Ethernet Module Manual



- ✤ INNOVATIVE & COMPACT
- ✤ EASY TO PROGRAM
- ✤ LOW COST FACTOR

CE



User Manual Ethernet Module

U p d a t e d: April 15, 2 0 10

DDS xLogic SuperRelay is an Easy Electronic Co., Ltd Manufactured product.

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xLogic SuperRelay Ethernet module (ELC-Ethernet)

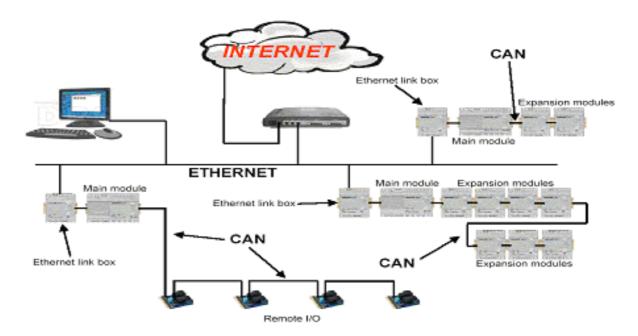
Brief introduction

ELC-Ethernet

It is called Ethernet module and is used to connect ELC main modules in different places to Ethernet networks to buildup a large distributed monitoring and control system .The ELC-Ethernet module can be divided into two types, the ELC-Ethernet-AC type and ELC-Ethernet-DC type.

Ethernet network

If the application requires a system where more than one main module is needed and these main modules have to communicate with each other, then each main module can be connected to an Ethernet Module and to the Ethernet network. The project down/upload to and from the main modules and the communication between the main modules happens over the Ethernet network. Furthermore the visualization of the whole system is possible and easy to achieve via a personal computer.



Hardware connection:

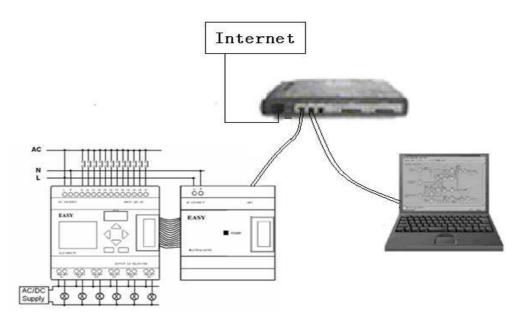
Net Port Diagram:



How to connect hardware before Ethernet module running?

- 1. Set ELC-Ethernet IP address. (Refer to software first part)
- 2. Link the ELC-Ethernet to the xLogic SuperRelay system (which must contain an ELC-18 CPU module)
- 3. Link the ELC-Ethernet to internet/network using CAT5 Ethernet cable, then use PC or other monitor device for monitoring or download/upload of users' programs.
- 4. Power on all devices in accordance with their voltage class.
- 5. Set communication parameter by xLogicsoft. (Page 12)

Sketch map:



Software part:

First part: Set or modify IP address, port number with "serial" software.

How to configure Ethernet module IP address?

1. Install Ethernet module IP address configuration software.

Step one: Double click the file "driver" in CD and then the following contents will be shown:



Step two: Select "Setup.exe" file, and install it by double-clicking the left mouse key.



Click "Next".

InstallShield Wizard
License Agreement Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
In order to use the HW Device Server Toolkit, you must read and agree to the following license agreement. Please indicate your agreement by pressing the YES button.
HW TECHNOLOGY, INC. END USER LICENSE AGREEMENT HW Device Server Toolkit
This License Agreement for the HW Device Server Toolkit ("License Agreement") is a legal agreement between you (either an individual or an entity) and HW Technology, Inc. ("HW") for HW Device Server Toolkit software ("Software"). You may install as many
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install Device Server, you must accept this agreement.
InstallShield
< <u>B</u> ack <u>Y</u> es <u>N</u> o

Click "Yes" to continue the next step.

