact + normally-closed contact; Analog output: 0 ~ 10V

Line sequence definition of RDU-A G2 and expansion cards

See Table 1-15 for the line sequence definition of RDU-A G2 and expansion cards.

Table 1-15 Line sequence definition of RDU-A G2 and expansion cards

RJ45	DO	DI/Smoke	Sensor	COM	DOAO card	DIAI card
1	12\/	12\/	12\/	RTS	0~10\/	12\/
2	120	12.0	12.0	NC	0 100	12 V
3	Normally-closed	NC	NC	TXD	normally-closed	AI_I
4	Disengaging detection	Disengaging			Disengaging	Disengaging
		delection	GND	GND	detection	detection
5	GND	GND			GND	GND
6	Normally-open	וח	NC	RXD	Normally-open	וח
7	СОМ	Ы	D+	D+	СОМ	Di
8	NC	NC	D-	D-	NC	AI_V
Note:						

1. The line sequence of RJ45 interface is 1 to 8 from left to right, with the gap downwards;

2. The D+, D- are two kinds of levels of the RS485 differential signal;

3. NC: Not Connected

1.3 Main Functions

The main functions of RDU-A G2 are listed in Table 1-16.

Table 1-16 Main functions of RDU-A G2

Main function	Description
Device monitoring	Realizing camera viewing in data center; getting and handling the data of different intelligent devices and controlling them through Web interface

Main function	Description						
	Monitoring and conti	rolling each AC which participates in the AC teamwork according to a certain rule, to					
AC TeamWork	achieve the goals of reducing AC power consumption, prolonging AC life-span and avoiding competition						
	among ACs in the te	am					
Energy	Supportive of PUE statistic and system load percentage statistic in both power mode and electric energy						
Consumption	mode, and capable of displaying real-time valve and historic data						
Alarm	Current alarm Displaying alarm in real time, and confirming the current alarm						
Management	History alarm	Querving the history alarm					
		1 Can be customized according to user requirements that is alarm notification					
		content can be customized:					
		2. You can choose the communication mode to receive alarm information of different					
		2. Fou can choose the communication mode to receive alarm mormation of different					
		3 The communication mode includes Email SMS phone and PDU voice potification					
	Alarm notification	suctom					
		4 Email supports SSI function:					
		4. Email supports SSE function,					
Alorm		o. Supplying alarm test function to test whether of not users have received the alarm					
Aldiiii		6. Sonding the system running status periodically according to user configuration					
Management		Can be customized according to user requirements:					
		2. DO1 alarm output:					
		2. DOT alarm output,					
		3. Can combine equipment signals, parameters and alarm to control equipment;					
	Actions	4. Having the following logic components.					
		2) NOT, which represent AND command 2) OR, which represent OR command 2) NOT, which represent NOT command 4) XOR, which represent XOR command					
		3) NOT, which represent NOT command 4) XOR, which represent XOR command					
		5) G1, which represent G1 command 6) L1, which represent L1 command					
	Device	7) DS, which represent DS command					
	Device	Querying the main data of equipment					
Data & Lliatany		Querving the history data					
	History log	Querying the log data					
	Clear biston	Clearing the history date and log date					
	Clear history	1. Can add, madify and dalate equipment actively, and support adding seven pieces					
	Dovico	of intelligent equipment at most:					
	management	2 Can install and uninstall equipment type and support connecting third party					
Dovice Options	management	2. Can install and unitistall equipment type and support connecting third party					
Device Options	Cignal aatting	Medifying equipment name, signal name and slarm level online					
	Signal setting	Modifying equipment name, signal name and alarm level online					
	Dalch	Updating and downloading configuration files and system files					
	Monitoring unit	Collecting the system information of RDLLA G2-A					
		1. Setting the network information such as IP, subnet mask, gateway and DNS:					
		2 Controlling whether the upper monitoring system (RDI-M manager) can visit the					
	Network setting						
		3 Remote service setting					
	l Iser management	Adding, modifying and deleting user information					
System Ontions	Date/time setting	Calibrating the real time clock of RDI I-A G2-A					
Oystern Options	Restore system	Reporting the RDU-A G2 and restoring default configuration					
	Site setting	Modifying site information online					
	License						
	management	Completing expansion of RDU-A G2 function and connecting capacity through license					
	System upgrade	Upgrading the application program online					
	System title	Setting title and logo picture at the top of the Web page					
	- ,	Displaying serial number, identify code and software version, and supplying links for					
Help	About RDU-A G2	downloading user manual and tool software					

1.4 Technical Specifications

1.4.1 Environment Specifications

See Table 1-17 for the environment specifications of RDU-A G2.

Item	Requirement
Application location	Usually in data center or computer room, with air conditioner
Working temperature	-10°C ~ +60°C
Relative humidity	5%RH ~ 95%RH, no condensing
Working environment	Dust: compliant with the indoor requirements of GR-63. No corrosive gas, flammable gas, oily
	mist, steam, water drops or salt
Air pressure	70kpa ~ 106kpa
Storage temperature	-40°C ~ +70°C
Cooling	Natural cooling
Power distribution network	TT/TN
Protection level	IP20

Table 1-17 Environment conditions

1.4.2 Mechanical Specifications

See Table 1-18 for the mechanical specifications of RDU-A G2.

Table 1-18	Mechanical specifica	tions
------------	----------------------	-------

External model	Measurement	Valve	Error
IRM-HOST2	Height	43mm	< ±0.5 mm
	Width	440mm	< ±1 mm
	Depth	311mm	< ±1 mm
	Weight	<8kg	
IRM-4COM IRM-8DIAI IRM-8DOAO	Height	20mm	< ±0.5 mm
	Width	158mm	< ±1 mm
	Depth	199mm	< ±1 mm
	Weight	<1kg	

1.4.3 Performance Specifications

See Table 1-19 for the performance specifications of RDU-A G2.

 Table 1-19
 Performance specifications

Connected component	Cable standard	Connected distance	Connected number /
Connected component		(unit: m)	connection point
Connecting node of SENSOR1	Standard category 4 twisted-pair cable	≤ 100	16 ^[1]
Connecting node of SENSOR2	Standard category 4 twisted-pair cable	≤ 100	16 ^[2]
Connecting nodes of DI ports	Standard category 4 twisted-pair cable	≤ 100	4 ^[3]
Connecting nodes of DO ports	Standard category 4 twisted-pair cable	≤ 100	2 ^[4]
Connecting nodes of COM ports	Standard category 4 twisted-pair cable	≤ 100	16 ^[5]
Note:			

[1]: For temperature, temperature and humidity, door status, water, 4DI, 4DO, DO devices and so on, each sensor or device is calculated as one node; for smoke and infrared sensors, each sensor is calculated as four nodes; only capable of connecting devices whose address within the group is 1;

[2]: The connecting capacity is the same as [1], however, it can only connect devices whose address within the group is 2;

[3]: DI includes four ports: DI1, DI2, Smoke1, Smoke2, which are provided on the RDU-A G2;

[4]: Visual and audible alarm lamp has two connecting nodes: DO1, DO2. The two connecting nodes can also be for other use as two routes of digital output;

[5]: The RDU-A G2 can connect up to 16 intelligent devices, not including the default devices, 8DIAI and 8DOAO devices. The connected devices of single COM cascade cannot exceed four

1.4.4 Product Certificate

RDU-A G2 satisfies CE allege.

Chapter 2 Hardware Installation

This chapter introduces the hardware installation of RDU-A G2, including installation preparation, installing RDU-A G2 host, and installing accessories of expansion cards and sensors.

2.1 Installation Preparation

2.1.1 Note

When installing RDU-A G2, take the following precautions to avoid damage to personnel and devices by accident.

- •Always cut off the power before performing any installation operation on RDU-A G2
- •Ensure that the external devices are connected to the correct RDU-A G2 ports
- •Wear an ESD wrist-wrap during installation
- •Arrange the wires properly, and do not put any heavy objects on the wires or stamp the wires

2.1.2 Environmental Requirement

Operating environment

The RDU-A G2 must be installed indoors. See Table 1-17 for the detailed requirements.

Anti-static requirement

Take the following measures for minimizing static influences:

- •Maintain proper temperature and humidity in the machine room (See Table 1-17)
- •Wear antistatic clothing and an ESD wrist-wrap when contacting with the circuit board; if antistatic clothing or ESD wrist-wraps are unavailable, wash your hands and dry them instead

Anti-EMI requirement

Take the following measures for anti-EMI purpose:

- •The RDU-A G2 working ground cannot share with the ground device or SPD ground of electrical power equipment. Instead, place them away from each other as far as possible
- •Keep the RDU-A G2 away from large-power radio transmitter, radar, or high-frequency large current electrical equipment
- •Use electromagnetic shielding if necessary

2.1.3 Space Requirement

- •Keep the RDU-A G2 as far as possible away from heat sources
- •It is recommended to install the RDU-A G2 into a 19" standard cabinet. Keep at least 10mm clearance around the RDU-A G2 for heat dissipation

2.1.4 Installation Tool

The required installation tools are listed in Table 2-1.

Table 2-1	Installation	tools
	installation	10015

Tool	Specification	Usage
Cross screwdriver (cross)	100mm, 200mm	Installing brackets, dummy plates for expansion slots of RDU-A G2 host
Digital multimeter	3.5-bit digital display	Inspecting the electrical connection

2.2 Installing RDU-A G2 Host

2.2.1 Mechanical Installation

The RDU-A G2 host can be installed in a cabinet.

The installation procedures are as follows:

1. Confirm that the cabinet has been secured, with no obstacles inside or outside it.

2. Fasten the hangers onto both sides of the RDU host with accessory M4 screws; there are two methods for installing the hangers: installing on the front end and installing on the back end, as shown in Figure 2-2 and Figure 2-3.



(6 pcs)

Figure 2-2 Installing the hangers on the back end

3. Use M6 floating nuts to fasten the hangers of RDU-A G2 host to the cabinet.

2.2.2 Electrical Connection

The electrical connection procedures of the RDU-A G2 host are as follows:

1. Select a C14 or national standard cable (RDU-A G2 accessories) based on the port type of the power supply end. Take out the corresponding power cable, and insert one end of the power cable into the power input interface of the RDU-A G2 host, and install the anti-disengaging fastener shown in Figure 2-3.



Figure 2-3 Anti-disengaging fastener

2. Ensure that the connection is correct. Connect the other end of the power cable to the mains supply.

Note

The RDU-A G2 host provides dual power supplies to supply power; you can select one or two route(s) of power supply. The input voltage ranges from 100Vac to 240Vac, and the frequency ranges from 45Hz to 66Hz.

2.3 Installing Accessories Of Expansion Cards And Sensors

Note

The IRM-4COM/IRM-8DIAI/IRM-8DOAO expansion card is optional, and you can choose whether to buy and install it or not.

2.3.1 Installing Expansion Cards

The expansion cards include IRM-4COM, IRM-8DIAI and IRM-8DOAO. The installation procedures are as follows: Remove the dummy plate for expansion slot (Slot1 or Slot2) on the front panel of RDU-A G2 host, insert the expansion card into the corresponding expansion slot of RDU-A G2, and fasten the screws on both sides, as shown in Figure 2-4.



Figure 2-4 Installing expansion cards

2.3.2 Installing Intelligent Sensors

The intelligent sensors include: IRM-S01T intelligent temperature sensor (IRM-S01T for short), IRM-S02TH intelligent temperature and humidity sensor (IRM-S02TH for short), IRM-S04DI intelligent digital input sensor with Phoenix ports (IRM-S04DI for short), IRM-S04DIF intelligent digital input sensor with RJ45 ports (IRM-S04DIF for short). Their appearances are shown in Figure 2-5.



Figure 2-5 Intelligent sensors

Installation procedures

For the installation procedures of the intelligent sensors, refer to the corresponding intelligent sensor user manuals: Refer to *IRM-S01T Intelligent Temperature Sensor User Manual* for IRM-S01T; Refer to *IRM-S02TH Intelligent Temperature And Humidity Sensor User Manual* for IRM-S02TH; Refer to *IRM-S04DI Intelligent Digital Input Sensor With Phoenix Ports User Manual* for IRM-S04DI; Refer to *IRM-S04DIF Intelligent Digital Input Sensor With RJ45 Ports User Manual* for IRM-S04DIF.

2.3.3 Installing Physical Sensors

The physical sensors include smoke sensor, water logging sensor, infrared sensor and door status sensor.

There are two installation modes for smoke sensor, water logging sensor, infrared sensor and door status sensor.

- •Directly connected to DI port on the rear panel of RDU-A G2. (Silk print: DI1, DI2, Smoke1 and Smoke2. Each port can be connected with anyone of smoke sensor, water logging sensor, infrared sensor and door status sensor at will.) See Table 1-15 for the line sequence of cable connection.
- •Connected to RDU-A G2 through IRM-S04DI or IRM-S04DIF: connect the sensor to the digital input port of IRM-S04DI or IRM-S04DIF. For the line sequence of cable connection, refer to *IRM-S04DI Intelligent Digital Input Sensor With Phoenix Ports User Manual* or *IRM-S04DIF Intelligent Digital Input Sensor With RJ45 Ports User Manual*.

Chapter 3 Web Page Of RDU-A G2

This chapter expounds how to access RDU-A G2 through Web, and relative functions, including login preparation, log in RDU-A G2, RDU-A G2 homepage and menus.

3.1 Login Preparation

To ensure that the RDU-A G2 page function can be normally used, please refer to this section for selecting and setting browser options.

3.1.1 Checking IP Address Connectivity

Before logging in RDU-A G2 through Web, please first confirm the IP address of RDU-A G2, and test its connectivity. Refer to Q5 in *4.2* FAQ for the test method.

3.1.2 Checking Browser Version

The recommended browser version includes: IE10 or IE11.

3.1.3 Checking Browser Setting

Checking IE General setting

Double-click the icon of IE to run the software, click the menus of **Tools** -> **Internet Options**, then click the **Settings** button on the **General** tab, and select **Every time I visit the webpage** for **Check for newer versions of stored pages**, as shown in Figure 3-1.

Internet Options	? X
General Security Privacy Content Home page — To create home page tabs	Connections Programs Advanced
Temporary Internet Files and History Settings	
Temporary Internet Files Internet Explorer stores copies of webpages, images, and media for faster viewing later. Check for newer versions of stored pages: © Every time I visit the webpage © Every time I data Internet Evalues	Use default Use blank
Every time 1 start Internet Explorer Automatically	on exit
🔘 Never	Delete Settings
Disk space to use (8-1024MB) (Recommended: 50-250MB) Current location: C:\Users\Gavin\AppData\Local\Microsoft\Windows\Temporary	Settings
Move folder View objects View files	displayed in Settings
History Specify how many days Internet Explorer should save the list of websites you have visited.	Fonts Accessibility
Days to keep pages in history: 20	Cancel Apply
OK Cancel	

Figure 3-1 General setting

Checking IE proxy setting

1. Double-click the icon of IE to run the software, click the menus of **Tools** -> **Internet Options** and then choose the **Connections** tab to pop up the window shown in Figure 3-2.

Internet Options	? 💌			
General Security Privacy Content Connections	Programs Advanced			
To set up an Internet connection, click Setup.	Setup			
Dial-up and Virtual Private Network settings				
	Add			
	Add VPN			
	Remove			
Choose Settings if you need to configure a proxy Settings server for a connection.				
Never dial a connection				
 Dial whenever a network connection is not pres Always dial my default connection 	ent			
Current None	Set default			
Local Area Network (LAN) settings				
LAN Settings do not apply to dial-up connections. LAN settings Choose Settings above for dial-up settings.				
ок с.	ancel Apply			

Figure 3-2 Choosing the **Connections** tab

2. In the window shown in Figure 3-2, click the button LAN Settings to pop up the window shown in Figure 3-3.

Local Area Network (LAN) Settings			
Automatic configuration			
Automatic configuration may override manual settings. To ensure the use of manual settings, disable automatic configuration.			
Automatically detect settings			
Use automatic configuration script			
Address			
Proxy server Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections).			
Address: Port: 80 Advanced			
Bypass proxy server for local addresses			
OK Cancel			

Figure 3-3 LAN setting

3. Consult the network manager of your area, ask if you need to set a proxy server and get the configuration method. If there is no need to set a proxy server, do not tick any option.

Checking IE security setting

1. Double-click the icon of IE to run the software, click the menus of **Tools** -> **Internet Options** and then choose the **Security** tab to pop up the window shown in Figure 3-4.

