ioLogik E2262 User's Manual

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www.moxa.com/product

ioLogik E2262 User's Manual

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Table of Contents

1
Introduction

The ioLogik E2262 is a stand-alone Active Ethernet I/O server. It connects thermocouple sensors and digital output on/off switches for automation applications over Ethernet and IP-based networks.

The following topics are covered in this chapter:

- **Overview**
  - Traditional Remote I/O
  - Active Ethernet I/O
  - Click&Go
  - Optional Liquid Crystal Display Module (LCM)
- **Product Features**
- **Packing List**
- **Product Specifications**
- **Physical Dimensions**
  - With LCD Module
  - Without LCD Module
- **Hardware Reference**
  - Panel Guide
  - LED Indicators

Overview

(shown with and without optional LCM)

The ioLogik E2262 is part of the E2000 line of ioLogik Active Ethernet I/O servers, which are designed for intelligent, pro-active status reporting of attached thermocouples over a network. It includes 2 MB of Flash ROM and 8 MB of SDRAM. An optional hot-pluggable Liquid Crystal Display Module (LCM) can be used to view and configure device settings.

Traditional Remote I/O

Ethernet remote I/O solutions have been on the market for a long time. Traditional solutions are "passive," in the sense that I/O servers wait passively to be polled by a host computer. The response time in this type of setup, however, tends to be on the order of seconds. The "passive" remote I/O structure is simply inadequate for data acquisition and control systems that require a response time on the order of hundredths of seconds.

Active Ethernet I/O

Moxa's Active Ethernet I/O line was developed specifically to address the limitations of the traditional passive approach. Rather than having the host computer poll the I/O device server over the network for the status of each I/O device, the Active Ethernet I/O server intelligently sends the host computer status information under user-specified conditions. This is a report by exception approach, which greatly reduces the load on CPU and network resources. Network packets are far fewer in number and far smaller in size, since I/O information is only sent when necessary, and only information from the specified I/O device is sent. Based on field tests of an ioLogik E2000 series server used in an RFID system, 50 ms is the typical response time over a 100 Mbps Ethernet network. Moxa's active I/O messaging system uses TCP or UDP for I/O messaging and supports sending messages to up to ten host computers simultaneously.

In addition to providing intelligent status reporting, Active Ethernet I/O servers are backwards compatible, with all of the functions and capabilities of traditional passive remote I/O servers.

Click&Go

Moxa developed the Click&Go Logic control interface for easy configuration and deployment of Active Ethernet I/O. Click&Go's intuitive, graphical interface lets administrators use simple IF/THEN statements as rules to determine how the Active Ethernet I/O server responds to different I/O conditions. For example, the Active Ethernet I/O server could be programmed so that if the temperature recorded by an attached sensor reaches a certain value, an attached switch is turned on and an e-mail is sent to an administrator. Click&Go makes it easy to define a set of these rules, which will become the basis for your Active Ethernet I/O system.

Optional Liquid Crystal Display Module (LCM)

In order to make user easy view, the ioLogik E2262 supports an optional hot-pluggable Liquid Crystal Display Module (LCM) for field management and configuration. The LCM can display network and I/O settings such as temperature value. The ioLogik E2262's IP address and netmask can also be configured using the LCM, and one LCM can be used to maintain and configure all ioLogik 2000 devices.

Product Features

- Click&Go Logic for easy configuration of your Active Ethernet I/O system
- High-speed active I/O messaging
- 8 input channels for various thermocouple temperature sensors, such as J, K, T, E, R, S, B, and N type TC sensors, and more, with software selectable filtering time
- 4 channels for 24 VDC output with Pulse Output mode and software selectable pulse width
- 10/100 Mbps Ethernet supporting Modbus/TCP and up to 10 hosts
- Windows utility and quick programming library for VB, VC++, BCB (coming soon)
- Expandable I/O through optional RS-485 modules
- Supports SCADA software including InTouch, Citect, and iFix32
- SNMP for system management and I/O status
- Remote management over the network including firmware updates
- Supports TFTP server to import configuration
- Power-on and safe status settings for digital output
- Optional hot-pluggable LCM for status display and configuration

Packing List

The ioLogik E2262 is shipped with the following items:

Standard Accessories

- ioLogik E2262 Active Ethernet I/O server
- Document and Software CD

Optional Accessories

- LDP1602 ioLogik liquid crystal display module (LCM)

NOTE: Notify your sales representative if any of the above items are missing or damaged.

Product Specifications

LAN

Ethernet	10/100 Mbps, RJ45
Protocols	Modbus/TCP, TCP/IP, UDP, DHCP, Bootp, SNMP (MIB for I/O and Network), HTTP

Serial

Interface	RS-485 (2-wire): Data+, Data-, GND
Serial Line Protection	15 KV ESD for all signals

Serial Communication Parameters

Parity	None
Data Bits	8
Stop Bits	1
Flow Control	None
Speed	1200 to 115200 bps
Protocol	Modbus/RTU
Built-in RTC	Yes

Thermocouple Input

Channels	8, thermocouple sensors
I/O Mode	J, K, T, E, R, S, B, and N type TC sensors, and mV
Input Impedance	> 1 mega-ohm
Resolution	0.1°C
TC Conversion Rate	90 ms per channel
Accuracy	+/-0.1%
Zero Drift	+/- 6 uV/ºC (typical)
Span Drift	+/- 25 ppm/ºC
CMR @50/60Hz	92 dB
NMR @50/60Hz	92 dB
Optical Isolation	2 KVrms / 3 KVDC

Supported Thermocouple Types

Sensor Type	Degree Range	Count Range
J	0 to 750°C	0 to 7500
K	-200 to 1250°C	-2000 to 12500
T	-200 to 350°C	-2000 to 3500
E	-200 to 900°C	-2000 to 9000
R	-50 to 1600°C	-500 to 16000
S	-50 to 1760°C	-500 to 17600
B	600 to 1700°C	6000 to 17000
N	-200 to 1300°C	-2000 to 13000

Supported millivolt Resolution Mode

2.3 µV	-78.126 to +78.126 mV	-781260 to 781260
1.15 µV	-39.062 to +39.062 mV	-390620 to 390620
0.5 µV	-19.532 to +19.532 mV	-195320 to 195320

Virtual Thermocouple

Channels	8
Operation Mode	Average, Difference

Digital Output

Channels	4, sink type
On-state Voltage	24 VDC nominal, 30 VDC max.
Output Current Rating	Max. 200 mA per channel
Optical Isolation	2 KVrms/3 KVDC

Protection	Over temperature shutdown: 170°C Over current limit: 750 mA/channel (typical)

Power Requirements

Power Input	24 VDC nominal, 12 to 48 VDC (max.)
Power Consumption	175 mA @ 24 VDC (typical) 4.6 W with LCM (max.)
Field Power	24 VDC nominal, up to 48 VDC

Mechanical Specifications

Wiring	I/O cable max. 14 AWG

Environmental

Operating Temperature	-10 to 60ºC (14 to 140ºF), 5 to 95%RH
Storage Temperature	-40 to 85ºC (-4 to 185ºF), 5 to 95%RH
Shock	IEC60068-2-27
Freefall	IEC60068-2-32
Vibration	IEC60068-2-6
MTBF	> 200,000 hrs @ 25°C

Agency Approvals

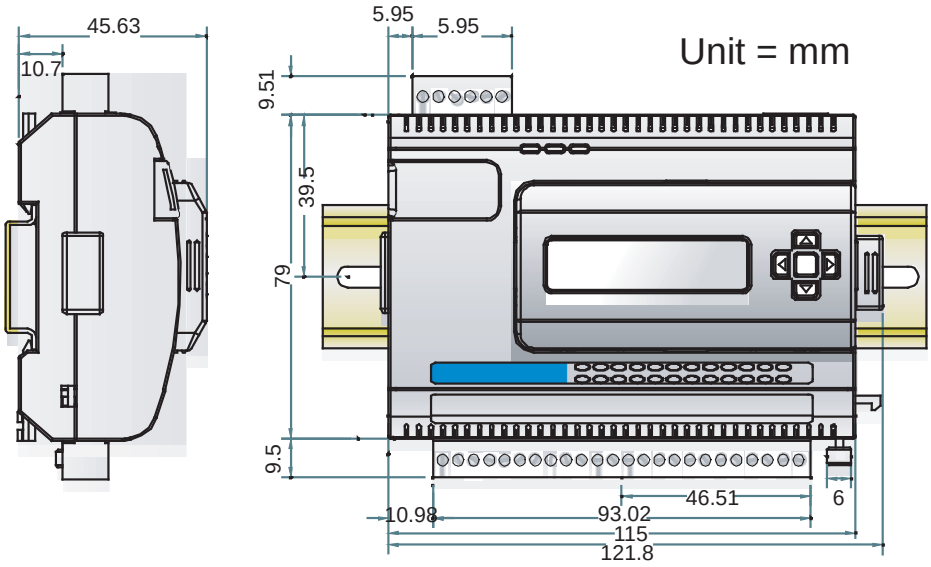
EMC	FCC Part 15, CISPR (EN55022) Class A CE-IEC61000-4-2 (ESD), Level 2/3 CE-IEC61000-4-3 (RS), Level 2 CE-IEC61000-4-4 (EFT), Level 2 CE-IEC61000-4-5 (Surge), Level 3 CE-IEC61000-4-6 (CS), Level 2 CE-IEC61000-4-8 (PM), Level 1 CE-IEC61000-4-11 (Dip) CE-EN61000-6-2 CE-EN61000-6-4
Safety	UL 508

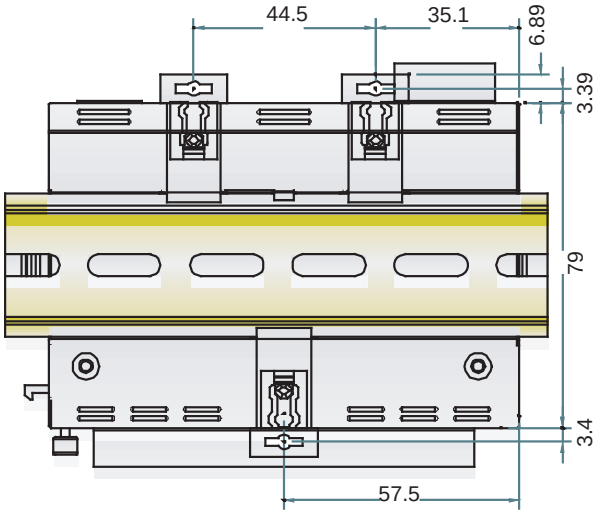
Warranty

Period	2 years

Physical Dimensions

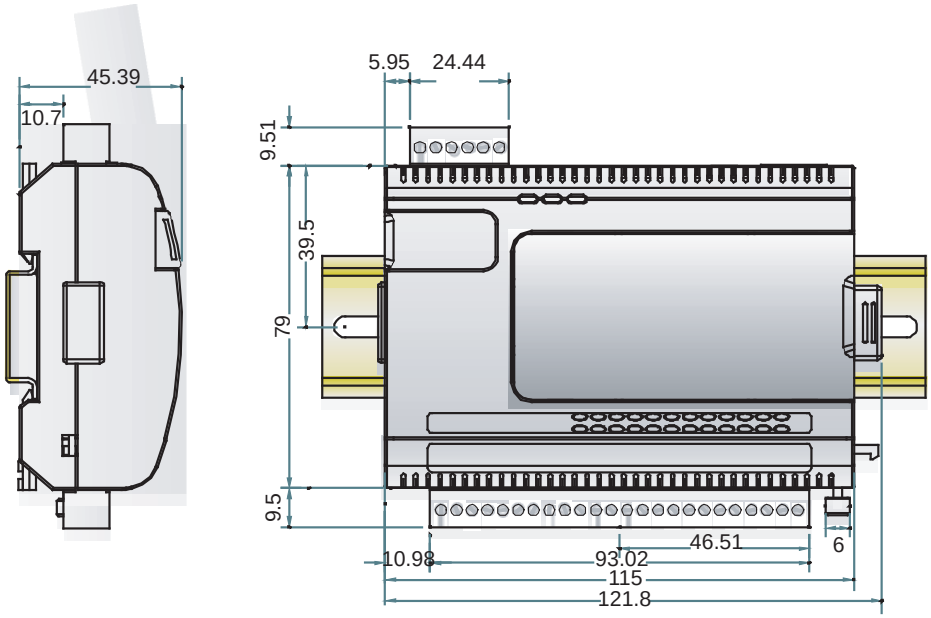
With LCD Module





Without LCD Module

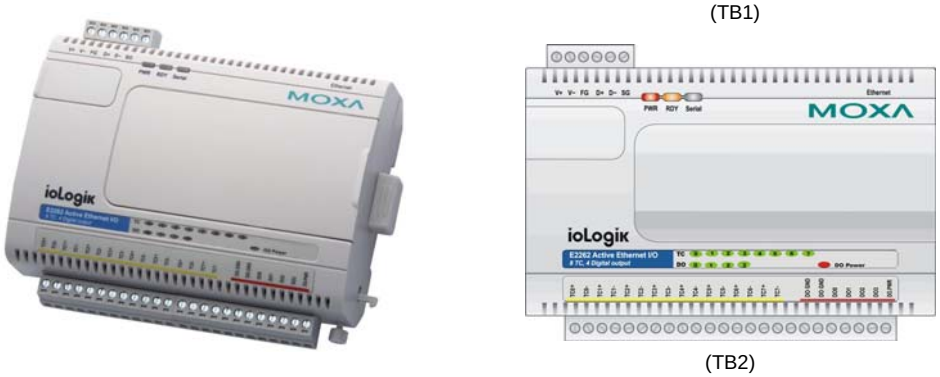
Unit = mm



Hardware Reference

Panel Guide

(TB1)



(TB2)

NOTE: The reset button restarts the server and resets all settings to factory defaults. Use a pointed object such as a straightened paper clip to hold the reset button down for 15 sec. The RDY LED will turn red as you are holding the reset button down. The factory defaults will be loaded once the RDY LED turns green again. At this point, you can release the reset button.

LED Indicators

Ethernet		
Ethernet	orange	Valid 10 Mbps Ethernet connection
	green	Valid 100 Mbps Ethernet connection
	(flashing)	Transmitting or receiving data
System		
PWR	red	Power is on
	off	Power is off
RDY	red	System error
	green (steady)	Unit is functioning normally
	green (flashing)	Click&Go ruleset is active
	green & red (flashing)	Safe status settings activated
	off	Power is off or there is a power problem.
Serial	(flashing)	Serial port is receiving/transmitting data
Thermocouple		
TC × 8 channels	green	Normal operation
	red	Channel error or no connection
	off	Channel off
Digital Output		
DO × 4 channels	green	ON status
	off	OFF status
DO PWR	red	ON status
	off	No power in

2
Initial Setup

This chapter describes how to install the ioLogik E2262.

The following topics are covered:

- **Hardware Installation**
  - Connecting the Power
  - Grounding the ioLogik E2262
  - Connecting to the Network
  - Setting the RS-485 Baudrate
  - Adding More I/O Channels
- **Software Installation**

Hardware Installation

Connecting the Power

Connect the 12 to 48 VDC power line to the ioLogik E2262's terminal block (TB1). If power is properly supplied, the Power LED will glow a solid red color until the system is ready

ATTENTION

Disconnect the power before installing and wiring
Disconnect the power cord before installing and/or wiring your ioLogik E2262.

Do not exceed the maximum current for the wiring
Determine the maximum possible current for each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size.
If the current exceeds the maximum rating, the wiring could overheat, causing serious damage to your equipment.

Grounding the ioLogik E2262

There are two grounding points on the ioLogik E2262: the wall mounting point and the DIN-rail mounting plate. Note that both grounding points are actually connected to the same conducting pathway.

Connecting to the Network

1. Connect the ioLogik E2262 to the host PC with an Ethernet cable. For initial setup of the ioLogik E2262, it is recommended that the ioLogik E2262 be configured using a direct connection to a host computer rather than remotely over the network.
2. Note the ioLogik's default IP settings:

IP Address	Netmask	Gateway
192.168.127.254	255.255.255.0	None

   Configure the host PC's IP address to 192.168.127.*xxx*. (*xxx*: from 001 to 253) so the ioLogik will be visible on the network. In Windows, you will need to do this through the Control Panel.
3. Use ioAdmin or the web console to detect the ioLogik E2262. Once the ioLogik E2262 has been detected, modify the settings as needed for your network environment, then restart the ioLogik E2262. For information on ioAdmin, please refer to Software Installation later in this chapter.

Setting the RS-485 Baudrate

The RS-485 port on the ioLogik E2262 is reserved for connecting to another ioLogik R2000 I/O server. The RS-485 port can run Modbus/RTU or I/O command sets. The baudrate is set by a physical dial on the back of the ioLogik E2262. The default settings are baudrate = 115200, parity check = N, data bits = 8, and stop bit = 1.

	Baudrate for RS-485 (parameters are N, 8, 1)	Dial setting and corresponding baudrate: 0:115200 1:57600 2:38400 3:19200 4:9600 5:4800 6:2400 7:1200

Remember to restart the ioLogik E2262 after making any changes to the RS-485 baudrate.

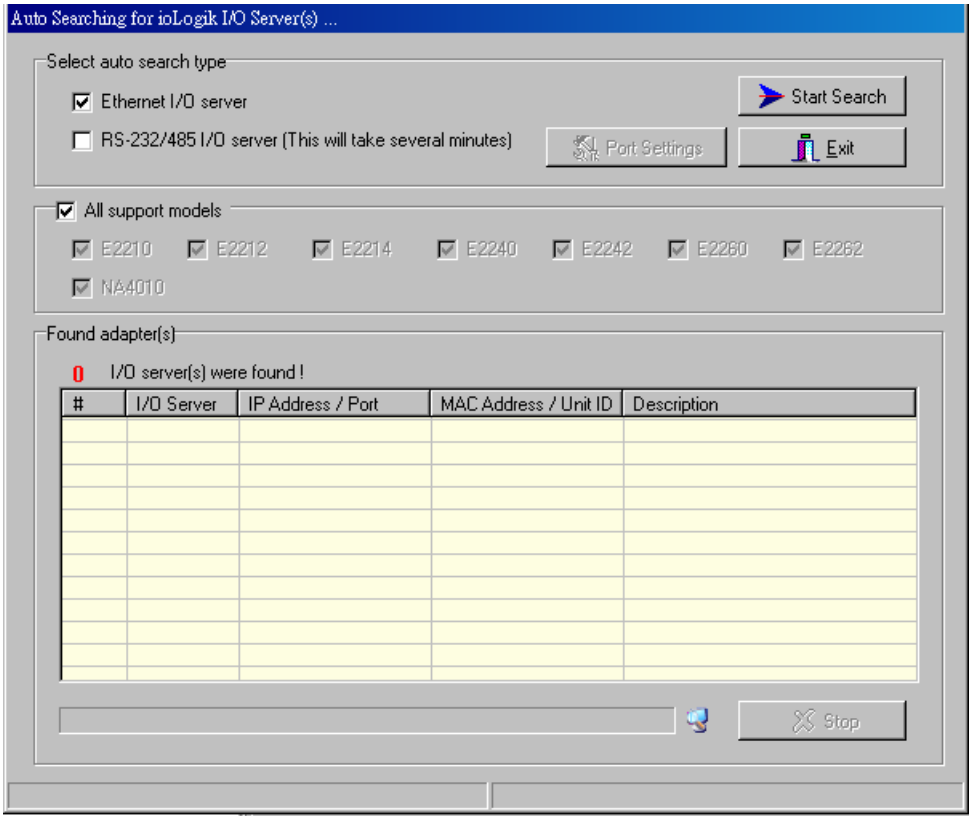
Adding More I/O Channels

A cost effective way to add more I/O channels to your ioLogik E2000 I/O server is to attach the appropriate ioLogik R2000 I/O server. The two servers can be snapped together using the RS-485 system bus connector, as shown in the following figure. Digital I/O channels can be added using the ioLogik R2110, and analog I/O channels can be added using the ioLogik R2140. For additional details, please refer to the ioLogik R2110 or R2140 user's manual.

Software Installation

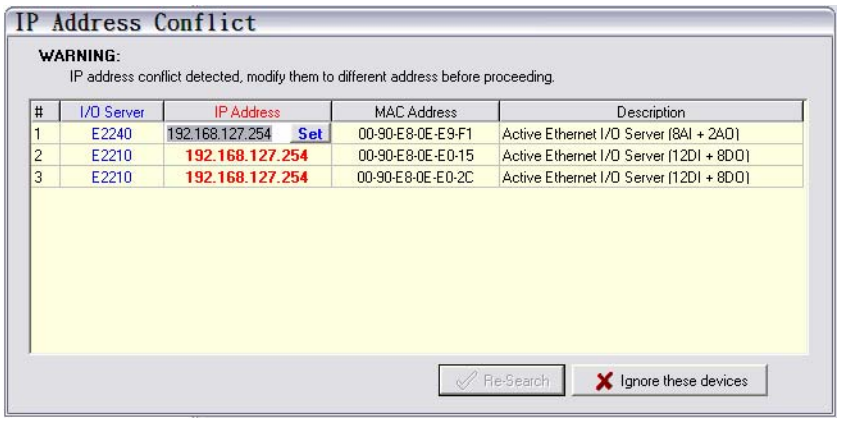
ioAdmin is a Windows utility provided for the configuration and management of the ioLogik E2262 and attached I/O devices. It can be used from anywhere on the network to monitor and configure the ioLogik E2262. You can also configure some of the settings through the web console or optional LCM.

1. **Installation from CD**: Insert the Document and Software CD into the host computer. In the root directory of the CD, locate and run SETUP.EXE. The installation program will guide you through the installation process and install the ioAdmin utility. You can also install the MXIO DLL library or ioEventLog separately.
2. **Open ioAdmin**: After installation is finished, run **ioAdmin** from **Start → Program Files → Moxa→ IO Server → Utility → ioAdmin**.
3. **Search the network for the server**: When ioAdmin is started, a pop-up window will appear to help you search for these I/O devices. Or, you can search for a specific model. On the menu bar, select **System →Auto Scan Active Ethernet I/O Server**. In the dialog window that appears, click **Start Search** to begin searching for the ioLogik E2262.