InstallShield Wizard	×
Choose Destination Location Select folder where Setup will install files.	
Setup will install Device Server in the following folder.	
To install to this folder, click Next. To install to a different another folder.	folder, click Browse and select
Destination Folder C:\Program Files\Serial\Device Server	B <u>r</u> owse
InstallShield <u>B</u> a	k <u>Next</u> ≻ Cancel

InstallShield Wizard	×
Select Components Choose the components Setup will install.	
Select the components you want to install, and clear the install.	e components you do not want to Description Setup and management utility for the Device Server. This component is always installed
Space Required on C: 3008 K Space Available on C: 1833040 K InstallShield <u>< B</u> a	ack <u>N</u> ext > Cancel

InstallShield Wizard
Select Program Folder Please select a program folder.
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue. Program Folders: Serial
Existing Folders: Altium Easy EASY xLogicsoft IAR Systems Inno Setup 5 McAfee Office 2003 Real WinRAR
InstallShield < <u>B</u> ack <u>N</u> ext > Cancel

InstallShield Wizard	
R	InstallShield Wizard Complete
	Setup has finished installing Device Server on your computer.
	Dpen program folder
	K Back Finish Cancel
	Caricei

Click "Finish" button.

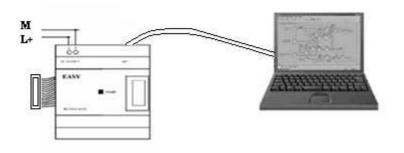
Select the program fold "Serial->DS Manager" and click to open.

Windows XP Professional Vindows VP Profession	 Windows Update 设定程序访问和默认 Protel DXP 程序(P) 交档(D) 设置(S) 援索(C) 帮助和支持(H) 运行(R) 关机(U) 		Office 2003 Internet Explorer Outlook Express Windows Media Player FoxitReader2.0 远程协助 千千静听 暗黑破坏神2V1.11中文版 暴风影音 腾讯软件 McAfee Inno Setup 5 Siemens LOGO1Soft 金山词霸2007 紫光华字拼音输入法V6 Easy Keil uVision2 IAR Systems EASY ×Logicsoft Altium 中国移动 Fetion Adobe Reader 9		Connection Wizard DS Manager Help Manual Port monicor Uninstall VSP Manager	system32
Access		auto-di scov	ery by broadcast) Own	er/Det	/ic	Refresh Settings Upgrade Initialize Routing Status Buzz! Change IP Add

In order to enable your Ethernet module to link to an Ethernet network, you are required to connect your Ethernet module (ELC-Ethernet-DC/AC) to your computer or other monitor device by the CAT5 cable. Let's take computer as an example:

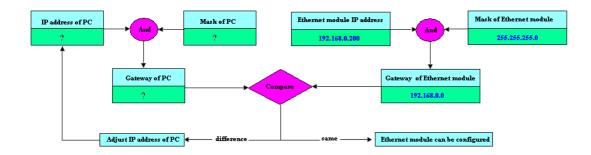
Device Servers on the local network segment. This list is created automatically by the DS Manager. Click here to learn more about the auto-discovery access mode. <u>More info...</u>

Connect diagram:



You are required to set in the following way, otherwise the Ethernet module may fail to work. Please take some time to study the following instructions carefully:

At first, you would make sure the PC and the Ethernet module are in one net segment. The initial IP of the Ethernet module is ""192.168.0.200". If they are not in one net segment you can change the IP of your pc.



Note: All the contents in the red frame region cannot be adjusted. That's to say, you must select the items as follows in red circle.

ocar pevice	Servers (auto-discovery by broa	ucast)	Refresh
MAC	IP	Owner/Device name	Settings
			Upgrade
			Initialize
			Routing Statu
			Buzz!
			Change IP
			Add

Power on ELC-Ethernet-DC module and click "Refresh" button.