Internet Options
General Security Privacy Content Connections Programs Advanced
Select a zone to view or change security settings.
🛯 🔮 🔩 🗸 🚫
Internet Local intranet Trusted sites Restricted sites
Trusted sites
This zone contains websites that you trust not to damage your computer or your files. You have websites in this zone.
Security level for this zone
Allowed levels for this zone: All
Low Minimal safeguards and warning prompts are provided Most content is downloaded and run without prompts All active content can run Appropriate for sites that you absolutely trust
Enable Protected Mode (requires restarting Internet Explorer)
Custom level Default level
Reset all zones to default level
OK Cancel Apply

Figure 3-4 Security setting 1

2. In the window shown in Figure 3-4, choose **Trusted sites** and click the **Custom level** button to pop up the window shown in Figure 3-5.

Security Settings - Trusted Sites Zone
Settings
NET Framework Dosable Disable Enable Prompt XAML browser applications Disable Enable Prompt Enable Prompt Enable Prompt Enable Prompt Isable Disable Prompt Wr MPS documents Disable Prompt Prompt
*Takes effect after you restart Internet Explorer Reset custom settings Reset to: Medium-low Reset
OK Cancel

Figure 3-5 Security setting 2

3. In the window shown in Figure 3-5, set 'Medium-low' for the security level. Click the **Reset** button to finish **Reset** custom settings, at last, click **OK**.

4. In the window shown in Figure 3-6, set Enable for File download.

Internet Options General Security Privacy Co Select a zone to view or change Internet Local intranet	e security settings.	
Local intranet This zone is for all we found on your intranet Security level for this zone Allowed levels for this zone - Allowed levels for this zone - Allowed levels for this zone - Nest content - Unsigned Acti - Same as Medi Enable Protected Mode	Security Settings - Trusted Sites Zone Settings Disable Prompt Downloads Settings File download Disable File download File download Disable File download Disable File download Disable File download Disable File download File d	Reset

Figure 3-6 Enabling file download

5. In the window shown in Figure 3-7, set **Enable** for **Initialize and script ActiveX controls not marked as safe for scripting**.

Internet Options	EX §
General Security Privacy Co	ntent Connections Programs Advanced
Select a zone to view or change	e security settings.
🥥 👊	\checkmark \bigotimes
Internet Local intranet	Trusted sites Restricted sites
Local intranet This zone is for all we found on your intrane Allowed levels for this zone - Medium-low - Medi	Security Settings - Trusted Sites Zone Settings Prompt Download unsigned ActiveX controls Disable Promot Initialize and script ActiveX controls not marked as safe for scrip Disable Froupt Ohy allow approved domains to use ActiveX without prompt Ohy allow approved domains to use ActiveX without prompt Chy allow approved domains to use ActiveX without prompt Administrator approved Disable Froable Froable Froable Kadministrator approved Disable Kadministrator approved Disable Disable Kadministrator approved Disable Disabl

Figure 3-7 Enabling ActiveX controls

6. In the window shown in Figure 3-8, add the IP address of the RDU-A G2 into the trusted site list.



Figure 3-8 Adding trusted sites

3.2 Log In RDU-A G2

3.2.1 Authorizing Boot-Strap

1. When logging in RDU-A G2 for the first time, open the IE browser, and enter the IP address of the RDU-A G2 (the default IP of LAN1 is 192.168.0.254; the default IP of LAN2 is 192.168.1.254) in the address box, the authorizing boot-strap page will appear, as shown in Figure 3-9. If the authorizing boot-strap page does not appear, refer to Q5 in 4.2 FAQ.

EMERSON	RDU-A G2
Network Power	Intelligent Monitoring Unit
	Code: 165d-6d52-b1fb Password : OK Cancel Please call service line to obtain the password by engineers Emerson Network Power Service Line: 400-887-6510
Serial Number:[21023116752133	2810013] Hardware Version:[A01] Software Version:[4.00] Alpha 1
Cop	yright © Emerson Group, All rights reserved
2	1009 Copyright, 2014 by Emerson Group

Figure 3-9 Authorizing boot-strap page

2. Call the customer service hotline of Emerson Network Power Co., Ltd.: 400-887-6510, tell the code to the customer service personnel, and you will get the password.

3. Type the gotten password in the textbox of **Password**, and then click **OK**. If the password is correct, the system will jump to the login page automatically (see Figure 3-10).

3.2.2 Login Page

1. Open the IE browser, and enter the IP address of the RDU-A G2 in the address box, the login page will appear, as shown in Figure 3-10. If the login page does not appear, refer to Q5 in 4.2 FAQ.

EMERSON. Network Power	Intelligent Mo	RDU-A G2 nitoring Unit
	User Name: Password: Login Canc Change Theme	Forget password el 中文 English
	Crystal blue	
EMERSON Network Power	Intelligent Mo	RDU-A G2 nitoring Unit
	User Name: Password: Login Cancel Change Theme 🔳 🔳	Forget password 中文 English
	Ocean blue	

Figure 3-10 Login page of RDU-A G2

2. On the login page, select a preferable theme by clicking **a** or **b**: **b** means crystal blue; **b** means ocean blue, as shown in Figure 3-10.

3. Type the username and password (default username: 'admin', default password: 'emerson'), and click the **Login** button, the homepage will appear, as shown in Figure 3-12. If you cannot visit the homepage after entering correct username and password, refer to *3.1.2 Checking IE Setting* and set the IE browser again.

3.2.3 Getting Password

If you forget the password, click the **Forget Password** button on the login page, and the screen will display the page of getting password, as shown in Figure 3-11.

EMERSON. Network Power	X	RDU Manager
	Please input us The password will be send to	ername your email or mobile
	Get Password	Return Login

Figure 3-11 Page of getting password

Type your username, and click the **Get Password** button, your password will be sent to the email box or phone which you have configured before. Clicking the **Return Login** button cancels the operation.

1. Only when you have correctly configured the email and SMS parameters on the **SMS and Email Server Configuration** page can you receive the password sent by the system. Refer to *Alarm Notification* in *3.4.4 Alarm Management* for detailed setting method.

2. The gotten password is a random new password generated by the system; please modify the password after logging in the system successfully.

3.3 Homepage Of RDU-A G2

The homepage of RDU-A G2 can be viewed by device or by location. After successful login, the homepage is displayed by location by default, as shown in Figure 3-12.

3.3.1 Viewing By Location

As shown in Figure 3-12, click **By Location** in the upper part of menu items, the display area at right side will display the page viewed by location. You can self-define a plane layout for centralized display according to physical locations of devices in the machine room. After simple configuration, the effect is shown in Figure 3-12.



Figure 3-12 Homepage of RDU-A G2 (by location)

Clicking the Setting button shown in Figure 3-12 enters setting status of the homepage, as shown in Figure 3-13.



Figure 3-13 Setting page

After the homepage enters setting status, the setting method is as follows:

1. Background setting

Click the Set Background button, the window shown in Figure 3-14 pops up.

- •Click the **Browse...** button to choose the background picture, after it is chosen, the **Preview** area will display the preview effect.
- •Click the Upload button, after the picture is uploaded, the page will display the background picture.



Figure 3-14 Setting background

Note

Only .gif, .ipg and .bmp format pictures are allowed to be uploaded, and the picture size cannot exceed 500K.

2. Display setting

Click the Set Display button, the window shown in Figure 3-15 pops up.

- •Select the Signal Display mode: Mouse hover, Always.
- •Select whether to display Device icon.

•After select the device name, the device signals will be displayed in the lower box. You can select the device signals to be displayed according to your needs, however, the selected signals cannot exceed 4.

Dispaly Setting	×
Signal Display: Mouse hover Always 	~
Device icon:	
Select Device Name: AC_DME3000_1	
Indoor Temperature	
✓ Indoor Humidity	
Outdoor Temperature	
PC Turn On Status	
Refrigeration Status	
Heat Status	
Humidification Status	
Dehumidification Status	
Communicate Status	
OK Cancel	~
<	>

Figure 3-15 Display setting

Note

1. **Signal Display** mode and **Device icon** options are applicable to the currently-selected device. For different devices, their display mode can be set to be different independently.

2. For the display mode of temperature, humidity and 4DI signals, select 'Other Devices or Sensors' and perform settings.

3. Self-define the device location

After the homepage enters setting status, drag the device (signal) icon on the homepage to change its location at will.

4. Reset

Click the **Reset** button, the homepage viewed by location will be restored to initial status.

5. Save

Click the Save button, all configuration will be saved and the page returns to view status.

6. Back

Click the **Back** button, the homepage will return to view status from setting status.

Note

Except for uploading background, only after you click the Save button, the configuration can take effect and be displayed.
 Except for uploading background, if you click the Back button directly after configuration, all configuring information will be lost.

3.3.2 Viewing By Device

As shown in Figure 3-12, click **By Device** in the upper part of menu items, the display area at right side will display the page viewed by device. After simple configuration, the homepage will display corresponding information according to device type, as shown in Figure 3-16.

For the detailed configuration method, refer to relative descriptions about the **Set Display** button in 3.3.1 *Viewing By Location*.

MERSON Network Power				Welcome				Liebe Performanc	rt. RDU-A G2 e Monitoring
levice By L	ocation System	n Controllat le : Allow		A 1	8	0	🚨 Welco	me to RDU-A G2 Syst	em: admin[Logout]
Data Center	- Envir	onmental (2)							^
Environmental			ENV TH		ENV 4	DI			
UPS		Alarm			Normal				
Cooling									
Camera View	UPS	(2)							
AC TeamWork	+								
Energy Consum	ption		UPS_IIA16_1		UPS_ADAPTPM	_1			
Alarm Managem	ent +								
Data&History	+								
Device Options	+ Cooli	ng (6)							
System Options	+	A	C_DME3000_1		AC_DME3000	_2		AC_DME3000_	3
Help	+	🐣 _ e		e			e	Indoor Temperature: Indoor Humidity:	·
		A	C DME3000 4		AC_PEX	1		AC CM+	1
									~
									>
-A 62 Time: 201	+-05-20 17.02.55					Display/Hide Cu	rrent Alarm	Auto Pop-out	Alarm Sounds
1. Devi	ce number	of this type	2. De	vice name		Devi	ce signa	al valve	

1. For temperature, humidity and 4DI sensors, the page viewed by device only displays the whole status.

2. For other devices, the page viewed by device displays four signals at most.

3.3.3 Time Calibrating Link

The lower left part displays the system time of RDU-A G2. Clicking the system time of RDU-A G2 will jump to the time calibrating page. For detailed operation, refer to *Date/Time Setting* in *3.4.7* System Options.

3.3.4 Clearing Time-Out

When there is no operation on the page within 15min, the page will become uncontrollable, as shown in Figure 3-17.

EMERSON. Network Power		Liebert, RDU-A G2 Performance Monitoring	
By Device By Location	System Controllable: [Clear] Time-out	A1 🔜 8 🕕 0	
Data Center -	Environmentai (2)		^
+ Environmental	ENV_TH	ENV_4DI	
+ UPS	Alarm	Normal	
+ Cooling			
Camera View	UPS (2)		
AC TeamWork +			
Energy Consumption	UPS_ITA16_1	UPS_ADAPTPM_1	
Alarm Management +		•	
Data&History +			

Figure 3-17 Controllable status

Click **[Clear] Time-out**, the input box shown in Figure 3-18 will appear. After typing the password, the controllable status will become normal after about 5s.

Message		×
Please in	put pass	sword:
	ОК	Cancel

Figure 3-18 Dialog box of Security authentication

3.3.5 Logout

Click the **Logout** link at the upper right corner of the homepage, the prompt box shown in Figure 3-19 will appear, clicking **OK** will log out safely.



Figure 3-19 Logout

3.3.6 Real-Time Alarm Pop-Up Setting

The real-time alarm displaying list is contracted on the bottom of the page by default. You can perform the following operation by referring to Figure 3-12:

1. Click Display/Hide Current Alarm manually, and the real-time alarm displaying list will pop up;

2. Tick Auto Pop-out, and the real-time alarm displaying list will pop up when an alarm is generated;

3. Tick Alarm Sounds, and the system will play alarm sound through the browser when an alarm is generated.

After the real-time alarms have all been confirmed, the turned-on alarm sound will stop and be on when a new alarm occurs.

3.4 Menu Items

On the homepage of RDU-A G2, the menu items include **Data Center**, **AC TeamWork**, **Energy Consumption**, **Alarm Management**, **Data&History**, **Device Options**, **System Options** and **Help**.

3.4.1 Data Center

Click the **Data Center** menu in the left, the submenus will appear. According to the two selections of **By Device** and **By Location**, the submenus will be classified and displayed according to device type and device location respectively. Clicking the specific device, the right part will display the relative information of the device, including **Overview**, **Sampling**, **Control**, **Setting** and **Alarm**.

Note

1. ENV-TH in **Data Center** is a dummy device, which indicates all temperature sensors, and temperature and humidity sensors connected to RDU-A G2, and the name cannot be changed.

2. The **Camera View** submenu is not displayed by default. When you connect video devices, the menu will be displayed automatically.

Overview

Click the **Overview** tab, and click the **Edit** button, you can define the overview page, as shown in Figure 3-20.

	1 2					3
EMERSON Network Power		Welcon	ne		Lie	bert , RDU-A G2 prmahce Monitoring
By Device By Location	System Controllable: Allow	A1	8	0 🍚	A Welcome to RDU-A	G2 System: admin[Logout]
Data Center -	Overview Sampling Control	Setting Alarm				
• ENV_TH	90-1	100-1	90-1	100-		
+ Rack1	85- 0 °C 40- 15-	75- 0% 50- 25-	40- 15- 0 °C	75- 0% 50- 25-		*
Camera View	-10-00 Temp 01	Hum 01	Temp 02	Hum 02		4
AC TeamWork +						
Energy Consumption	25	25		12	(b) (×	
Alarm Management +	20 30 15 10 10 10 10 10 35	15 menter 10 30 35		10 - 8 -	10	5
Data&History +				6-4-2-		<u>p</u> <u> </u>
Device Options +	0 50	0 50 SO		ō	0	· · · · · · · · · · · · · · · · · · ·
System Options +						
Help +	10 Temp 01/deg Cl		10 -	4	m 041% DLI	
	8-		8-		111 U [[20KH]	
	4		4			
					014 03 21 10-00-04	
		P		F	Rece Rece Rece Rece R	ece
RDU-A G2 Time: 2014-03-31 10:14	:53			📥 <u>Display/Hide C</u>	urrent Alarm 🛛 🗹 Auto Poj	p-out 🗹 Alarm Sounds
		8			9	10
1. Signal configuration icon	2. Remove compon	ent icon		3. Back	o browse icon	 Component lis
5. Save icon	6. 'Effective to same	e type of equip	ment' icor	7. Resto	re icon	
8. View history chart icon	9. History data selec	ction icon		10. View	real chart icon	
	Figur	re 3-20 Over	view tab			
n editing status, clicking	the 😰 icon can resto	ore default; cli	icking the	e 🛃 icon	can configure	the same type of
other devices: click the 🚺	icon can save the c	onfiguration:	click the	icon	can return to v	iew status.

1. The **Overview** page has different default display mode of components for different device type, and clicking the restore icon will restore to this state.

2. Certain types of devices (such as air conditioner, UPS) have special status charts, which cannot be deleted or configured. However, the locations of these status charts can be changed.

Sampling

Clicking the Sampling tab can enter the sampling page, which displays sampling signals of selected device, as shown in Figure 3-21.

EMERSON Network Power	Welcome					Liebert, RDU-A G2 Performance Monitoring		
By Device By Location	System Controllable: /	llow	A 1	II 8	0	🚨 Welcome to RDU-A G2 System: admin[Logout]		
Data Center -	Overview	ampling Control Settin	g Alarm					
	ENV_TH (TH_SENSOR	2)						
• ENV_IH	Index	Signal Name		Valu	1e	Sampling Time		
+ Rack1	1	Temp 11		22.2	°C	2014-03-31 10:48:57		
Camera View	2	Hum 11		52.1	%	2014-03-31 10:48:57		
	3	Temp 21		23.5	°C	2014-03-31 10:48:57		
AC TeamWork +	4	Hum 21		41.5	%	2014-03-31 10:48:57		
Energy Consumption	5	Temp 32		23.8	°C	2014-03-31 10:49:08		
Alarm Management +	6	Hum 32		70.5	%	2014-03-31 10:49:08		

Figure 3-21 Sampling signals

- 1. If some signal is in alarm status, it will be displayed in red.
- 2. You can click the corresponding signal name for modifying or restoring, as shown in Figure 3-22.

Modify Signal Name	^{52.1} %
Please Input New S	ignal Name:
Temp 11	×
OK Cancel	Restore System

Figure 3-22 Modifying signal name

For ENV-TH and ENV-4DI devices, see the following descriptions:

After modifying the name of Sampling signals, the names of Control, Setting and Alarm will be modified at the same time;
 On the Control, Setting and Alarm pages, it is prohibited from modifying the signal name.

Control

Clicking the **Control** tab can enter the control page, which displays control signals of selected device, as shown in Figure 3-23.

