AB-1756 系列 PLC 组态森特奈 Ethernet/IP 协议



10-LINK 主站模块使用教程

1、设定森特奈 Ethernet/IP 协议 IO-LINK 主站模块的 IP 地址。

可以通过第三方设置软件进行 IP 地址设置,本例中使用 AB 的"Bootp-DHCP Tool"软件, 设置之前,先将模块 IP 地址设置拨码拨到"0XFF",即 DHCP 模式,上电一直等待分配 IP。 打开该软件,选择本机相应网卡,点击"OK"

Select Network Interface	×
Please select a network interface:	
Description	IP Address
Realtek PCIe GbE Family Controller	192.168.0.15
Bluetooth Device (Personal Area Network)	Unknown
I AP-Windows Adapter V9	Unknown
Intel(R) Dual Band Wireless-AC 8265	192.168.1.253
Microsoft Wi-Fi Direct Virtual Adapter #4	Unknown
The osoft with Direct virtual Adapter #4	OIIKIIOWII
ОК	

2、双击扫描出的模块,输入要设置的 IP 地址(IP 地址与本机 IP 地址要在同一网段),点击 "OK"。设置完毕后,可以将模块 IP 地址设置拨码拨到"0X00",即按照上次的 DHCP 分配的 IP 地址运行。

BootP DHCP EtherNet/IP Commissioning	Tool		—	
File Tools Help				
Add Relation	Discovery History			Clear History
Ethernet Address (MAC) Type (hr:min:sec)	# IP Address	Hostname		
02:98:89:44:55:89 DHCP 11:22:08	4			
1	Entered Relations			
	Entered Relations			
Ethernet Address (MAC) Type IP Address	Hostname Des	cription		
Firors and warnings				- Relations
Linghie to service DHCP request from 02:08:80:14:55	5.80			0 of 256
Chapter to Service Differ Frequest from 02:50.08.44.00				0.01200

	Discovery History	
Ethernet Address (MAC	Type (hr:min:sec) # IP Address	Hostname
02:98:89:44:55:89	New Entry	×
	Server IP Address: 192.168.0.15	
	Client Address (MAC): 02:98:89:44:55:89	9
	Client IP Address: 0 . 0 .	0.0
Ethernet Address (MAC	Hostname:	
	Description:	
	ОК Са	ancel
New Entry	×	
New Entry	192 168 0 15	
New Entry Server IP Address Client Address (MAC)	× : 192.168.0.15 : 02:98:89:44:55:89	
New Entry Server IP Address Client Address (MAC) Client IP Address	× : 192.168.0.15 : 02:98:89:44:55:89 : 192 . 168 . 0 . 11	
New Entry Server IP Address Client Address (MAC) Client IP Address Hostname	× 192.168.0.15 02:98:89:44:55:89 192 . 168 . 0 . 11	
New Entry Server IP Address Client Address (MAC) Client IP Address Hostname Description	× 192.168.0.15 02:98:89:44:55:89 192 . 168 . 0 . 11	



BootP DHCP EtherNet/IP Commissioning Tool File Tools Help	- 🗆 X
Add Relation Discovery History	Clear History
Ethernet Address (MAC) Type (hr:min:sec) # P Address Hostname 02:98:89:44:55:89 DHCP 9:43:54 85 192.168.0.11	
, Entered Relations	
Ethernet Address (MAC) Type IP Address Hostname Description 02:98:89:44:55:89 DHCP 192.168.0.11	
Errors and warnings Sent 192.168.0.11 to Ethernet address 02:98:89:44:55:89	Relations 1 of 256

3、打开 Studio 5000 软件, 创建一个新项目, 并选择控制器(本例使用 1756-L81E)。自定 义一个"名称"。点击"Next"。选择控制器的主固件版本, 选择机架尺寸, 选择控制器的插槽, 选择一个安全权限选项。