MAC	IP	Owner/Device name	Settings
0, 2, 3, 5, 51, 183	192.168.0.200 (local)	ELC-ETHN/	Upgrade
			Initialize
		Routing Statu	
			Buzz!
			Change IP
			Add
		>	

The object module appears as above window shows; it includes "Linking Status", "MAC", "IP", "Owner/Device name"

Option 1: ELC-Ethernet unit as client, xLogicsoft software as Server.

Click "Settings" button to modify IP address.

"Network Settings" tab shows:

😼 Settings: DS <¥3.1	4 (S) >+#
Network Settings Serial	Settings Outbound packets All
Owner name	ELC-ETHN
Device name	
MAC-address	0, 2, 3, 5, 51, 183
DHCP	O- Disabled
IP-address	192, 168, 0, 200
Port	4000
Transport protocol	1- TCP
Broadcast VDP data	(irrelevant)
Inband commands	O- Disabled
Data login	O- Disabled
Connection timeout (min)	O- Disabled
Routing Mode	2- Client only
Connection mode	O- Immediately (on powerup)
Destination IP-address	192, 168, 0, 214
Destination port	5000
Gateway IP-address	192, 168, 0, 1
Subnet mask	255, 255, 255, 0
Notification destinati	0- Last port
Save Load	Password OK Cancel

Note: Just as above figure shows, parameters in "Destination IP-address, Gateway IP-address and Subnet mask" must be adjusted to be exactly same as those in your PC. However, "IP-address" and "Port" in above configure shows can be adjusted as you like.

"Serial Settings" tab shows:

S Manager	5ettings: D5 <¥3.14(5) >+	N	
Access Local Device	Network Settings Serial	Settings Outbound packets Al	1 Refresh
Local Device	Serial interface	1- Half-duplex	herresh
	RTS/CTS flow control	1- Local	
Status h	DTR mode	O- Idle or remote	Settings
(÷ 🛄 🐗 (Baud rate	3- 9600 bps	Upgrade
	Parity	0- None	
	Data bits	1- 8 bits	Initialize
	Soft entry into Serial p	O- Disabled	outing Status
	On-the-Fly commands	O- Disabled	Buzz!
	Password for on-the-Fl	(irrelevant)	
	Notification bitmask	0	Change IP
			Add
	Save Load	Password OK (Cancel

"Outbound packets" tab shows:

SDS Manager	Settings: D5 <¥3.14(5)>+N	_ 🗆 🗙	
Access Local Device	Network Settings Serial Settings Outbound packets All		Refresh
	Max packet length 255		
	Max intercharacter delag1		
Status M	Start on any char 1-Yes		Settings
🧼 🛄 🐗 🔟	Use start-character O- No		Upgrade
	Start character (ASCII 0		
	Use stop-character O- No		Initialize
	Stop-character (ASCII c 0		outing Status
	Number of post-charactem O		Buzz!
			DUZZ!
			Change IP
			Add
D	J		
υ		. 1	
	Save Load Password OK Ca	ancel	
			1.

"All" tab shows the following configuration:

etwork Settings Seria	1 Settings Outbound packets All	
Owner name	ELC-ETHN	~
Device name	1.444	
MAC-address	0. 2. 3. 5. 51, 183	
DHCP	0- Disabled	
IP-address	192. 168. 0. 200	
Port	4000	
Transport protocol	1- TCP	
Broadcast VIIP data	(irrelevant)	
Inband commands	0- Disabled	
Data login	0- Disabled	
Connection timeout (m:	n O- Disabled	
Routing Mode	2- Client only	
Connection mode	0- Immediately (on powerup)	
Destination IP-addre		
Destination port	5000	
Gateway IP-address	192.168.0.1	
Subnet mask	255, 255, 255, 0	
Notification destina	ti 0- Last port	
Serial Settings		
Serial interface	1- Half-duplex	
RTS/CTS flow control	1- Local	
DTR mode	0- Idle or remote	
Baud rate	3- 9600 bps	
Parity	0- None	
Data bits	1-8 bits	
Soft entry into Seria	10- Disabled	
On-the-Fly commands	0- Disabled	
Password for on-the-	(] (irrelevant)	
Notification bitmask	0	
Outbound packets		
Max packet Length	255	
Max intercharacter del	av 1	
Start on any char	1- Yes	
Use start-character	0- No	
Start character (ASCI	10	
Use stop-character	0- No	
Stop-character (ASCII		
Number of post-charac		
•	N1987	
100		

Confirm your settings by clicking "OK". You also can save your settings for loading next time.