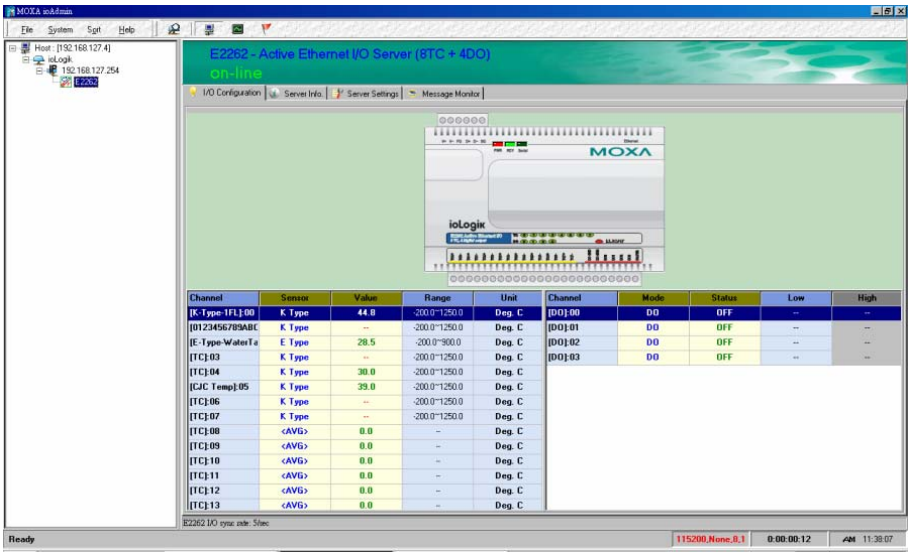


If ioAdmin is unable to find the ioLogik E2262, there may be a problem with your network settings.

When **multiple ioLogik E2000 units** are on the same network, remember that each unit has the same default IP address. You will need to assign a different IP address to each unit to avoid IP conflicts. ioAdmin automatically detects IP conflicts and gives you a chance to modify each unit's IP address in the "IP Address" columns. Click the "Set" button to reboot the corresponding unit with its new IP address. Click the "**Re-Search**" button to refresh the list of units found by ioAdmin.



4. **Monitoring I/O status**: Once the ioLogik E2262 is found by ioAdmin, you can view the status of all I/O devices on ioAdmin's main screen.



You can now use ioAdmin to set up or configure your ioLogik E2262.

3
Utilities

This chapter goes over the functions available in ioAdmin, the ioLogik E2262's main configuration and management utility.

The following topics are covered:

- **Introduction to ioAdmin**
- **Features of ioAdmin**
- **ioAdmin Main Screen**
  - Main Screen Overview
  - Wiring Guide
- **Menu Items**
  - File
  - System
  - Sort
  - Help
  - Quick Links
- **Main Window**
  - I/O Configuration Tab (General)
  - Server Info Tab
  - Server Settings Tab (General)
  - Message Monitor Tab
- **ioAdmin Administrator Functions**
  - I/O Configuration Tab (Administrator)
  - Server Settings Tab (Administrator)
  - Network Tab
  - Firmware Update Tab
  - Watchdog Tab
  - Click&Go Logic Tab
- **Server Context Menu**
- **Using TFTP to Import/Export Configuration**
- **Using ioEventLog**

Introduction to ioAdmin

The ioLogik I/O server can be managed and configured over the Ethernet by ioAdmin, a Windows utility provided with your ioLogik E2262. ioAdmin's graphical user interface gives you easy access to all status information and settings.

The ioLogik E2262 also supports configuration by web console and by optional LCM, but full configuration and management is only available through ioAdmin.

A new feature in ioAdmin automatically detects IP conflicts between ioLogik E2000 units. If ioAdmin detects an IP conflict, a window will appear that allows you to resolve the IP conflict immediately and restart each unit.

ioAdmin also includes Click&Go Logic control for the configuration of your Active Ethernet I/O system.

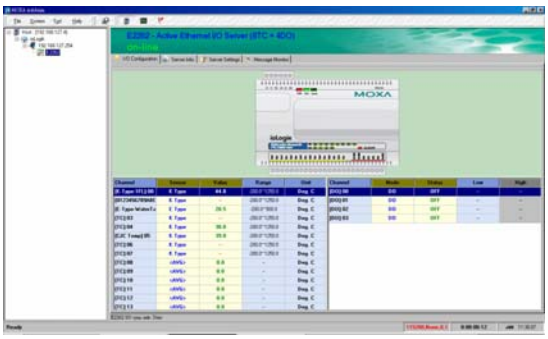
ioAdmin consists of following software:

- **ioAdmin with Click&Go Logic**
- **ioLogik 2000 Wiring Guide**
- **ioLogik 4000 Wiring Guide**

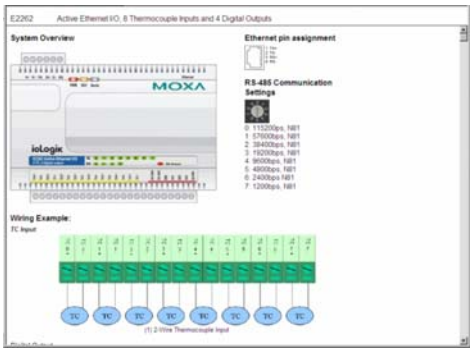
Features of ioAdmin

Remote Management
Over the Ethernet network, ioAdmin allows users to

- Find and configure multiple ioLogiks
- Monitor and configure attached I/O devices
- Test I/O devices
- Reset the ioLogik



On-line Wiring Guide
An on-line wiring guide can be opened from within ioAdmin for your convenience. The easily accessible wiring guide can save administrators much time while planning or troubleshooting.



Configuration File

ioAdmin allows the entire configuration of the ioLogik E2262 to be saved as a file. The file is viewable as text and can serve three purposes:

- as a record or backup of configuration
- as a template for the configuration of other servers
- as a quick reference guide for you to configure Modbus drivers in a SCADA system

The file includes the following information:

1. File name, date, and time
2. Model information
3. Modbus addresses

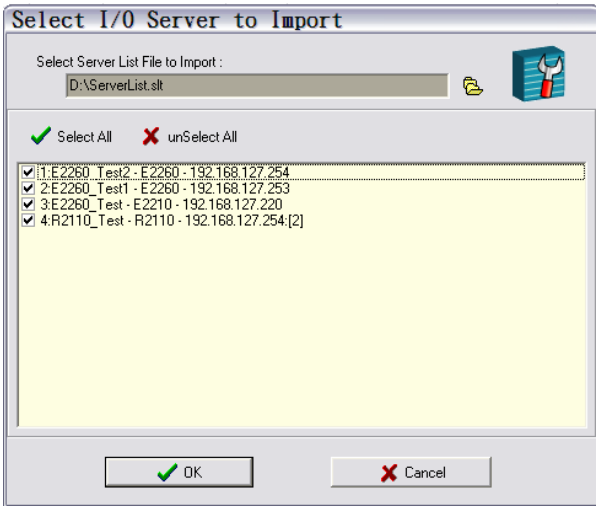
```
ioLogik E2262 Network I/O Server Configuration
========================================
Date: 2008/04/19
Time: 11:45:13
Firmware: V1.0 Build08041510
[1. Model]
----------
MOD_TYPE=E2262 - Active Ethernet I/O Server (8TC + 4DO)
MOD_LOC=
MOD_NAME=

[2. I/O Configurations]
-----------------------
TC00=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC01=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC02=0,(℃) ,Sensor Type=3,(E TYPE) ,Enable=1
TC03=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC04=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC05=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC06=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC07=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC08=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
TC09=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
TC10=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
TC11=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
TC12=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
TC13=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
TC14=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
```

Server Management List

ioAdmin can import and export a list of ioLogiks that are being managed. This file can make it easier to manage all devices on the network, and includes the following information:

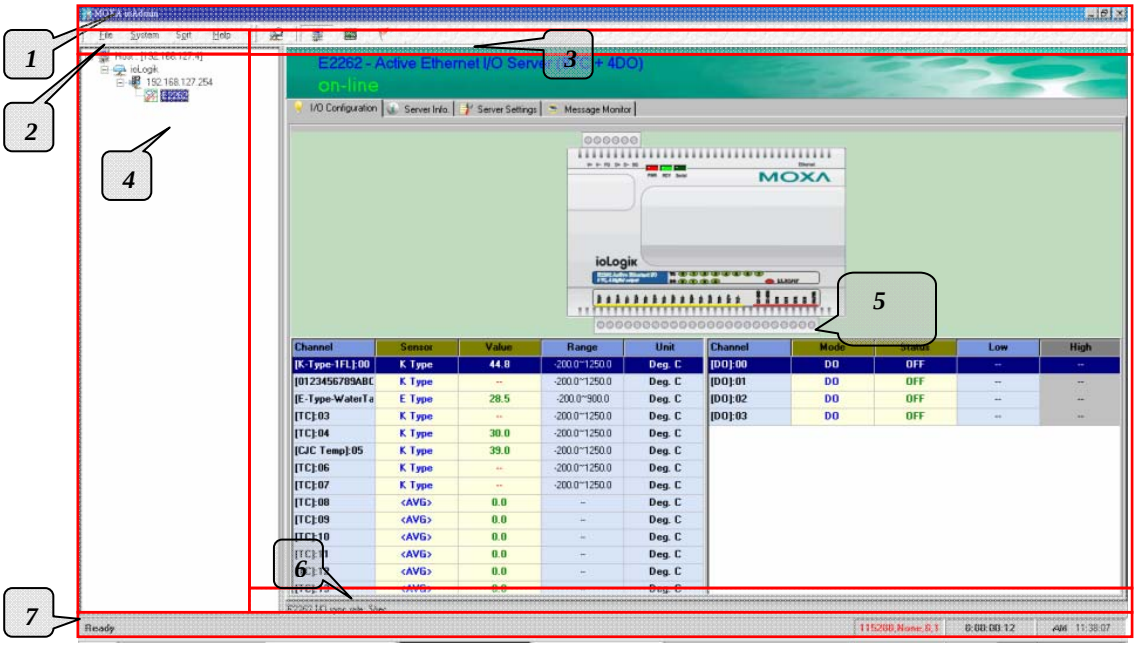
1. Server Name
2. Module Type
3. IP Address
4. Unit ID



ioAdmin Main Screen

Main Screen Overview

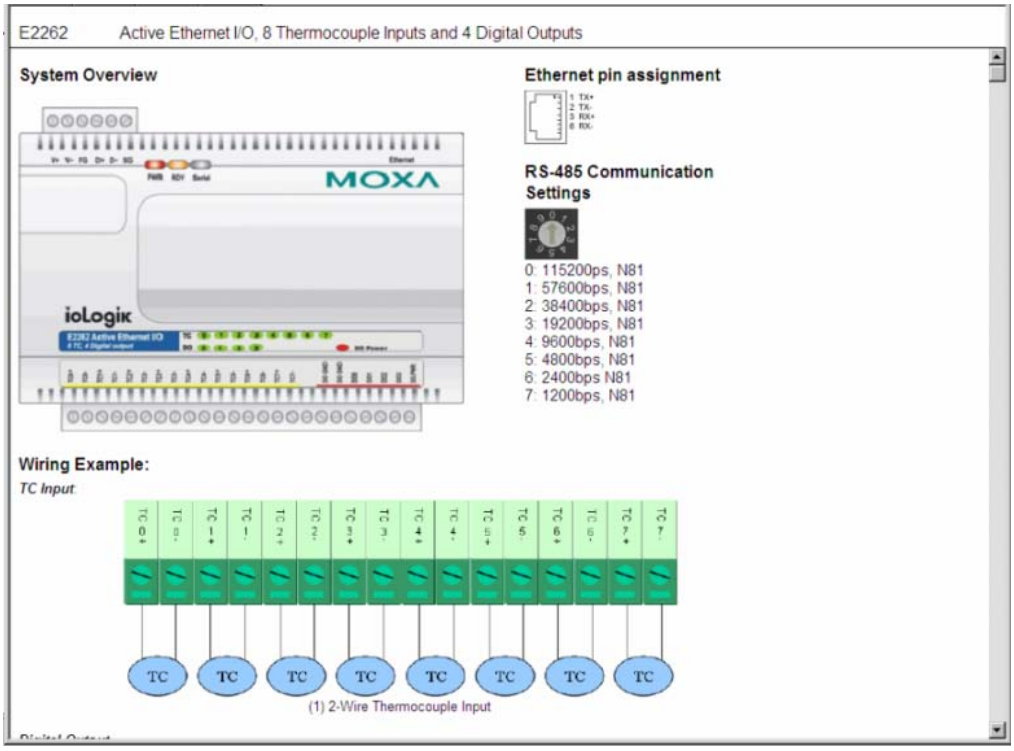
This is ioAdmin's main screen. The main window defaults to the I/O Configuration tab, which displays a figure of the ioLogik E2262 and the status of every I/O channel below it. The other tabs in the main window take you to server and network settings, and further functions are available when you log on as an administrator. Note that configuration options are not available until you log on as an administrator.



ioAdmin Main Screen	
1.	Title
2.	Menu bar
3.	Quick link
4.	Navigation panel
5.	Main window
6.	Sync. rate status
7.	Status bar

Wiring Guide

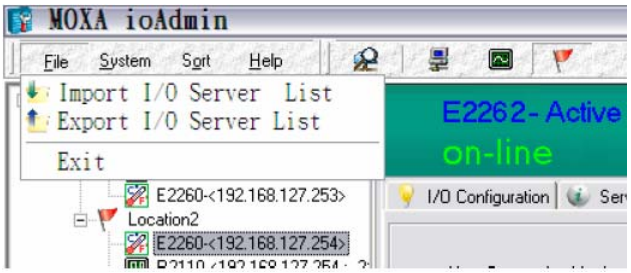
ioAdmin provides a wiring guide to the ioLogik E2262. You can access the wiring guide by right-clicking the figure of the ioLogik E2262 in the I/O Configuration tab. Select "Wiring Guide" in the submenu to open a help file showing the wiring information and electrical characteristics of the ioLogik E2262.



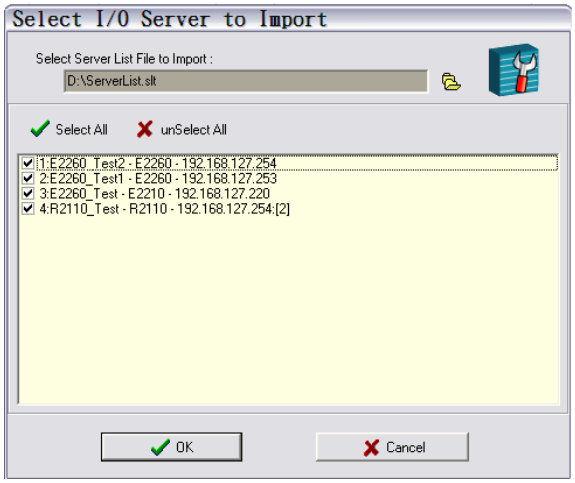
Menu Items

File

From the File menu, you can export the list of I/O servers that are currently displayed in the navigation panel. You also can import a list of I/O servers into ioAdmin.



When importing a server list, you will be prompted to select which servers on the list need to be imported.



The file will have a .SLT extension and can be opened as a text file. The server list will provide the following information for server:

1. Server Name
2. Module Type
3. IP Address
4. Unit ID

System

Several operations are possible from the System menu.

Auto Scan Active Ethernet I/O Server will search for ioLogiks on the network. When connecting for the first time or recovering from a network disconnection, you can use this command to find I/O servers that are on the network.

Network Interface allows you to select a network to use, if the PC has multiple network adapters installed.

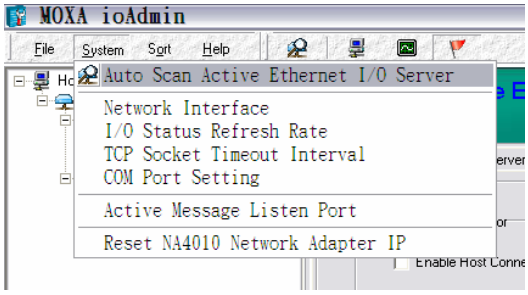
I/O Status Refresh Rate is used to adjust how often the I/O server is polled for device status. The current rate is displayed on the status bar at the bottom of the window. Note that higher sync rates result in higher loads on the network.

TCP Socket Timeout Interval allows you to select the preferred timeout value for TCP socket communication.

COM Port Setting is used to set the parameters for Modbus communciation, such as baudrate, data bits, and timeout interval. For most applications, this will involve connecting to ioLogik R-Series devices.

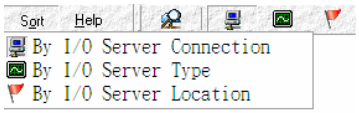
Active Message Listen Port specifies the port number to use for Active Ethernet I/O messages. If your network uses a firewall, you can coordinate this setting with your firewall settings to ensure that active messages get through.

Reset NA4010 Network Adapter IP is used to re-assign an IP address to the NA-4010 network adapter, for ioLogik 4000 systems.



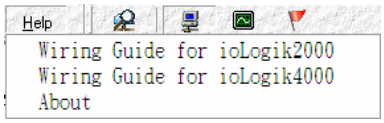
Sort

The Sort menu allows the server list in the navigation panel to be sorted by connection, type, and location.



Help

In the Help menu, you can view wiring guides and information about ioAdmin.



Quick Links

Quick links are provided to search for I/O servers on the network and sort the server list.

 Search network for I/O servers

 Sort by connection

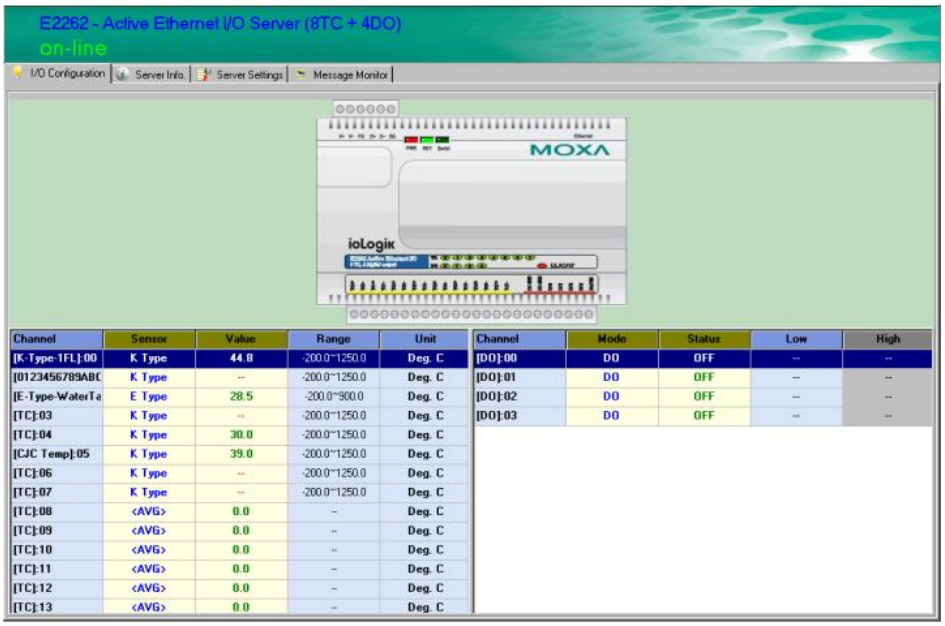
 Sort by I/O server type

 Sort by location

Main Window

I/O Configuration Tab (General)

The I/O Configuration tab shows the status of every I/O channel. This is the default tab when you first open ioAdmin.



Channel	Sensor	Value	Range	Unit
[K-Type-1FL]:00	K Type	44.8	-200.0~1250.0	Deg. C
[0123456789ABC	K Type	--	-200.0~1250.0	Deg. C
[E-Type-WaterTa	E Type	28.5	-200.0~900.0	Deg. C
[TC]:03	K Type	--	-200.0~1250.0	Deg. C
[TC]:04	K Type	30.0	-200.0~1250.0	Deg. C
[CJC Temp]:05	K Type	39.0	-200.0~1250.0	Deg. C
[TC]:06	K Type	--	-200.0~1250.0	Deg. C
[TC]:07	K Type	--	-200.0~1250.0	Deg. C
[TC]:08	<AVG>	0.0	--	Deg. C
[TC]:09	<AVG>	0.0	--	Deg. C
[TC]:10	<AVG>	0.0	--	Deg. C
[TC]:11	<AVG>	0.0	--	Deg. C
[TC]:12	<AVG>	0.0	--	Deg. C
[TC]:13	<AVG>	0.0	--	Deg. C

Channel	Mode	Status	Low	High
[DO]:00	DO	OFF	--	--
[DO]:01	DO	OFF	--	--
[DO]:02	DO	OFF	--	--
[DO]:03	DO	OFF	--	--

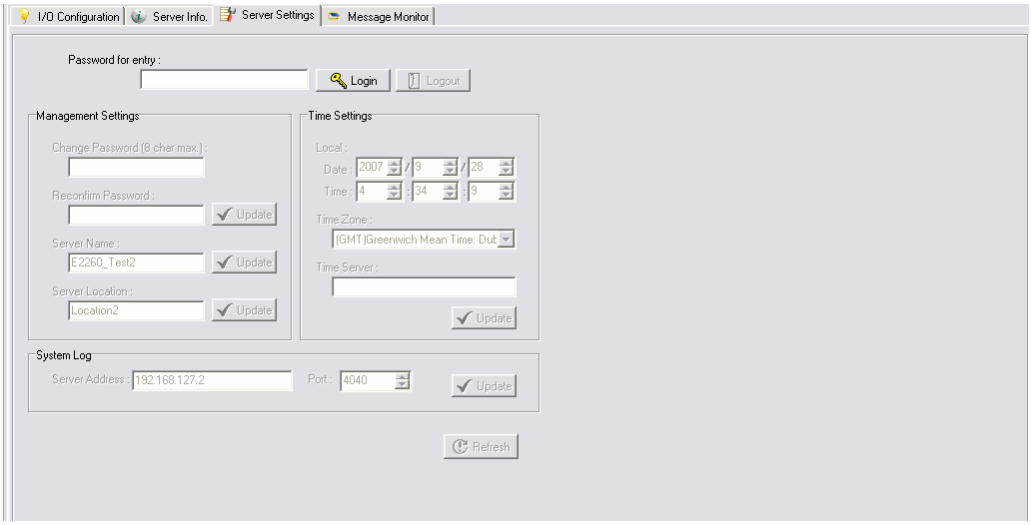
Server Info Tab

Server information, such as firmware revision, is displayed in the Server Info tab.