EMERSON. Network Power	Welcome Liebert. RDU-A G Performance Monitoring						
By Device By Location	System C	ontrollable: Allow	<u>A</u> 1	II 0	0	A	Welcome: admin[Logout]
Data Center -	Ov	erview Sampling Control	Setting Alarm				
	ENV_TH	(TH_SENSOR)					
• ENV_TH	Index	Signal Name	Value	Refres	h Date/Time	Value Setting	Set
+ Rack1	1	Clear Sensor Comm Fail Alarm	Clear			Clear 🗸	Set

Figure 3-23 Control signals

1. Clicking the Set button can control the device.

2. For the name of **Control** signals (except ENV-TH and ENV-4DI), you can click the corresponding signal name for modifying or restoring, as shown in Figure 3-23.

Setting

Clicking the **Setting** tab can enter the setting page, which displays setting signals of selected device, as shown in Figure 3-24.

EMERSON Network Power		1	Welcome			Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Contro	ollable: Allow	A 1	II 8 😡 0	🚨 Welcome to RD	U-A G2 System: admin[Logout]
Data Center -	Overvie	w Sampling Control Setting	Alarm			
	ENV_TH (TH	_SENSOR)				,
• ENV_IH	Index	Signal Name	Value	Refresh Date/Time	Value Setting	Set
+ Rack1	1	All High Temp Alarm limit	35.0deg.C			
	2	All Low Temp Alarm limit	0.0deg.C	;; [
Camera View	3	All High Hum Alarm limit	80.0%RH			
AC TeamWork +	4	All Low Hum Alarm limit	10.0%RH	;; [
	5	Temp 11 Alarm hystersis	2.0deg.C			
Energy Consumption	6	High Temp 11 Alarm limit	35.0deg.C			
Alarm Management +	7	Low Temp 11 Alarm limit	5.0deg.C			
Additi Management +	8	Hum 11 Alarm hystersis	5.0%RH	()		
Data&History +	9	High Hum 11 Alarm limit	80.0%RH			
Davias Options +	10	Low Hum 11 Alarm limit	10.0%RH			
Device Options +	11	Temp 21 Alarm hystersis	2.0deg.C			
System Options +	12	High Temp 21 Alarm limit	20.0deg.C	-1-1-		

Figure 3-24 Setting signals

1. You can set several signals at the same time, and at most 16 signals can be set at the same time for each time.

2. For the name of **Setting** signals (except ENV-TH and ENV-4DI), you can click the corresponding signal name for modifying or restoring, as shown in Figure 3-22.

Note

The ENV-TH device only displays effective setting signals, however, other devices displays all setting signals.

Alarm

Clicking the **Alarm** tab can enter the alarm page, which displays alarm signals of selected device, as shown in Figure 3-25.

EMERSON Network Power		W	/elcome			Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Controllab	le: Allow	🔒 1 🛛 👪 8	🔒 O 🕠	Welcome to I	RDU-A G2 System: admin[Logout]
Data Center -	Overview	Sampling Control Setting	Alarm			
	ENV_TH (TH_SE	NSOR)				
• ENV_IH	Index	Signal Name	Alarm Lev	vel Update Al	arm Level	Set
+ Rack1	1	High Temp 11 Alarm	Critical	Critical	~	
	2	Low Temp 11 Alarm	Critical	Critical	~	
Camera View	3	Temp 11 Invalid Alarm	Critical	Critical	~	
	4	Temp 11 Comm Fail Alarm	Moderate	Moderate	• 🗸	
AC TeamWork +	5	High Hum 11 Alarm	Critical	Critical	~	
Energy Consumption	6	Low Hum 11 Alarm	Critical	Critical	~	
	7	Hum 11 Invalid Alarm	Critical	Critical	~	
Alarm Management +	8	High Temp 21 Alarm	Critical	Critical	~	
Data&History +	9	Low Temp 21 Alarm	Critical	Critical	~	
	10	Temp 21 Invalid Alarm	Critical	Critical	~	
Device Options +	11	Temp 21 Comm Fail Alarm	Moderate	Moderate	• •	
System Options +	12	High Hum 21 Alarm	Critical	Critical	~	
	13	Low Hum 21 Alarm	Critical	Critical	~	
Help +	14	Hum 21 Invalid Alarm	Critical	Critical	~	
	15	High Temp 32 Alarm	Critical	Critical	~	
	16	Low Temp 32 Alarm	Critical	Critical	~	
	17	Temp 32 Invalid Alarm	Critical	Critical	~	
	18	Temp 32 Comm Fail Alarm	Moderate	Moderate	• •	
	19	High Hum 32 Alarm	Critical	Critical	~	
	20	Low Hum 32 Alarm	Critical	Critical	~	
	21	Hum 32 Invalid Alarm	Critical	Critical	~	

Figure 3-25 Alarm signals

1. You can set alarm level of several alarm signals at the same time, and at most 16 signals can be set at the same time for each time.

2. For the name of **Alarm** signals (except ENV-TH and ENV-4DI), you can click the corresponding signal name for modifying or restoring, as shown in Figure 3-22.

Note

The ENV-TH device only displays effective alarm signals, however, other devices displays all alarm signals.

Camera View

Click the Camera View submenu under the Data Center menu, the page shown in Figure 3-26 pops up.



The RDU-A G2 supports two routes of USB cameras. The icon 📲 is used to adjust the camera turning;

 \Rightarrow **a** -50% **b** is used to adjust the picture bright; **b** -50% **b** is used to adjust the picture contrast; **Refresh Rate** can be selected through the drop-down boxes. Meanwhile, it supports **Capture** and **Download** functions.

Note

1. The function of adjusting the camera turning is only for the RDU-A G2 dedicated camera which has the turning function;

2. When using the camera view function, please check and ensure that JRE (Java Runtime Environment, version: 1.5.0 and above) is installed.

3.4.2 AC TeamWork

The AC teamwork function is used to monitor and control each AC which participates in the AC teamwork according to a certain rule, to achieve the goals of reducing AC power consumption, prolonging AC life-span and avoiding competition among ACs in the team.

On the RDU-A G2-A homepage, click the **AC TeamWork** menu in the left, two submenus will appear, including **TeamWork Status** and **TeamWork Setting**.

TeamWork Status

Click the TeamWork Status submenu under the AC TeamWork menu, the page shown in Figure 3-27 pops up.

EMERSON Network Power				We	lcome					Liebert, R Performance Moni	DU-A G2 toring
By Device By Location	System Contr	ollable: Allow			A 1		8 😣		& Welcome to RD	U-A G2 System: adm	in[Logout]
Data Center +	Teamwork	Status									
	Teamwork Nan	ne	AC Name	Device Status	Operation Status	s	Change Reason	Alarm Status	Participate Polling	Sensor Name	AC property
AC TeamWork -		Via protocol	AC_DME3000_1	Enabled	Communication fa	ailure	Polling	Alarm	YES	Temp 11; Hum 11;	Main AC
TeamWork Status	TRAIN	Via protocol	AC_DME3000_2	Enabled	Communication fa	ailure	Polling	Alarm	YES		Main AC
	TIVIVV	Via protocol	AC_DME3000_3	Enabled	Communication fa	ailure	Polling	Alarm	YES	<u>10</u>	Main AC
TeamWork Setting		Via protocol	AC_DME3000_4	Enabled	Communication fa	ailure	Polling	Alarm	YES		Main AC
Energy Consumption											
Alarm Management +											
Data&History +											
Device Options +											
System Options +											
Help +											

Figure 3-27 TeamWork status page

The TeamWork status page displays the main AC running parameters in all AC teams.

TeamWork Setting

Note

The AC Teamwork function of RDU-A G2 is available in two versions: standard version and authorized version. The standard version has the AC Teamwork function configured with the RDU-A G2 standard software; the authorized version is a software version which needs to be purchased separately.

1. Teamwork Parameters

Click the **TeamWork Setting** submenu under the **AC TeamWork** menu, the teamwork parameters setting page pops up, the standard version is shown in Figure 3-28, and the authorized version is shown in Figure 3-29.

EMERSON Network Power			W	/elcome					Liebert, RDU-A G2 Performance Monitoring
y Device By Location	System Controllable: Allow			A 1	8	0 🌔)	& Welcome to F	RDU-A G2 System: admin[Logout]
Data Center +	AC Teamwork Setting [Sta	andard Version]							
AC TeamWork -	AC Teamwork:	Teamwork Para	meters	AC Parameter	5				
TeamWork Status	[1] TMW	Teamwork Name	TMW						
TeamWork Setting		Teamwork Mode	⊖ Stan	d-alone 🖲 Team	vork				
- realityork setting		Teamwork Logic	Pollir	ng Logic 🗹 Main/	Spare Logic	Stack Lo	gic 🗹 Con	npetition Logic 🗹	Related Sensor Logic
Energy Consumption		AC minimum count		1					
Alarm Management +		AC minimum run time		30 minutes (5~1	80 min)				
Data&History +		AC polling count		1					
Device Options +		Frequency of AC team	Polling	 Daily Weekly 	Interval On every	Mon.	1 Day	Start at 00:00	V
System Options +		Stack Logic and Compe	tition Logi	с					
Help +		Return Air Temperatur	re r Tompora	20.0	°C (15∼30	°C)			
		Return Air Humidity	rempera	40.0	% (20~60%	6)			
		Deviation of Return Ai	r Humidity	5.0	% (1~10%)				
		Related Sensor Logic – AC Turn on temperatu	re	25.0 °C					
		AC Turn on temperatu		17.0 0					
							Reset A	AC status	Team Polling by Manual
						Add		Modify	Delete

Figure 3-28 Teamwork parameters setting page (standard version)

EMERSON Network Power		Welcome	Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow	🗛 1 🔛 B 🕠 0	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	AC Teamwork Setting [/	Authorized Version, 6 ACs available]	
AC TeamWork -	AC Teamwork:	Teamwork Parameters AC Parameters	
TeamWork Status	[1] TMW	Teamwork Name TMW	
	Add new teamwork	Teamwork Mode O Stand-alone Teamwork	
leamWork Setting		Teamwork Logic 🗹 Polling Logic 🗹 Main/Spare Logic 🗹 Stack Logic 🗹 Co	npetition Logic 🗹 Related Sensor Logic
Energy Consumption		AC minimum count 1	
Alarm Management +		AC minimum run time 30 minutes (5~180 min)	
		Polling Logic	
Data&History +		AC polling count	
Device Options +		Frequency of AC team Polling O Weekly On every Mon.	Start at 00:00 V
System Options +		Stack Logic and Competition Logic	
Help +		Return Air Temperature 20.0 °C (15~30°C)	
Theip		Deviation of Return Air Temperature 5.0 °C (1~5°C)	
		Return Air Humidity 40.0 % (20~00%) Deviation of Return Air Humidity 5.0 % (1~10%)	
		Related Sensor Logic	
		AC Turn on temperature 25.0 °C	
		AC Turn off temperature 17.0 °C	
		Reset	AC status Team Polling by Manual
		Add	Modify Delete

Figure 3-29 Teamwork parameters setting page (authorized version)

As for the AC Teamwork function of RDU-A G2 standard version, the descriptions are as follows:

The AC Teamwork function only supports one AC team, **[1]TMW** by default, without adding and deleting functions; meanwhile, the team name cannot be changed. However, the authorized version does not have such limit.

Click the **Click here to add teamwork** link in the **AC Teamwork** list, you can add a new AC team. After the team parameters are configured, click the Add button to save the setting, at this time, the new-added team will be displayed in the left **AC Teamwork** list.

For detailed parameter descriptions of the teamwork parameters setting page, see Table 3-1.

Add, edit or delete AC in the team on the AC parameters setting page, refer to 2. AC Parameters in this section;

Select the AC team which needs to be edited in the **AC Teamwork** list. Similar to the adding team procedures, edit the team parameters on the teamwork parameters setting page, and set the AC parameters in the team on the AC parameters setting page. After editing, click the **Modify** button (see Figure 4-20) to save the setting;

Select the AC team which needs to be deleted in the **AC Teamwork** list, and click the **Delete** button to save the setting.

Team parameters	Default	Low limit	Upper limit	Notes	Standard version	Authorized version
Teamwork Mode	Single-alone	Single-alone (0)	Teamwork (1)	Single-alone (0): Each AC in the team operates separately; Teamwork (1): Each AC in the team participates in team Boolean calculation	~	J
AC minimum count	1	1	AC number in the team	1		\checkmark
AC minimum run time	30	5	180	Unit: min		\checkmark
Return air temperature	20	15	30	Unit: °C	\checkmark	\checkmark
Deviation of return air temperature	5	1	5	Unit: °C	\checkmark	\checkmark

Table 3-1 Parameters on the teamwork parameters setting page

Team parameters	Default	Low limit	Upper limit	Notes	Standard version	Authorized version
Return air humidity	40%	20%	60%	1		\checkmark
Deviation of return air humidity	5%	1%	10%	1		\checkmark
AC polling count	1	1		Lower value between the running AC number and the backup AC number	\checkmark	\checkmark
Frequency of AC team polling	Daily	Daily, Weekly		1	\checkmark	\checkmark
Interval	1	1	99	Daily mode	\checkmark	\checkmark
On every	1	1	7	Weekly mode Mon, Tue, Wed, Thur, Fri, Sat, Sun	\checkmark	~
Start at	00:00	00:00	23:00	1	\checkmark	\checkmark
Team polling by manual	No	No	Yes	Used for test	\checkmark	\checkmark
Reset AC status	No	No	Yes	Initializing AC status	\checkmark	\checkmark
AC Turn on temperature	25	15	30		\checkmark	\checkmark
AC Turn off temperature	17	15	30		\checkmark	\checkmark
Note: √ means the c	orresponding v	ersion can be co	onfigured			

1. If you need the RDU-A G2 authorized version, please contact the Emerson customer service center and purchase it. The contact telephone number is 4008876510.

2. Only four Emerson DME series ACs with standard configuration are supported by default.

3. RDU-A G2 supports at most eight teams.

2. AC Parameters

Click the **TeamWork Setting** submenu under the **AC TeamWork** menu, and then click the **AC Parameters** button, the AC parameters setting page pops up, as shown in Figure 3-30.

EMERSON Network Power		Welcome		Liebe	ert. RDU-A G2 ce Monitoring
By Device By Location	System Controllable: Allow	🚣 1 🔤 B	🤑 O	Welcome to RDU-A G2 Sys	tem: admin[Logout]
Data Center +	AC Teamwork Setting [/	Authorized Version, 6 ACs available]			^
AC TeamWork	AC Teamwork:	Teamwork Parameters AC Parameters			
	[1] TMW	AC Index Comm. Type AC Name 4DO Used	Join in Rotate AC	property Running Status Ref.	Fault Status Ref.
TeamWork Status	Add new teamwork	2 Via Protocol AC_DME3000_1 2 Via Protocol AC_DME3000_2	YES Mair	AC	
• Teamwork Setting		3 Via Protocol AC_DME3000_3	YES Mair	AC	
Energy Consumption		4 Via Protocol AC_DME3000_4	YES Mair	AC	
Alarm Management +		Modify AC Parameter			
Data&History +		Via protocol	🔿 Via DI		
Device Options +		AC Index 1	AC Name		
Device Options +		AC Device. AC_DME3000_1	Running Status Ref	Please Sel.a Equip 🗸	~
System Options +		Relate to 4DOPlease Sel. 4DO V	✓ Fault Status Ref.	Please Sel.a Equip 🗸	~
Help +		Participate Polling	AC property	Main AC Standby AC	
		Relevant Sensors:	Alarm Signals:	Select All	
			Communication High Voltage A Low Voltage A Wigh Temperat Low Temperat High Humidity Dow Humidity Short Period A Add AC More	n Fault Alarm Jarm arm arm arm arm Alarm Alarm Alarm Alarm Alarm Alarm Alarm Alarm Delete AC	
			Add Modify	/ Delete] ~
	<				>

Figure 3-30 AC parameters setting page

On the AC parameters setting page, you can add, edit and delete AC in the team.

•The procedures for adding an AC are as follows:

1) Select the AC which needs to participate in teamwork from the drop-down box of AC Device;

2) In the AC Index field, type the index of the AC in the team (The AC index will be automatically added from 1);

3) Set the temperature sensors and temperature & humidity sensors related to the AC. Each AC can be related to relevant signals of at most five temperature sensors and temperature & humidity sensors (including at most ten signals of temperature and humidity). When the highest temperature of the related sensors is higher than the AC Turn on temperature, if the air conditioner is off at the time, the air conditioner will start; when the highest temperature of the related sensors is lower than the AC Turn off temperature, if the air conditioner is on at the time, the air conditioner will stop.