🥑 New Project					?	\times
Project Types			Search			×
💕 Logix	Compa	act GuardLogix® 53	70 Safety Cor	ntroller		1
🕥 View	 Compa Compa Compa Compa Contro Contro 175 175 	act GuardLogix® 53 actLogix™ 5370 Con actLogix™ 5380 Con actLogix™ 5480 Con olLogix® 5570 Contr olLogix® 5580 Contr 56-L81E ControlLog 56-L82E ControlLog	80 Safety Cor troller troller roller roller gix® 5580 Co gix® 5580 Co	ntroller ntroller		
	175 175 N <u>a</u> me: Location:	56-L83E ControlLog 56-L84E ControlLog EthernetIP F:\Studio5000-prog	gix® 5580 Co gix® 5580 Co gram	ntroller ntroller	Brows	se
		Cancel	<u>B</u> ack	<u>N</u> ext	<u> </u>	sh

🥑 New Project				?	×
1756-L81E Contr EthernetIP	olLogix® 5580 Controller				
Re <u>v</u> ision:	32 ×				
<u>C</u> hassis:	1756-A7 7-Slot ControlLogix C	hassis	~		
<u>S</u> lot:	0 ~				
Security <u>A</u> uthority:	No Protection		~		
	Use only the selected Security / authorization	Authority for a	authentication a	nd	
Secure With:	<u>L</u> ogical Name <controller nam<="" p=""></controller>	e>			
	<u>Permission Set</u>		\checkmark		
Description:					
	Cancel	<u>B</u> ack	<u>N</u> ext	<u>E</u> ini	sh
 A 占丰"Einis	b"				

4、点击"Finish"



5、安装森特奈 IO-Link 主站模块的 EDS 文件,点击菜单"TOOLS"---"EDS Hardware Installation Tool"



6、依次点击"下一页"---下一页



7、点击"Browse…",在弹出的对话框中找到模块的 EDS 文件目录,选中并点击"打开"

ockwell Automation's EDS Wizard		>
Registration Electronic Data Sheet file(s) will be added to your system for use in	n Rockwell Automation applications.	Į
Register a single file		
C Register a directory of EDS files		
Named:		
	Browse	
• If there is an icon file (.ico) with the same name as the file(s) you are	
 registering then this image will be associated with the device. 		
To	perform an installation test on the file(s), click Next	
	< 上一步(B) 下一页(N) > 取	淌
	•	

💰 Select an EDS file			\times
$\leftarrow \rightarrow$ \checkmark \uparrow \frown ethe >	Sentinel_ELIP_8IOL	✔ Ō 在 Sentinel_ELIP_8IOL v5.6 丿	D
组织 ▼ 新建文件夹		<u>≣</u> ⊤ □	?
🔜 此电脑	^ 名称	^ 修改日期	
🧊 3D 对象	Sentinel_ELIP_8	BIOL v5.6.eds 2024/7/29 16:	43
🚆 视频			
▶ 图片			
🗎 文档			
👆 下载			
🎝 音乐			
📃 桌面			
🏪 Windows (C:)			
Recovery Image (D:)			
🔜 软件 (E:)			
🔜 新加卷 (F:)	v <		>
文件名(N): [Sentinel_ELIP_8IOL v5.6.eds	✓ EDS Files (*.eds)	~
		打开(O) 🔽 取消	

8、然后依次点击"下一页",知道显示"完成",点击"完成"即可。

Rockwell Automation's EDS Wizard		\times
Registration Electronic Data Sheet file(s) will be added to your system fo	or use in Rockwell Automation applications.	V
Register a single file		
C Register a directory of EDS files	olders	
Named		
C:\Users\lzh_n\Desktop\EthernetIP\Sentinel_ELIP_8IOL v5.6\Ser	ntinel_E Browse	
• • • • • • • • • • • • • • • • • • •		
If there is an icon file (Jco) with the same name as the registering then this image will be associated with the	e file(5) you are device.	
	To conform on installation took on the file/of allele Mart	
	To perform an installation test on the file(s), click Next	
	< 上一步(B) 下一页(N) >	取消
_		
_		
tockwell Automation's EDS Wizard)
EDS File Installation Test Results This test evaluates each EDS file for errors in the EDS file.	This test does not guarantee EDS file validity.	I
C (Lossellation Test Decola		_
Clusers/Izh_n/desktop/ethernetip/sentinel_elip_8iol v	5.6\sentinel_elip_8iol v5.6.eds	
View file		
		Rocal
	< <u> 二</u> 一步(B) トー贝(N) >	收荷