Address	Value/Status	Access	Description
34097	0x1393	Read	Vendor ID
34098	0x0001	Read	Unit ID for MODBUS/RTU
34100	Moxa Technologies Inc.,	Read	Vendor Name
34101	E2262 Active Ethernet I/O Server	Read	Product Name
34103	V1.0	Read	Firmware Version
34104	Build08041510 (04/15/2008)	Read	Firmware Release Date
34117	V1.0	Read	Click&Go Version
34118	V3.2.15	Read	MOS Version
34105	1	Read	Number of TCP connection
34106	0x0100	Read	Ethernet Interface Speed, 10/100
34107	00-90-E8-0D-0E-49	Read	MAC Address
34108	1	Read	LCM Detection
34109	V1.0	Read	LCM Firmware Revision
34110	Build06030112 (03/01/2006)	Read	LCM Firmware Release Date
34111	2656	Read	System Elapsed Time (in sec)
44097	192.168.127.254	Read/Write	IP Address
44098	255.255.255.0	Read/Write	Subnet Mask
44099	0.0.0.0	Read/Write	Gateway
44100	60	Read/Write	Modbus/TCP Alive Check Timeout
44101	0028 0040 0011 0019 0004 2008	Read/Write	System Local Time
44102	23	Read/Write	System Time Zone
44104	255.255.255.255	Read/Write	DNS1 Server Address
44105	255.255.255.255	Read/Write	DNS2 Server Address

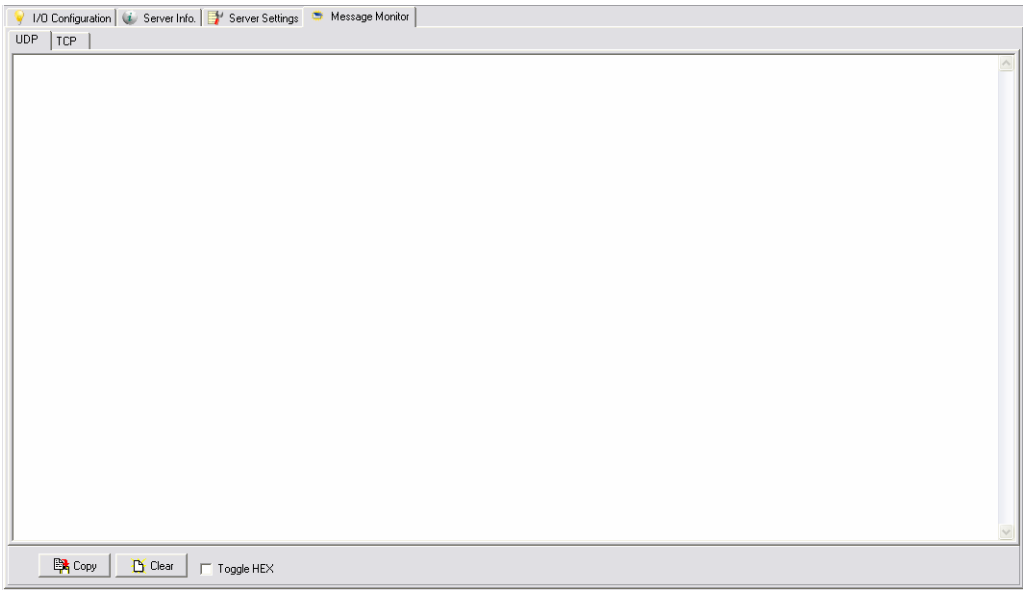
Server Settings Tab (General)

The Server Settings tab is where you log in as an administrator. This is required in order to gain access to the ioLogik E2262 configuration options. If no administrator password has been set up, simply click **Login** and leave the **Password for entry** field blank. Please refer to the ioAdmin Administrator Functions section later on in this chapter for more detail.



Message Monitor Tab

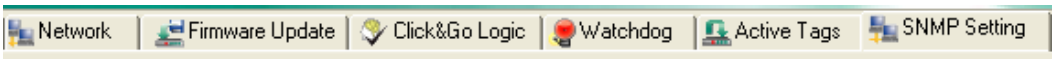
The Message Monitor tab will display any TCP/UDP I/O messages received from the ioLogik E2262. When you install the ioLogik E2262 for the first time, the Click&Go ruleset will not have been defined yet, so no messages will be displayed. Please refer to Chapter 5 for information on using Click&Go. Once a ruleset has been ddefined and activated, any TCP/UDP messages sent from the ioLogik E2262 will be displayed in the Message Monitor tab.



Messages can be displayed in ASCII or in HEX. To display messages in HEX, make sure that "Toggle HEX" is checked.

ioAdmin Administrator Functions

For full access to all configuration options, log in as an administrator in the Server Settings tab. This is required whenever you start up ioAdmin or boot up/restart the ioLogik E2262. When you install the ioLogik E2262 for the first time, the password will be blank and you can simply click **Login**. Additional functions will available after logging in, including the following new tabs:



When making configuration changes, you will need to click **Update** or **Apply** to save the changes. Some changes will require a restart of the ioLogik E2262 in order to take effect, and you will be given the option to restart the computer if necessary.

ATTENTION

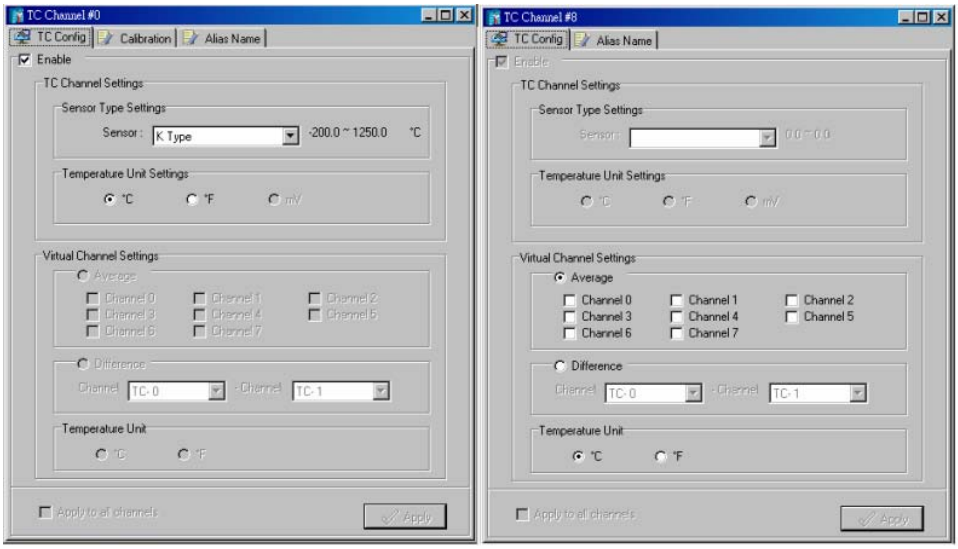
You MUST log in to access any administrator function, including Network, Communication Watchdog Timer, and Firmware Update tabs. If you forget the password, you can hold down the ioLogik's reset button to clear the password and load factory defaults. **This will result in the loss of all configuration settings and your Click&Go Logic ruleset!**

I/O Configuration Tab (Administrator)

When logged on as an administrator, you can double click on a channel in the I/O Configuration tab to configure that channel's settings. A window will open with configuration options for that channel. Settings made in this window can be copied to all I/O channels using the "Apply to all channels" option. Options for Power on Settings and Safe Status Settings are also available.

Configuring Thermocouple Input Channels

The ioLogik E2262 provides 8 fixed physical TC input (Thermocouple) channels, each supporting up to 8 different types including J, K, T, E, R, S, B, N types, and mV voltage inputs. The TC channels are numbered from channel 0 to channel 7. Moreover, channel 8 to channel 15 are virtual temperature channels that report a running average or difference of selected TC channels.



The following table is a list of supported sensor types and ranges.

Type	Temperature Range	Count Range
J	0ºC to 750ºC	0 to 7,500
K	-200ºC to 1250ºC	-2,000 to 12,500
T	-200ºC to 350ºC	-2,000 to 3,500
E	-200ºC to 900ºC	-2,000 to 9,000
R	-50ºC to 1600ºC	-500 to 16,000
S	-50ºC to 1760ºC	-500 to 17,600
B	600ºC to 1700ºC	6,000 to 17,000
N	-200ºC to 1300ºC	-2,000 to 13,000
2.3 μV	- 78.126mV to + 78.126mV	-781,260 to 781,260
1.15 μV	- 39.062mV to + 39.062mV	-390,620 to 390,620
0.5 μV	- 19.532mV to + 19.532mV	-195,320 to 195,320

The status of attached sensors will be reported by the count value, which corresponds to the sensor ranges shown above. For example, for a K type TC sensor, a count value of 10 corresponds to a 0.1°C reading. Moxa can only guarantee accuracy within the ranges shown above. Be sure to verify the sensor type. Accurate readings beyond these ranges cannot be guaranteed.

Virtual Channels

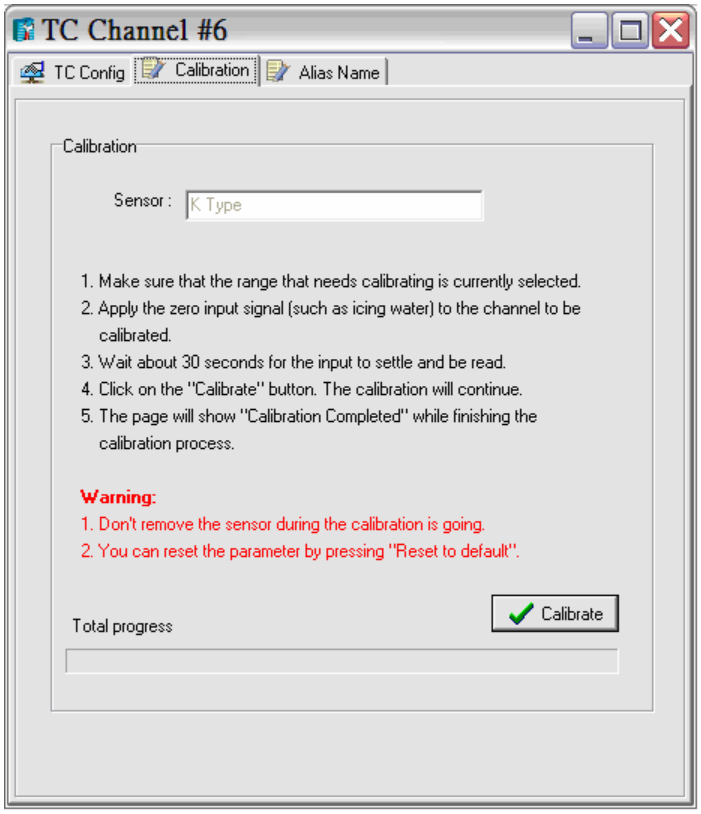
The ioLogik E2262 provides virtual channels so you can easily determine the average or deviation values for any attached temperature sensor. A virtual channel can operate in Average Mode or Deviation Mode. In Average Mode, up to 8 physical channels are selected and the virtual channel reports the average value of the selected channels. In Deviation mode, two physical channels are selected and the virtual channel reports the difference between the channels.

When using virtual channels, if there are errors on any of the selected physical channels, that channel's readings will simply be ignored. You can refer to the LED indicators to see if any errors are encountered with any of the physical channels.

Note that virtual channels only support temperature units and cannot be used with resistance units. Any channel that is connected to a mV voltage input will be treated as an error channel.

Calibration

The ioLogik E2262 allows you to calibrate the TC sensor by user. In each channel configuration section, click "Calibration" and then follow the onscreen instructions to start the TC sensor calibration. Each calibration needs about 20 seconds (per channel). Please note that you can press "Reset to default" on the Navigation Panel to reload the factory default value and ignore the user calibrated value. The default value is calibrated in the factory and is stored in the device.

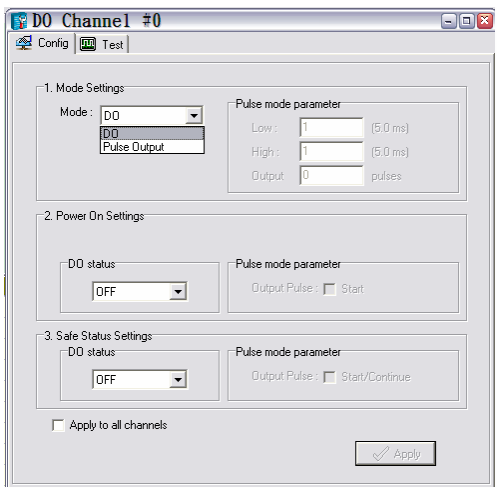


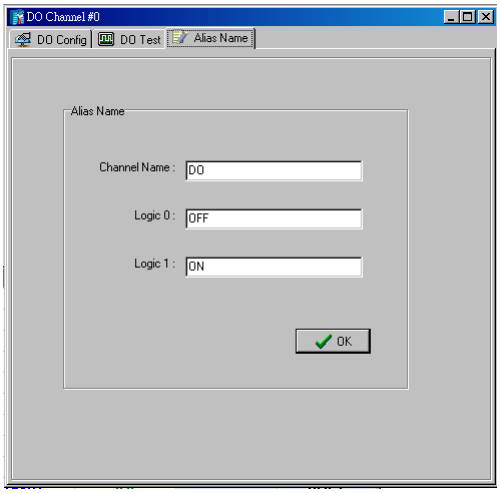
Alias Name

Click the Alias Name tab to customize the channel name. You may use names with up to 16 characters. If you already set the Alias Name on I/O Configuration page, the channel name will appear on Click&Go, Active message, and Web.

Configuring Digital Output Channels

The ioLogik E2262 is equipped with 4 digital output channels that can be set individually to "DO" or "Pulse Output" mode.





In DO mode, the specification is as follows.

Type	Logic 0 (OFF)	Logic 1 (ON)
DO mode	Open	Short

In Pulse Output mode, the selected digital output channel will generate a square wave as specified in the pulse mode parameters. The low and high level widths are entered in multiples of 5 ms, with a maximum setting of 4,294,967,295, or 248 days, 13 hours, 13 minutes, and 56 seconds.To set the low level width for 500 ms, you would enter 100 (because 100 × 5 ms = 500 ms). If the low width value is 500 and the high width value is 500, the pulse output would be a square wave with a 5-second pulse cycle. If continuous pulse output is desired, enter "0" for the number of pulses, otherwise enter the desired number of pulses between 1 and 4,294,967,295.

Power On Settings

Use this field to set the initial behavior of the DO channel when the ioLogik E2262 is powered on. You can configure whether or not the DO is set to OFF or ON at power up. For DO channels in Output Pulse mode, you can configure whether or not the pulse output commences at power up.

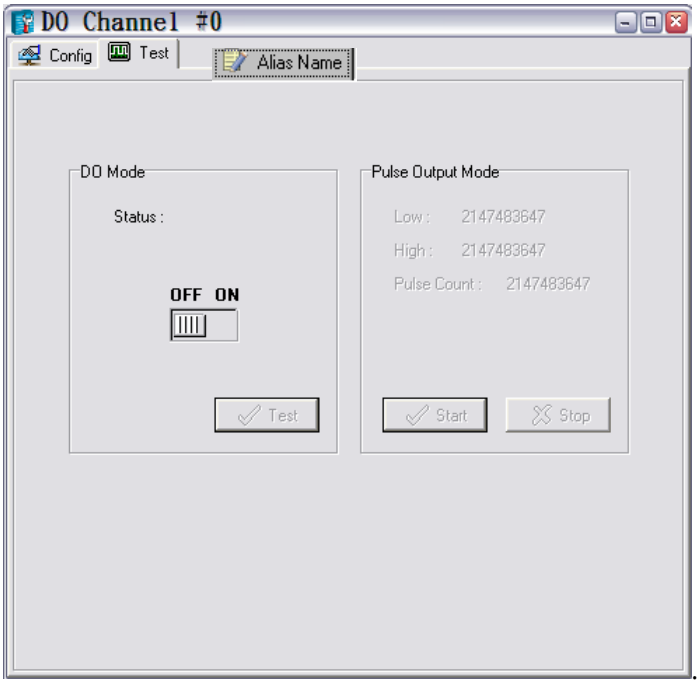
Safe Status Settings

Use this field to specify how the DO channel behaves when the network connection is lost. When the network connection is lost for the amount of time specified in the Host Connection Watchdog, each output channel will be reset to its Safe Status settings. Note that the Host Connection Watchdog is disabled by default. If the Host Connection Watchdog is disabled, the Safe Status settings will have no effect.

You can configure whether or not the DO is set to OFF or ON for Safe Status. For DO channels in Output Pulse mode, you can configure whether or not the output pulse commences or continues for Safe Status.

Test DO

You can test the DO channel by using ioAdmin.



DO-DO: set the DO to "ON" or "OFF"

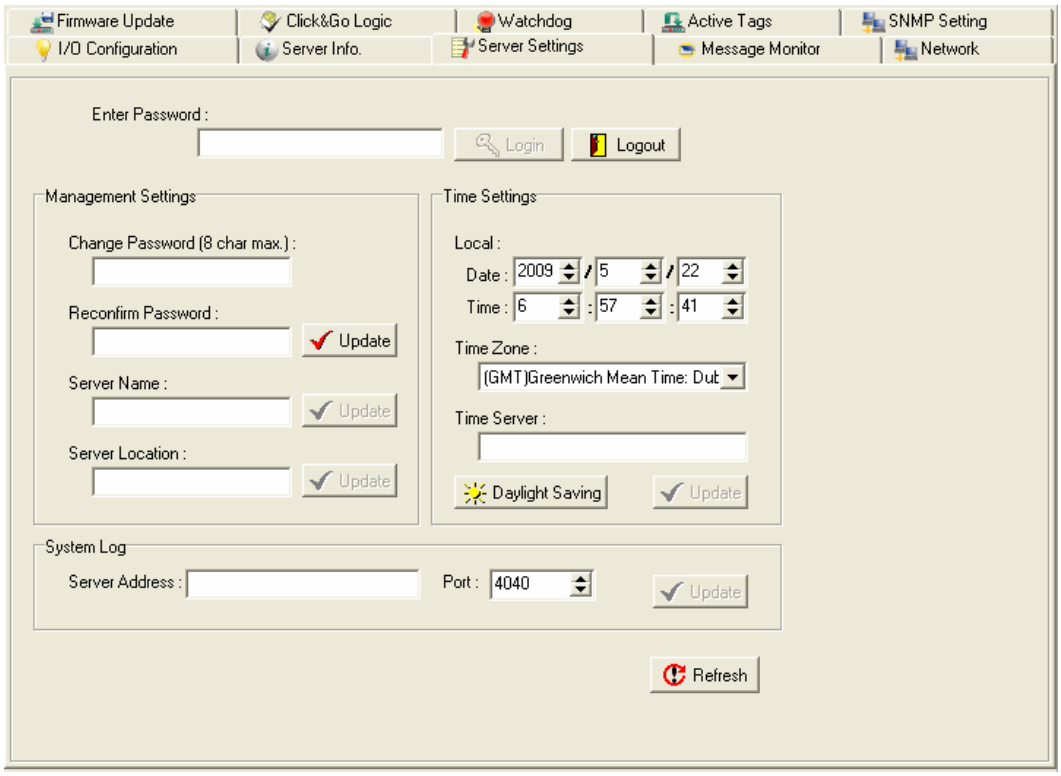
DO-Pulse: activate or stop pulse generation.

Alias Name

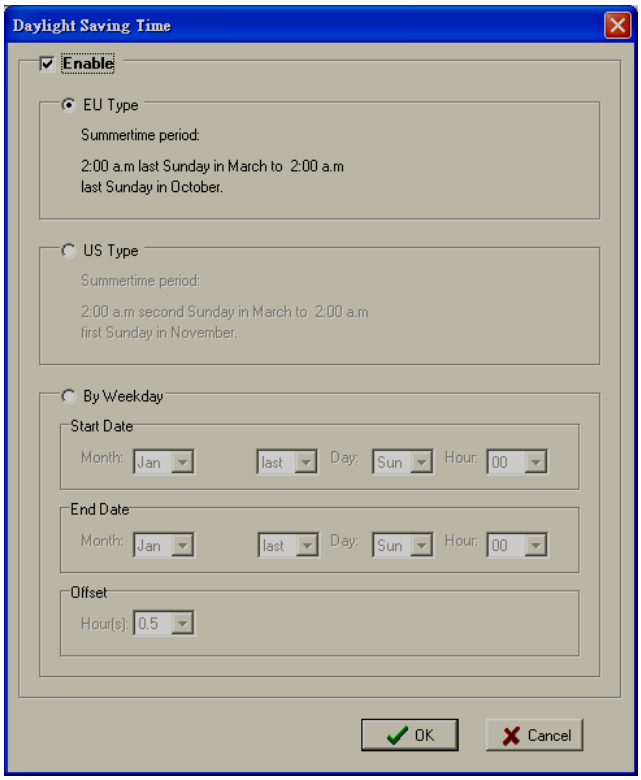
Click the Alias Name tab to customize the channel name. You may use names with up to 16 characters. If you already set the Alias Name on I/O Configuration page, the channel name will appear on Click&Go, Active message, and Web.

Server Settings Tab (Administrator)

You may set the password, server name, location, date, time, time zone, and time server in the Server Settings tab. ioAdmin supports long server names and a location description up to 58 characters.