4) Set **Alarm Signals**, that is, when the selected alarm signals are generated, judge that the AC is faulty or cannot be used. At most 15 fault or alarm signals can be set for each AC, and the default fault or alarm signals include: High Temperature Alarm, High Pressure Lock, Low Pressure Lock and Exhaust Lock.

5) Click the Add AC button to add an AC, and the AC basic information will be displayed in the upper list of the page.

Note

The AC index cannot be set larger than the AC number of the team.

•The procedures for editing an AC are as follows:

1) Select the AC which needs to be edited in the AC list, and edit the AC rotate index, related temperature & humidity sensors and AC fault or alarm signals.

2) After editing, click the **Modify AC** button to complete modifying, and the AC basic information will be displayed in the upper list of the page.

•The procedures for deleting an AC are as follows:

Select the AC which needs to be deleted, and click the **Delete AC** button to complete deleting, and the AC basic information will be deleted from the upper list of the page.

After modifying the AC parameters, you need to click the **Modify** button (click the **Add** button after adding a new teamwork) to make it take effect, or the data will be lost after you leave the page.

3.4.3 Energy Consumption

The energy consumption page displays real time and historical energy consumption data according to user-defined rule, to achieve the goal of helping user analyze whole energy consumption of the machine room.

On the RDU-A G2 homepage, click the **Energy Consumption** menu in the left, three submenus will appear, including **Current PUE**, **History PUE** and **Calculation Setting**.

Current PUE

Click **Energy Consumption** -> **Current PUE** submenu, the page will display real time PUE and real time load percent according to user-defined energy consumption setting (refer to *Calculation Setting* in this section), as shown in Figure 3-31.



History PUE

Click Energy Consumption -> History PUE submenu, the page will display the historical data recorded in the system, as shown in Figure 3-32.

		Liebert, RDU-A G2 Performance Monitoring			
System Co	ntrollable: Allow	A 26	23	U 1	
Query Hi	storical Energy Consum	ption			
Index	PUE	Load Percent	Time:		Sample Mode
1	2.42	0	2014-03-26 09:35:26		Power Mode
	System Co Query Hi Index 1	System Controllable: Allow Query Historical Energy Consum Index PUE 1 2.42	System Controllable: Allow 26 Query Historical Energy Consumption Index PUE Load Percent 1 2.42 0	System Controllable: Allow A 26 23 Query Historical Energy Consumption Index PUE Load Percent Time: 1 2.42 0 2014-03-2	Welcome System Controllable: Allow Allow 20 23 0 1 Query Historical Energy Consumption Index PUE Load Percent Time: 1 2.42 0 2014-03-26 09:35:26

Figure 3-32 History PUE

1. The RDU-A G2 can record and display up to 1000 pieces of PUE historical records.

2. After you perform calculation setting, the system will save a piece of record every 24h according to your configuration.

3. If you do not perform calculation setting, the system will not save the PUE records.

4. If you perform calculation setting but do not perform system load percentage setting, the system will still save the PUE records, but the load percent will always be 0.

Calculation Setting

Click Energy Consumption -> Calculation Setting submenu, the page shown in Figure 3-33 will appear.

EMERSON Network Power		Welcome	Liebert. RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow	🗚 1 🛄 4 🕠 0.	🚨 Welcome: admin[Logout]
Data Center +	Energy Consumption Calculation Setting	J	
AC TeamWork +	PUE Caculate Mode	Power Mode Power Consumption Mod	de
Energy Consumption	✓ IT Load		
Current PLIE	Index Operator Device Name	Signal Name	Option
History DUE	1 + MPDU_MPS_1	Active Power	Delete NMS
History POE	2 + MPDU_MPS_2	Active Power	Delete NMS
Calculation Setting	+ V [MPDU_MPS_1	✓ Active Power ✓	Add
Alarm Management +	Infrastructure Load		
Data&History +	All Devices		
Device Options +	Index Operator Device Name	Signal Name	Option
System Options +	1 + AMM_YD2025_1	A-phase active power	Delete NMS
Help +	+ V MPDU_MPS_1	✓ Active Power ✓	Add
			Save
	Systerm Load Percent Setting		
	Rated Power	100 kw	
		1Please Sel.a Equip 🗸	×
	Actual Power	2Please Sel.a Equip 🗸	~
		3Please Sel.a Equip 🗸	~
			Save

Figure 3-33 Calculation Setting

1. Energy Consumption Calculation Setting

1) You can select two types of devices for Energy Consumption Calculation. To facilitate illustration, we define that: A = Energy Consumption of IT load, B = Energy Consumption of Infrastructure load, C = Energy Consumption of all devices. The rules are as follows:

If you configure calculating A and B, PUE = (A + B)/A;

If you configure calculating A and C, PUE = C/A;

If you configure calculating B and C, PUE = C/(C - B);

Among the above formula, the valve of A, B or C is the summary of the three signals configured at left side of the page.

2) Power Mode or Power Consumption Mode

Power Mode

In Power Mode, the system will count an instantaneous valve of device power every 8h from 00:00:00 to 00:00:00 on next day, and calculate an average valve of a day after three times of counting as the power PUE of that day. For instance:

In the first counting, the IT load power is (A1) 8kW, and all device power is (B1) 10kW.

In the second counting, the IT load power is (A2) 9kW, and all device power is (B2) 11kW.

In the third counting, the IT load power is (A3) 7kW, and all device power is (B3) 10kW.

The power PUE of that day: (B1+B2+B3)/(A1+A2+A3)

• Power Consumption Mode

In Power Consumption Mode, the system will count the device power consumption valve within 8h every 8h from 00:00:00 to 00:00:00 on next day, and calculate an average valve of a day after three times of counting as the power consumption PUE of that day. The counting mode is similar to that of power mode.

Note

1. On the day you perform Calculation Setting, the system will calculate the counting times and valves from the setting time to 00:00:00 on next day, and use them to calculate an average valve as the PUE of that day.

2. If **Power Mode** is selected, you need to select power signals; if **Power Consumption Mode** is selected, you need to select power consumption signals.

2. System Load Percent Setting

You can configure the actual power and rated power to calculate the system load percent, and the rules are as follows:

System load percent = actual power / rated power

Among the above, the actual power is summary of the three power signals on the right of Actual Power.

3.4.4 Alarm Management

The Alarm Management menu supplies alarm centralized management function, enabling you of self-defining alarm notification and alarm linkage rules, and viewing historic alarm.

On the RDU-A G2 homepage, click the **Alarm Management** menu on the left, four submenus appear, including **Current Alarm**, **History Alarm**, **Alarm Notification** and **Alarm Actions**.

Current Alarm

Click **Current Alarm** submenu under the **Alarm Management** menu, or refer to 3.3.6 *Real-Time Alarm Prompt Setting*, the current alarm list will pop up, as shown in Figure 3-34.



Figure 3-34 Current alarm

1. You can click the tabs above the alarm list to view current alarms according to alarm levels.

2. Click the **Acknowledge** button to confirm the alarm. The confirmed alarm will not participate in alarm linkage, and the alarm notification is sent once only.

3. When the mouse is located on the **Confirmed** link, the alarm confirming information will be hovered; when you move the mouse, the information will disappear, as shown in Figure 3-35.

		🚨 All Alarm	A Critical Alarm	Moderate Alarm Output Low	Alarm			-
1	ndex	Alarm Level	Device Name	Alarm	Trigger value	Alarm Date/Time	Alarm Acknowledgement	~
1	1	Moderate	UPS_ADAPTPM_1	Communication Failure		Relevant Device: UPS_ADAPTPM_	1 Confirmed	
1	2	Moderate	AC_PEX_1	Communication Failure Alarm		Signal Name: Communication Failur Alarm Level: Moderate	e Acknowledge	
	3	Moderate	AC_DME3000_4	Communication Failure Alarm		Sampling Time: 2014-03-26 09:33:4 Confirmed by : admin	7 Acknowledge	
4	4	Moderate	AC_DME3000_3	Communication Failure Alarm		Confirmed on Date/Time: 2014-03-2 10:09:07	6 Acknowledge	
į	5	Moderate	AC_DME3000_2	Communication Failure Alarm		2014-03-26 09:30:41	Acknowledge	
(6	Moderate	UPS_ITA16_1	Communication Failure		2014-03-26 09:30:32	Acknowledge	~

Figure 3-35 Confirming information

History Alarm

Click **History Alarm** submenu under the **Alarm Management** menu to look over historical alarm records., Select a device (for instance, 'All Device') and set the start time and end time (for instance, from 2014-03-26 00:00:00 to 2014-03-26 23:59:59). Then click the **Query** button, all alarm records generated between the start time and end time will be listed, including: **Index**, **Device Name**, **Signal Name**, **Alarm Level**, **Trigger valve**, **Start Date/Time**, **Confirmed by**, **Confirmed on Date/Time** and **End Date/Time**, as shown in Figure 3-36.

Click the **Download** button to download the query results.

EMERS Network P	SON. ower				Ļ	Liebert, RDU-A G2 Performance Monitoring						
By Device	By Locati	on	System	n Controllable: Allo		A		11 36	🔒 1			
Data Cent	ter +	•	Histo	ry Alarm Query	Please download within 5 minutes. Nu	mber of	records display	ved per page car	not exceed 500. Pleas	e input the correc	t number.	~
		_	Device	Name:	All Devices 🗸							
AC Team	Work +	-	Start D	late/Time:	2014-03-26 00:00:00	End D	ate/Time:	2014-03-2	6 23:59:59 🔤			
Energy Co	onsumption	•							Query	Do	wnload	
Alarm Ma	nagement -	-	Index	Device Name	Signal Name		Alarm Level	Trigger value	Start Date/Time	Confirmed by	Confirmed on Date/Tim	ie E
Current	Alarm		1	UPS_ITA16_1	Power Module 5 Fault		Critical	22). 	2014-03-26 10:28:56	-		2
+ History	Alarm		2	UPS_ITA16_1	Parallel Board Fault		Critical		2014-03-26 10:28:56	-		2
• History	Alann	-	3	UPS_ITA16_1	Battery 1 Charger Overtemperature	e	Critical	223)	2014-03-26 10:28:56		22	2
Alarm N	lotification		4	UPS_ITA16_1	Mains Phase Rotation Error		Moderate		2014-03-26 10:28:56	-	899	2
Alarm A	Actions		5	UPS_ITA16_1	System Require Transfer ByPass F	ailure	Low	22.95 2.25	2014-03-26 10:28:56		822	2
			6	UPS_ITA16_1	Power Module 5 Fault		Critical		2014-03-26 10:27:48	-	6 -	2
Data&Hist	tory -	•	7	UPS_ITA16_1	Parallel Board Fault		Critical	005	2014-03-26 10:27:48		8 <u>12</u>	2
			8	UPS_ITA16_1	Battery 1 Charger Overtemperature	е	Critical		2014-03-26 10:27:48			2
Device Of	ptions		9	UPS_ITA16_1	Mains Phase Rotation Error		Moderate		2014-03-26 10:27:48	-	827	2
System O	ptions	•	10	UPS_ITA16_1	System Require Transfer ByPass F	ailure	Low	344)	2014-03-26 10:27:48		-	2
			11	UPS_ADAPTPM_	1 Parallel Line Fault		Critical		2014-03-26 10:27:13	173	857	2
Help		F .	12	UPS_ITA16_1	Power Module 5 Fault		Critical	and)	2014-03-26 10:26:43	-	24	2
			13	UPS_ITA16_1	Parallel Board Fault		Critical	65%	2014-03-26 10:26:43	1771	877	2

Figure 3-36 History alarm query

Alarm Notification

1. Alarm Notification Configuration

Click the **Alarm Notification** submenu under the **Alarm Management** menu, the page shown in Figure 3-37 pops up. You can choose the notification method to receive notification of chosen level alarm from chosen equipment, meanwhile, you can also choose the language of alarm notification information and customize the alarm content (including Equip name, Alarm description, Alarm TIME and Alarm state by default).

Click the **Save** button to finish the alarm configuration. When an alarm is generated, the system will notify users through the chosen notification method.
Note

- 1. Users must tick the notification method first in the Notification by check boxes, and then the alarm table below can be edited;
- 2. When all devices are chosen, all devices will be configured with the same alarm level;
- 3. When low level alarm is chosen, the alarm level above this level will also be chosen;
- 4. When some device is chosen, the highest level Critical Alarm will be chosen by default.

EMERSON. Network Power		Welcome		Liebert RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow	<u>A</u> 1	8 🕒 0	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	User Alarm notification Configuration	SMS And Email Server Confi	guration Scheduled Notification C	Configuration
	Tip: If an alarm occurred and is not confirmed to	be closed, the system will keep on	sending alarm notification every 4 hou	rs up to 3 times.
AC TeamWork +	User Name: admin [Admin	nistrator] 🗸		
Energy Consumption	Email:			
	Phone:			
Alarm Management -	Language Type: O English	Chinese		
Current Alarm	Notification by: Email	SMS	Phone	
History Alarm	Customized Alarm Notification: 🗹 Device N	lame 🗹 Alarm Description 🛽	🛛 Alarm Date/Time 🛛 🗹 Alarm Stat	us 🗌 Alarm Level 🗌 Site Name 🗌 Site I
Alarm Notification	All Devices Device	e Type Applied	Critical	Moderate
	ENP_RDU-A[DUM	IMY]		
Alarm Actions	ENP_AC_DME300	DO[COM]		
Data&History +	ENP_AC_PEX[CC	PM]		
Device Options +	ENP_AC_CM+[CC	DM]		
	ENP_UPS_ADAP	ТРМ[СОМ]		
System Options +	ENP_UPS_ITA16	20K[COM]		
Help +	ENP_ENV_4DI[SE	ENSOR]		
	ENP_ENV_TH1[S	ENSOR]		
	ENP_ENV_TH2[S	ENSOR]		
		Save		

Figure 3-37 Alarm notification configuration

2. SMS/Email Server Configuration

Click the Alarm Notification submenu under the Alarm Management menu, and then click the SMS/Email Server Configuration tab, the page shown in Figure 3-38 pops up.

EMERSON Network Power	Welcome	Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow 🔒 1 💶 4 🔒 ()	🚨 Welcome: admin[Logout]
Data Center +	User Alarm notification Configuration SMS And Email Server Configuration Scheduled Notification Configuration	n
AC TeamWork +	SMS Modem Configuration (Tip: SMS Modem can be installed either on COM1 port or USB port!)	
	Port Type: USB V	
Energy Consumption	SMS Modem: Not Configured V	
Alarm Management -	Parameter: 460800,n,8,1	
Current Alarms	Save	Configuration
History Alarm	O RDU Voice Notification System Setting	
Alarm Notification	Server IP: 0.0.0.0	
Alarm Actions	Port: 13393	
	Receive Alarm Restore msg. YES V	
Data&History +	Save	Configuration
Device Options +	Email Server Configuration	
System Options +	Email Server. webmail.emersonnetwork.com.cn	
Holp +	Server Port: 25 SSL	
пер т	Email User: RDU-A	
	Email Password:	
	Sender Email Address: RDU-A@emersonnetwork.com.cn	
	Default	Save
	The Email Content Configuration	
	Contact: Service@emersonnetwork.com.cn	
	Service Phone: 4008876510	
		Save

Figure 3-38 SMS/Email server configuration

On the page shown in Figure 3-38, you can perform **SMS Modem Configuration** and **RDU Voice Notification System Setting** for alarm notification reminding through SMS or phone, you can also perform **Email Server Configuration** for alarm notification reminding through email, the procedures are as follows:

SMS Modem Configuration

1) Connect an SMS Modem through COM1 port or USB port according to need, and choose **Port Type**, the page will display **Parameter** automatically;

2) Choose SMS Modem (GSM) according to the SMS Modem type;

3) Set the communication parameter of the SMS Modem;

4) Click the **Save** button to save the configuration of current user's SMS Modem.

Note

1. If the SMS Modem is connected through COM1 port, set the communication parameter of the SMS Modem as '9600,n,8,1' before using it, the setting procedures are as follows:

2. If the SMS Modem is connected through USB port, use the default value of the communication parameter of the SMS Modem.

RDU Voice Notification System Setting

- 1) Type the server IP address in the Server IP field;
- 2) Type the port number in the Port field, and the default is 13393;
- 3) Click the Save button to save the voice notification system setting.

•Email Server Configuration

- 1) Type the server IP address or domain name in the Email Server field;
- 2) Type the Server Port, Email User, Email Password and Sender Email Address in the corresponding fields;

3) Click the Save button to save the configuration of current user's Email server.

Note

- 1. The Server Port is 25 by default. When SSL is chosen, the Server Port will become 465 automatically;
- 2. The **Email User** is RDU-A by default;

3. When using SSL, you need to ensure that the Email server supports SSL function.

3. Scheduled Notification Configuration

Click the Alarm Notification submenu under the Alarm Management menu, and then click the Scheduled Notification Configuration tab, the page shown in Figure 3-39 pops up.