Rockwell Automation's EDS	Wizard	×
Change Graphic Image		1
You can change the g	raphic image that is associated with a device.	U
Proc	luct	
Change icon	Communications Adapter	
	Internet El IR-BIOL - yes y 5.6	
	WINE LEP OIDLAR P.D	
		< 上一步(B) 下一页(N) > 取満
		-
Rockwell Automation's EDS	Wizard	
Final Task Summary		<u>.</u>
This is a review of th	e task you want to complete.	2
You would like to r	egister the following device.	
ELIP-8IOL-xxx v	5.6	
		< 上一步(B) 下一页(N) > 取消
	•	
Rockwell Automation's EDS	Wizard	
A BR	You have successfully completed the EDC Ward	
N Start	too have successing completed the EDS wizard.	
		[/······
		完成

9、另外,安装 EDS 文件也可以通过安装完编程软件后附带的"EDS Hardware Installation Tool"

工具进行安装 (过程略)。



10、右键左侧"Ethernet",点击"New Module",在弹出的对话框中找到森特奈的 IO-LINK 主站模块 ELIP-8IOL-XXXX,然后点击"Creat"

Logical Model ▲ I/O Configuration ▲ 1756 Backplan [0] 1756-L81	n e, 1756-A7 IE EthernetIP	Errors	
A 📅 Ethernet	New Module	O Errors A C	
E 1750-LC	Import Module		
	Discover Modules		
â	Paste Ctrl+V	-	
	Properties Alt+Enter	-	
t Controller Or	Print P	•	
Select Module Type Catalog Module Discovery Enter Search Text for Mod Module Type Catego Analog Communication Communication	r Favorites dule T Clear Filters ory Filters	Module Type Vendor Filters Rockwell Automation/Spreche. SHC Corporation	H <u>i</u> de Filtersa
Catalog N Desc ELIP-SIOL-xxxx ELIP	ription Vend 2-810L-xxx v5.6 Sent	Treategory Inel Communications	
1 of 643 Module Types	Found		A <u>d</u> d to Favorites
∠ C <u>l</u> ose on Create			Create Close Help



General	General			
Connection	Tere			
Module Info	Type:	ELIP-8I0L-XXX ELIP-8I0L-XXX V5.6		
Internet Protocol	Vendor:	Sentinel		
	Parent:	Local		
	Name:			Ethernet Address
	Description			Private Netwo 192 168 1
	Description:		\sim	IP Address:
				O Host Name:
			\sim	
	- Module Defi	nition		
	Revision:	2.003		
	Electronic K	eying: Compatible Module		
	Connections	s Exlusive Owner		

11、在弹出的对话框中, 输入名称(ELIP)及 IP 地址(192.168.0.11)

New Module		\times
General*	General	
Connection Module Info	Type: ELIP-8IOL-xxxx ELIP-8IOL-xxx v5.6	
Internet Protocol	Vendor: Sentinel	
	Parent:	
	Name: ELIP Ethernet Address	
	Description:	
	✓	
	Module Definition	
	Revision: 2.003	
	Electronic Keying: Compatible Module	
	Connections Exlusive Owner	
	Change	
Status: Creating	OK Cancel	Help

12、点击"Change",在弹出的对话框中,"Revision"为模块硬件版本,这要和 RSLinx 在线模 块属性(见下图)版本一致。"Electronic Keying"为电子钥匙,具体配置可参考下图。另外 "Connections"连接部分,EDS 文件自动给模块分配了 266 字节的输入和 256 字节的输出。

	Local	Module Definition ×	rnet A
ion:		Revision: 2 V 003	rivate 2 Add
		Electronic Keying: Compatible Module ~	lost N
		Connections:	
		Name Size	
		Exlusive Owner Input: 266 Outpu 256 SINT	
Definit	ion		
nio Kovi	ing	OK Cancel Help	
HIC KEY	ing.		
ctions		Exiusive Owner	
		Change	