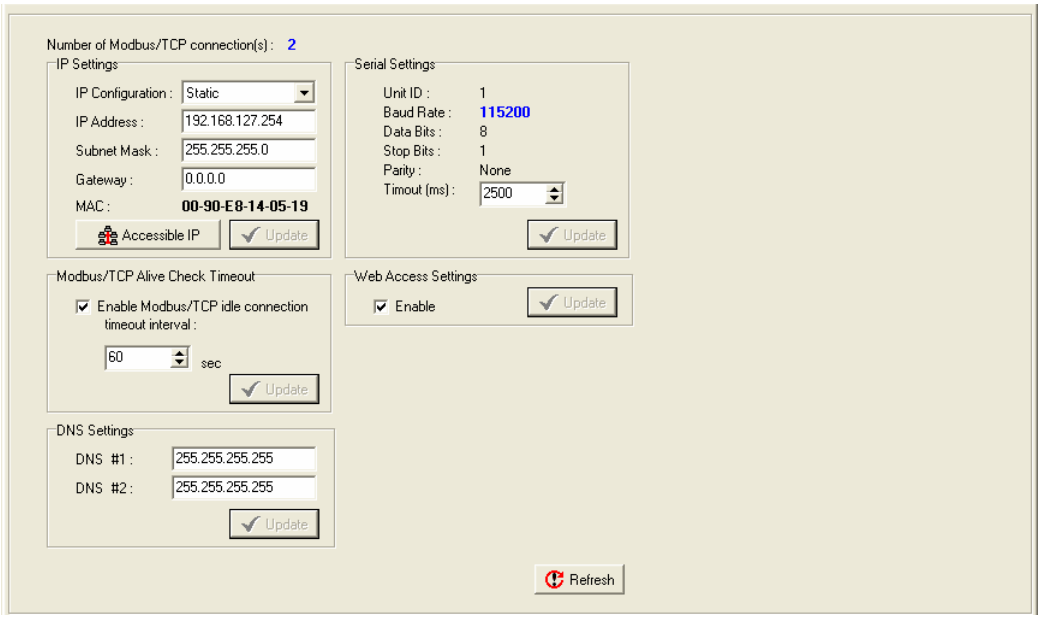
You may set up the Daylight Saving schedule by clicking the "Daylight Saving" button. You may choose EU type, US type, or User defined type. User defined type allows you to define the days and offset hours.



If you will be using ioEventLog to receive server status reports, such as for warm or cold starts, you need to specify the IP address and port number for the PC that will be running ioEventLog in the "System Log" field. The default port number is 4040. For additional information, please refer to the ioEventLog section later in this chapter.

Network Tab

The Network tab is where you configure IP settings, Modbus/TCP Alive Check Timeout settings, DNS settings, Serial settings, and Web Access settings for the ioLogik E2262.



IP Settings: You can assign a static or dynamic IP address to the ioLogik E2262, as well as the subnet mask and gateway address. The Accessible IP screen can be used to control network access to the ioLogik E2262 and attached sensors. The ioLogik will reject all requests that do not originate from sources listed in the accessible IP list. Leave this list blank in order to allow requests from any IP address.

Modbus/TCP Alive Check Timeout: The Modbus/TCP Alive Check Timeout is designed to avoid TCP connection failure. When the host is down, the ioLogik E2262 will continue to wait for a response from the host. This will cause the TCP port to be indefinitely occupied by the host. When the Modbus/TCP idle connection timeout interval is enabled, the ioLogik E2262 will close the TCP connection automatically if there is no TCP activity for the specified time. Please note that Modbus/TCP connections will be blocked when setting up Accessible IP.

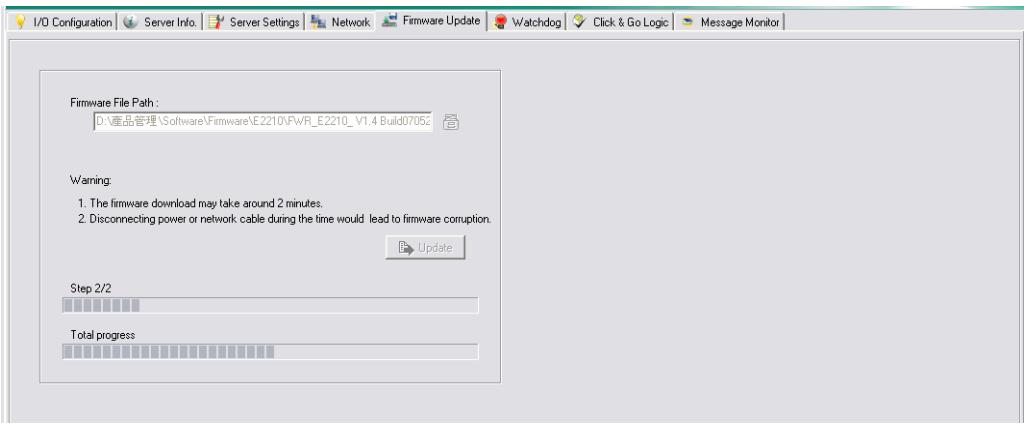
DNS Settings: Use this field to specify up the IP addresses of up to 2 DNS servers. These two DNS servers can be used to automatically find available e-mail addresses when using Click&Go Logic.

Serial Settings: You can view the reserved RS-485 communication parameters here, and you can set the timeout value for breaks in RS-485 communication. Note that the other serial communication parameters cannot be modified. If you wish to adjust the baudrate, you will need to use the physical dial on the back panel of the ioLogik E2262.

Web Access Settings: This field enables and disables the ioLogik E2262's web console. The web console allows the configuration of many settings using a web browser that is directed to the server's IP address. If the web console is not enabled in this field, you will not be able to access the web console.

Firmware Update Tab

The ioLogik E2262 supports remote firmware updates through the Firmware Update tab. Enter the path to the firmware file or click on the icon to browse for the file. Click **Update** to update the firmware. The wizard will lead you through the process until the server is restarted.



WARNING

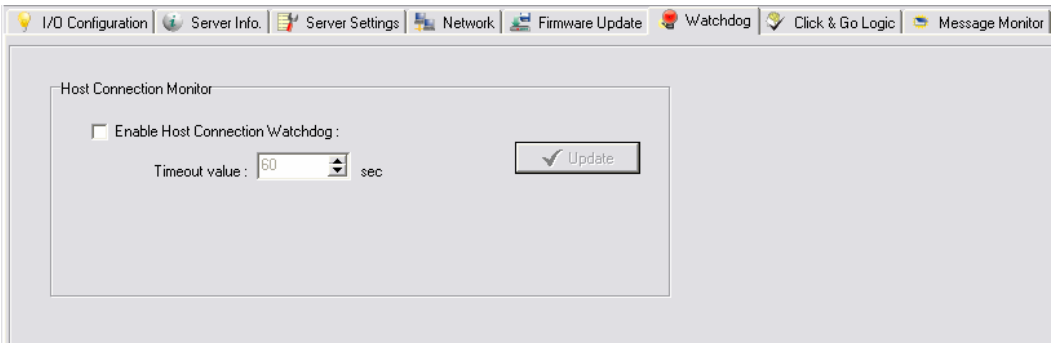
Do not interrupt the firmware update process! An interruption in the process could result in your device becoming unrecoverable.

After the firmware is updated, the ioLogik will restart and you will have to log in again to access administrator functions.

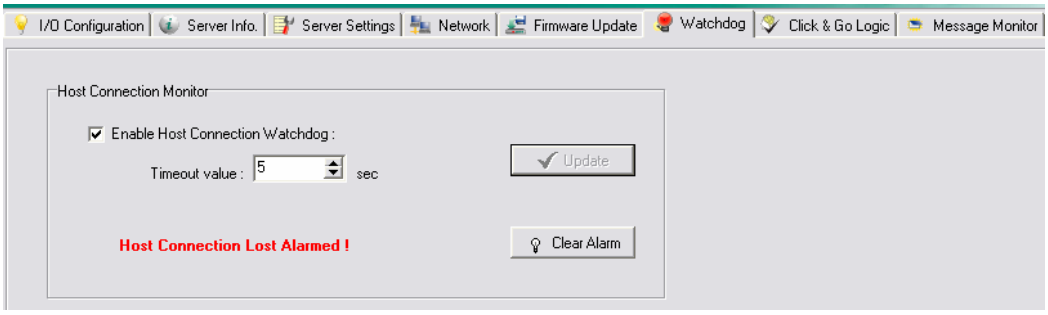
The firmware on any attached I/O expansion module, such as an ioLogik R2000 server, must be updated over the RS-485 bus. Firmware on cascaded modules cannot be updated over Ethernet.

Watchdog Tab

The Watchdog tab is where you configure the Host Connection Watchdog, which is used with the Safe Status settings to define each DO channel's response to a lost network connection. When the Host Connection Watchdog is enabled, the ioLogik E2262 will respond to network disconnections that exceed the specified amount of time. The ioLogik will respond by resetting DO channels to their Safe Status settings. By default, the Watchdog is disabled. To enable the Watchdog, make sure **Enable Host Connection Watchdog** is checked, set the **Timeout value**, then click the **Update** button.

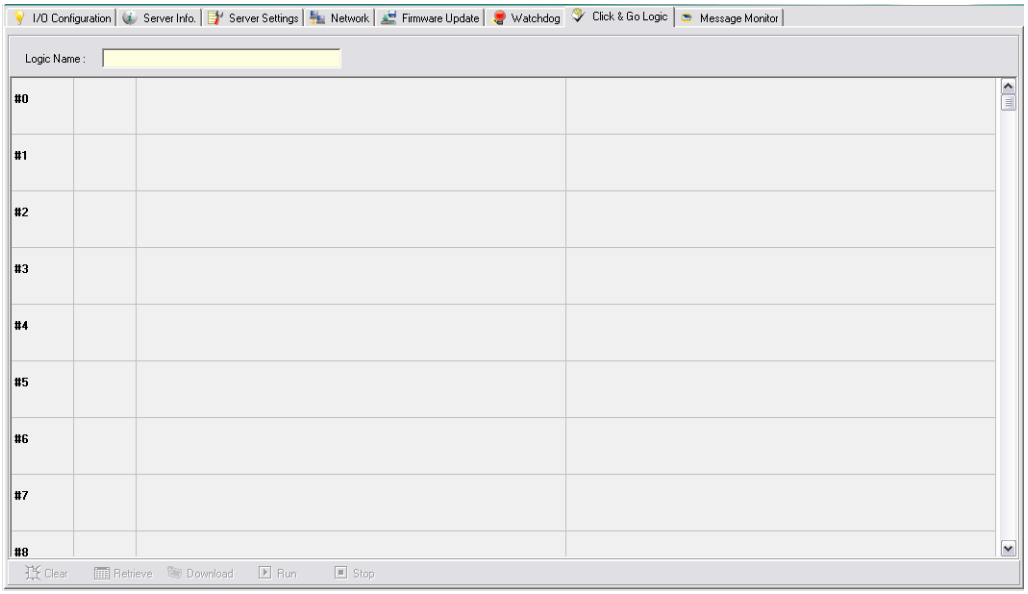


If the Watchdog is enabled and the network connection has been lost, you will need to return to the Watchdog Tab in order to resume normal operation. There will be a message saying "Host Connection Lost", indicating that Safe Status settings have been activated. Click **Clear Alarm** to exit Safe Status and return to normal operation.



Click&Go Logic Tab

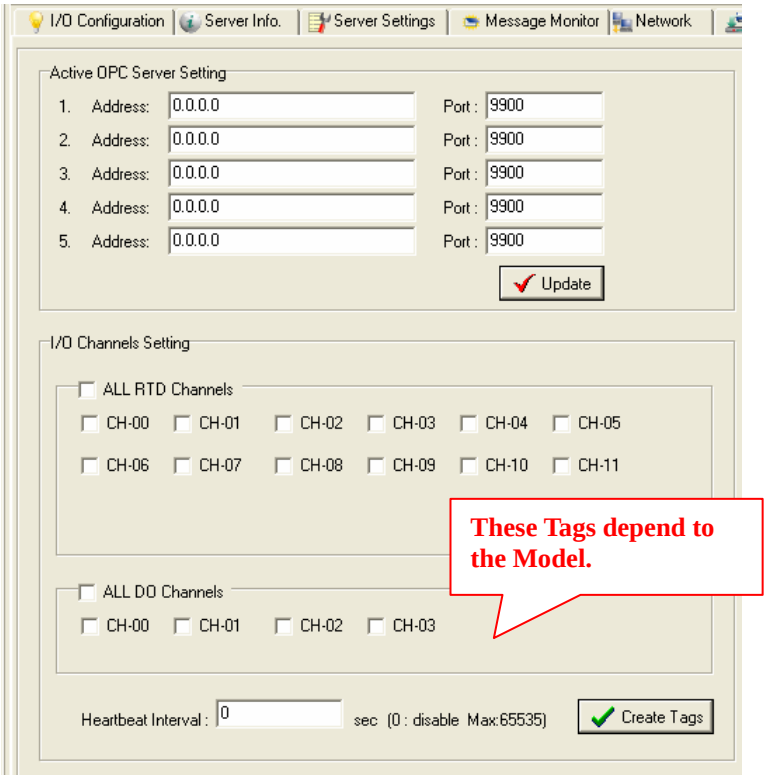
The Click&Go Logic tab is where Active Ethernet I/O operation is configured. While traditional Ethernet I/O involves an I/O server that reacts passively to polling requests from a network host, Active Ethernet I/O involves an I/O server that actively reports I/O data under user-specified conditions. Click&Go Logic is a powerful and easy-to-use tool to define the conditions for reporting I/O data. Please refer to Chapter 5 for more information.



Changes made in the Click&Go Logic tab are not effective until the ioLogik E2262 is restarted, just like changes made in other tabs. Note that when an I/O channel is used in Click&Go Logic, its range and units become fixed and cannot be modified.

Active Tags Tab

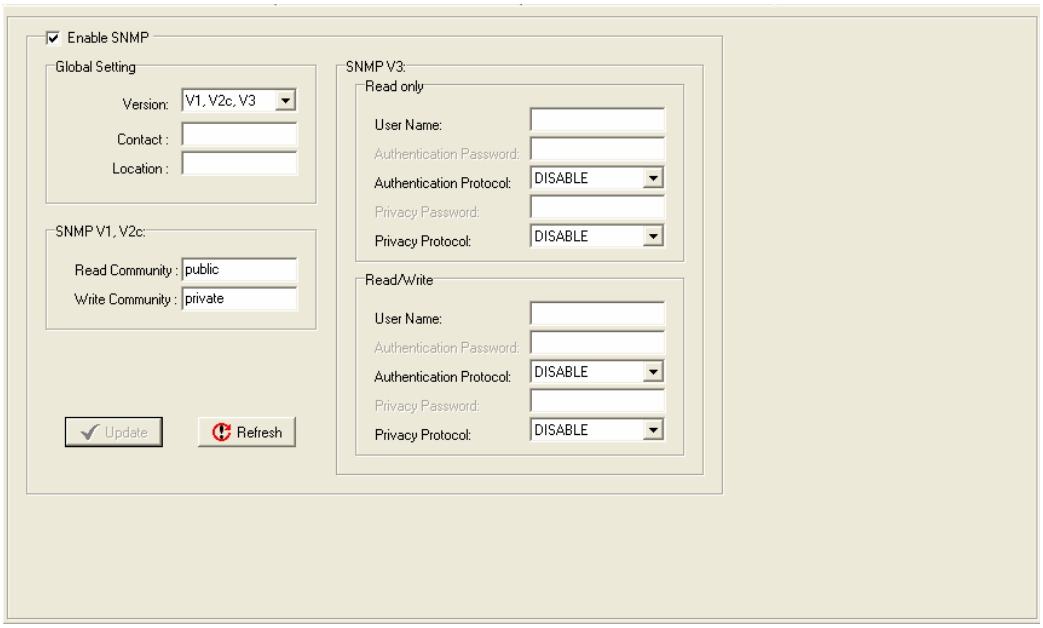
When logged in as an administrator, fill in the IP address in the **Active Tags** tab to configure Active OPC Address and Port settings. ioLogik Active Ethernet I/O can support up to 5 IPs at the same time. The Active OPC Server Address can be filled in using the IP address. The default port number is 9900. The port number should be the same as the setting in Active OPC Server's "Active Tag Listen Port". After the OPC setting and Channel Tags have been configured as desired, click **Create Tags**. The ioLogik Active Ethernet I/O will reboot in order for the settings to take effect.



The Heartbeat Interval is the time between each instance Active OPC server is informed that ioLogik is still working. The tags for Analog Value, such as AI, AO, RTD, TC, are synchronized with pre-defined percentages that are filled in the **On Change** column. The updated DI/DO/Relay tags can be synchronized by changing the status. If counter mode is used, **Advanced Settings** allows you to synchronize time by 100 to 60,000 ms. Please refer to the Active OPC Server section for more details about how to use Active OPC server.

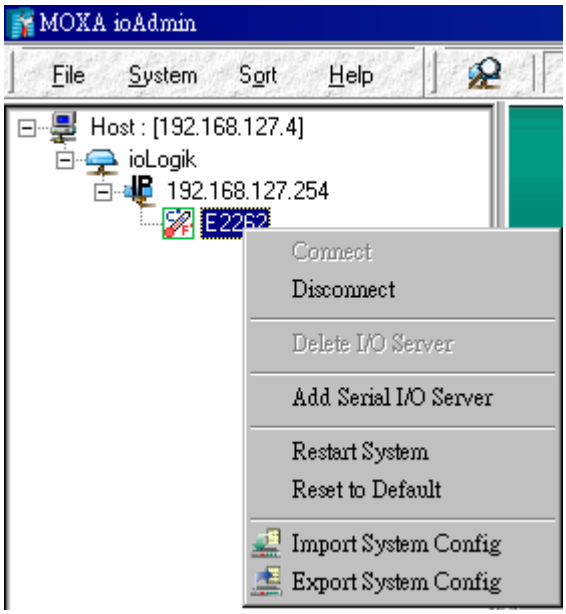
SNMP Settings Tab

The ioLogik Ethernet I/O supports SNMP V1, V2c, and V3 (Simple Network Management Protocol) to monitor network and I/O devices with SNMP Network Management software. It is useful in building automation and telecom applications. Use these fields to enable SNMP and set the read and write community strings for SNMP V1 and V2c, or use authentication for SNMP V3.



Server Context Menu

The Server context menu is accessed by right clicking on the server model name in the navigation panel.



Connect

Select this command to have ioAdmin attempt a re-connection over the network to the selected ioLogik server.

Disconnect

Select this command to have ioAdmin drop the network connection with the selected ioLogik server.

Delete I/O Server

Select this command to have ioAdmin remove the selected serial I/O.

Add Serial I/O Server

Select this command to manually add a serial I/O server by using its Unit ID.

Restart System

Select this command to restart the selected ioLogik server. You will need to log in as an administrator to use this function.

Reset to Default

Select this command to reset all settings for the selected ioLogik server, including console password and IP address, to factory default values. You will need to log in as an administrator to use this function.

Export System Config

Select this command to export the configuration of the selected ioLogik server to a text file. You will need to log in as an administrator to use this function. It is strongly recommended you use this method to back up your configuration after you have finished configuring the ioLogik for your application.

The following is an example of the exported configuration file:

```
ioLogik E2262 Network I/O Server Configuration
=======================================
Date: 2008/04/19
Time: 11:45:13
Firmware: V1.0 Build08041510
[1. Model]
----------
MOD_TYPE=E2262 - Active Ethernet I/O Server (8TC + 4DO)
MOD_LOC=
MOD_NAME=

[2. I/O Configurations]
-----------------------
TC00=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC01=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC02=0,(℃) ,Sensor Type=3,(E TYPE) ,Enable=1
TC03=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC04=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC05=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC06=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC07=0,(℃) ,Sensor Type=1,(K TYPE) ,Enable=1
TC08=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
TC09=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
TC10=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
TC11=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
TC12=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
TC13=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
TC14=0,(℃) ,Sensor Type=20,(Average) ,Enable=1 ,Formula=0
```

Import System Config

Select this command to reload a configuration that was exported to a text file. You will need to log in as an administrator to use this function. You will need to restart the ioLogik server in order for the new configuration to take effect. This command can be used to restore a configuration after loading the factory defaults, or to duplicate a configuration to multiple ioLogiks.

Using TFTP to Import/Export Configuration

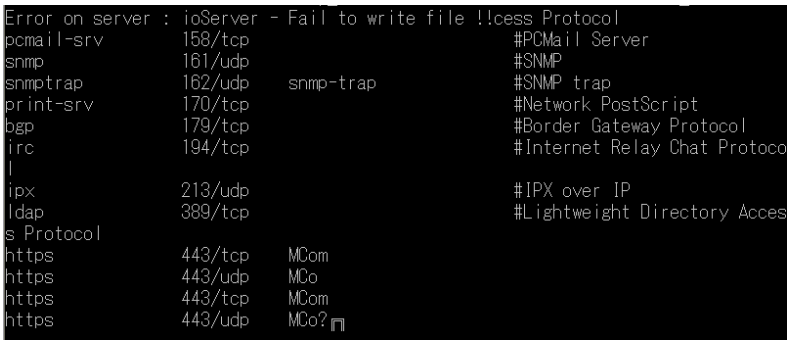
TFTP (Trivial File Transfer Protocol) provides basic FTP functionality in a very simple protocol. Due to TFTP's simplicity, it can be implemented using a very small amount of memory, an important consideration when it was first developed. The ioLogik E2262 supports the use of TFTP to import or export configuration files.

The following is an example using Windows TFTP and an ioLogik E2262 with an IP address of 192.168.127.254:

1. Enter "TFTP 192.168.127.254 GET ik2262.txt" to get the ioLogik's configuration file.

2. Enter "TFTP 192.168.127.254 PUT ik2262.txt" to load a configuration file onto the ioLogik.

You must use "ik2262.txt" as the destination filename when copying a configuration file to the ioLogik E2262. Otherwise, you will receive an error message as shown below:



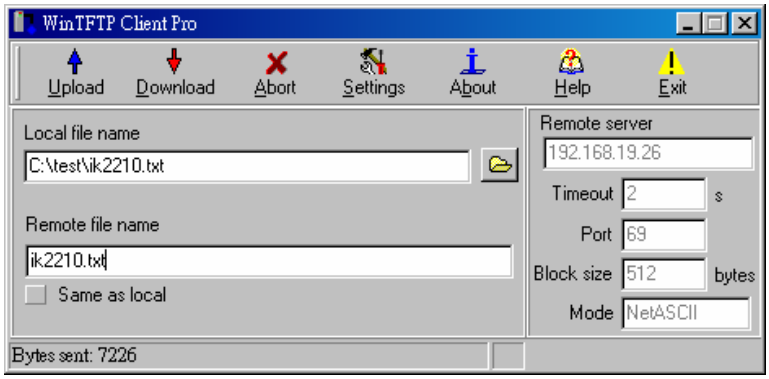
You can use TFTP in a batch file to transfer configuration files for different units. For example, you might have two configuration files that need to be copied to two different servers: ik2262_1.txt for 192.168.127.253, and ik2260_2.txt for 192.168.127.254. A batch file could be written as follows:

tftp 192.168.127.253 put ik2262_1.txt ik2262.txt

tftp 192.168.127.254 put ik2262_2.txt ik2262.txt

ATTENTION

You can also run TFTP client software, open the configuration file, and enter the remote server's IP. Note that both ASCII and Octet mode are supported. When the download process is complete, the I/O server will reboot. WinTFTP Client Pro is a trademark of WinTFTP. All rights reserved.



