Liebert.PEX 系列空调

后台通讯配置说明

目录

1.1 后台通讯组件 INTELLISLOT 的应用	2
1.2 后台通讯卡介绍	2
1.3 后台通讯卡安装	3
1.4 后台通讯组件调试	3
1.4.1 设置超级终端	4
1.4.2 设置 485 通讯卡	5
1.4.3 设置 TCP/IP 通讯卡	6
1.4.4 设置 TCP/IP 通讯卡 SNMP 参数	8
1.5 后台通讯组网示意图	. 11

1.1 后台通讯组件 INTELLISLOT 的应用

介绍后台通讯组件 INTELLISLOT 的应用,主要包括后台通讯卡的介绍、安装、调试等内容。

1.2 后台通讯卡介绍

冷冻水空调的后台通讯配置支持以下两种通讯卡:

1. TCP/IP 通讯卡

TCP/IP 通讯卡如图 1-1 所示。该卡可提供网络接口, MIB 库, 且可通过 IE 浏览数据。



图1-1 TCP/IP 通讯卡

2. 485 通讯卡

485 通讯卡如图 1-2 所示。该卡可以给后台提供 RS485 接口的 Modbus 协议。



1.3 后台通讯卡安装

安装通讯卡

冷冻水空调机组上已经安装了安装盒 1 和安装盒 2。如用户需要安装后台通讯配置,只需按图 1-3 所示,把通讯卡插入 安装盒 1 中,拧紧螺钉即可。



接线

后台通讯配置的电气原理图,如图 1-4 所示。其中 P61、P65 和 P67 电缆,在机组出厂时已经接好,现场只需通过通讯 线将通讯卡与监控中心连接。



图1-4 后台通讯配置电气原理图

1.4 后台通讯组件调试

通讯线连接完成后,开始进行设置超级终端和通讯卡参数。

□ 注意

在调试之前,必须先进入 iCOM 控制板的"维护菜单",把"网络设置"中的 **S824 监控地址**设为"3", **S835 监控协议** 设为"Vlcty(Velocity)", **S843 导入控制**设为"S+R"。

1.4.1 设置超级终端

485 通讯卡和 TCP/IP 通讯卡必须进行设置后才能和后台监控系统通讯。用通讯卡自带的通讯线将计算机的 RS232 口和 通讯卡的调试口连接,通过 Windows 自带的超级终端进行参数设置。具体设置步骤如下:

1. 点击**开始→程序→附件→通讯→超级终端**,启动超级终端。在弹出的**连接描述**界面中随意输入名称(如 "tt")后, 按**确定**按钮,如图 1-5 所示。

连接描述 ? ×
新建连接
输入名称并为该连接选择图标:
名称(№):
tt
图标(1):
确定 取消

图1-5输入名称

2. 弹出的连接到界面如下图所示。在连接时使用中选择所用计算机串口的串口号(如 "COM1"),如图 1-6 所示。

连接到	
🧞 тру	
输入待拨电话的详细	田信息:
国家(地区)(C):	中国 (86)
区号(图):	86
电话号码(P):	
连接时使用(12):	COM1
	确定即消

图1-6 选择连接串口

3. 按照下图所示配置通信参数,单击确定,如图 1-7 所示。

毎秒位数(B): 9600	
数据位 @): 8	•
奇偶校验 @): 无	•
停止位 (2): 1	•
数据流控制 @): 无	•

图1-7 设置端口属性

1.4.2 设置 485 通讯卡

485 通讯卡参数设置步骤如下所示:

1. 超级终端设置完成后,点击确定,出现如下图的超级终端界面。

Emerson Network Power OpenComms 485 Discovering Device	
Main Menu	
1: 485 Network Settings 2: Factory Settings 3: Firmware Updates 4: Device Connection State	
q: Quit and abort changes x: Exit and save	
Please select a key ?>	
2. 输入"1"后,显示如下图。	
Emerson Network Power OpenComms 485 Discovering Device	
485 Network Settings Menu	
1: Enabled Application Modbus Server 2: Control enabled 3: Server ID 1 4: Communications Rate 9600	
<esc>: Cancel menu level</esc>	
Please select a key ?> _	
3. 输入"1"后,显示如下图所示。	
Valid Selections:	
1. Modbus Server 2. IGMNet Server	
Select Auxiliary Com Port Application: (<es< td=""><td>c> - Cancel)</td></es<>	c> - Cancel)
4. 输入"1"后,选择 Modbus 协议,显示如下图所	示。
Emerson Network Power OpenComms 485 Discovering Device	
485 Network Settings Menu	
1: Enabled ApplicationModbus Server2: Controlenabled3: Server ID24: Communications Rate9600	
<esc>: Cancel menu level</esc>	
Please select a kev ?> 3	
5. 输入"3"后,选择通讯卡和后台通讯的 ID,显示	示如下图所示。
Enter the server ID (1 - 255) ?>	

?>

6. 在命令提示符下输入服务器的 ID,显示如下图所示。

Emerson Network Power OpenComms 485 ICOM Environmental Control 485 Network Settings Menu 1: Enabled Application Modbus Server 2: Control 3: Server ID enabled 4: Communications Rate 9600 <ESC>: Cancel menu level Please select a kev ?> 4 7. 输入"4"后,显示如下图所示。 Valid Selections: 9600 1. 2. 3. 19200 38400 Select BaudRate: (<Esc> - Cancel) ?> 8. 输入"1"、"2"或"3"可选择与后台通讯的波特率,显示如下图所示。 Emerson Network Power OpenComms 485 ICOM Environmental Control Main Menu 1: 485 Network Settings 2: Factory Settings 3: Firmware Updates

3: Firmware Updates 4: Device Connection State q: Quit and abort changes x: Exit and save

Please select a key ?>

9. 按 ESC 键退出到主界面下。如果输入"x"则保存设置,待保存完毕,重启动 485 通讯卡。

10. 在主界面下,输入"4"可查看通讯卡和冷冻水空调的通讯状态是否正常,显示如下图所示。

Device	Connectio	on State
Stage	Status	Details
00:01:04 (SysUpTime) Discovering Communication Protocol Discovering Device Reading Device Information Launching Services Running Application Connection Count	Complete Complete Complete Complete 00:00:57 1	VELOCITY ICOM Environmental Control 100 % 100 % (SysUpTime)

1.4.3 设置 TCP/IP 通讯卡

TCP/IP 通讯卡参数设置步骤如下所示:

1. 超级终端设置完成后,点击确定,出现如下图的超级终端界面。

Emerson Network Power OpenComms WEB Discovering Device... Main Menu 1: System Information 2: IP Network Settings 3: Factory Settings 4: Firmware Updates 5: Device Connection State q: Quit and abort changes x: Exit and save Please select a key ?> 2. 输入"2"后,显示如下图所示。 Emerson Network Power OpenComms WEB ICOM Environmental Control IP Network Settings Menu 1: Boot/IP Settings 2: SNMP Communications 3: Web Server 4: Telnet Server 5: Change Username/Password <ESC>: Cancel menu level Please select a key ?> _

3. 输入"1"后,显示如下图所示。

Boot mode 一般要设置成静态地址 Static。如果客户网络是自动分配地址,选择 DHCP,则 IP, Netmask 和 Gateway 不需要设置。输入"3"、"4"、"5",根据提示信息分别输入相应的数字配置 IP,子网掩码 Netmask 和网关 Gateway。这3个参数一般需要客户给出。

2: IP Network Settings 3: Factory Settings 4: Firmware Updates 5: Device Connection State q: Quit and abort changes x: Exit and save Please select a key ?>

5. 在主界面下,输入"5"可查看通讯卡和冷冻水空调的通讯状态是否正常,如下图所示。

Device	Connection St	tate
Stage	Status	Details
Q0:11:14 (SysUpTime) Discovering Communication Protocol Discovering Device Reading Device Information Launching Services Running Application Connection Count	Complete Complete Complete Complete 00:01:09 (Sys 1	VELOCITY ICOM Environmental Control 100 % 100 % sUpTime)

1.4.4 设置 TCP/IP 通讯卡 SNMP 参数

- 在 TCP/IP 通讯卡的超级终端设置完毕后,进行该通讯卡的参数设置。具体设置步骤如下:
- 1. 在 IE 浏览器的地址栏输入 TCP/IP 卡的 IP 地址,如果出现如图 1-8 的界面,说明该通讯卡和 iCOM 控制器通讯不正
- 常。如果 State 为 Completing 或 In Process,则说明该通讯卡正在和 iCOM 控制器进行通讯。