EMERSON. Network Power		Welcome	Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow	🚣 1 📕 4 🕠 0	👗 Welcome: admin[Logout]
Data Center +	User Alarm notification (onfiguration SMS And Email Server Configuration Scheduled Notification Configuration	n
AC TeamWork +	User Name:	admin [Administrator] 🗸	
Energy Consumption	Enable the notify:	Enabled	
	Phone:	.	
Alarm Management -	Email:	201 # 7	
Current Alarms	Notification by:		
 History Alarm 	Language Type:	English	
Thistory / turn	Notification Scheduled Cycle:	Week 🖲 Day 🔘 hour	
Alarm Notification	Interval Of Notification:	1 Day	
Alarm Actions	Send Time Setting:	11:00 🗸	
Data&History +			Save

Figure 3-39 Scheduled notification configuration

Note

1. Scheduled notification configuration must be used together with alarm notification configuration; otherwise, you cannot select User Name, Notification by and Language type;

2. For scheduled notification configuration, the notification method 'Phone' is not supported;

3. The scheduled notification means sending the running state of the RDU-A G2 system (normal or alarm) to the user.

1) First of all, on the Alarm Notification Configuration page, complete and save the setting of User, Notification by and Language type.

2) On the Scheduled Notification Configuration page, set the Notification Enabled Period (setting range: 8:00 ~ 20:00), Notification Scheduled Cycle (default: Day), Interval of Notification (default: Day) and Send Time Setting (default: start time).

3) Click the **Save** button to save the system notification configuration.

Alarm Actions

Click the **Alarm Actions** submenu under the **Alarm Management** menu to obtain the alarm linkage function, the page shown in Figure 3-40 pops up.

EMERSON Network Power		Welcome	Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow	🚣 1 🔛 8 \cdots 🕛 0	Welcome to RDU-A G2 System: admin[Logout]
Data Center +	Alarm Actions		
	Alarm output in DO1		
Energy Consumption	Input 1 Operator Device/Register Signal Type Signal Name	Input 2 Parameterl Device/Register Signal Type Signal 1 Name	Parameter Output 2 Device/Register Signal Type Signal Signal Name Value
Alarm Management –			
Current Alarm		Add Save and Apply	
History Alarm	Key to Operator/Symbol		
Alarm Notification	1:R, which is defined as a Register	Usage: R(Register_ID); 0 = < Register_	ID <= 99
Alarm Actions	2:P, which is defined as a Parameter	Usage: P(The Value)	
Alum Actions	3:SET, which represents SET command	Usage: SET _ Parameter1 _ Output	
Data&History +	4:AND, which represents AND command	Usage: AND Input1 Input2 Output	
	5:OR, which represents OR command	Usage: OR Input1 Input2 Output	
Device Options +	6:NOT, which represents NOT command	Usage: NOT Input1 Output	
System Ontions +	7:XOR, which represents XOR command	Usage: XOR Input1 Input2 Output	
System options	8:GT, which represents Greater Than command	Usage: GT Input1 _ Parameter1 Parameter	eter2 Output
Help +	9:LT, which represents Less Than command	Usage: LT Input1 _ Parameter1 Parame	ster2 Output
	10:DS, which represents Delay command	Usage: DS Input1 _ Parameter1 _ Outp	ut
	Limitation		
	All output signal value must be enumerable type and it	can not be alarm signal. Signal input value with LT or 0	GT operator must be F,U or L type.

Figure 3-40 Alarm linkage configuration 1

Alarm output in DO1

If **Alarm output in DO1** is ticked, the relay will control the output of DO1 port separately. If the system has an alarm and the alarm has not been confirmed, the relay will be closed; if the system has no alarm or all alarms have been confirmed, the relay will be open, at this time, DO1 will not participate in alarm linkage any more.

Linkage function

As shown in Figure 3-40, the **Key to Operator/Symbol** list shows all the commands and their usages. Click the **Add** button to add new alarm linkage expression, as shown in Figure 3-41.

Operator	● Signal ○ Input 1	Register		● Signal ○ Output	tRegister		
	Device/Register	Signal Type	Signal Name	Device/Register	Signal Type	Signal Name	Signal Value
	Monitoring Unit 🗸	Alarm 🗸	Outgoing Alarms Blocked	Monitoring Unit 🗸	Control 🗸	~	
OR 🗸	● Signal ○ Input 2	Register					
	Device/Register	Signal Type	Signal Name				
	Monitoring Unit V	Alarm 🗸	Outgoing Alarms Blocked				

Figure 3-41 Alarm linkage configuration 2

Firstly select a command, for instance, 'OR'. In this case, the expression is 'signal 1 [Input1 Register] OR signal 2 [Input2 Register] = signal 3 [Output Register]'.

Secondly, when **Signal** is chosen for the input and output parameters, first choose the equip name from the drop-down lists of **Equip/Register**; then choose the signal type from the drop-down lists of **Signal Type**; at last choose the signal name from the drop-down lists of **Signal Name**; signal 1, 2, 3 can be any available signals of the RDU-A G2-A.

Thirdly, when **Register** is chosen for the parameters, users need to type the register name in the textbox of the register, for instance, R(0), R(1) and so on, as shown in Figure 3-42.

Astions Co	onfiguration	Operator	Input	: 1 Signal	Input 2	Signal	ParameterParameter	Output	Signal
'n	Operator	O Signal @ Incom	t 1P agistar		Simul O Output	Posistor			
u		Device/Register	Signal Type	Signal Name	Device/Register	Signal Type	Signal Name	Signal Value	
is	OP				Monitoring Unit 🗸	Control 🗸	~		
, Fe		Device/Register	Signal Type	Signal Name					
ał		R(0) 🗸							
ic				Add	Cano	el			

Figure 3-42 Alarm linkage configuration 3

Click the Add button to add the new alarm linkage expression, otherwise click the Cancel button.

If you click the Add button, as shown in Figure 3-43, an alarm linkage expression is added. Click the **Save and Apply** button to make it effective. Click the **Delete NMS** button to delete the PLC expression, and click the **Save and Apply** button to make the setting effective.

EMERSON. Network Power		Welcome		Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow	<u>A</u> 1	🖬 8 🛛 🔒 0	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	Alarm Actions			
	Alarm output in DO1			
AC TeamWork +	Input 1	Input 2	ParameterParameter	Output
Energy Consumption	Operator Device/Register Signal Signal [Type Name	Device/Register Signal Sign Type Nam	al 1 2 De	vice/Register Signal Signal Type Name Value
Alarm Management -	Outgoing OR Monitoring Unit Alarm Alarms Blocked	Higi ENV_TH1 Alarm Temp Aları	h 11 AC_ m	_DME3000_1 Control Remote No Delete NMS
Current Alarm				
History Alarm		Add	Save and Apply	
Alarm Notification	Kan ta Oranata (Saraha)			
Alarm Actions	1'R which is defined as a Register	Usage: R/Re	nister ID):0 = < Register ID <= 9	19
	2:P, which is defined as a Parameter	Usage: P(The	e Value)	
Data&History +	3:SET, which represents SET command	Usage: SET	Parameter1_Output	
Device Options +	4:AND, which represents AND command	Usage: AND	Input1 Input2 Output	
	5:OR, which represents OR command	Usage: OR In	iput1 Input2 Output	
System Options +	6:NOT, which represents NOT command	Usage: NOT	Input1 Output	
Help +	7:XOR, which represents XOR command	Usage: XOR	Input1 Input2 Output	
	8:GT, which represents Greater Than command	Usage: GT In	put1 _ Parameter1 Parameter2 C	Jutput
	9:LT, which represents Less Than command	Usage: LT Inj	put1 Parameter1 Parameter2 O	utput
	10:DS, which represents Delay command	Usage: DS In	put1 _ Parameter1 _ Output	
	Limitation			
	All output signal value must be enumerable type an	id it can not be alarm signal. Sig	nal input value with LT or GT ope	rator must be F,U or L type.

Figure 3-43 Alarm linkage configuration 3

The operator usages in the alarm linkage are listed in Table 3-2.

Table 3-2 Operator usages in the alarm linkage

Operator	Input 1	Input 2	Param1	Param2	Output	Expression
SET	/	/	P1	/	Sout/Rout	SETP1_Output
AND	Sin1 /Rin1	Sin2 /Rin2	/	/	Sout/Rout	Sin1 [Rin1] AND Sin2 [Rin2] = Sout [Rout]
OR	Sin1 /Rin1	Sin2 /Rin2	/	/	Sout/Rout	Sin1 [Rin1] OR Sin2[Rin2] = Sout [Rout]
NOT	Sin1 /Rin1	/	/	/	Sout/Rout	Sin1 [Rin1] NOT = Sout [Rout]
XOR	Sin1 /Rin1	Sin2 /Rin2	/	/	Sout/Rout	Sin1 [Rin1] XOR Sin2[Rin2] = Sout [Rout]
GT	Sin1 /Pin1	1	D1	D2	Sout/Rout	When Sin1 [Rin1] > P1, Sout [Rout]=1;
01		,		12	300/11001	When Sin1 [Rin1] < P1 - P2, Sout [Rout]=0
IТ	Sin1 /Pin1	1	D1	D2	Sout/Pout	When Sin1 [Rin1] < P1, Sout [Rout]=1;
L1		,		12	300/1100/	When Sin1 [Rin1] > P1 + P2, Sout [Rout]=0
DS	Sin1 /Rin1	/	P1	/	Sout/Rout	Sin1 [Rin1] DS P1 output to Sout [Rout]

Note:

1. Sin1, Rin1, Sin2, Rin2, P1, P2, Sout, Rout respectively refer to Signal 1, Input1 Register, Signal 2, Input2 Register, Parameter

1, Parameter 2, Signal 3, Output Register;

2. The input signal of logic operator AND/OR/NOT/XOR/DS can only be alarm signal;

3. The input signal value of arithmetic operator GT/LT can only be float, int or long int;

4. All output signals can only be control signals, and the output signal value must be enumerated type

The following illustrates the alarm linkage with examples:

Example 1:

If it is required that when the temperature and humidity sensor of RDU-A G2 system generates a high temperature alarm, the alarm lamp turns on. Suppose that the alarm lamp is mounted on the DO1 port, you can achieve the alarm linkage function through the following configuration:

Expression: [High Temp 11 Alarm] DS P(3) [RDU-A DO1] [Close]

The configuration method is shown in Figure 3-44. When the High Temp 11 Alarm is generated, RDU-A DO1 will close after a delay of 3s, thus the alarm lamp turns on.

is Configui	operator _		input 1	ianal		Input 2	P	arameterParameter	Outpu	It
Operator	● Signal ○ Input 1	Register			Parameter 1	● Signal ○ Output	Register			
DS 🗸	Device/Register	Signal Type	Signal Name		p(3)	Device/Register	Signal Type	Signal Name	Signal Value	
	ENV_TH1 🗸	Alarm 🗸	High Temp 11 Alarm	~		ENV_4DI 🗸	Control 🗸	RDU-A DO1 V	Close	\checkmark
				A	٨dd	Cancel				

Figure 3-44 Example 1 for alarm linkage

Example 2:

If it is required that when the front door or back door of the rack is open, the alarm lamp turns on. Suppose that the DI1 and DI2 ports of the RDU-A G2 are respectively connected with the door status sensors on the front and back door, and the alarm lamp is mounted on the DO1 port. You can achieve the alarm linkage function through the following configuration:

Expression: [RDU-A DI1 Alarm] OR [RDU-A DI2 Alarm] = [RDU-A DO1] [Close]

The configuration method is shown in Figure 3-45. When the alarm signal of RDU-A G2 DI1 Open or RDU-A G2 DI2 Open generates an alarm, RDU-A G2 DO1 will close, thus the alarm lamp turns on.

Operator	mp			Signal	ParameterParameter		Signal
● Signal ○ Input 1	Register		● Signal ○ Output	legister			
Device/Register	Signal Type	Signal Name	Device/Register	Signal Type	Signal Name	Signal Value	
ENV_4DI V	Alarm 🗸	RDU-A DI1 Alarm 🗸	ENV_4DI 🗸	Control 🗸	RDU-A DO1 V	Close 🗸	
● Signal ○ Input 2	Register						
Device/Register	Signal Type	Signal Name					
ENV_4DI V	Alarm 🧹	RDU-A DI 2 Alarm 🗸]				
		Add	Can	el			
1	r © Signal O Input 1 Device/Register ENV_4D1 © Signal O Input 2 Device/Register ENV_4D1 V		Signal Operator Signal Signal O Input 1Register Device/Register Signal Type Signal Name ENV_4DI V Alarm V RDU-A DI 1 Alarm V O Signal O Input 2Register Device/Register Signal Type Signal Name ENV_4DI V Alarm V RDU-A DI 2Alarm V Add	IDU Operator Signal r Signal Input IRegister Device/Register Signal Type Signal Name Device/Register Signal Type Signal Name ENV_4DI (Alarm ~) RDU-A DI1 Alarm ~) Optice/Register Signal Type Signal Name Device/Register Signal Type Signal Name Device/Register Signal Type Signal Name ENV_4DI (Alarm ~) RDU-A DI2Alarm ~)	Signal Operator Signal Signal Signal r Signal Input 1Register Signal Type Signal Name Device/Register Signal Type RDU-A D11 Alarm ENV_4DI (Control Signal O input 2Register Device/Register Signal O input 2Register Signal O input 2Register Signal Mame ENV_4DI (RDU-A D12Alarm Add Cancel 	Signal Signal Signal Parameterrarameter r • Signal Input Register • Signal OutputRegister Device/Register Signal Type Signal Name Device/Register Signal Type © Signal Input Register RDU-A DI1 Alarm ENV_4DI Control RDU-A DO1 ? Signal Input Register Signal Type Signal Name ENV_4DI (RDU-A DI1 Alarm ENV_4DI (Control (RDU-A DO1 2 Signal Input Register Signal Name ENV_4DI (Control ENV_4DI (Alarm RDU-A DI2Alarm Add Cancel	Signal OutputRegister

Figure 3-45 Example 2 for alarm linkage

3.4.5 Data & History

The Data & History menu supplies query service of all types of historical data and logs for the user.

On the RDU-A G2 homepage, click **Data & History** in the left part, four submenus appear, including: **Device Information**, **History Data**, **History Log** and **Clear History**.

Device Information

Click the **Device Information** submenu under the **Data & History** menu, the page shown in Figure 3-46 pops up. The page includes two tabs: **Device Information List** and **Export SNMP MIB**.

1. Device Information List

As shown in Figure 3-46, the page lists the main information of all equipment. Click the **Download** button to download the query result.

EMERSON Network Power			Welcome			Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow		A 1	8	0 🌙	🚨 Welcome to RDU-A G2 System: admin[Logout]
Data Center +	Device Information List Device Information List Ple	Export SNMP MIB	es.			
AC TeamWork +						Download
37 1	Index Devic	се Туре	Device N	lame		Location
Alarm Management +	1 ENP_	ENV_TH1[SENSOR]	ENV_TH	1		Rack1
Data&History =	2 ENP	ENV_TH2[SENSOR]	ENV_TH	2		Rack1
	3 ENP_	ENV_4DI[SENSOR]	ENV_4D			Rack1
Device Information	4 ENP	AC_DME3000[COM]	AC_DME	3000_1		Rack1
History Data	5 ENP	AC_DME3000[COM]	AC_DME	3000_2		Rack1
,	6 ENP	AC_DME3000[COM]	AC_DME	3000_3		Rack1
History Log	7 ENP	AC_DME3000[COM]	AC_DME	3000_4		Rack1
Clear History	8 ENP	AC_PEX[COM]	AC_PEX	_1		Rack1
	9 ENP	AC_CM+[COM]	AC_CM+	_1		Rack1
Device Options +	10 ENP_	UPS_ITA16_20K[COM]	UPS_ITA	16_1		Rack1
System Options +	11 ENP	UPS_ADAPTPM[COM]	UPS_AD	APTPM_1		Rack1

Figure 3-46 Device information list

2. Export SNMP MIB

As shown in Figure 3-47, you can select **Export All Device MIB** or **Export MIB By Device**. After selection, click the **Download** button to export MIB information.

EMERSON. Network Power			Welcome			Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow		A1	8	0	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	Device Information List Export SNMP MIB	Export SNMP MIB				
Energy Consumption	Export All device MIB	○ Export MIB By Device ENP_RDU-A[DUMMY] ✔	Device Type		[Download
Alarm Management +						
Data&History -						
Device Information						
History Data						
History Log						
Clear History						
		Figure 3-47 E	Export SNM	IP MIB		

Note

If you do not get the SNMP service authorization, the **Export SNMP MIB** page will not appear. If you need to get the SNMP service license, please contact Emerson customer service center for purchase, and the contact number is 4008876510.