Using ioEventLog

Installing ioEventLog

ioEventLog is a Windows utility provided for the monitoring of the ioLogik E2262 and attached I/O devices. It can be used from anywhere on the network to monitor the ioLogik E2262.

1. **Installation from CD**: Insert the Document and Software CD into the host computer. Run SETUP.EXE, which is located in the root directory. The installation program will guide you through the installation process and install the ioEventLog utility.
2. **Open ioEventLog**: After installation is finished, run **ioEventLog** from **Start → Program Files → Moxa → IO Server → Utility →ioEventLog**.

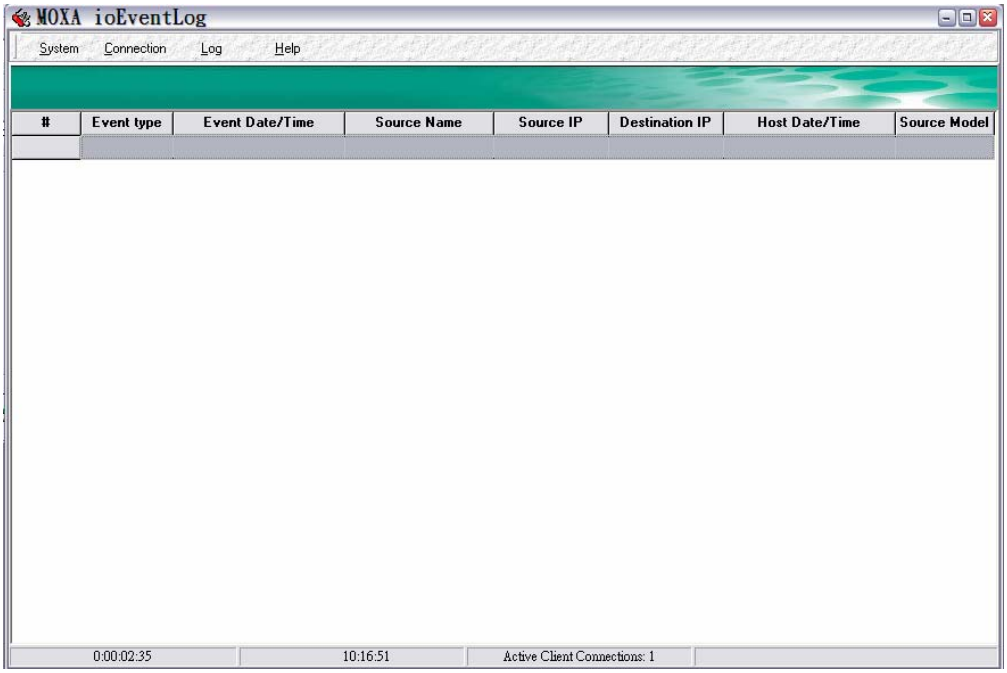
Basic Functions

ioEventLog is installed along with ioAdmin form the Document and Software CD. It is designed to help you keep a record of ioLogik status events over the network. The log is stored on the Windows PC. You will need to set up your ioLogik to send status events to the PC's IP address. The following events are monitored:

- cold start
- warm start

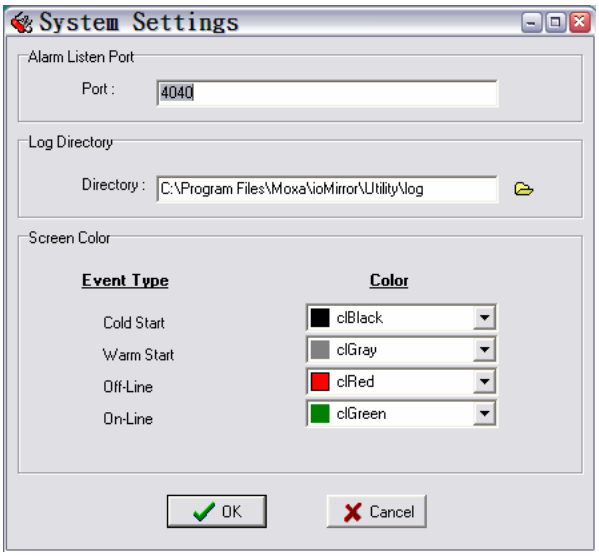
For each event, the following information is provided. The log can be sorted by any of these fields:

- Event type
- Event date and time
- ioLogik's source name
- Source IP
- Destination IP
- Host date and time
- Source model



Configuration

In the System menu, select **Settings** to configure ioEventLog.



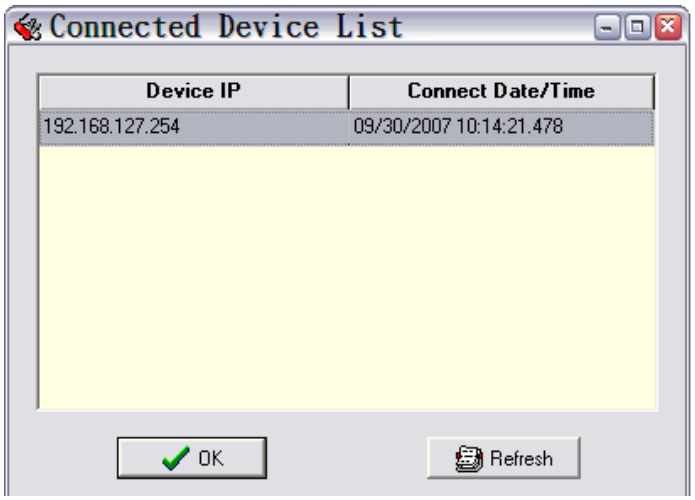
The **Alarm Listen Port** is the TCP port number that will be monitored for status events. You can modify this setting as necessary to receive signals through a firewall. It will need to match the settings for the ioLogik that is being monitored.

The **Log Directory** is where the log files will be stored. The default directory is C:\Program Files\Moxa\ioEventLog\log. A separate log file is created for each day, with file names assigned automatically.

You can also select the color of each event type in the log.

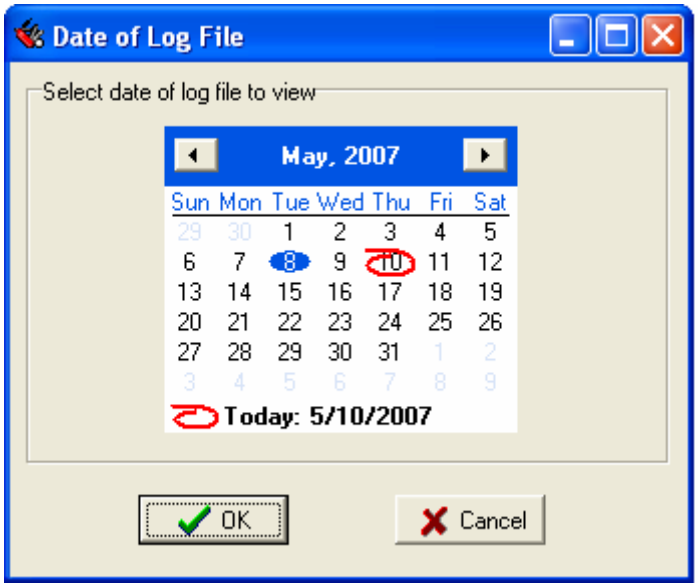
Checking Connected Devices

You can see which I/O servers is already connected to ioEventLog by selecting **Connected Device List** from the **Connection** menu. You will be prompted to view which devices are connected.



Opening Log Files

You can view previously saved logs by selecting **Open** from the Log menu. You will be prompted for the data that you wish to view.



The logs for the day that you select will be displayed in the Alarm Log Viewer window.

Clearing the Log

If you wish to clear the log, you can select Clear from Log menu. This will clear all events for the current day. The cleared events will not be saved in that day's logs. After the logs are cleared, new events will be displayed and recorded as usual.

4
Using the Web Console

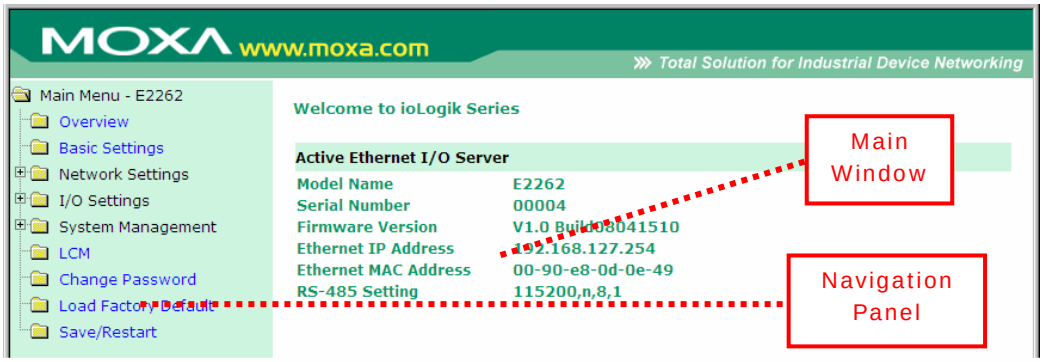
You can use the ioLogik E2262's built in web console to configure many options.

The following topics are covered:

- **Introduction to the Web Console**
- **Basic Settings**
- **Network Settings**
  - General Settings
  - Ethernet Configuration
  - RS-485 Settings
- **I/O Settings**
  - TC Channels
  - DO Channels
- **System Management**
  - Accessible IP Settings
  - SNMP Agent
  - Network Connection
  - Firmware Update
  - Import System Config
  - Export System Config
- **LCM**
- **Change Password**
- **Load Factory Default**
- **Save/Restart**

Introduction to the Web Console

The ioLogik E2262 web console is a browser-based configuration utility. When the ioLogik E2262 is connected to your network, you can enter the server's IP address in your web browser to access the web console. Note that although most configuration options are available in the web console, some settings are only available through ioAdmin. Furthermore, the web console can be disabled under Web Access Settings in ioAdmin. If you are unable to access the web console, check the Web Access Settings in ioAdmin.



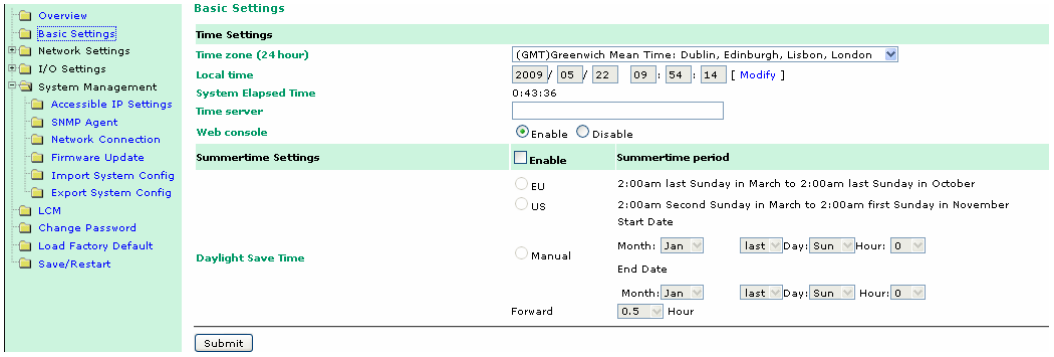
The left panel is the navigation panel and contains an expandable menu tree for navigating among the various settings and categories. When you click on a menu item in the navigation panel, the main window will display the corresponding options for that item. Configuration changes can then be made in the main window. For example, if you select Basic Settings in the navigation panel, the main window will show a page of basic settings that you can configure.

You must click the **Submit** button after making configuration changes. The Submit button will be located at the bottom of every page that has configurable settings. If you navigate to another page without clicking the Submit button, your changes will not be retained.

Submitted changes will not take effect until they are saved and the ioLogik E2262 is restarted! You can save and restart the server in one step by clicking the **Save/Restart** button after you submit a change. If you need to make several changes before restarting, you can save your changes without restarting by selecting Save/Restart in the navigation panel. If you restart the ioLogik E2262 without saving your configuration, the ioLogik E2262 will discard all submitted changes.

Basic Settings

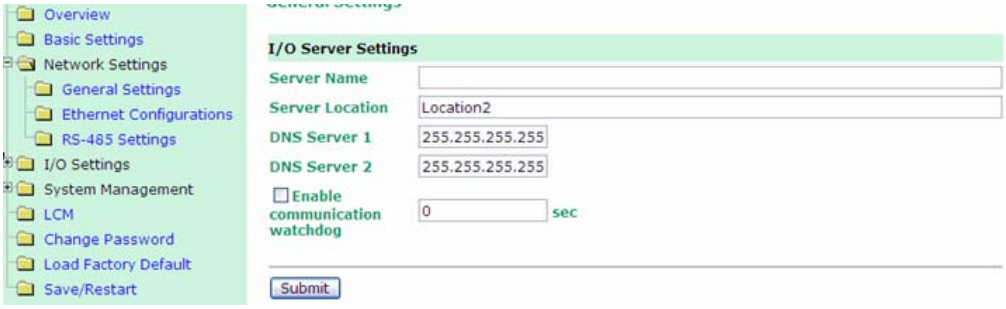
On the Basic Settings page, you can set the ioLogik E2262's system time or provide the IP address of a time server for time synchronization.



Network Settings

General Settings

On the General Settings page, you can assign a server name and location to assist you in differentiating between different I/O servers. You can also enable the Host Communication Watchdog and define the timeout value.

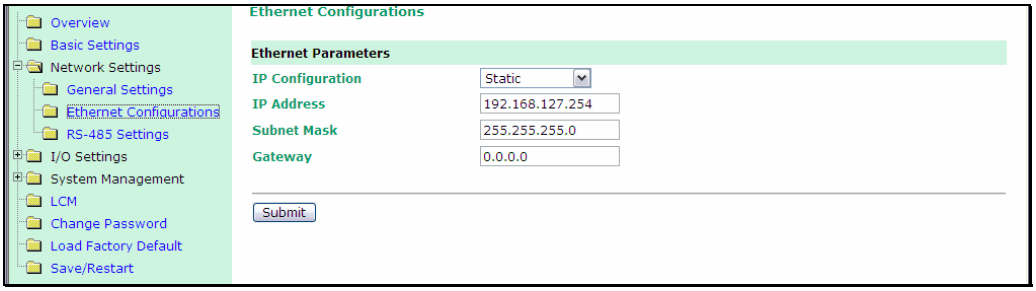


When enabled, the Host Connection Watchdog activates Safe Status settings for DO channels when the ioLogik E2262 loses its network connection for the specified amount of time. By default, the Watchdog is disabled. You can use ioAdmin to configure each DO channel's Safe Status setting.

To enable the Watchdog, make sure that **Enable connection watchdog** is checked, set the timeout value, and restart the server.

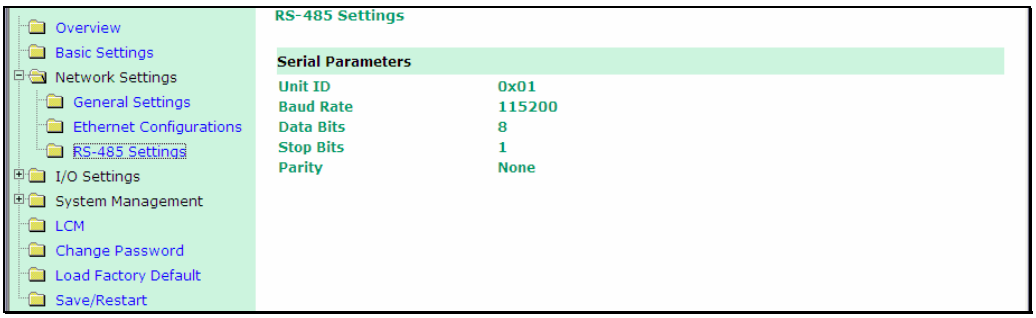
Ethernet Configuration

On the Ethernet Configuration page, you can set up a static or dynamic IP address for the ioLogik E2262, as well as the subnet mask and gateway address.



RS-485 Settings

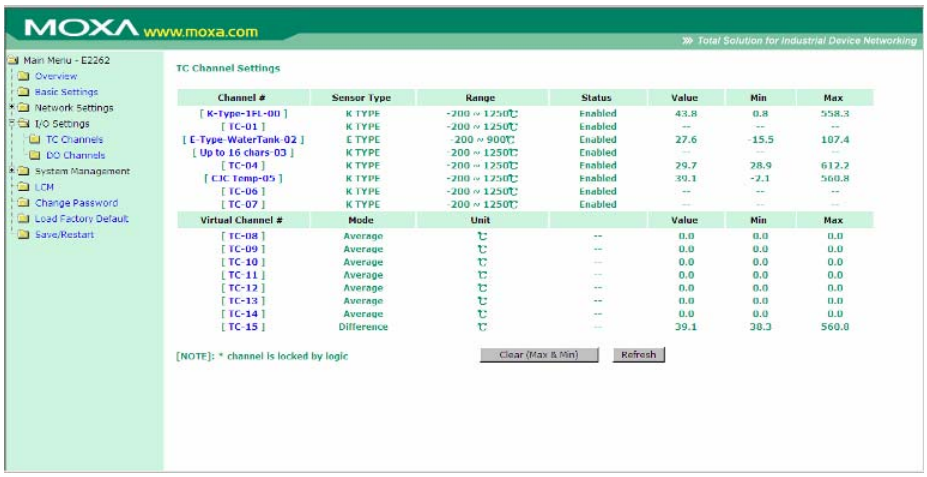
On the RS-485 Settings page, you can view the serial communication parameters, but no configuration changes are allowed. The baudrate can only be configured by the physical dial on the back of the ioLogik E2262. This is a reserved function.



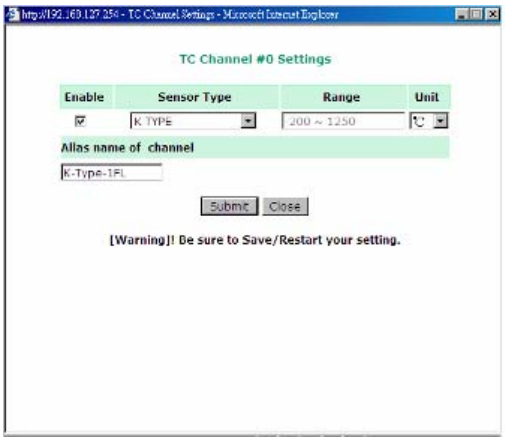
I/O Settings

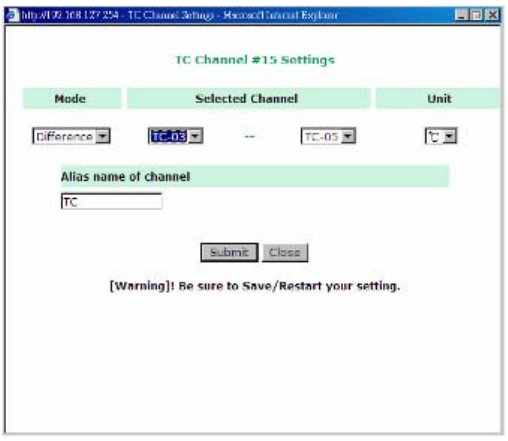
TC Channels

On the TC Channels page, you can view the status of channels TC-00 through TC-15, which includes both physical and virtual channels. You can click the **Channel Name** to enter settings page on which can set the **Alias Name**.



You can click on each channel to enable or disable it, or to configure the TC input mode. When a channel has been disabled, the sample rate of the remaining channels will be increased automatically.





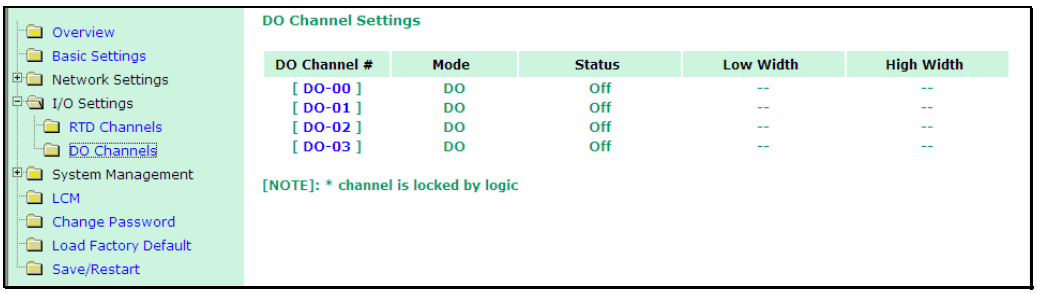
The following table is a list of supported sensor types and ranges.

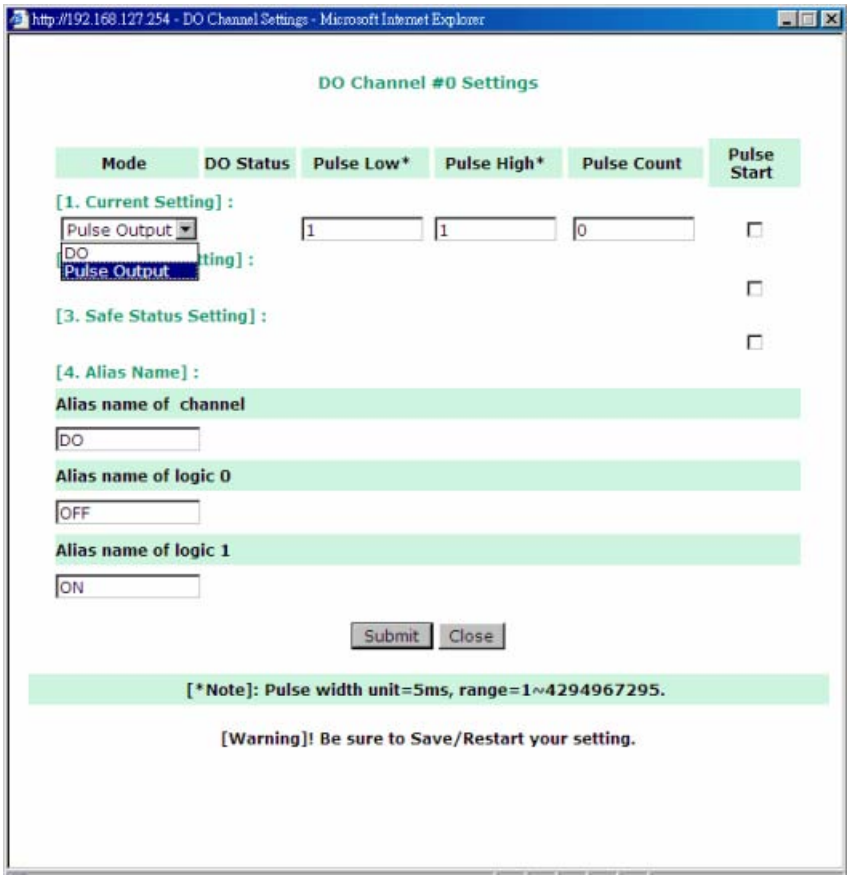
Type	Temperature Range	Count Range
J	0ºC to 750ºC	0 to 7,500
K	-200ºC to 1250ºC	-2,000 to 12,500
T	-200ºC to 350ºC	-2,000 to 3,500
E	-200ºC to 900ºC	-2,000 to 9,000
R	-50ºC to 1600ºC	-500 to 16,000
S	-50ºC to 1760ºC	-500 to 17,600
B	600ºC to 1700ºC	6,000 to 17,000
N	-200ºC to 1300ºC	-2,000 to 13,000
2.3 µV	- 78.126mV to + 78.126mV	-781,260 to 781,260
1.15 µV	- 39.062mV to + 39.062mV	-390,620 to 390,620
0.5 µV	- 19.532mV to + 19.532mV	-195,320 to 195,320

Channels 8 through 15 are virtual channels. You can click on a virtual channel to configure whether it will return current averages or deviations for the specified physical channels (TC-00 through TC-07).