Liebert OpenComms Web Card - Microsoft Internet Explorer				_ 8 ;
文件(座) 编辑(座) 查看(亚) 收藏(▲) 工具(工) 帮助(Щ)				<u></u>
🕤 后退 🔻 🕥 🔻 📓 🐔 🔎 搜索 ☆ 收藏夹 🤪 🔗 😓 🔜 🔛 🎇	🖇 🐲 🚳 👘			
地址(D) 🗃 http://192.168.254.1/			_ ∋转	·到 链接 » 乾
G oogle C→ 搜索 ∲ 参资讯 SGoogle Earth MGnail 🖁	🕽 按钮库 👻 🕇	书签▼ 🔤 允许显示弹出式窗	□ 見翻译 - & 搜索字词标明	◎ 设置•
4	7			
EMER	RSON. Power			
الله المعالمة الم	ebert			
The web card is attempting to establish a	communication	n link to the Liebert de	vice.	
r				
Phase	State	Detail		
Discovering Communication Protocol	Pending	VELOCITY		
Discovering Device	Pending	00/ Complete		
Reading Device Information	Pending	0% Complete		
Launching Services	Pending	0% Complete		
Connectio	n Count: 0			
If this message appears for more than 3 minutes it may indicate a commu	nication proble	m, and may require se	rvice assistance. Please ve	rify wiring
and consult the troubleshooting	g section of you	n user's manual.		
If further assistance is ne	cessary, visit <mark>I</mark>	iebert.com.		
Last updated: Monday - J	July 28, 2008 1	0:19:35am		
5. 完毕			🚺 🚺 Trusted si	ites -

图1-8 初始界面(1)

待通讯正常后,出现如下图界面如图 1-9 所示。

EMERSON. Network Power	monitor contro	ol configure support	😃 Liebert
Device Identification:	Summary:	Updated: July 28	3, 2008 10:29:52AM
Uninitialized Uninitialized Uninitialized 192.168.254.1	Actual 5 ° C Setpoint 23 5 Prop. Band 3	Temperature Control	Capacity Cooling 0 % Heating 0 %
Device Status:	Deadband O	-1.5 23 +1.5	_
Unit Off Check Device Status	♦ Actual 37 % Setpoint 80 3	Humidity Control	
Device Information:	Deadband 0	-5 80 +5	
Active Alarms Local Display	Active Alarms:		
 Temperature Humidity Statistics 	Humidifier Proble Compressor 1 Ov	m erload	
System Status	Compressor 2 Ov	erload	
System Alarms	Room Th Sensor	Failure Alarm	
,	Supply Sensor Fa	ilure Warning	

- 图1-9 初始界面(2)
- 2. 点击 configure 标签,进入配置界面,如图 1-10 所示。

EMERSON. Network Power	monitor	control configure support
Device Identification: Uninitialized Uninitialized Uninitialized 102 168 254 1	Configuratio CAUTION: S reinitialize tl	n Categories: witching pages during configuration edits without saving will result in a he network interface card for any saved changes to take effect.
	Category	Description
Device Status:	Device Info	Identification parameters: name, location, contact, and description
Unit Off Check Device Status	Factory Defaults	Reset the configuration to factory default settings.
	IP Settings	Identify the network address, netmask, and default router of the device.
Configuration Categorie		Proper configuration allows this device to communicate with other network hosts via TCP/IP and UDP based protocols.
E Factory Defaults	Reinitialize	Reinitialize the web card.
 Reinitialize SNMP Access 		Reinitialization of the card is required whenever the configuration is modified. The card will shutdown all network services, reset, perform an inital self test and then restart with the latest configuration.
È Traps È Telnet È Users	SNMP	Identify authentication alerts, host access, and SNMP Trap targets for significant device events.
🗀 Web		Simple Network Management Protocol (SNMP): Is a popular "Standards
	冬	1-10 配置界面

3. 点击左面板 SNMP 下的 Access,显示如图 1-11 所示。分别输入用户名和密码(用户名和密码为"Liebert"),点击确定,进入配置页面。注意用户名和密码都区分大小写。