Communicating with Device Server		
Logging in		
Cancel		

Second part: Communication and monitor with xLogicSoft software.

1.Link ELC-Ethernet to ELC-18 CPU module

2. Here are two options to open "COM PORT":

	\odot	
A. click	~	symbol

B. select menu Tools->Configuration

Communicat:	ion Configu	uration 🛛 🔀
Modbus Type:	RTU	PLC Address 1
• RS232	RS232 RS232 Port	COM1 • Bps 9600 •
	Ethernet —	
C Ethernet	Port	5000 Search
	© Server	PLC's IP
	C Client	Address
Connect		Cancel

3.Select "Ethernet" option

Communicat	ion Config	uration		🥞 Settings: DS ≺¥3.	14 (S)>+₩	
				Network Settings Serial	L Settings Outbound packets All	
Modbus Type:	RTU	PLC Address	1	Owner name	ELC-ETHN	~
	- RS232			Device name		
C RS232	RS232 Port	COM1 - Bps	9600 👻	MAC-address	0. 2. 3. 5. 51. 183	
		J DPS	1	DHCP	0- Disabled	
	- Ethernet			IP-address	192. 168. 0. 200	
		(F000	Search	Port	4000	
Ethernet	Port	5000	Jearch	Transport protocol	1- TCP	
				Broadcast UDP data	(irrelevant)	
		PLC's IP		Inband commands	0- Disabled	
	Server	0%		Data login	0- Disabled	
		070		Connection timeout (min	n O- Disabled	
				Routing Mode	2- Client only	
		Address		Connection mode	0- Immediately (on powerup)	=
	C Client	192 . 168 . 0	0 . 5	Destination IP-addres	ss 192. 168. 0. 214	
		d.		Destination port	5000	
				Gateway IP-address	192.168.0.1	
Connec	t to PLC		Cancel	Subnet mask	255. 255. 255. 0	
				Notification destinat	ti 0- Last port	×
-				Save Load	Password	Cancel

Communicati	ion Config	iration		
Modbus Type:	RTU	•	PLC Address	1
C RS232	RS232 RS232 Port	COM1	Bps	9600 💌
	-Ethernet			
Ethernet	Port	5000		Search
	Server	PLC's IP	192.168.0.3	200 💌
	buru	L	2%	
	C Client	Address	. 168 . C) . 5
		,		
Connect	to PLC			Cancel

When the "PLC's IP" has been found, you can do the following.

5. Click "Connect to PLC" button, and then the Ethernet module and PC will be linked.

After the Ethernet module and PC are linked, many features are available, e.g. Downloading user program into xLogic CPU module, uploading program into PC and online monitor (monitor real time status of xLogic IO) can be done, herewith Ethernet module just plays the role of ELC-RS232/USB programming cable.