DO Channels

On the DO Channels page, you can configure each DO (digital output) channel by clicking on the channel. DO Channels can operate in DO mode or Pulse Output mode. In DO mode, output is either on or off. In Pulse Output mode, a configurable square wave is generated.



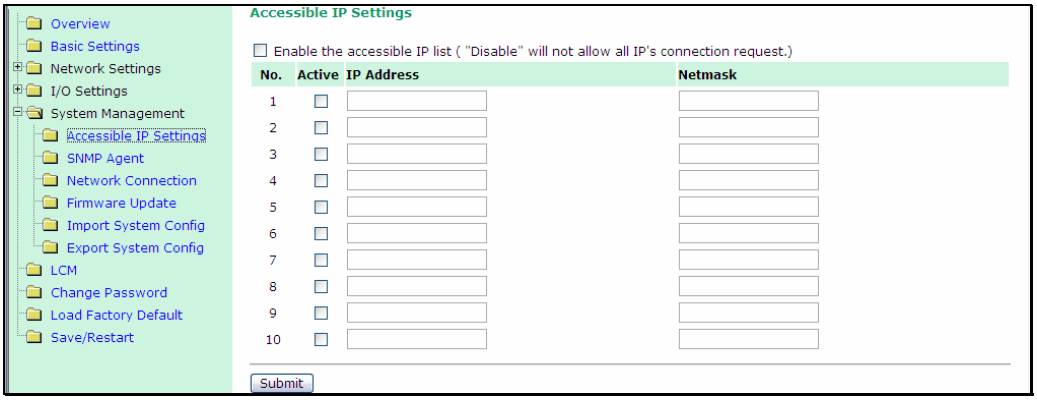


You can use the Power On Setting field to specify the channel's status when the ioLogik E2262 is powered on, and the Safe Status Setting field to specify the channel's status if the network is disconnected. Note that Safe Status is controlled by the Host Connection Watchdog, which is disabled by default. If the Host Connection Watchdog is disabled, the channels' Safe Status settings will have no effect.

System Management

Accessible IP Settings

On the Accessible IP Settings page, you can control network access to the ioLogik E2262. When the accessible IP list is enabled, a host's IP address must be listed in order to have access to the ioLogik E2262.



You can add a specific address or range of addresses by using a combination of IP address and netmask, as follows:

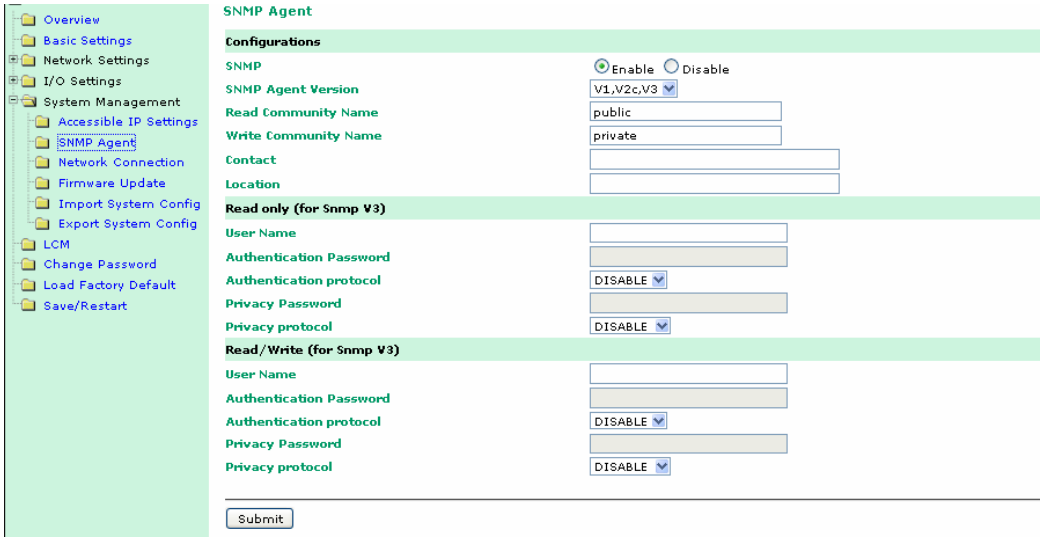
- **To allow access to a specific IP address**
  Enter the IP address in the corresponding field; enter **255.255.255.255** for the netmask.
- **To allow access to hosts on a specific subnet**
  For both the IP address and netmask, use 0 for the last digit (e.g., 192.168.1.0 and 255.255.255.0).
- **To allow unrestricted access**
  Deselect the Enable the accessible IP list option.

Refer to the following table for additional configuration examples.

Allowed Hosts	IP address/Netmask
Any host	Disable
192.168.1.120	192.168.1.120 / 255.255.255.255
192.168.1.1 to 192.168.1.254	192.168.1.0 / 255.255.255.0
192.168.0.1 to 192.168.255.254	192.168.0.0 / 255.255.0.0
192.168.1.1 to 192.168.1.126	192.168.1.0 / 255.255.255.128
192.168.1.129 to 192.168.1.254	192.168.1.128 / 255.255.255.128

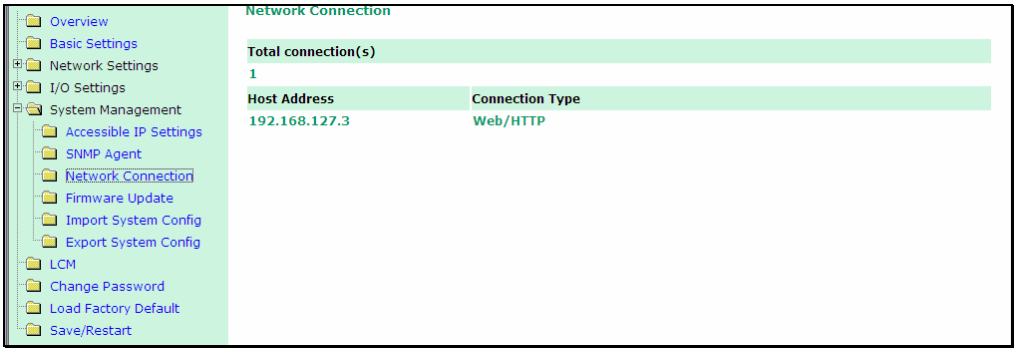
SNMP Agent

On the SNMP Agent page, you may enable SNMP and set the read and write settings. The ioLogik Ethernet I/O device supports SNMP v1, v2c, and V3 (Simple Network Management Protocol) to allow monitoring of network and I/O devices with SNMP Network Management software. It is useful in building automation and telecom applications. Use these fields to enable SNMP and set the read and write community strings for SNMP v1 and v2c, or use authentication for SNMP v3.



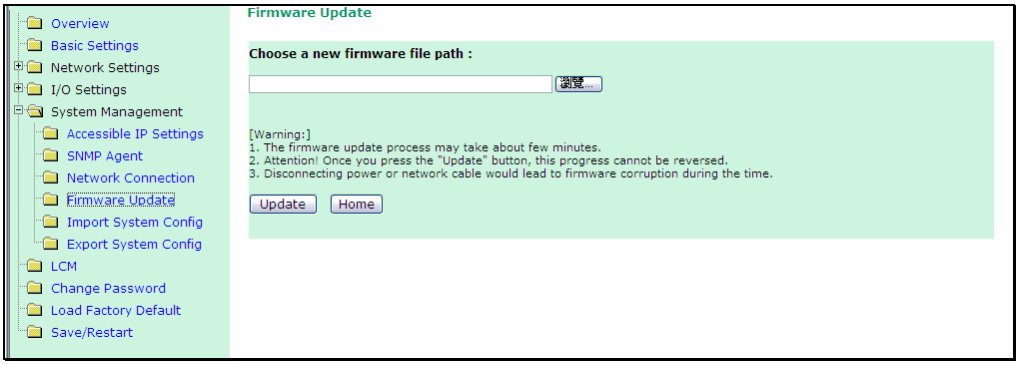
Network Connection

On the Network Connection page, you can view the TCP connections from other hosts. This can assist you in the management of your devices.



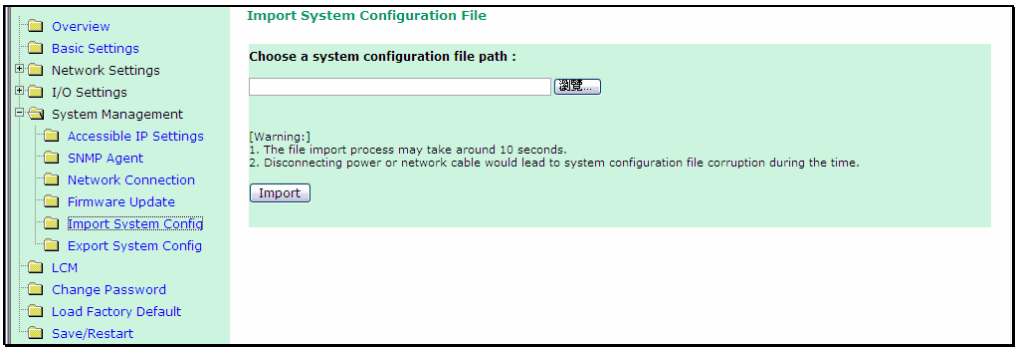
Firmware Update

On the Firmware Update page, you can load new or updated firmware onto the ioLogik.



Import System Config

On the Import System Config page, you can import a configuration onto the ioLogik. The configuration file must have been generated by ioAdmin or through the web console. This function can be used to duplicate settings between ioLogiks. You will be prompted for the location of the configuration file (i.e., "ik2262.txt").



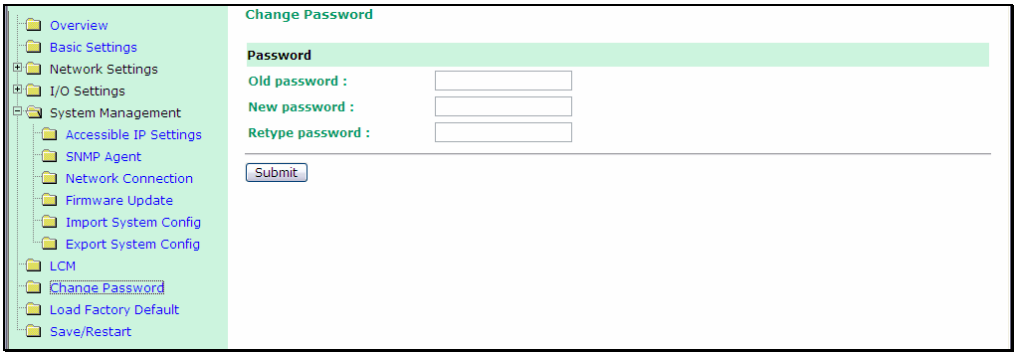
Export System Config

On the Export System Config page, you can save the ioLogik's configuration into a file for backup or import into another ioLogik server.

LCM

If you have installed the optional LCM, you can view the LCM's status and firmware details on the LCM page.

Change Password



When changing the ioLogik E2262's password settings, you will first need to enter the old password. Leave this blank if you are setting up password protection for the first time. To set up a new password or change the existing password, enter your desired password under both **New password** and **Confirm password**. To remove password protection, leave the New password and Confirm password fields blank.

ATTENTION

If you forget the password, the ONLY way to configure the ioLogik E2262 is by using the reset button to load the factory defaults.

Before you set a password for the first time, it is a good idea to complete the ioLogik's configuration and export the configuration to a file. The configuration can then be easily loaded imported back into the ioLogik E2262 if it has been reset to factory defaults.

Load Factory Default

This function will reset all of the ioLogik E2262's settings to the factory default values. All previous settings including the console password will be lost.

Save/Restart

If you change the configuration, do not forget to reboot the system.

5
Active OPC Server Lite

In this chapter, we explain how to use ioAdmin to configure your ioLogik product.

The following topics are covered in this chapter:

- **OLE for Process Control**
- **Introduction to Active OPC Server Lite**
- **Active OPC Server Lite – From Pull to Push**
- **Features of Active OPC Server Lite**
- **Active OPC Server Lite Specifications**
  - Installation of Active OPC Server Lite
  - Installation of OPC Core Components
- **Active OPC Server Lite**
  - Main Screen Overview
- **Menu Items**
  - File
  - System
  - Sort
  - Quick Links
- **Tag Generation**
  - Push Tag Configuration from ioAdmin
  - Advanced Settings
  - Heartbeat Interval
  - Read/Write Privilege
  - OPC Test Client

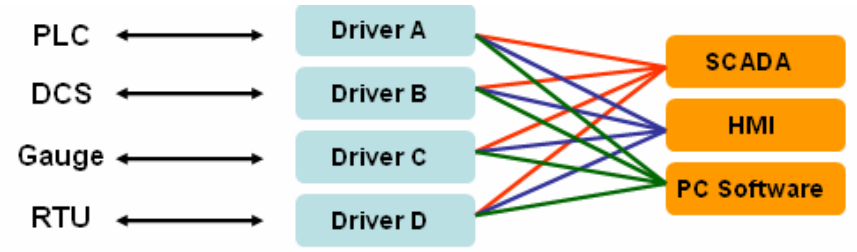
OLE for Process Control

OPC (originally OLE for process control) is an industry standard created with the collaboration of a number of leading worldwide automation hardware and software suppliers, working in cooperation with Microsoft. The standard defines methods for exchanging real-time automation data between PC-based clients using Microsoft operating systems. The organization that manages this standard is the OPC Foundation.

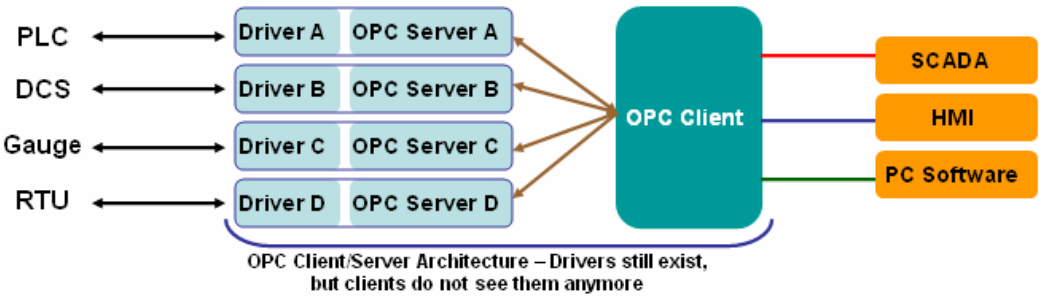
The OPC Specification is a non-proprietary technical specification that defines a set of standard interfaces based upon Microsoft's OLE/COM/DCOM platform and .NET technology. The application of the OPC standard interface makes possible interoperability between automation/control applications, field systems/devices and business/office applications.

Traditionally, each software or application developer was required to write a custom interface, or server/driver, to exchange data with hardware field devices. OPC eliminates this requirement by defining a common, high performance interface that permits this work to be done once, and then easily reused by HMI, SCADA, Control and custom applications.

[Drivers must be installed several times to connect to different devices]



[OPC Client/Server creates a common interface connecting to different devices]



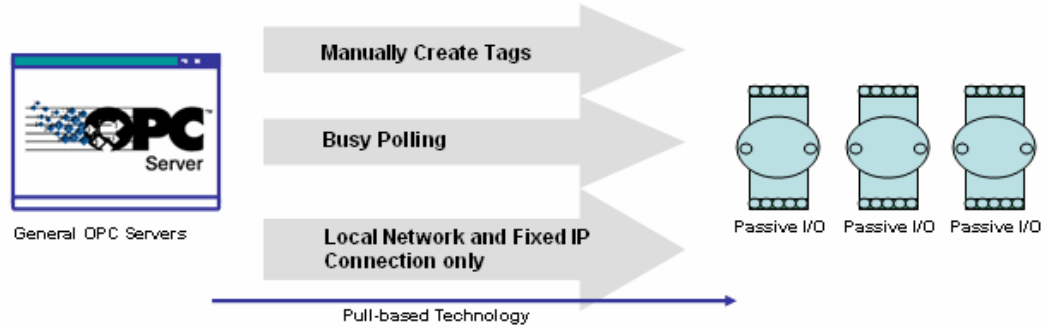
Introduction to Active OPC Server Lite

Moxa Active OPC Server Lite is a software package operated as an OPC driver of an HMI or SCADA system. It offers seamless connection from Moxa ioLogik series products to the SCADA systems, including the most popular Wonderware, Citect, and iFix. Active OPC Server Lite meets the latest standard of OPC DA3.0 that allows connections to various kinds of devices and host OPC machines.

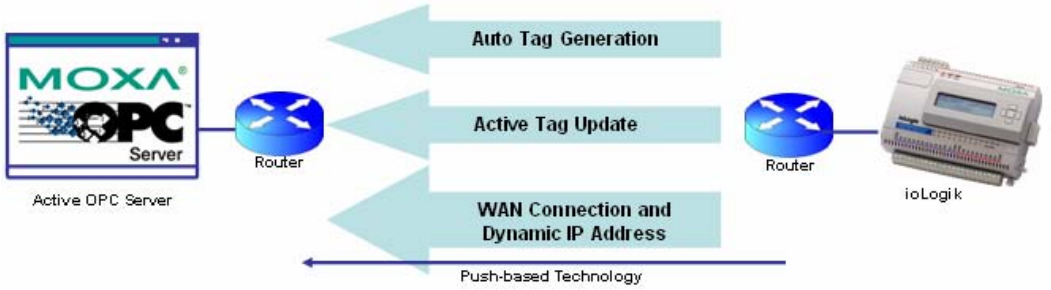
Active OPC Server Lite – From Pull to Push

When first looking up the I/O divices' Modbus table, users need to create one tag within 19 or more steps including specifying the IP address, selection of the protocols, and define the data type. The procedure is repeated over and over again until all the devices and tags are created. A technician can expect to take 1 minute to create just one tag. But what if there are 400 tags in the OPC system? Also, the more tags are used, the higher CPU loading will be taken.

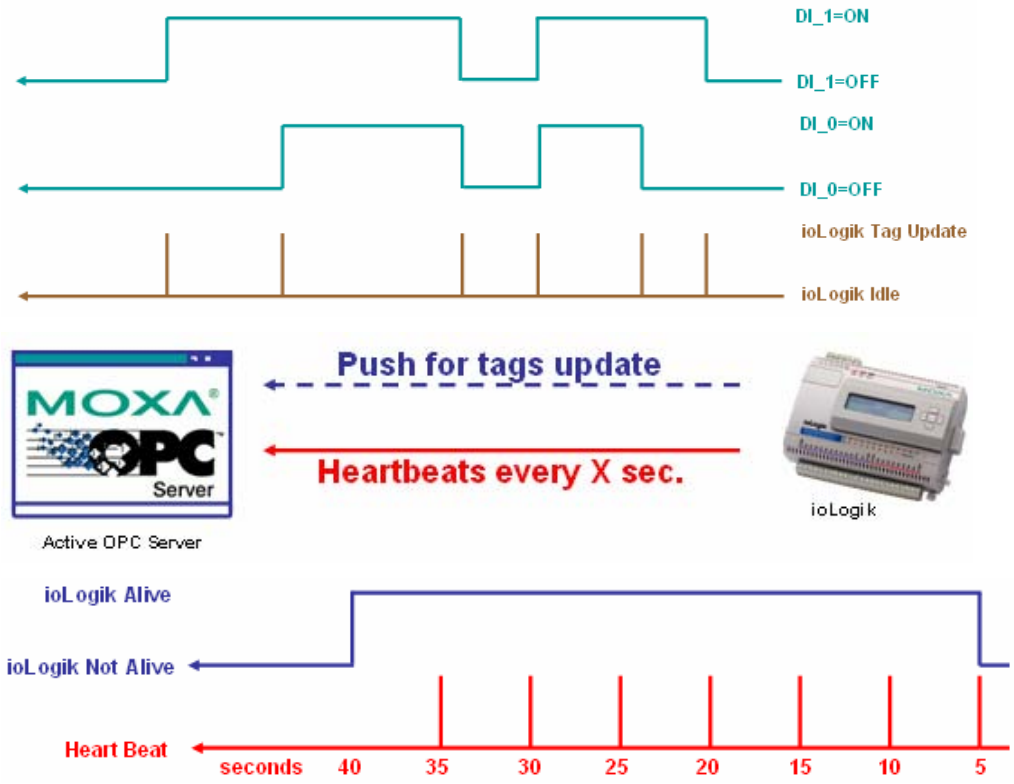
The general OPC also requires the connected I/O devices to use fixed IP address, if there are applications running on a public network (usually dynamic IPs) or portable measurements, there is no way to connect to an I/O device using OPC. This architecture is also called "pull" technology because the OPC server always polls the I/O devices from tag creation, IP connection and the tag status update.