Edit View Communications Station DDE	/OPC Security Window Help
* 50 81 8	AB_ETHIP-1\192.168.0.11 ? ×
RSWho - 1	Device Name: ELIP-8IOL-xxxx Vendor: 2317
✓ Autobrowse Refresh ™ ™ ™ ● ● ● <td>Product Type: 12 Product Code: 28011 Revision: 2.003 Serial Number: 075BCD15 EDS File Name: 090D000C6D6B02XX.EDS Faults:</td>	Product Type: 12 Product Code: 28011 Revision: 2.003 Serial Number: 075BCD15 EDS File Name: 090D000C6D6B02XX.EDS Faults:
<	Close Help

SLinx Classic Gateway - RSWho - 1

"Electronic Keying"电子钥匙知识点:

用户配置模块时,指定模块槽号。但是,也可能会在该槽中置入不同 模块,不管是故意还是意外。

用户使用电子钥匙可以保护自己的系统,防止在槽中意外置入错误的 模块。用户选择的钥匙选项决定了槽中的模块必须匹配该槽配置的程 度。

如果:	则选择:	
 必须匹配所有信息: ・ 类型 ・ 产品编号 ・ 供应商 ・ 主要或次要修订号 	完全匹配	
匹配除了次要修订号的其它所有信息	兼容模块	
没有匹配的信息	禁用钥匙	

13、点击"OK",在左侧菜单栏里将增加一项"ELIP-8IOL-XXX ELIP"

New Module				×
-General [®] -Connection -Module Info - Internet Protocol	General Type: Vendor: Parent: Name: Description: Module Definii Revision: Electronic Key Connections	ELIP-8IOL-xxx ELIP-8IOL-xxx v5 6 Sentinel Local ELIP 00 2.003 ing: Compatible Module Extusive Owner	Ethernet Add O Private N O IP Addres O Host Nan	tress stwo ss: 192.168.0.11 ne.
tatue: Croating		Change		OK Cancel Heln
h Logica	l Model	➡		
🖬 🗐 🖓 Co	onfiguratio	on		
4 💷 17 5	6 Backpla	ne, 1756-A7		
ē [0) 1756-L8	1E EthernetIP		
₄ 盎 Ethe	ernet			
[] 1 []	756-1815	EthernetIP		
ر می ا				
El	LIP-8IOL->	XXX ELIP		

14、双击"Controller Tags",在右侧对话框中有三项模块的标签数据,分别是 ELIP: C 配置数据, ELIP: I 输入数据, ELIP: O 输出数据。

🖾 Controller Tags - EthernetlP(controller) 🗙							
Scope: BEthernetIP			∽ 💽 Enter Name Filter				
	III ← Alias For	Base Tag	Data Type				
▲ ELIP:C			_090D:ELIP_8IOL_xxxx_5220586D:C:0				
 ELIP:C.Data 			SINT[4]				
ELIP:C.Data[0]			SINT				
ELIP:C.Data[1]			SINT				
ELIP:C.Data[2]			SINT				
▶ FLIP:C.Data[3]			SINT				
▲ ELIP:I			_090D:ELIP_8IOL_xxxx_C120282D:I:0				
ELIP:1.ConnectionFaulted			BOOL				
▶ ELIP:I.Data			SINT[266]				
• ELIP:O			_090D:ELIP_8IOL_xxxx_793A82CE:O:0				
▶ ELIP:O.Data			SINT[256]				
0							

15、点击下方"Monitor Tags",可以看出配置数据一共4个字节,参考森特奈 IO-LINK 主站 说明书,其中第一个字节 ELIP.C.Data【0】作为8个端口配置,0代表关闭 IO-LINK 功能, 1代表打开 IO-LINK 功能,其余三个字节暂保留。默认8个端口值都为1,即都是打开 IO-LINK 功能的,用户可以在此更改是否打开 IO-LINK 功能(更改时,注意将 PLC 模式打到"GO offline",如果在'Online'状态下更改,再转到"offline"后,修改的值又会恢复成原值)。