- A. Upload program : click 📴
- B. Download program: click 📕
- C. Monitor program run status: click 📮

Option 2: ELC-Ethernet unit as server (Slave), xLogicsoft software as Client.

cess 🙀	Settings: DS <v3.1< th=""><th>4(S)>+N</th><th>Refresh</th></v3.1<>	4(S)>+N	Refresh
t MAC	Owner name Device name		Settings
(□) ♦ 0.2.3	MAC-address	0. 2. 3. 5. 51. 183	Upgrade
	DHCP	O- Disabled	Initialize
	IP-address Port	192. 168. 0. 200 4000	outing Status
	Transport protocol	1- TCP	Buzz!
	Broadcast UDP data	(irrelevant)	Change IP
	Inband commands	O- Disabled	
	Data login Connection timeout (min)	O- Disabled O- Disabled	Add
	Routing Mode	2- Client only 🔹	
	Connection mode Destination IP-address	O- Server (Slave) 1- Server OR Client (Master) 2- Client only	The Routing n will act as a se
	Destination port Gateway IP-address	192. 168. 0. 1	
	Gateway IF-address Subnat mack Save Load	192.168.0.1 255.255.255 0 Password OK Cancel	

The Routing mode set "0-Server(Slave)" ,ELC-Ethernet will act as a server.

Sector Decomes Seria	l Settings Outbound packets All
Owner name	ELC-ETHN
Device name	
MAC-address	0.2.3.5.51.183
DHCP	O- Disabled
IP-address	192, 168, 0, 200
Port	4000
Transport protocol	1- TCP
Broadcast VDP data	(irrelevant)
Inband commands	O- Disabled
Data login	0- Disabled
Connection timeout (mi	n O- Disabled
Routing Mode	0- Server (Slave)
Connection mode	(irrelevant)
Destination IP-addres	ss (irrelevant)
Destination port	(irrelevant)
Gateway IP-address	(irrelevant)
Subnot mock	(irrelevent)

Confirm your settings by clicking "OK".

Communicating with Device Server
Rebooting Device Server
[Cancel]

xLogicsoft communication configuration as follows:

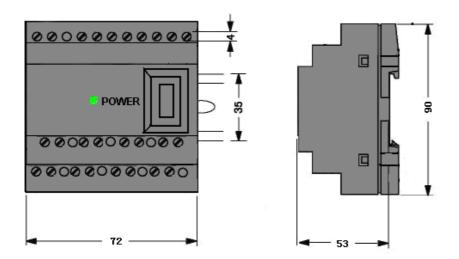
	😼 Settings: DS <v3.14(s)>+N 📃 🗖 🔀</v3.14(s)>
Communication Configuration	Network Settings Serial Settings Outbound packets All
Modbus Type: RTU PLC Address 1	Owner name ELC-ETHN
	Device name
C 92222	MAC-address 0.2.3.5.51.183
C RS232 RS232 Port 00M1 _ Bps 9600 _	DHCP O- Disabled
Ethernet	IP-address 192.168.0.200
	Port 4000
Ethernet Port 4000 Search	Transport protocol 1- TCP
	Broadcast UDP data (irrelevant)
PLC's IP	Inband commands O- Disabled
C Server	Data login O- Disabled
0%	Connection timeout (min O- Disabled
	Routing Mode O- Server (Slave)
Address	Connection mode (irrelevent)
Client 192 . 168 . 0 . 200	Destination IP-address (irrelevant)
	Destination port (irrelevant)
	Gateway IP-address (irrelevant)
Connect to PLC Cancel	Subnat mack (ivvalament)
Lancei	
	Save Load Password OK Cancel

Click "Connect to PLC" button, and then the Ethernet module and PC will be linked.

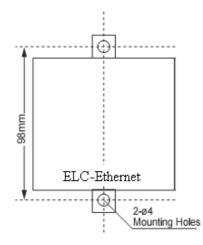
In addition, if more than one CPU module is required in certain application/project system, then communication between those CPU modules has to be done via Ethernet module. To achieve this, please note that each CPU module must require one Ethernet module to be linked to. In other words, one Ethernet module can ONLY be used to link with ONE CPU module.

Note: MODBUS RTU is the communication protocol between the Ethernet module and any other device. Such communication protocol would be available if required.

Dimension:



Mounting Hole Layout



Model	ELC-Ethernet-DC	ELC-Ethernet-AC
Supply Voltage	DC 12-24V	AC 110-240V