连接到	192.168.25	4.1	<u>?</u> ×
Ŷ	X		AA
Realm1			
用户名	(U):	🖸 Liebert	•
密码(<u>P</u>):	****	
		□记住我的密码(图)	
		确定	取消

图1-11 输入用户名和密码

4. 在图 1-12 中进行 SNMP 后台监控中心 NMS (Network Management System) 配置。点击 Edit 按钮,在 IP Address 中 输入 NMS 的 IP 地址,在 Access 中选择读写控制以及在 Community 中输入 "Public",然后点击 Save 按钮。

□ 注意

1. 在进行 NMS 配置之前,界面中显示的是 Edit 按钮。在编辑配置之后, Edit 按钮变成 Save 按钮。

2. NMS 配置完成后,必须点击 Save 按钮进行保存。

Device Identification: SNMP Access: Uninitialized Farameter Uninitialized Entry Uninitialized IP Address Configuration Categorie Note: Setting: IP Address = 0.0.0.0, Access = write, and Community = public, allows write access by any hosts, this may be a security risk to consider. Access Configure read and write access for network hosts. Configuration Categorie Community String identifying a "secret" known only by those hosts that are trusted for access. Device Info Factory Defaults IP Settings Clear Remittalize SNMP Access Clear Traps Entry IP Address Access IP Settings Entry Traps Entry IP Address Access IP Setings Entry IP Address Access IP 192.168.254.110 read C write IP 2.168.254.110 read C write IP 2.168.254.110 read C write	EMERSON. Network Power	monitor	control configu	ure support	Liebert [°]			
Uninitialized Parameter Description Uninitialized Entry number of the access source. 192.168.254.1 IP Address Device Status: IP Address Configuration Categorie Summary Device Info Factory Defaults IP Factory Defaults Community String identifying a "secret" known only by those hosts that are trusted for access. Note: The maximum length of the entry is 32 characters. Clear Clear Clear the values of the parameters. SNMP Access Access Community Traps Entry Traps IP 2.168.254.110 IP 2.168.254.110 read C write Intialize 2 Intialize 2 Intialize 2 Intialize 2 Intialize 2 Integration Integration Int	Device Identification:	SNMP Acce	ISS:					
Uninitialized Up: 168.254.1 Device Status: IP Address Configuration Categorie Summary Device Info Factory Defaults IP Settings Reinitialize SNMP Access Traps Telnet Users Veb 2 192.168.254.110 0 react Configuration Categorie Summary Device Info Factory Defaults IP Settings Clear Clear the values of the parameters. Clear Clear Clear Veb 2 192.168.254.110 © read © write public 2 192.168.254.110 © read © write public 2 192.168.254.110 © read © write public Clear Clear Same	Uninitialized	Parameter	Description					
192.163.254.1 IP Address Configure network hosts interested in device information access. Note: Status: Note: Setting: IP Address = 0.0.0.0, Access = write, and Community = public, allows write access by any hosts, this may be a security risk to consider. Access Configuration Categorie Summary Device Info Factory Defaults IP Settings Reinitialize SNMP SNMP Access Traps Telnet Users 1 Veb 1 192.168.254.110 read 0 write public, allows write access Community Save Reset	Uninitialized Uninitialized	Entry	Entry number of the	e access source.				
Device Status: Note: Setting: IP Address = 0.0.0.0, Access = write, and Community = public, allows write access by any hosts, this may be a security risk to consider. Access Configuration Categorie Summary Device Info Factory Defaults IP Settings IP Settings Reinitialize SNMP Access Access Clear Traps Telnet Users 1 Veb 1 1 192. 168. 254. 110 0 read 0 write 2 192. 168. 254. 110 0 read 0 write 2 192. 168. 254. 110 0 read 0 write 2 192. 168. 254. 110 0 read 0 write 2 192. 168. 254. 110 0 read 0 write 2 192. 168. 254. 110 0 read 0 write 2 192. 168. 254. 110 0 read 0 write	192.168.254.1	IP Address	Configure network h	nosts interested in de	vice information access.			
Access Configure read and write access for network hosts. Configuration Categorie Community Summary Device Info Factory Defaults Note: The maximum length of the entry is 32 characters. IP Settings Clear Reinitualize SNMP Access Community SNMP Access Traps Telnet Users 1 Web 1 192.168.254.110 read © write public Clear 3 © read © write	Device Status:	Device Status: Note: Setting: IP Address = 0.0.0.0, Access = write, and Community = public, allows write access by any hosts, this may be a security risk to consider						
Configuration Categorie Community String identifying a "secret" known only by those hosts that are trusted for access. Device Info Factory Defaults Note: The maximum length of the entry is 32 characters. Clear Clear the values of the parameters. SNMP Access Access Entry Telnet 1 Users 1 Web 2 192.168.254.110 read © write public Clear 3 © read © write		Access	Configure read and	write access for net	work hosts.			
IP Settings Reinitialize SNMP Access Traps Telnet Users Web 2 192.168.254.110 0 read 0 write public Clear	Configuration Categorie: Summary Device Info Eactory Defaults	Community	String identifying a access. Note: The maximum	String identifying a "secret" known only by those hosts that are trusted for access.				
 Reinitialize SNMP Access Traps Telnet Users Web Instruction 1 (192, 168, 254, 110) Reset Community Clean Instruction 1 (192, 168, 254, 110) Reset Instruction 1 (192, 168, 254, 110) Instruction 1 (192, 168, 254, 110) Instruction 1 (192, 168, 254, 110) Reset Instruction 1 (192, 168, 254, 110) Instruction	IP Settings	Clear	Clear the values of t	the parameters.				
Iraps Entry IP Address Access Community Telnet 1 192.168.254.110 • read • write public Clean Web 2 192.168.254.110 • read • write public Clean 3 • read • write Clean Clean	 Reinitialize SNMP Access 	Sa	Save Reset					
Image: Series 1 192.168.254.110 © read O write public Clean Image: Web 2 192.168.254.110 O read © write public Clean Image: Series 3 © read O write public Clean	Traps	Entry	IP Address	Access	Community			
Web 2 192.168.254.110 C read © write public Clean 3 © read © write Clean Clean </th <th>Users</th> <th>1</th> <th>192. 168. 254. 110</th> <th>⊙ read © write</th> <th>public</th> <th>Clear</th>	Users	1	192. 168. 254. 110	⊙ read © write	public	Clear		
3 © read C write Clean	🖿 Web	2	192. 168. 254. 110	O read ⊙ write	public	Clear		
		3		⊙ read ⊂ write		Clear		