Moxa Active Ethernet I/O – ioLogik series products provide the I/O status report via TCP/UDP message, e-mail or SNMP traps. These benefits have now expanded to the OPC technology. Without asking any questions, even the IP address, settings of a tag are automatically created by the ioLogik itself to notify which tag should be created. Users need only to launch the Active OPC Server program, and those I/O channels selected by a user will be "pushed" from an ioLogik to Active OPC Server.



The "push" technology also includes the update for the tags. When the I/O the status changes, there will be updates from the ioLogik to Active OPC Server Lite. Compared to constantly polling (pull-based) the status, this feature efficiently reduces the network bandwidth usage and speeds up the response time with event-driven, push-based status updates. At the same time, the heartbeat function visual confirms that ioLogik is "alive" and working.



Features of Active OPC Server Lite

Automatic tag generation

Without specifying IP addresses, I/O channels, and data formats one by one or editing and importing any configuration text files, Active OPC Server Lite creates the tags for the target ioLogik automatically. These tags are not fixed but created by users. After selecting the channels required to be update to Active OPC Server Lite, it will generate the tag configuration without asking any questions. Training for installation and configuration should be required to implement a general OPC Server package. For ioLogik users, learning the OPC technology, looking up Modbus address, configuring data format, assigning target IP and so on are not required.

Active tag update with heartbeat detection

ioLogik uses "Active" technology to update the I/O status. This includes the tag status update to Active OPC Server Lite. Compared to traditional OPC Servers, this mechanism reduces Ethernet bandwidth usage by 80%. At the same time, it increases the response time of the I/O channels 7 timers faster than before. The SCADA PC can now also be load balanced for its CPU time because it simply waits for updates instead of polling the I/O channel all the time.

Dynamic IP Address Support

Active OPC Server also delivers the flexibility of using dynamic IP addresses on the ioLogik. As for the traditional data acquisition application, I/O devices are not capable of using this approach. The flexibility of connections through firewall is also expanded.

Active OPC Server Lite Specifications

Hardware Requirements	
CPU	Intel Pentium (Pentium 4 and above)
RAM	512 MB (1024 MB recommended)
Network Interface	10/100Mb Ethernet
Software Requirements	
Operating System	Microsoft Windows 2000, XP or later
Editor (Not necessary)	Microsoft Office 2003 (Access 2003) or later
OPC Server Specifications	
OPC Data Access	1.0a, 2.0, 2.05a, 3.0
Max. tags	256
ioLogik Support	
Product Model	ioLogik E2210, E2212, E2214, E2240, E2242, E2260, E2262
Firmware version	V3.0 or above
ioAdmin version	V3.0 or above

Installation of Active OPC Server Lite

Active OPC Server Lite can be found in the **Document and Software CD**, or downloaded from Moxa Website. The following steps show how to install Active OPC Server Lite from the CD.

1. **Installation from CD**: Insert the Document and Software CD into the host computer. In the Software\AOPCLite directory of the CD, locate and run SETUP.EXE. The installation program will guide you through the installation process and install the Active OPC Server Lite utility.
2. **Open Active OPC Server Lite**: After installation is finished, run Active OPC Server Lite from the Windows Start menu: **Start →Program Files →MOXA →IO Server →ActiveOPC→ActiveOPC.**

Installation of OPC Core Components

OPC Core Components provides the necessary connection library of Active OPC Server Lite. This package must be installed in the computer where Active OPC Server Lite is.

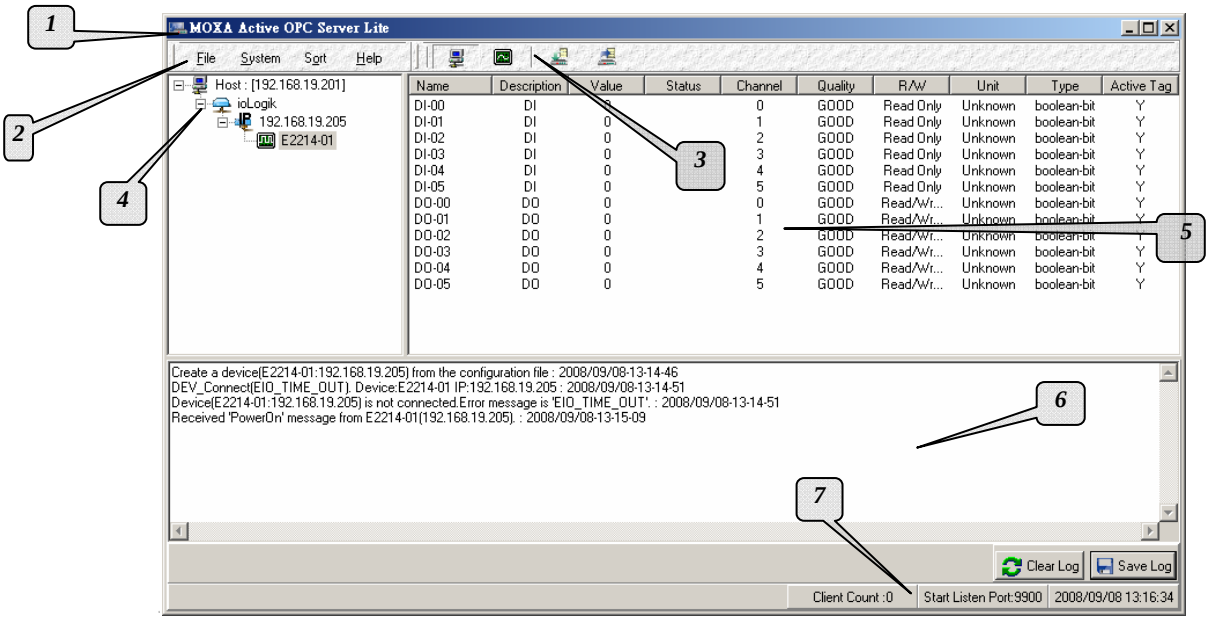
1. After Active OPC Server Lite installation is finished, run Setup OPC Core Components from the Windows Start menu: **Start →Program Files →MOXA →IO Server→ActiveOPC→Setup OPC Core Components**

The installation program will guide you through the installation process.

Active OPC Server Lite

Main Screen Overview

Active OPC Server Lite's main screen displays a figure of the mapped ioLogik with the status of every I/O tag. Note that configuration and tags are not available until you have the ioLogik to create the tags.

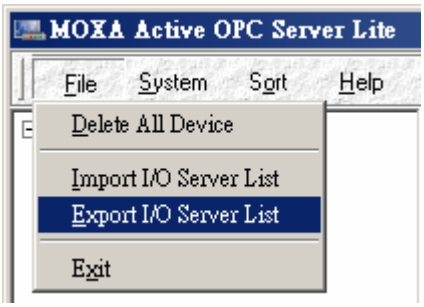


Active OPC Server Lite Main Screen
1. Title
2. Menu bar
3. Quick link
4. Navigation panel
5. Tag Window
6. Log Monitor
7. Status bar

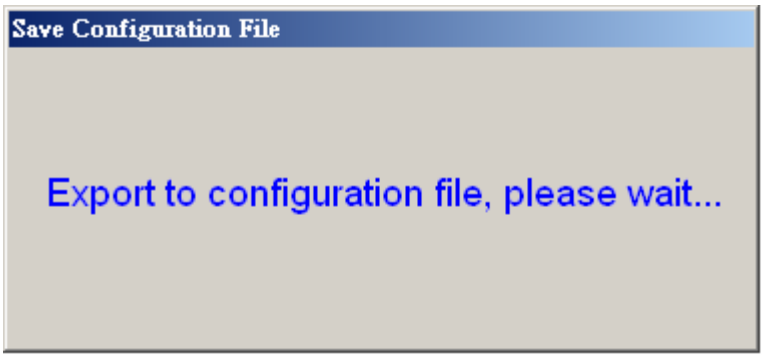
Menu Items

File

From the **File** menu, you can export the list of the ioLogik that are currently displayed in the navigation panel. You also can import a list into Active OPC Server Lite.

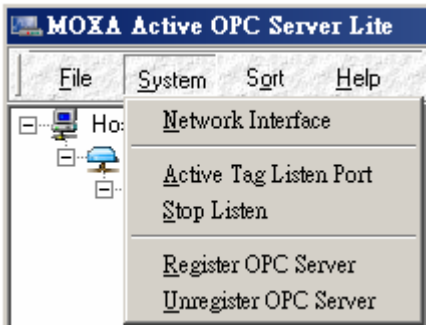


The file will have **.mdb** extension and can be opened using Microsoft Office - Access. The server list includes the current tag information of the mapped ioLogik. Saving the configuration when exiting the Active OPC Server is also recommended.



System

Several operations can be accessed from the **System** menu.



Network Interface allows you to select a network to use, if the PC has multiple network adaptors installed.

Active Tag Listen Port allows you to select the preferred TCP socket port for tag generation from ioAdmin.

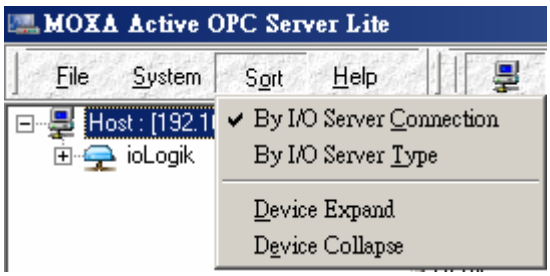
Stop Listen allows you to stop getting tag generation messages and I/O status updates.

Register OPC Server is used to register the DCOM components to the Windows system. After Active OPC Server Lite is installed, it will automatically configure the DCOM.

Unregister OPC Server is used to cancel the registration of the DCOM components from the Windows system.

Sort

The **Sort** menu allows the server list in the navigation panel to be sorted by connection and type (model).



Quick Links

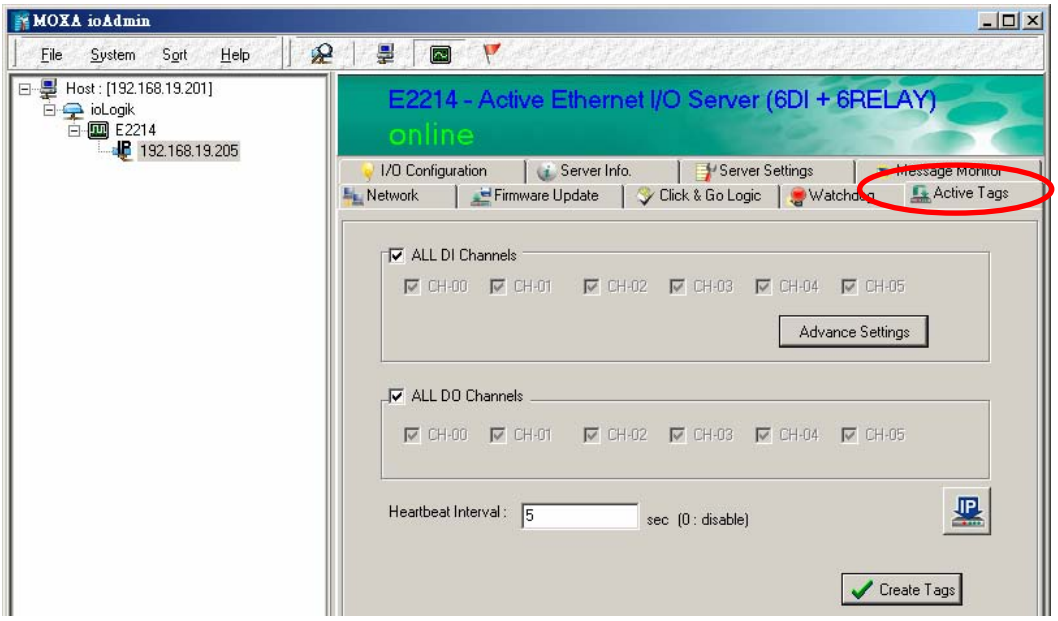
Quick links are provided to sort the server list and import/export configuration.

	Sort by connection
	Sort by server type
	Import configuration
	Export configuration

Tag Generation

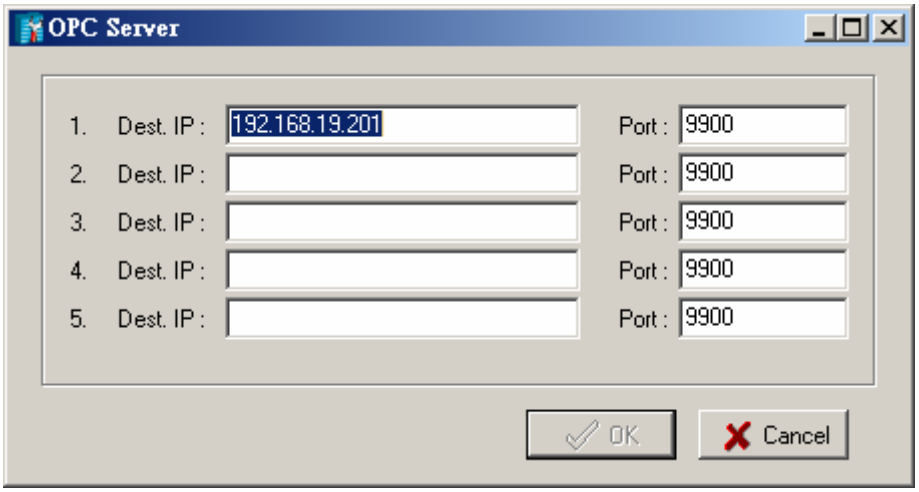
Push Tag Configuration from ioAdmin

Tag configuration of an ioLogik is specified by ioAdmin configuration utility. Start the ioAdmin, log in as an administrator and go to the **Active Tags**.



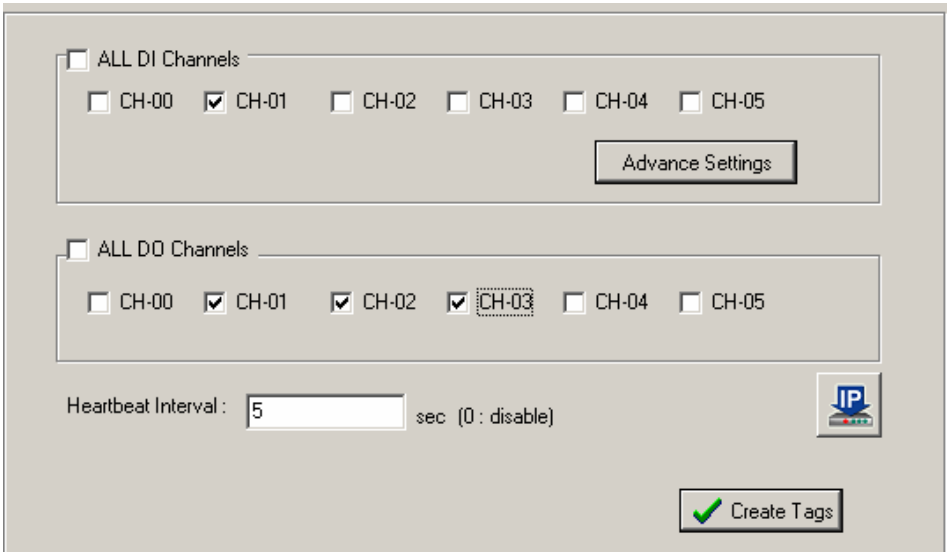
Following are the steps to create the tags.

1. Click on the **Set OPC Server Address** () button to specify the IP address of Active OPC Server Lite.



2. Click **Yes** to restart the ioLogik.

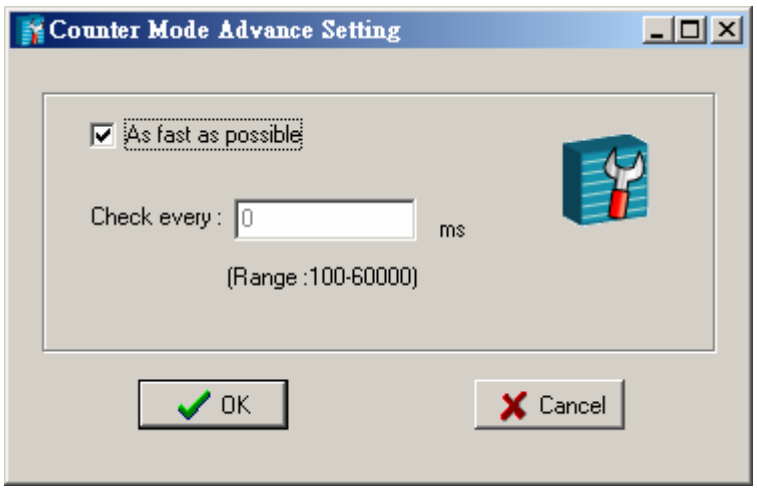
3. Specify the channels needed to be monitored by Active OPC Server Lite.



4. Click on the Create Tags button to push the tag configuration to Active OPC Server Lite.
5. Start the Active OPC Server Lite from Windows Start Menu. In the log monitor, a message will appear to confirm that the configuration was received. After that, tags are automatically created.

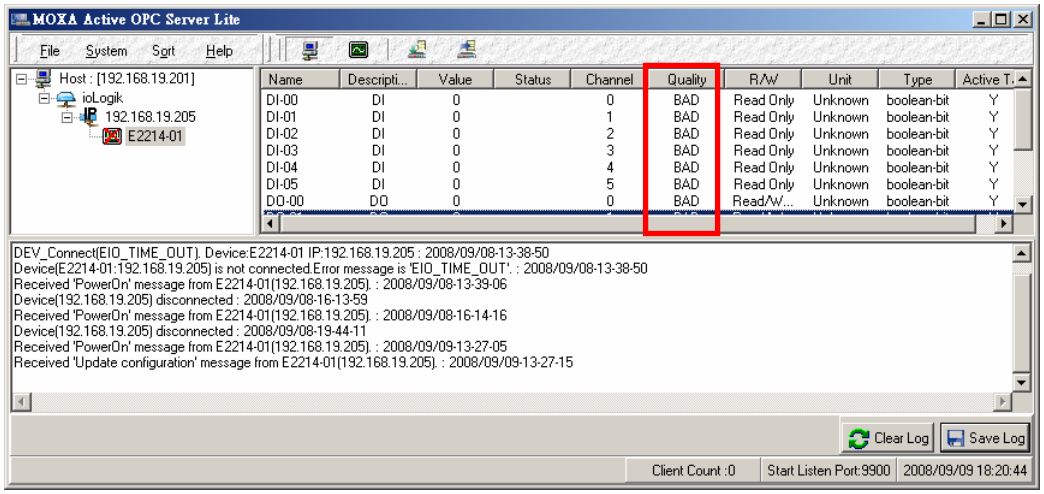
Advanced Settings

Advanced settings of the tags define the period that an ioLogik checks for the counter input status. By default, the status is checked as soon as it changes. Users can define the interval starting from 100 ms to 60 seconds.



Heartbeat Interval

Tags are event-driven and updated only when the status of an I/O channel changes, so when the status remains unchanged, there will not be an update to Active OPC Server Lite. To ensure the ioLogik is connected and alive, **Heartbeat Interval** can be used to determine the connection status between the ioLogik and Active OPC Server Lite. If the heartbeat interval is set and the network between the ioLogik and Active OPC Server Lite is down, Active OPC Server Lite will detect the stop of the heartbeat and the Quality column will show **BAD** to indicate the loss of the connection. Default interval is set to 0 seconds, which disables the heartbeat. The maximum interval is 65,535 seconds.



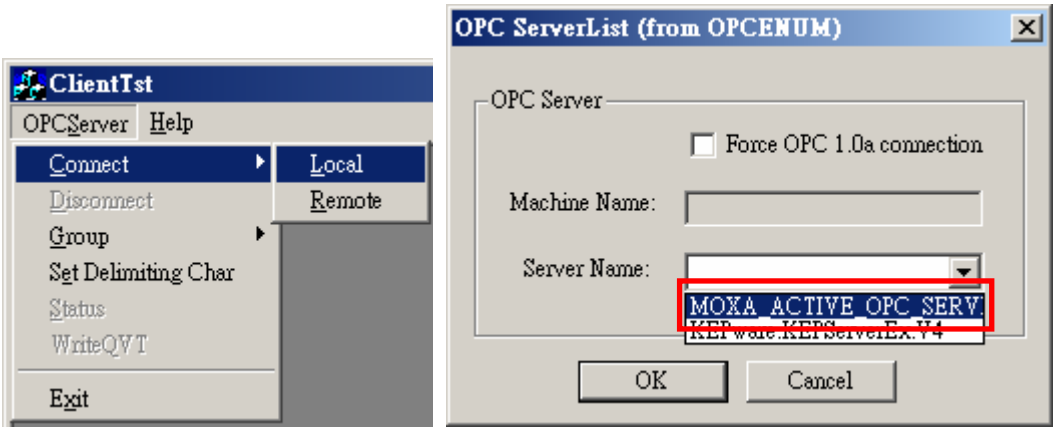
Read/Write Privilege

An input channel can only be read while an output channel is read/write acceptable showing on the Active OPC Server Lite. Note that if an output channel has been used in the Click&Go logic, the tags for that channel are read-only.

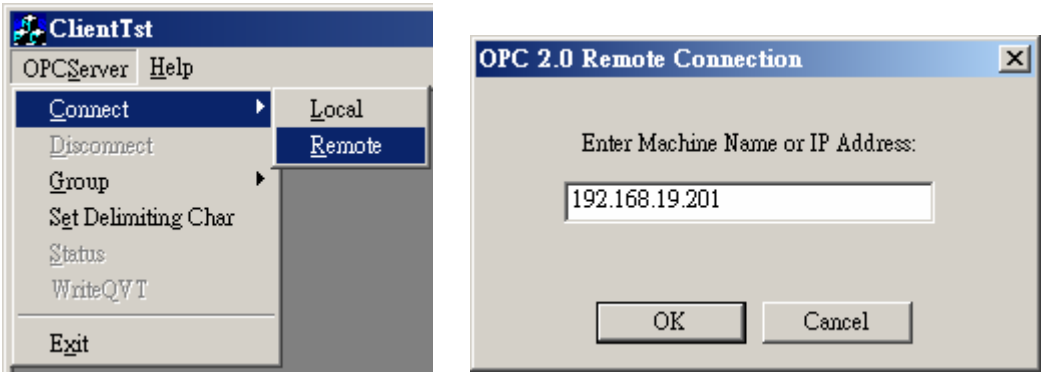
OPC Test Client

An OPC client software is embedded into the Active OPC Server Lite package for test purposes. After configuring the tags on the Active OPC Server Lite, this **ClientTest** can be launched from the Windows Start menu: **Start →Program Files →MOXA →IO Server →ActiveOPC→ClientTest**.