History Data

Click the **History Data** submenu under the **Data & History** menu, the page shown in Figure 3-48 pops up. The page has two tabs: **History Data** and **Historical Curve**.

EMERSON Network Power		Welcome					Liebert. RDU Performance Monitor	-A G2 ing
By Device By Location	System Contro	llable: Allow	A 1	8	0 🌖	۵.	Welcome to RDU-A G2 System: admin[_ogout]
Data Center +	History History Data	Data Historical Curve	n 5 minutes. Number of re	cords displayed per pa	ige can not excee	ed 500. Please	input the correct number.	~
AC TeamWork + Energy Consumption	Device Name: Start Date/Time	All Devices	Log Type: [End Date/Time:	History Data 2014-04-01 23:59:59	~			_
Alarm Management +						Query	Download	
Data&History -	Index	Device Name	Signal Name		Value	Unit	Date/Time	
Device Information	1	Monitoring Unit	System Running Status		Alarm	(77)	2014-04-01 00:30:45	
· Device miorination	2	ENV_TH2	Temp 32		24.20	deg.C	2014-04-01 00:44:24	
History Data	3	ENV_TH2	Hum 32		61.00	%RH	2014-04-01 00:44:24	
History Log	4	ENV_TH1	Temp 11		22.50	deg.C	2014-04-01 00:55:12	
01	5	ENV_TH1	Hum 11		42.90	%RH	2014-04-01 00:55:12	
Clear History	6	ENV_TH1	Temp 21		23.60	deg.C	2014-04-01 00:55:12	
Device Options +	7	ENV_TH1	Hum 21		33.00	%RH	2014-04-01 00:55:12	
	8	Monitoring Unit	System Running Status		Alarm		2014-04-01 01:30:44	
System Options +	9	ENV_TH2	Temp 32		24.00	deg.C	2014-04-01 01:44:38	
Hala A	10	ENV_TH2	Hum 32		60.80	%RH	2014-04-01 01:44:38	
тер	11	ENV_TH1	Temp 11		22.40	deg.C	2014-04-01 01:55:22	

Figure 3-48 History data

1. History Data

As shown in Figure 3-48, choose a device (for instance, 'All Devices') and the Log Type (for instance, 'History Data'), and set the start time and the end time (for instance, from 2014-04-01 00:00:00 to 2014-04-01 23:59:59). Then click the **Query** button, all the history data during the time will be listed, click the **Download** button to download the query result.

2. Historical Curve

As shown in Figure 3-49, choose a device (for instance, 'ENV_TH1') and the Log Type (for instance, 'Temp 11'), and set the start time and the end time (for instance, from 2014-04-01 00:00:00 to 2014-04-01 23:59:59). Then click the **Show Curve** button, if history data are queried, a historical curve of the signal will be shown.



Figure 3-49 Historical curve

History Log

Click the History Log submenu under the Data & History menu, the page shown in Figure 3-50 pops up.

EMERSON Network Power			Liebert. RDU-A G2 Performance Monitoring			
By Device By Location	System Controlla	ble: Allow	A	1 🛄 8	0 🕒	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	History Log Q	uery Please download	l within 5 minutes. Download N	lumber of records displayed	d per page can no	t exceed 500. Please input the correct number.
AC TeamWork +	Log Type: Start Date/Time:	User Operation Log 2014-04-01 00:00:00	End Date/Time:	2014-04-01 23:59:59		
Energy Consumption						Query Download
Alarm Management +	Index	User Name	Date/Time	Operation Content		
Data&History -	1	admin	2014-04-01 10:03:50	Login succeeded		
Device Information	2	admin admin	2014-04-01 16:38:09 2014-04-01 16:40:59	Login succeeded		
History Data History Log						
Clear History						

Figure 3-50 History log

On the page shown in Figure 3-50, choose the log type (for instance, 'User Operation Log') and set the start time and the end time (for instance, from 2014-04-01 00:00:00 to 2014-04-01 23:59:59). Then click the **Query** button, all user operation logs during the time will be listed, click the **Download** button to download the query result.

Note

When the log type is selected as 'System Log' or 'Driver Log', after clicking the **Query** button, the query result will not be displayed on the page, instead, it will be directly downloaded as a zip file.

Clear History

Click the Clear History submenu under the Data & History menu, the page shown in Figure 3-51 pops up.

EMERSON Network Power			Liebert, RDU-A G2 Performance Monitoring			
By Device By Location	System Controllable: Allow	1	A 1	8	0	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	Clear History					
AC TeamWork + Energy Consumptio n	Please select data type:	History Alarm History Data Statistics Data Control Log System Log		Clear		
Alarm Management + Data&History -						
Device Information History Data History Log Clear History						



As shown in Figure 3-51, you can choose 'History Alarm' and click the **Clear** button to clear all the history alarm. In the same way, you can clear any other getable data in the drop-down box.

3.4.6 Device Options

On the RDU-A G2 homepage, click **Device Options** in the left part, three submenus will appear, including **Device Management**, **Signal Setting** and **Batch Configuration**.

Device Management

1. Add/Modify/Delete Device

Click the Device Management submenu under the Device Options menu, the page shown in Figure 3-52 pops up.

EMERSON Network Power		W	elcome				Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow		🗛 1 🛛 👪	8 🔒 ()	🚨 Welcome to R	DU-A G2 System: admin[Logout]
Data Center +	Add/Modify/Delete Device	Install/Uninstall Device T	ype Asset Inventor	ry			
AC TeamWork +	Tip: After finishing the operation, then	click [Save] to enable config	uration to take effect.				
ACTEANWORK	Index Device Type	Device Name	Location	Address	Module_ID	Port	Parameter
Energy Consumption	2 ENP_ENV_TH1[SENSOR]	ENV_TH1	Rack1	1	0	SENSOR1	9600,n,8,1
	3 ENP_ENV_TH2[SENSOR]	ENV_TH2	Rack1	1	0	SENSOR2	9600,n,8,1
Alarm Management +	4 ENP_ENV_4DI[SENSOR]	ENV_4DI	Rack1	2	0	SENSOR2	9600,n,8,1
Data&History +	5 ENP_AC_DME3000[COM]	AC_DME3000_1	Rack1	1	0	COM1	19200,n,8,1
	6 ENP_AC_DME3000[COM]	AC_DME3000_2	Rack1	2	0	COM1	19200,n,8,1
Device Options -	7 ENP_AC_DME3000[COM]	AC_DME3000_3	Rack1	3	0	COM1	19200,n,8,1
Device Management	8 ENP_AC_DME3000[COM]	AC_DME3000_4	Rack1	4	0	COM1	19200,n,8,1
	9 ENP_AC_PEX[COM]	AC_PEX_1	Rack1	2	0	COM2	9600,n,8,1
 Signal Setting 	10 ENP_AC_CM+[COM]	AC_CM+_1	Rack1	1	0	COM2	1200,n,8,1
Batch Configuration	11 ENP_UPS_ITA16_20K[COM]	UPS_ITA16_1	Rack1	1	0	COM3	9600,n,8,1
	12 ENP_UPS_ADAPTPM[COM]	UPS_ADAPTPM_1	Rack1	2	0	COM3	9600,n,8,1
System Options +							
Help +	Modify						
	Device Type:	~	Device Name:				
	Port:	~	Device Address:		Module_ID:	0	
	Location:	~	Parameter:				
				Add		Modify	Delete
	Save Configuration						
				Save Configurat	ion		

Figure 3-52 Add/modify/delete equipment

As shown in Figure 3-52, you can add/modify/delete a new device, the procedures are as follows:

Adding a new device

1) Choose the device type in the **Device Type** textbox;

2) Type the device name in the **Device Name** textbox, or use the default device name;

3) After the device type is chosen, the drop-down box of Port will list the default port number(s) of the device type automatically; if the device type is not chosen, the port number cannot be chosen;

4) Type the device address, which must be numbers from 1 to xx, in the Device Address textbox. The device addresses under the same port number must be different; for some device types, you need not type the device address, at this point, the Device Address textbox turn gray and cannot be edited. When one kind of device has many models, you need to type the model ID, which must be numbers from 1 to xx. The model IDs under one kind of device must be different;

5) Choose or type the device location;

6) Type the communication parameter in the **Parameter** textbox. In the event that the device type is certain, the communication parameter prompt information will appear in the Parameter textbox, including the communication parameter format and default communication parameter of the equip type;

7) Click the Add button, the page shown in Figure 3-53 pops up, at the same time, a piece of new device information will be added in the device list;



8) Click the Save Configuration button, the page shown in Figure 3-54 pops up;



Figure 3-54 Prompt information 2

If clicking the **Cancel** button, the added equipment fails; if clicking **OK**, the dialog box of Security authentication pops up, as shown in Figure 3-18.

9) Type the login password of current user, and click OK. The reboot page pops up, as shown in Figure 3-55;



Figure 3-55 Reboot page

After the system reboots, adding a device becomes effective.

10) Log in the RDU-A G2 webpage again and the added device will appear in the list on device management page.

Note

Up to 16 intelligent devices (excluding RDU-A G2 itself, ENV-TH, ENV-4DI, 8DIAI card and 8DOAO card) can be added in the system by default. Through authorization, the connecting capacity can be expanded. If you need to expand the connecting capacity, please contact Emerson customer service center for purchase, and the contact number is 4008876510.

Deleting a device

1) Choose the device which needs to be deleted in the device list;

2) Click the **Delete** button to delete the device;

3) Click the **Save Configuration** button to make the settings become effective, and the detailed procedures are the same as those of adding a new device.

Note

Before clicking the **Delete** button, if the device information has been modified, it cannot be deleted.

- Modifying a device
- 1) Choose the device which needs to be modified in the device list;
- 2) Modify the device information;
- 3) Click the Modify button to make the setting effective;

4) Click the **Save Configuration** button to make the settings become effective, and the detailed procedures are the same as those of adding a new device.

After adding, modifying or deleting procedures, if you leave the **Add/Modify/Delete Device** page without clicking the **Save Configuration** button to make the settings effective, the prompt information will pop up to remind you, as shown in Figure 3-56.



Figure 3-56 Prompt information 3

Note

Clicking the Save Configuration button can save all the operations at one time.

2. Install/Uninstall Device Type

Click the **Device Management** submenu under the **Device Options** menu, and then click the **Install/Uninstall Device Type** tab, the page shown in Figure 3-57 pops up.

EMERSON Network Power		Liebert , RDU-A G2 Performance Monitoring			
By Device By Location	System Controllable: Allow	A	1 🔡 8	🕛 🚺 🚨 Wel	come to RDU-A G2 System: admin[Logout]
Data Center +	Add/Modify/Delete Device	Install/Uninstall Device Type	Asset Inventory		
AC TeamWork +	Select Installation Package:		Browse (Show Help)	Install	^
Energy Consumption	Uninstall Device Type				
	Index Device Type	Installed		Version	Uninstall Device Type
Alarm Management +	1 ENP_PDU_S	TS[COM]		1.8	Uninstall
Data&History +	2 ENP_PDU_S	TS[SNMP]		1.8	Uninstall
Device Options -	3 ENP_AMM_Y	(D2025[COM]		1.8	Uninstall
Device Management	4 ENP_MPDU_	MPS[COM]		1.8	Uninstall
Signal Setting	5 ENP_AC_DM	E3000[COM]		1.8	Using
Batch Configuration	6 ENP_AC_PE	X[COM]		1.8	Using
System Options +	7 ENP_AC_PE	X[SNMP]		1.8	Uninstall
Help +	8 ENP_AC_CM	I+[COM]		1.8	Using
	9 ENP_AC_CM	I+[SNMP]		1.8	Uninstall
	10 ENP_AC_DM	IE3000[SNMP]		1.8	Uninstall
	11 ENP_AC_XD	P[COM]		1.8	Uninstall
	12 ENP_AC_CR	V[COM]		1.8	Uninstall
	13 ENP_UPS_IT	A5_10K[COM]		1.8	Uninstall
	14 ENP_UPS_IT	A5_10K[SNMP]		1.8	Uninstall
	15 ENP_UPS_U	H11[COM]		1.8	Uninstall
RDU-A G2 Time: 2014-04-02 11:	:18:07			Display/Hide Current Alarm	✓ Auto Pop-out ✓ Alarm Sounds

Figure 3-57 Install/Uninstall Device Type

Click the **Browse...** button to download configure package (file format of .iru) from local content, and click the **Install** button to install the new device type.

Note

The device type number supported by the system is related to the system remaining memory and the size of driver configuration package, but the number cannot exceed 64.

The page displays the installed device type information in the lower right part. Click the **Uninstall** button, the confirming dialog box pops up, as shown in Figure 3-58.

Message	×
Are you sure to	uninstall it?
ОК	Cancel

Figure 3-58 Confirming dialog box

Click **OK**, the dialog box of Security authentication pops up, as shown in Figure 3-18, type the login password of current user, and click **OK** to uninstall the corresponding equipment type.

Note

1. While installing device type, if the device type exists and the device driver has a higher version than the driver to be added, it cannot be installed repeatedly;

2. If the installation pack has no version information, or the version information does not match the software version, the device type cannot be installed.

2. If some device uses the device type, the **Uninstall** button becomes gray, displaying **Using**, and the device type cannot be uninstalled.

3. Asset Inventory

Click the **Device Management** submenu under the **Device Options** menu, and then click the **Asset Inventory** tab, the page shown in Figure 3-59 pops up.

EMERSON. Network Power		Welcome						Liebert, RDU-A G2 Performance Monitoring		
By Device By Location	System Controllal	ole: Allow		A1	U O 😡 O		🚨 Welcor	ne: admin[Logout]		
Data Center +	Add/Modify	/Delete Device	Install/Uninstall Device	Type Asset Inven	tory					
AC TeamWork +	Tip: After finishing	the operation, the	en click [Save Configuratio	n] to enable configuration	to take effect.					
	Equip ID Devic	e Name	Equip MODEL	Equip Manufacturer	Equip Code	PowerOn Time	Warranty Deadline	User Code		
Energy Consumption	1 Monite	oring Unit	()	10 				-		
Alarm Management A	2 ENV_	TH1		2 	-	с н	±11			
Alarm Management +	3 ENV_	TH2		100			7. 3	-570		
Data&History +	4 ENV_	4DI	-	-	-			-		
Device Options -										
	Modify Assets									
Device Management	Equip MODEL				Equip Manufacturer					
Signal Setting	Equip Code				User Code					
Batch Configuration	PowerOn Time				Warranty Deadline		(iiii)			
System Options +					[OK]			
Help +	Save Configurat	ion								
					[Save Configuration]			

Figure 3-59 Asset Inventory

On the Asset Inventory page, you can set six items: Equip Model, Equip Manufacturer, Equip Code, User Code, PowerOn Time and Warranty Deadline.

Choose a device, and the corresponding asset information will be displayed in the textboxes at lower part of the page;

After self-defining and modifying, click the **Modify** button, the modified result will be displayed in the list at upper part of the page;

After all modifying is done, click the Save Configuration button to save the asset information.

Note

For newly-added device, its default asset information is '---'.

Signal Setting

Click the Signal Setting submenu under the Device Options menu, the page shown in Figure 3-60 pops up.

EMERSON Network Power		Welcome	Liebert. RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow	🗚 1 🔛 B 😡 0	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	Modify Device Name Modify Signal		
	Index Device Name	Update device name	Set
AC Teamwork	1 ENV_TH1		
Energy Consumption	2 ENV_TH2		
Alarm Management +	3 ENV_4DI		
Data&History +	4 AC_DME3000_1		
Dutudinistory	5 AC_DME3000_2		
Device Options -	6 AC_DME3000_3		
Device Management	7 AC_DME3000_4		
Signal Setting	8 AC_PEX_1		
Batch Configuration	9 AC_CM+_1		
	10 UPS_ITA16_1		
System Options +	11 UPS_ADAPTPM_1		
Help +			

Figure 3-60 Modify device name

On the page shown in Figure 3-60, you can modify the device name. Type the new device name and click the **Set** button to make all setting effective.

	Note							
The cl	haracters o	of device name and	signal name can	he English	letters digits	space and underline	other characters	are invalid

Click Modify Signal, the page shown in Figure 3-61 pops up.

EMERSON Network Power		Welcome		Liebert. RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow	A.1 🖬 8	0	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	Modify Device Name Modify Signal			
AC TeamWork +	Device Type: ENP_RDU-A[DUMMY] V	Signal Type: Sampling	~	
ACTUMINON	Index Signal Name	New Name		Set
Energy Consumption	1 System Running Status			
Alarm Management +	2 Running Config Type			
Data&History +				
Device Options -				
Device Management				
Signal Setting				
Batch Configuration				



On the page shown in Figure 3-61, you can modify the signal name as well as the alarm level of the alarm signal. Choose **Device Type** and **Signal Type**, type the new signal name, and click the **Set** button to make it effective.