注: 要想通过更改配置数据来设定是否打开端口 IO-LINK 功能的话,此时模块窗口的 "端口配置拨码"必须拨为 0X00,如果"端口配置拨码"拨成了非 0,则模块按照拨码开启对应 IO-LINK 端口。

ope: EthernetIP	Show: All Tags		× T .
Name	≡l≁ Val	ue * Fo	orce Mas
ELIP:C		{}	
 ELIP:C.Data 		{}	
 ELIP:C.Data[0] 		-1	
ELIP:C.Data[0].0		1	
ELIP:C.Data[0].1	端口1配置	1	
ELIP:C.Data[0].2	端口2配置	1	
ELIP:C.Data[0].3	端口3配置	1	
ELIP:C.Data[0].4	端山4配置 端口5配署	1	
ELIP:C.Data[0].5	端口6配置	1	
ELIP:C.Data[0].6	端口7配置	1	
ELIP:C.Data[0].7	端口 8 配置	1	
ELIP:C.Data[1]		0	
ELIP:C.Data[2]		0	
▶ ELIP:C.Data[3]		0	

16、ELIP: I 输入数据, 分配了 266 字节, 其中"ELIP:I.ConnectionFaulted"作为 EthernetIP 通 讯的诊断,反馈一个开关量。ELIP: O 输出数据,分配了 256 个字节。具体输入输出字节映 射关系如下表:

IO-LINK 过程数据输入(占用 266 Byte)

字节	描述								
	8位代表8个端口	口当前IO-	LINK状	态: 1ī	E常通	言,0未	、通信		
Byte0	位 7	6	5	4	3	2	1	0	
	端口 Ca	3 07	C6	05	C4	C3	62	CT	
	8位代表8个端	□IO-LIN	K断线ü	민录: 1 ³	有过断	线,0ラ	未有过!	断线	
Byte1	位 7	6	5	4	3	2	1	0	
	端口 Ca	B C7	C6	C5	C4	C3	C2	C1	
Byte2			C1端口	新线次数	发				
Byte3	C2端口断线次数								
Byte4	C3端口断线次数								
Byte5	C4端口断线次数								
Byte6	C5端口断线次数								
Byte7	C6端口断线次数								
Byte8	C7端口断线次数								
Byte9	C8端口断线次数								
Byte10 - Byte41	C1端口过程输入数据(32Byte)								
Byte42 - Byte73	C2端口过程输入数据(32Byte)								
Byte74 - Byte105	C3端口过程输入数据(32Byte)								
Byte106 - Byte137	C4端口过程输入数据(32Byte)								
Byte138 - Byte169	C5端口过程输入数据(32Byte)								
Byte170 - Byte201	C6端口过程输入数据(32Byte)								
Byte202 - Byte233		C7端口	过程输)	\数据(32Byt	e)			
Byte234 - Byte265	C8端口过程输入数据(32Byte)								

IO-LINK 过程数据输出(占用 256 Byte)

字节	描述
Byte0 - Byte31	C1端口过程输出数据(32Byte)
Byte32 - Byte63	C2端口过程输出数据(32Byte)
Byte64 - Byte95	C3端口过程输出数据(32Byte)
Byte96 - Byte127	C4端口过程输出数据(32Byte)
Byte128 - Byte159	C5端口过程输出数据(32Byte)
Byte160 - Byte191	C6端口过程输出数据(32Byte)
Byte192 - Byte223	C7端口过程输出数据(32Byte)
Byte224 - Byte255	C8端口过程输出数据(32Byte)

17、下面要进行控制器联机,点击"COMMUNICATIONS"---"Who Active

h logic	COMMUNICATIONS		TOOLS	WINDOW	
26	윪	Who Active			
	×	Select Recent Pat	h		
Path: <non< td=""><td colspan="4">Select Communication Software</td></non<>		Select Communication Software			
		Go Online			
▼ ₽		Upload		tro	
		Download		A	

18、在选择通信路径之后, 单击 Who Active 对话框中的 Go Online。

a Who Active (RSLinx Classic)	
Autobrowse Refresh	
B-B Workstation, DESKTOP-8DV4TEV	Go Online
	Upload
	Download
🕀 🗍 192.168.0.110, 1756-L81E LOGIX5581E, 1756-L81E/E	Update Firmware
192.168.0.15, FactoryTalk Linx - Desktop, DESKTOP-8	Close
	Help
>	
Path: AB_ETHIP-1\192.168.0.110	Set Project Path
Path in Project: <none></none>	Clear Project Path

19、转成"offline"后,点击"COMMUNICATIONS"----"Download"下载程序