图1-12 SNMP 后台监控中心 NMS 配置界面(1)

5. 在图 1-13 的左面板上展开 **SNMP** 后,点击 **Traps**,用于设置接收 Traps 的 NMS 的 IP 地址,Port 和 Community。修 改完成后,必须点击 Save 保存设置。

EMERSON. Network Power	monitor	control configure supp	ort	Liebert*		
Device Identification: Uninitialized Uninitialized Uninitialized 192.168.254.1	SNMP Traps:					
	Parameter	Description				
	Entry	Entry number of the trap target.				
	IP Address	Configure network hosts interested in alert notifications (i.e. SNMP Traps).				
Device Status: Unit Off Check Device Status		Note: Typically notifications are sent to Network Management Systems (NMSs) and other hosts running software for graceful operating system shutdown due to power outages.				
	Port	Port to send the notification to at the IP Address identified.				
	Community	y String identifying a "secret" known only by those hosts that want to be notified of device status changes.				
Configuration Categorie: Summary Device Info Factory Defaults IP Settings Reinitialize SNMP Access Traps Telnet Users		Note: The maximum length of the entry is 32 characters.				
	Clear	Clear the values of the parameters.				
	Save Reset					
	Entry	IP Address	Port	Community		
	1	192. 168. 254. 110	162	public		Clear
	2		162			Clear

图1-13 SNMP 后台监控中心 NMS 配置界面(2)

1.5 后台通讯组网示意图

TCP/IP 通讯卡(SNMP 协议)组网图如图 1-14 所示, 空调机组的连接数量没有限制。



□ 注意

单机不需要 HUB。

485 通讯卡(Modbus 协议)组网图如图 1-15 所示,最多可连接 32 台空调机组。