Note

1. For Env TH and Env 4DI, the system has the linkage modifying function for the signal name, that is, when the sampling signal name is modified, the names of corresponding control signal, setting signal and alarm signal will be modified as well. Therefore, the page only supplies the function of modifying sampling signal name.

2. The signal name modified here will be used as default signal name of the device.

Batch Configuration

Click the Batch Configuration submenu under the Device Options menu, the page shown in Figure 3-62 pops up.

EMERSON. Network Power		Welcome			Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow	Å 1	8	0 🕒	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	RDU-A G2 Batch Configuration				
	Upload file from local computer to RDU-A G2(Show Help)			
AC TeamWork +	File path:	Browse			Upload
Energy Consumption	Download file from RDU-A G2 to local compute	er(Show Help)			
Alarm Management +					Download
Data&History +					
Device Options -					
Device Management					
Signal Setting					
Batch Configuration					

Figure 3-62 Batch configuration

On the page, you can perform Upload and Download operations to complete batch configuration.

Note

1. Only 'admin' has the authority of batch configuration. If you fail in performing batch configuration, please click **Show Help** to view the help information.

2. The batch configuration file is encrypted after downloaded to local.

3.4.7 System Options

On the RDU-A G2 homepage, click the **System Options** menu in the left part, seven submenus appear, including: **Monitoring Unit**, **Network Setting**, **User Management**, **Date/Time Setting**, **Restore System**, **Site Setting**, **License Management**, **System Upgrade** and **System Title**.

Monitoring Unit

The **Monitoring Unit** submenu is used to set the signals of RDU-A G2 system, including **Sampling**, **Setting** and **Alarm** signals, the page is shown in Figure 3-63.

EMERSON Network Power			Welcome			Liebert RDU-A G2 Performance Monitoring
By Device By Location	System Controllable	a: Allow	A 1	8	0 🌔	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	Sampling	Setting Alarm				
	Monitoring Unit (E	NP_RDU-A[DUMMY])				
AC TeamWork +	Index	Signal Name		Val	lue	Sampling Time
Energy Consumption	1	System Running Status		Ala	rm	2014-04-02 13:23:51
Alarm Management +	2	Running Config Type		Normal	Config	2014-04-02 11:08:01
Data&History +						
Device Options +						
System Options -						
Monitoring Unit						

Figure 3-63 Monitoring unit (Sampling)

As for the operation method of the three tabs of **Sampling**, **Setting** and **Alarm** on the Monitoring unit page, refer to *3.4.1 Data Center*.

Note

On the Setting tab, if you set 'Blocked' for Outgoing Alarm Blocked, when an alarm occurs, it will be blocked, in this case:

1. Among the current alarms, except 'Outgoing Alarms Blocked', other alarms will all end;

2. The 'Blocked' setting for **Outgoing Alarm Blocked** will be automatically cleared in 24h.

Network Setting

1. IP Setting

Click the Network Setting submenu under the System Options menu, the page shown in Figure 3-64 pops up.

EMERSON. Network Power		Liebert. RDU-A G2 Performance Monitoring			
By Device By Location	System Controllable: Allow	A 1	8	0	Welcome to RDU-A G2 System: admin[Logout]
Data Center +	Network Setting Access Management	SNMP Configuration	Remote Servi	ice	
AC TeamWork +	RDU-A G2 IP setting The number of network card	1.2			
Energy Consumption	O Auto				
Alarm Management +	Static IP: 10.163.236.69 Mask: 255.255.0	.0 Default	Gateway: 10.16	3.236.1	☑ Use
Data&History +	IP Setting (Eth1 addr MAC: 00:09:F5:03:77:89)				
Device Options +	O Auto Static 				
System Options -	IP: 192.168.1.254 Mask: 255.255.0	.0 Default	Gateway: 10.16	3.236.1	☑ Use
Monitoring Unit	DNS addr				
Network Setting	Auto Static				
User Management	DNS1: DNS2:				
Date/Time Setting					
Restore System					Save

Figure 3-64 IP setting

The RDU-A G2 supplies two IP setting methods: DHCP auto addressing and manual static addressing, meanwhile, it supports DNS.

On the page shown in Figure 3-64, you can configure the network parameters, such as IP addressing mode, **IP**, **Mask**, **Default Gateway**, **DNS1** (Preferred DNS server) and **DNS2** (Alternate DNS server). After modifying the network parameters, click the **Save** button to make the setting effective.

Note

1. If network card 1 and network card 2 both use Static IP, the DNS address cannot be automatically obtained.

2. After modifying the IP address, you must use the new IP address to re-login the RDU-A G2. The system will jump to the IP address of network card 1 by default.

2. Access Management

Click the **Network Setting** submenu under the **System Options** menu, and then click the **Access Management** tab, the page shown in Figure 3-65 pops up.

MERSO Network Powe	N.			Welcome				Liebe Performance	rt . RDU-A G. te Monitoring
Device B	y Location	System Controllable: Allo	w	A 1	8	0	🚨 Welcome to F	RDU-A G2 Syst	em: admin[Logou
Data Center	+	Network Setting	Access Management	SNMP Configuration	Remote Service				
ACT W		Access Management							
AC Teamwor	rk T	RDU Manager Access Ma	inagement						
Energy Cons	umption	O Do not need to v	erify and any RDU Manage	r connected has the acces	s to the system.				
Alarm Manag	jement +	Need to verify an	nd only the listed RDU Man	ager as below has the acce	ss to the system.				
Data&History	· +						Set	Refre	sh
Device Option	ns +	IP Address of RDU Manag	f RDU Manager er:	Access I Access Type:	RDU Manager	~	Vhether Use Agent Serv Use Agent Server	NO	Connection S
System Optio	ons –								
Monitoring	Unit						Add Visitor	Delete \	/isitor
Network Se	etting	Setting Agent Server							
• User Manag	gement	Address		Category Socks4	· •]	PORT		
Date/Time S	Setting	Account		PassWord]			
							Save		

Figure 3-65 Access management

RDU-A G2 Intelligent Monitoring Unit User Manual

In the event of adding visitor, in the textbox of **IP Address of RDU Manager**, type the new IP address of the RDU manager, and click the **Add Visitor** button to finish the configuration.

Note

- 1. Up to three RDU manager IP addresses can be added in the system.
- 2. In the event of adding visitor, if you select to use an agent, you also need to configure the agent server.

3. SNMP Configuration

Click the **Network Setting** submenu under the **System Options** menu, and then click the **SNMP Configuration** tab, you can configure SNMP agent. The RDU-A G2 system supports V2 and V3 versions of SNMP agent.

As shown in Figure 3-66, the specific setting method of SNMP V2 is as follows:

- 1) Set NMS IP (host IP address of SNMP agent data receiving end);
- 2) Set Trap Level: 'Enable' or 'disable';

3) Keep defaults for other items.

EMERSON. Network Power		Welcome		Li Pe	iebert, RDU-A G2 rformance Monitoring	
By Device By Location	System Controllable: Allow	A 1	II 8 🕠 0	A Welcome to RDU-	A G2 System: admin[Logout]	
Data Center +	Network Setting Access Management	SNMP Configuration	Remote Service			
AC TeamWork +	SNMP Configuration No. NMS IP Trap Level Protocol Type Read	d Community Write Comm	nunity Name Authenti	ication Protocol Privacy Proto	col Authentication Passwo	^
Energy Consumption	Modify					
Alarm Management +	Protocol Type	V3				
Data&History +	NMS IP 0.0.0.0		Trap Level	Enable	Trap Test	
Device Options +	Read Community public		Write Community	private		
System Options -			Add New NMS	Modify NMS	Delete NMS	
Monitoring Unit Network Setting						

Figure 3-66 SNMP V2 setting

As shown in Figure 3-67, the specific setting method of SNMP V3 is as follows:

1) Set NMS IP (host IP address of SNMP agent data receiving end);

2) Set the **Trap Level**: 'Enable' or 'disable';

3) Set the Name;

4) Set the **User Type**: 'Authenticated & Encrypted', 'Authenticated & Not Encrypted', 'Not Authenticated & Not Encrypted';

5) Select Authentication Protocol: 'MD5', 'SHA';

6) Select Privacy Protocol: 'DES';

7) Self-define Authentication Password and Privacy Password.

Note

1. On the base of SNMP V2, SNMP V3 adds user authentication and privacy strategies.

2. If you select 'Not Authenticated & Not Encrypted' for **User Type**, the drop-down boxes of **Authentication Protocol** and **Privacy Protocol** will become gray, so you cannot set them;

3. Currently, only 'DES' is supported for Privacy Protocol.

4. You need to self-define **Authentication Password** and **Privacy Password**, which contain at least 8 characters, and be the same as the password set by the host of SNMP agent data receiving end, or it cannot be decrypted and received.

After parameter setting, click the Add button to add NMS;

If you need to modify NMS setting, select the NMS which needs to be modified, modify the setting and then click the **Modify** button to save the setting;

If you need to delete NMS, select the NMS which needs to be deleted, and then click the **Delete** button to delete the NMS.

EMERSON. Network Power				Welcome				Lie	bert , RDU-A G2 ormance Monitoring
By Device By Location	System Controllable: A	llow		A1	8	0 🤢	. ۸	Welcome to RDU-A (G2 System: admin[Logout]
Data Center +	Network Setting	Access Managem	ent SNMI	P Configuration	Remote Serv	rice			
AC TeamWork +	SNMP Configuration	vel Protocol Type	Read Commu	inity Write Com	nunity Name	Authent	ication Protoco	Privacy Protocol	Authentication Passwo
Energy Consumption	Modify								
Alarm Management +	Protocol Type	O SNMP V2	SNMP V3						
Data&History +	NMS IP	0.0.0.0			Trap L	evel	Enable	~	Trap Test
Device Ontions +	Name				User T	ype	Authenticated	& Encryp 🗸	
Contro options	Authentication Protocol	MD5	~		Privac	y Protocol	DES	~	
System Options -	Authentication Password				Privac	y Password			
Monitoring Unit					A	dd New NMS	5	Nodify NMS	Delete NMS
Network Setting									

Figure 3-67 SNMP V3 setting

Note

The RDU-A G2 does not supply SNMP agent service by default. If you need SNMP service license, please contact Emerson customer service center for purchase, and the contact number is 4008876510.

4. Remote Service

Click the **Network Setting** submenu under the **System Options** menu, and then click the **Remote Service** tab, the page shown in Figure 3-68 pops up.

EMERSON Network Power				Welcome			Liebert. RDU-A G2 Performance Monitoring
By Device By Loca	ation	System Controllable: All	ow	A 1	8	0	& Welcome to RDU-A G2 System: admin[Logout]
Data Center	+	Network Setting	Access Management	SNMP Configuration	Remote Service		
AC TeamWork	+	RDU Remote Service	System Configuration				
Energy Consumption	ont	Operation Type of RDU Remote Service:	Request RDU remote	Cancel RDU remote	O Replace Host		
Alarm Management	++	End-User:]			
		Contact Person:	admin 🗸	•			
Data&History	+	Mobile:	20 				
Device Options	+	E-mail:		J			
System Options	-	Frequency of Reporting.	wonuny	1			OK
Monitoring Unit	_	Remote service setti	ng				
Network Setting							
 User Managemen 	it	Remote service Phone	18706720516				
Date/Time Setting	9	Remote service Email	RemoteService@emerson	r			
Dectore System		Remote service IP	0.0.0.0				
· Restore System		Remote service Port	0]			
Site Setting							OK
License Managen	nent						UN

Figure 3-68 Remote service setting

The remote service setting includes three parts: Request RDU remote, Cancel RDU remote and Replace Host.

•Request RDU remote: used to establish remote service relationship

1) Type the self-defined customer name in the End-User textbox;

2) Choose the contactor for remote service in the **Contact Person** textbox, when the contactor is chosen, the corresponding mobile and email will be displayed;

Note

The contactor for remote service must be set through **System Options** -> **User Management** in advance, and you must provide the mobile or email, or the service request cannot be conducted. Refer to *User Management* in this section for detailed setting method.

- 3) Choose Frequency of Reporting: 'Monthly', 'Seasonal';
- 4) Click **OK** to send the remote service request.
 - •Cancel RDU remote: used to cancel the established remote service

Choose Cancel RDU remote and click OK to send a command to cancel the current remote service.

Note

Canceling the remote service is effective only under the precondition that the remote service has been established, otherwise, a prompt of failure will pop up after you click **OK**.

•Replace Host: used to replace the local host during remote service

When the host that has established remote service need to quit, but you want to remain the established remote service relationship, you need to replace the local host to participate in the remote service. The detailed setting method is the save as **Request RDU remote**, besides, type the hardware serial number of the replaced host.

User Management

Click the User Management submenu under the System Options menu, the page shown in Figure 3-69 pops up.

EMERSON. Network Power			Welco	ome			Liebert. Performance Mo	RDU-A G2 nitoring
By Device By Location	System Controllable:	Allow		🗾 🔺 1	0 📙		0	
Data Center +	Web user manage	ement						
	Option Name	User Level	Email	Mobile Phone	Binding Mobile	e Phone SN.	Account Due Time	Lock Status
AC TeamWork +	admin	Administrator			44DBC75		Never Expires	Normal
Energy Consumption	 emerson 	Engineer		12345	5420ACF875,7	6XD8C008	2016-04-12 14:53:58	Locked
Alarm Management +	Ma 416 - 11							
Data&History +	User Name:				Liser Level:	Operat	or 🗸	
Device Options +	Password:				Confirm:			
System Options -	Phone:					SMS/Phone	Test	
Monitoring Unit	Email:					Email Tes	t	
Network Setting	Binding Mobile Phone	SN.: They ar Please	e the mobile p add one or two	hone serial num) serial number,	ber used for con and if two, use ",	firming which n ," separate the	nobile APP can connec m.	t to RDU.
User Management	Account Due Time:	::			F	Refresh	Unlock	
Date/Time Setting								
Restore System				Ad	d	Modify	/	Delete

Figure 3-69 User management

On the page shown in Figure 3-69, you can add user, modify user and delete user.

Add user

- 1. Type username in the User Name textbox;
- 2. Choose the user authority;
- 3. Configure the user password, which cannot be vacant and should contain at least six letters or digits.
- 4. Re-type the password in the Confirm textbox;
- 5. (Optional) Type the user telephone number, which can use the following digits and characters: 0123456789, +;
- 6. (Optional) Type the email address;

7. Click the **Add** button, the dialog box of Security authentication pops up, as shown in Figure 3-18. Type the login password of current user, and click **OK** to add a new user.

Note

The characters of username can only be English letters, digits, -, and _. In addition, the initial characters must be letters or digits.

•Delete user

- 1. Choose the user which needs to be deleted in the username list;
- 2. Click the **Delete** button to pop up the confirming dialog box, as shown in Figure 3-70.



Figure 3-70 Confirming dialog box

3. Click **OK**, the dialog box of Security authentication pops up, as shown in Figure 3-18. Type the login password of current user, and click **OK** to delete the chosen user.

Note

The user of 'admin' cannot be deleted.

Modify user

1. Choose the user which needs to be modified in the username list;

2. Modify the user information;

3. Click the **Modify** button, the dialog box of Security authentication pops up, as shown in Figure 3-18. Type the login password of current user, and click **OK** to make the modified user information effective.

Users who access RDU-A G2 can be divided into four user groups, and they have different security level and user authority, see Table 3-3 for detailed information.

Security level	User group	User authority
Level A	Browser	All users can browse equipment information
Level B	Operator	The operators can send control command to intelligent equipment
Level C	Engineer	The engineers can get the following access: Send control command to intelligent equipment; Browsing, controlling and modifying parameters; Download files; Modifying user information of their own
Level D	Administrator	The administrator can get full access: Send control command to intelligent equipment; Browsing, controlling and modifying parameters; Upload and download files; Modifying, adding and deleting user information; AC teamwork parameter setting; System upgrade

Table 3-3 User security level

On the page shown in Figure 3-69, choose the current user, you can perform SMS/Phone Test and Email Test.

Before using the test function, users need to configure the SMS/Email server of current user, refer to *Alarm Notification* in *3.4.4 Alarm Management* for details.

SMS/Phone Test

Type the phone number in the **Phone** field, and click the **SMS/Phone Test** button to test that the telephone number of current user can be gotten through. If users receive the test SMS and telephone, the test is successful; if not, the test fails, please check that the telephone number is correct and the SMS Modem is properly connected.

•Email Alarm Notify Test

Type the email address in the **Email** field, and click the **Email Test** button to test that the email address of current user is correct. If users receive the test email, the test is successful; if not, the test fails, please check that the information above is correctly typed.

Note

When adding, modifying user, you must type the phone number or the email address, or the setting cannot be completed.

Date/Time Setting

Clicking the **Date/Time Setting** submenu under the **System Options** menu can synchronize the time. On the page shown in Figure 3-71, RDU-A G2 can get time from the time servers automatically. Type IP address in the **Primary server** textbox and **Secondary server** textbox in sequence, type a figure in **Interval to calibrate system time** textbox, select the **Time zone** and **Calibrating Protocol**, and then click the **Set** button to make the setting effective.

EMERSON. Network Power			Welcome			Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow		<u>Å 1</u>	8	0 🤪	Welcome to RDU-A G2 System: admin[Logout]
Data Center +	Date/Time Setting					
	Time zone:	+08:00 (Beijing, Ho	ng Kong)	~		
AC TeamWork +	O Get date/time automation	cally from the below	time servers:			
Energy Consumption	Primary Server:	0.0.0				
Alarm Management +	Secondary Server:	0.0.0				
	Interval to calibrate system time:	1	Hour			
Data&History +	Calibrating Protocol	TP(RFC868)	NTP(RFC1305)			
Device Options +	Last calibrating date/time					
System Options	Next calibrating date/time	-				
System Options	Specify Date/Time	Local Host Time	1			
Monitoring Unit	Date:	2014/04/02				
Network Setting	Time:	14:58:17				
User Management						Set
Date/Time Setting						

Figure 3-71 Date/time setting

The RDU-A G2 can also get the local time. Choose **Specify Date/Time**, click the **Local Host Time** button to get the local time, and then click the **Set** button to make the new time effective.

	Note
Time c	alibration adopts Specify Date/Time by default.

Restore System

Click the Restore System submenu under the System Options menu, the page shown in Figure 3-72 pops up.

EMERSON. Network Power		Welcome			Liebert, RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow	A 1	8	0	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	Restore System				
AC TeamWork	Reboot the RDU-A G2 system.				
AC Teamwork					Reboot RDU-A G2
Energy Consumption	To restore the default configuration, the system	n will restore the factory configurat	ion and clear all th	ne historical data. F	Finally, the system will reboot.
Alarm Management +					Restore System
Data&History +					the spinn
Device Options +					
System Options -					
Monitoring Unit					
Network Setting					
• User Management					
Date/Time Setting					
Restore System					

Figure 3-72 Restore System

Click the Reboot RDU-A G2 button to reboot the system.

Click the **Restore System** button to restore all the default settings.

Note

If you use the restore function, the RDU-A G2 may lose the original configuration solution. After the restore operation, make sure to wait one minute for the RDU-A G2 conducting complete initializing work before re-accessing it through Web.

Site Setting

Click the Site Setting submenu under the System Options menu, the page shown in Figure 3-73 pops up.

EMERSON Network Power		Welcome	Liebert. RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow	🛦 1 🛄 8	🕕 0 🌲 Welcome to RDU-A G2 System: admin[Logout]
Data Center +	Site Setting		
AC TeamWork +	Site Content	Update c	content Set
	Site Name RDU-A G2		
Energy Consumption	Site Location Xi'an		
Alarm Management +	Site Description RDU-A G2		
Data&History +			
Device Options +			
System Options -			
Monitoring Unit			
Network Setting			
User Management			
Date/Time Setting			
Restore System			
Site Setting			

Figure 3-73 Site information setting

On the page shown in Figure 3-73, you can modify the site information of RDU-A G2, including **Site Name**, **Site Location** and **Site Description**.

License Management

Click the License Management submenu under the System Options menu, the page shown in Figure 3-74 pops up.

EMERSON Network Power			Liebert, RDU-A G2 Performance Monitoring			
By Device By Location	System Controllable:	Allow	A1	8	0	Welcome to RDU-A G2 System: admin[Logout]
Data Center +	License Managem	ient				
	Software Version:	V 4.00 Alpha 1				
AC leamWork +	Serial Number:					
Energy Consumption	Identify Code:	165d-6d52-b1fb				
	Input lisence code:		(For	nat:XXXX-XXXX-X	xxx-xxxx-xxxx	
Alarm Management +						
Data&History +						Save
	Index	License code	Fi	Inction Name		Description
Device Options +	1	0000-0000-0000-0000	M	ax equip number		16 unit(s).
Sustan Osting	2	39B8-M882-FZ7C-J7JG-A6HC	Te	am Work		6 units
System Options -	3	SQN1-0YNP-Z0F0-TQVV-818H	Te	am Work		1 unit
Monitoring Unit	4	SVV4-EK3G-JJH3-TXB3-29GK	SI	MP Agent		Enabled
Network Setting						
User Management						
Date/Time Setting						
Restore System						
Site Setting						
License Management						



On the **License Management** page, you can conduct authorization of limited service (such as SNMP service) and view authorized functions. After you get the license code, input legal license code in the textbox, and click the **Save** button to finish installing. See Table 3-4 for the functions which can be authorized by the RDU-A G2.

Authorized functions	Descriptions
AC TeamWork	AC TeamWork authorized version and AC number participating in AC TeamWork, at
	most 32 ACs can be authorized to participating in AC TeamWork
SNMP service	SNMP agent service is open to user through authorization
Maximum connecting number	Maximum connecting number is expanded to 32 devices through authorization

Table 3-4	Overview of RDU-A G2 authorized functions

Note

1. After installing license code of some function successfully, you must reboot the system for taking effect.

2. After connecting the IRM4-COM expansion card, 4 will be added to the maximum connecting number.

System Upgrade

Click the System Upgrade submenu under the System Options menu, the page shown in Figure 3-75 pops up.

EMERSON Network Power		Welcome		Liebert , RDU-A G2 Performance Monitoring
By Device By Location	System Controllable: Allow	A1 💵 8	0 🕕	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	System Upgrade			
AC TeamWork +	Select Installation Package:	Browse (Show He	elp) In	stall
Energy Consumption				
Alarm Management +				
Data&History +				
Device Options +				
System Options -				
Monitoring Unit				
Network Setting				
User Management				
Date/Time Setting				
Restore System				
Site Setting				
License Management				
System Upgrade				

Figure 3-75 Site information setting

On the page shown in Figure 3-75, click the **Browse...** button to download configure pack (.rdu file format) from the local catalogue, and then click the **Install** button to upgrade the system.

	Note
The RI	DU-A G2 supports incremental upgrading function.

System Title

Click the System Title submenu under the System Options menu, the page shown in Figure 3-76 pops up.

EMERSON. Network Power	Welcome			Liebert , RDU-A G2 Performance Monitoring	
By Device By Location	System Controllable: Allow	🔺 1 🔛 8	€ 0	& Welcome to RDU-A G2 System: admin[Logout]	
Data Center +	Set Web Title				
AC TeamWork +	System Title:			ОК	
Energy Consumption	Picture Path:	Browse (Show Help)		Upload Default	
Alarm Management +					
Data&History +	Preview:				
Device Options +					
System Options -					
Monitoring Unit					
Network Setting					
User Management					
Date/Time Setting					
Restore System					
Site Setting					
License Management					
System Upgrade					
System Title					

Figure 3-76 Title setting

As shown in Figure 3-76, you can replace the Logo picture in the upper right part by uploading system Logo picture. Click the **Browse...** button, choose the needed Logo picture and click the **Upload** button to upload the file to RDU-A G2. Only [.gif], [.bmp], [.jpg] and [.png] format pictures are allowed, and the picture size should be less than 500K. Clicking the **Default** button can restore the default Logo picture.

You can also change the system title **Welcome** at the top of the page. Type the customized title in the **System Title** textbox and click **OK** to make it effective.

3.4.8 Help

On the RDU-A G2 homepage, click the Help menu in the left part, one submenu appears: About RDU-A G2.

The **About RDU-A G2** page displays **Software Version**, **Serial Number** and **Identify Code** of RDU-A G2, and supplies download links for user manual and tools, as shown in Figure 3-77.

EMERSON Network Power	Welcome			Liebert, RDU-A G2 Performance Monitoring		
By Device By Location	System Controllable :	Allow	A1	8	0	& Welcome to RDU-A G2 System: admin[Logout]
Data Center +	About RDU-A G2					
	Software Version:	V 4.00 Alpha 1				
AC TeamWork +	Serial Number:	21023116752132810013				
Energy Consumption	Identify Code:	165d-6d52-b1fb				
Alarm Management +	RDU-A G2 User Manual	Click here to download RDU-A G	2 User Manual(PDI	F Format)		
Data&History +	Tools Download	Click here to download USB Drive	ər			
Device Options +						
System Options +			Copyright © En 2009 Copyr	nerson Group, All r ight, 2014 by Eme	rights reserved rson Group	
Help –						
About RDU-A G2						



Chapter 4 Maintenance

This chapter expounds the maintenance of RDU-A G2, including restoring default setting and troubleshooting.

4.1 Restoring Default Setting

Restoring default setting can be finished through two modes: software or hardware.

For software restoring, refer to Restore System in 3.4.7 System Options.

Hardware restoring includes restoring RDU-A G2 admin password (default username: admin, password: emerson) and RDU-A G2 IP address (for default IP address, refer to *Network port* in *1.2.1 RDU-A G2 Host*). The methods is: press and hold the reset button (see Figure 4-1) for four seconds, release your hand until the run/alarm indicator turns off, the IP address and password of the RDU-A G2 will be restored to factory defaults after the system restarts.



Figure 4-1 Reset button

4.2 FAQ

Q1: After RDU-A G2 is powered on, why the power indicator is not on?

A: Please check that the power cable is connected correctly.

Q2: How to deal with that the POWER indicator is not on or the COM port does not work after the IRM-4COM\IRM-8DIAI\IRM-8DOAO expansion card is inserted?

A: The POWER indicator is not on, please check that the expansion card is inserted correctly and completely; If it is inserted normally, the RDU-A G2 will restart automatically, if the RDU-A G2 does not restart, please try to insert the expansion card again.

Q3: How to deal with that the communication of COM port is abnormal?

A: Firstly, ensure that the device communication mode is matched. The COM ports on the RDU-A G2 and the expansion card are RS-232/RS-485 adaptive ports; secondly, please ensure that the communication parameters are correctly configured.

Q4: How to deal with that the relay output port cannot control user equipment normally?

A: Check that the line sequences of user equipment terminals are correct, see Table 1-15 for details.

Q5: How to deal with that there is no access to RDU-A G2 login page when the RDU-A G2 communication is normal?

A: There are three measures to solve the problem:

Step 1: Ensure that the IP address is correct;

The RDU-A G2 has two network cards, please ensure that the network cable is connected to the correct port.

If it is static addressing, refer to *Network port* in *1.2.1 RDU-A G2 Host* for default IP of RDU-A G2; if it is set to get IP in DHCP mode, please view the current IP by referring to *Q6*.

Step 2: Ensure the connectivity of IP address.

To ensure the connectivity of IP address, you can use PING/ping command, and the method is as follows:

1) Click the 👩 icon at the lower left corner, and type 'cmd' in the 🔎 textbox, as shown in Figure 4-2.



Figure 4-2 Typing 'cmd'

2) Press the Enter key, the page shown in Figure 4-3 pops up. Type 'ping' and IP address in the command line (for instance, 'ping 10.163.162.135') and check whether the communication is successful.



Figure 4-3 Communication test

Step 3: If the above-mentioned steps cannot handle the problem, please use the Reset button on the host to restore default IP.

Step 4: Refer to 3.1 Login Preparation to complete relevant operations.

Q6: After setting DHCP, how to view the current IP address?

A: After setting DHCP, you need to visit the RDU-A G2 through COM port to get the current IP address. The method is as follows:

Step1: Refer to 3.4.8 Help, download USB driver of console port, and install it in the user computer.

Step2: Use the USB cable in the RDU-A G2 host package to connect the Console port on the RDU-A G2 to the computer USB port, and use a COM port tool (such as SecureCRT) to connect the RDU-A G2.

Step3: Type username 'rduadmin' and password 'emerson' to log in the RDU-A G2 system, type command 'setip1' and press the Enter key, to view the IP address, subnet mask and gateway. The method of viewing network parameters of network card 2 is the same as that of network card 1, type command 'setip2', as shown in Figure 4-4.

```
* Copyright(c) Emerson Group, All rights reserved.
2009 Copyright, 2013 by Emerson Group
* Welcome to RDU
* Version 1.0
2013.06
* Please input IP_address[10.163.236.56]:
Please input Subnet_mask[255.255.0.0]:
Please input Default_gateway[10.163.236.1]:
Nothing has been changed!
RDU_admin#setip2
Please input IP_address[192.168.1.254]:
Please input Subnet_mask[255.255.255.0]:
Nothing has been changed!
Figure 4-4 Viewing network parameters
```

Q7: How to perform troubleshooting of sensor?

Fault 1: The intelligent sensor has no display, and it cannot be displayed on the RDU-A G2 webpage.

A: Please perform troubleshooting according to the following procedures:

1) Ensure that the intelligent sensor is connected to the SENSOR port of the RDU-A G2; meanwhile, the sensor whose address within the group is 1 can only be connected to SENSOR1; the sensor whose address within the group is 2 can only be connected to SENSOR2;

2) Check that the connected cable is intact and it is straight network cable, and the connector is intact;

3) Check that the intelligent sensor is normal;

4) Ensure that the sensor address is not 00;

5) If multiple intelligent sensors are connected, ensure that the sensor addresses are not the same, and perform troubleshooting according to procedures 2 and 3 one by one.

Fault 2: The alarm indicator of the intelligent sensor is on.

A: Send the intelligent sensor back to the service center of Emerson local office for repair.

Fault 3: There are frequent communication failure alarms of intelligent sensors in the History Alarm of RDU-A G2.

A: Check that the network cable connector is intact, and that the network cable connection is not loosened.

Q8: You have chosen the ocean blue theme, but the page still adopts crystal blue theme while you are viewing the webpage of the RDU-A G2, how to deal with it?

A: Click the **[User] Logout** button to return the login page, click the **l** icon to choose the ocean blue theme, and log in the system again.

Q9: After an alarm is generated, you do not receive any email or SMS notification; or when the alarm does not finish, the email or SMS notification is less than three times, how to deal with it?

A: Please perform troubleshooting according to the following procedures:

1) Please check that the SMS/Email server configuration is correct, refer to *Alarm Notification* in 3.4.4 *Alarm Management*.

2) If you do not receive the SMS notification, please check that the phone is out of service because of overdue payment;

3) If you do not receive the email notification, please click the menu Data & History -> History Log to query the system log and check whether there is a record of failure in sending email. If so, it indicates that the network is busy or the email server communication is busy.

Appendix 1 Abbreviation

AC	Alternating Current
CA	Critical Alarm
DC	Direct Current
DI	Digital Input
IE	Internet Explorer, a Web browser developed by Microsoft@
FAQ	Frequently Asked Questions
FTP	File Transfer Protocol, used to transfer large chunks of data
HTML	Hypertext Mark-Up Language, used to create Web pages
HTTP	Hypertext Transfer Protocol, used to convey HTML
JRE	Java Runtime Environment
LED	Light Emitting Diode
Linux	A UNIX-like operating system with open source, developed under Free Software Foundation
LLP	Local Language Package
LUI	Local User Interface
MA	Moderate Alarm
NA	No Alarm
LA	Low Alarm

Appendix 2 Standard Configuration List

No.	Item description	Quantity	Unit
1	RDU-A G2 Intelligent Monitoring Unit	1	EA
2	RDU-A G2 Intelligent Monitoring Unit Installation & Commissioning Manual	1	EA
3	Metal Fittings/Ironware21-inch hanger		
4	Metal FittingsRDU cable clamp		
5	Cable and wire,IEC60320 C13 Plug,IEC60320 C14		
5	Plug,H05VV-F,3C,1mm^2,Black,2000mm,EU		
6	Metal Fittings/Ironwarehanger		
7	Outsourced Cable Set, UH52SA1SL2, USB Cable for UH52SA1Z UPS power, ROHS		
8	Outsourced Cable Set,,UHRK1S241SL62-UHRK1S241Z-2KVA/input cable-ROHS		
9	Standard Component, GB819.1-2000, Cross-head countersunk head screws M4 × 10		
10	Label Set Or Other label of Certificate		



VertivCo.com

© 2017 Vertiv Co. All rights reserved. Vertiv S V the Vertiv logo are trademarks or registered trademarks of Vertiv Co. All other names and logos referred to are trade names, trademarks or registered trademarks of the respective owners. While every precaution has been taken to ensure accuracy and completeness herein, Vertiv Co. assumes no responsibility, and disclaims all liability, for damages resulting from use of this information or for any errors or omissions. Specifications are subject to change without notice.