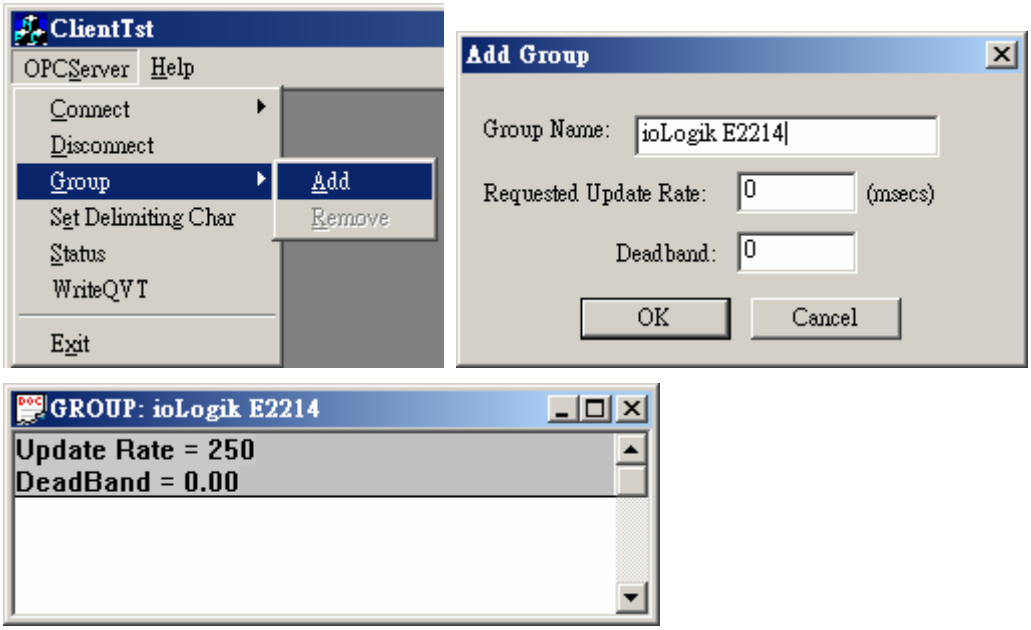
If Active OPC Server Lite is installed locally in the same PC, select **Connect → Local** from the menu bar. Specify the **MOXA ACTIVE OPC SERVER** in the **Server Name** column.



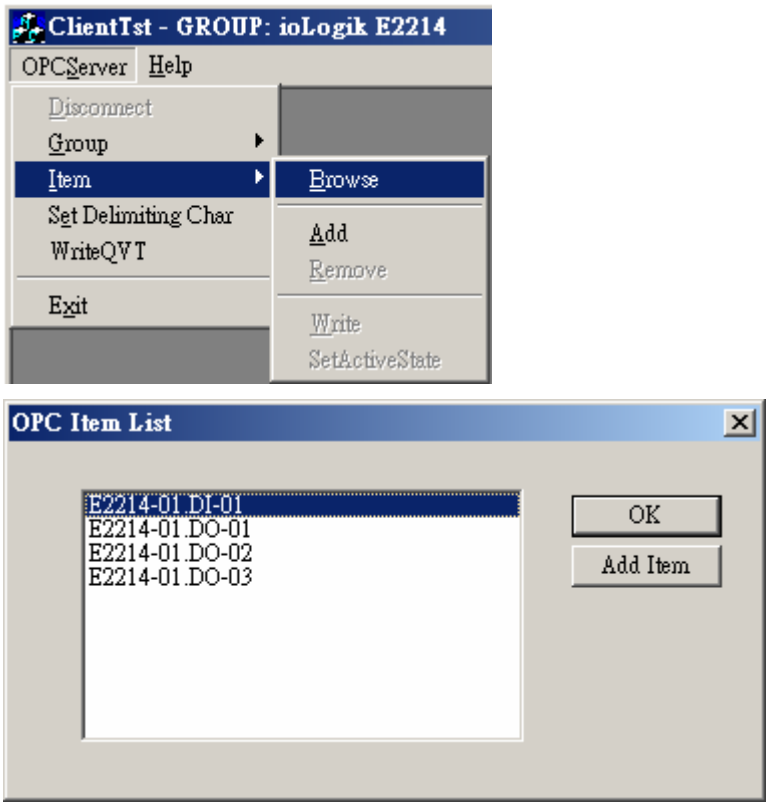
If the Active OPC Server Lite is installed on a remote PC, select **Connect → Remote** from the menu bar. Input the host name (i.e. Moxa_Client) or IP address and specify **MOXA ACTIVE OPC SERVER** in the **Server Name** column.

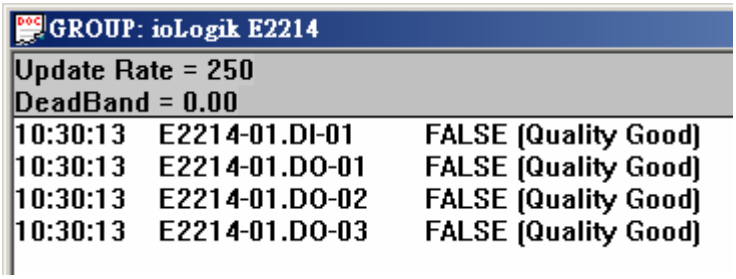


Click on the **Group → Add** and specify the **Group Name** (user-defined). A blank tag monitoring screen will start.

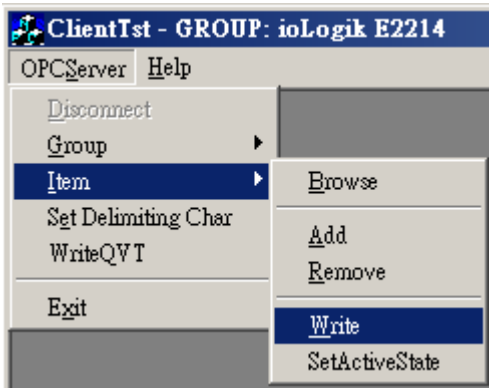


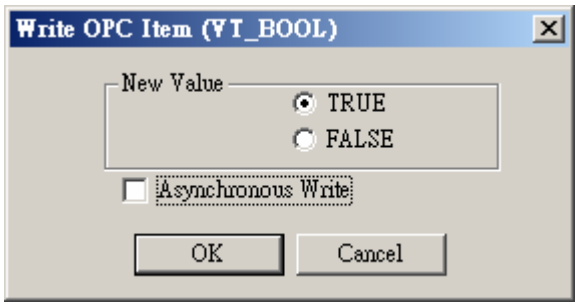
Click **Item → Browse** and select the channel needed to be monitored.





To write to the output channel, specify an output channel first. Then, select **Item → Write** from the menu bar.





A

Liquid Crystal Display Module (LCM)

The ioLogik E2262 supports an optional detachable Liquid Crystal Display Module (LCM) for easier field maintenance. The LCM is hot-pluggable and can be used to configure the network settings or display other settings. When plugged in, the LCM displays the ioLogik E2262 “home page,” and pressing any button takes you into the settings and configuration.

LCM Controls

The up and down buttons navigate between the current options. The right and left buttons enter and exit the submenus. The center button is used when modifying settings or restarting the server.

Button	Function
Up	go to the previous item
Down	go to the next item
Left	exit the current submenu and return to the previous menu (go up one level)
Right	enter the selected submenu (go down one level)
Center	enter/exit editing mode

An “e” in the upper right hand corner of the display indicates that the parameter can be modified. Press the center button on the LCM to modify that parameter’s settings.

LCM Options

Display	Explanation / Actions
`<ioLogik E2262>`	This is the default “home page” showing the IP address. Press the down button to view the submenus.
`<ioLogik E2262>` `server`	Enter this submenu to display information about the specific server you are viewing: ● serial number ● name ● location ● E2262 f/w ver ● lcm f/w ver ● model name

Display	Explanation / Actions
<ioLogik E2262> network	Enter this submenu to display information and settings for the network: • ethernet link • MAC address • IP mode • IP address • netmask • gateway • DNS server-1 • DNS server-2
<ioLogik E2262> click&go	Enter this submenu to display information about the ruleset being used by the active I/O system. • name • status
<ioLogik E2262> serial port	Enter this submenu to display the RS-485 cascade port settings.
<ioLogik E2262> i/o setting	Enter this submenu to access I/O channel status. Here are examples of settings that you might see: • TC-00 XXX Press up or down to navigate through the different I/O channels without having to go back to the previous menu.
<ioLogik E2262> console	Enter this submenu to see if the web console is enabled or disabled.
<ioLogik E2262> ping	Select this option to enter an IP address to ping. If you get a "timeout" error, it indicates that the E2262 cannot reach that IP address. Otherwise, the display will show the response time.
<ioLogik E2262> save/restart	Enter this submenu to display the **restart now** submenu. Enter the **restart now** submenu to display the **restart** option. Press the center button to modify this option, then select **enable** to save changes and reboot the I/O server. The **disable** option has no effect.

WARNING

Any configuration changes that are made through the LCM will not take effect until the ioLogik E2262 is restarted.

B
Modbus Mappings

0xxxx Read/Write Coils (Functions 1, 5, 15)

Reference	Address	Data Type	Description
00001	**0x0000**	**1bit**	**CH0 TC Reset Minimum Value** **<R> Always 0** **<W> 1=Reset to current value,**
00002	0x0001	1 bit	CH1 TC Reset Minimum Value
00003	0x0002	1 bit	CH2 TC Reset Minimum Value
00004	0x0003	1 bit	CH3 TC Reset Minimum Value
00005	0x0004	1 bit	CH4 TC Reset Minimum Value
00006	0x0005	1 bit	CH5 TC Reset Minimum Value
00007	0x0006	1 bit	CH6 TC Reset Minimum Value
00008	0x0007	1 bit	CH7 TC Reset Minimum Value
00009	0x0008	1 bit	Virtual CH8 TC Reset Maximum Value
00010	0x0009	1 bit	Virtual CH9 TC Reset Minimum Value
00011	0x000A	1 bit	Virtual CH10 TC Reset Minimum Value
00012	0x000B	1 bit	Virtual CH11 TC Reset Minimum Value
00013	0x000C	1 bit	Virtual CH12 TC Reset Minimum Value
00014	0x000D	1 bit	Virtual CH13 TC Reset Minimum Value
00015	0x000E	1 bit	Virtual CH14 TC Reset Minimum Value
00016	0x000F	1 bit	Virtual CH15 TC Reset Minimum Value
00017	0x0010	1 bit	CH0 TC Reset Maximum Value
00018	0x0011	1 bit	CH1 TC Reset Maximum Value
00019	0x0012	1 bit	CH2 TC Reset Maximum Value
00020	0x0013	1 bit	CH3 TC Reset Maximum Value
00021	0x0014	1 bit	CH4 TC Reset Maximum Value
00022	0x0015	1 bit	CH5 TC Reset Maximum Value
00023	0x0016	1 bit	CH6 TC Reset Maximum Value
00024	0x0017	1 bit	CH7 TC Reset Maximum Value
00025	0x0018	1 bit	Virtual CH8 TC Reset Maximum Value
00026	0x0019	1 bit	Virtual CH9 TC Reset Maximum Value
00027	0x001A	1 bit	Virtual CH10 TC Reset Maximum Value
00028	0x001B	1 bit	Virtual CH11 TC Reset Maximum Value
00029	0x001C	1 bit	Virtual CH12 TC Reset Maximum Value
00030	0x001D	1 bit	Virtual CH13 TC Reset Maximum Value
00031	0x001E	1 bit	Virtual CH14 TC Reset Maximum Value
00032	0x001F	1 bit	Virtual CH15 TC Reset Maximum Value
00033	**0x0020**	**1 bit**	**CH0 TC Enable** **<RW> 0=Disable, 1=Enable**

00034	0x0021	1 bit	CH1 TC Enable
00035	0x0022	1 bit	CH2 TC Enable
00036	0x0023	1 bit	CH3 TC Enable
00037	0x0024	1 bit	CH4 TC Enable
00038	0x0025	1 bit	CH5 TC Enable
00039	0x0026	1 bit	CH6 TC Enable
00040	0x0027	1 bit	CH7 TC Enable
00041	**0x0028**	**1 bit**	**CH0 DO Status** **<RW> 0=OFF, 1=ON**
00042	0x0029	1 bit	CH1 DO Status
00043	0x002A	1 bit	CH2 DO Status
00044	0x002B	1 bit	CH3 DO Status
00045	**0x002C**	**1 bit**	**CH0 DO Power-On Status** **<RW> 0=OFF, 1=ON**
00046	0x002D	1 bit	CH1 DO Power-On Status
00047	0x002E	1 bit	CH2 DO Power-On Status
00048	0x002F	1 bit	CH3 DO Power-On Status
00049	**0x0030**	**1 bit**	**CH0 DO Safe Status** **<RW> 0=OFF, 1=ON**
00050	0x0031	1 bit	CH1 DO Safe Status
00051	0x0032	1 bit	CH2 DO Safe Status
00052	0x0033	1 bit	CH3 DO Safe Status
00053	**0x0034**	**1 bit**	**CH0 DO Pulse Output Status** **<RW> 0=Stop, 1=Start**
00054	0x0035	1 bit	CH1 DO Pulse Output Status
00055	0x0036	1 bit	CH2 DO Pulse Output Status
00056		1 bit	CH3 DO Pulse Output Status
00057	**0x0038**	**1 bit**	**CH0 DO Power-On Pulse Output Status** **<RW> 0=Stop, 1=Start**
00058	0x0039	1 bit	CH1 DO Power-On Pulse Output Status
00059	0x003A	1 bit	CH2 DO Power-On Pulse Output Status
00060	0x003B	1 bit	CH3 DO Power-On Pulse Output Status
00061	**0x003C**	**1 bit**	**CH0 DO Safe Mode Pulse Output Status** **<RW> 0=Stop, 1=Start**
00062	0x003D	1 bit	CH1 DO Safe Mode Pulse Output Status
00063	0x003E	1 bit	CH2 DO Safe Mode Pulse Output Status
00064	0x003F	1 bit	CH3 DO Safe Mode Pulse Output Status

3xxxx Read Only Registers (Function 4)

Reference	Address	Data Type	Description
30001	**0x0000**	**1 word**	**CH0 TC Value Hi Word <R> 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)**
30002	**0x0001**	**1 word**	**CH0 TC Value Lo Word <R> 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)**
30003	0x0002	1 word	CH1 TC Value Hi Word
30004	0x0003	1 word	CH1 TC Value Lo Word
30005	0x0004	1 word	CH2 TC Value Hi Word
30006	0x0005	1 word	CH2 TC Value Lo Word
30007	0x0006	1 word	CH3 TC Value Hi Word
30008	0x0007	1 word	CH3 TC Value Lo Word
30009	0x0008	1 word	CH4 TC Value Hi Word
30010	0x0009	1 word	CH4 TC Value Lo Word
30011	0x000A	1 word	CH5 TC Value Hi Word
30012	0x000B	1 word	CH5 TC Value Lo Word
30013	0x000C	1 word	CH6 TC Value Hi Word
30014	0x000D	1 word	CH6 TC Value Lo Word
30015	0x000E	1 word	CH7 TC Value Hi Word
30016	0x000F	1 word	CH7 TC Value Lo Word
30017	**0x0010**	**1 word**	**Virtual CH8 TC Value Hi Word <R> 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)**
30018	**0x0011**	**1 word**	**Virtual CH8 TC Value Lo Word <R> 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)**
30019	0x0012	1 word	Virtual CH9 TC Value Hi Word
30020	0x0013	1 word	Virtual CH9 TC Value Lo Word
30021	0x0014	1 word	Virtual CH10 TC Value Hi Word
30022	0x0015	1 word	Virtual CH10 TC Value Lo Word
30023	0x0016	1 word	Virtual CH11 TC Value Hi Word
30024	0x0017	1 word	Virtual CH11 TC Value Lo Word
30025	0x0018	1 word	Virtual CH12 TC Value Hi Word
30026	0x0019	1 word	Virtual CH12 TC Value Lo Word
30027	0x001A	1 word	Virtual CH13 TC Value Hi Word
30028	0x001B	1 word	Virtual CH13 TC Value Lo Word
30029	0x001C	1 word	Virtual CH14 TC Value Hi Word
30030	0x001D	1 word	Virtual CH14 TC Value Lo Word
30031	0x001E	1 word	Virtual CH15 TC Value Hi Word
30032	0x001F	1 word	Virtual CH15 TC Value Lo Word
30033	**0x0020**	**1 word**	**CH0 TC Minimum Value Hi Word <R> 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)**
30034	**0x0021**	**1 word**	**CH0 TC Minimum Value Lo Word <R> 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)**
30035	0x0022	1 word	CH1 TC Minimum Value Hi Word

30036	0x0023	1 word	CH1 TC Minimum Value Lo Word
30037	0x0024	1 word	CH2 TC Minimum Value Hi Word
30038	0x0025	1 word	CH2 TC Minimum Value Lo Word
30039	0x0026	1 word	CH3 TC Minimum Value Hi Word
30040	0x0027	1 word	CH3 TC Minimum Value Lo Word
30041	0x0028	1 word	CH4 TC Minimum Value Hi Word
30042	0x0029	1 word	CH4 TC Minimum Value Lo Word
30043	0x002A	1 word	CH5 TC Minimum Value Hi Word
30044	0x002B	1 word	CH5 TC Minimum Value Lo Word
30045	0x002C	1 word	CH6 TC Minimum Value Hi Word
30046	0x002D	1 word	CH6 TC Minimum Value Lo Word
30047	0x002E	1 word	CH7 TC Minimum Value Hi Word
30048	0x002F	1 word	CH7 TC Minimum Value Lo Word
30049	**0x0030**	**1 word**	**Virtual CH8 TC Minimum Value Hi Word <R> 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)**
30050	**0x0031**	**1 word**	**Virtual CH8 TC Minimum Value Lo Word <R> 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)**
30051	0x0032	1 word	Virtual CH9 TC Minimum Value Hi Word
30052	0x0033	1 word	Virtual CH9 TC Minimum Value Lo Word
30053	0x0034	1 word	Virtual CH10 TC Minimum Value Hi Word
30054	0x0035	1 word	Virtual CH10 TC Minimum Value Lo Word
30055	0x0036	1 word	Virtual CH11 TC Minimum Value Hi Word
30056	0x0037	1 word	Virtual CH11 TC Minimum Value Lo Word
30057	0x0038	1 word	Virtual CH12 TC Minimum Value Hi Word
30058	0x0039	1 word	Virtual CH12 TC Minimum Value Lo Word
30059	0x003A	1 word	Virtual CH13 TC Minimum Value Hi Word
30060	0x003B	1 word	Virtual CH13 TC Minimum Value Lo Word
30061	0x003C	1 word	Virtual CH14 TC Minimum Value Hi Word
30062	0x003D	1 word	Virtual CH14 TC Minimum Value Lo Word
30063	0x003E	1 word	Virtual CH15 TC Minimum Value Hi Word
30064	0x003F	1 word	Virtual CH15 TC Minimum Value Lo Word
30065	**0x0040**	**1 word**	**CH0 TC Maximum Value Hi Word <R> 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)**
30066	**0x0041**	**1 word**	**CH0 TC Maximum Value Lo Word <R> 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)**
30067	0x0042	1 word	CH1 TC Maximum Value Hi Word
30068	0x0043	1 word	CH1 TC Maximum Value Lo Word
30069	0x0044	1 word	CH2 TC Maximum Value Hi Word
30070	0x0045	1 word	CH2 TC Maximum Value Lo Word
30071	0x0046	1 word	CH3 TC Maximum Value Hi Word
30072	0x0047	1 word	CH3 TC Maximum Value Lo Word
30073	0x0048	1 word	CH4 TC Maximum Value Hi Word
30074	0x0049	1 word	CH4 TC Maximum Value Lo Word
30075	0x004A	1 word	CH5 TC Maximum Value Hi Word
30076	0x004B	1 word	CH5 TC Maximum Value Lo Word
30077	0x004C	1 word	CH6 TC Maximum Value Hi Word

30078	0x004D	1 word	CH6 TC Maximum Value Lo Word
30079	0x004E	1 word	CH7 TC Maximum Value Hi Word
30080	0x004F	1 word	CH7 TC Maximum Value Lo Word
30081	**0x0050**	**1 word**	**Virtual CH8 TC Maximum Value Hi Word <R> 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)**
30082	**0x0051**	**1 word**	**Virtual CH8 TC Maximum Value Lo Word <R> 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)**
30083	0x0052	1 word	Virtual CH9 TC Maximum Value Hi Word
30084	0x0053	1 word	Virtual CH9 TC Maximum Value Lo Word
30085	0x0054	1 word	Virtual CH10 TC Maximum Value Hi Word
30086	0x0055	1 word	Virtual CH10 TC Maximum Value Lo Word
30087	0x0056	1 word	Virtual CH11 TC Maximum Value Hi Word
30088	0x0057	1 word	Virtual CH11 TC Maximum Value Lo Word
30089	0x0058	1 word	Virtual CH12 TC Maximum Value Hi Word
30090	0x0059	1 word	Virtual CH12 TC Maximum Value Lo Word
30091	0x005A	1 word	Virtual CH13 TC Maximum Value Hi Word
30092	0x005B	1 word	Virtual CH13 TC Maximum Value Lo Word
30093	0x005C	1 word	Virtual CH14 TC Maximum Value Hi Word
30094	0x005D	1 word	Virtual CH14 TC Maximum Value Lo Word
30095	0x005E	1 word	Virtual CH15 TC Maximum Value Hi Word
30096	0x005F	1 word	Virtual CH15 TC Maximum Value Lo Word

4xxxx Read/Write Registers (Functions 3, 6, 16)

Reference	Address	Data Type	Description
40001	**0x0000**	**1 word**	**CH0 DO Pulse Output Count Value Hi Word <RW> 0~4294967295**
40002	**0x0001**	**1 word**	**CH0 DO Pulse Output Count Value Lo Word <RW> 0~4294967295**
40003	0x0002	1 word	CH1 DO Pulse Output Count Value Hi Word
40004	0x0003	1 word	CH1 DO Pulse Output Count Value Lo Word
40005	0x0004	1 word	CH2 DO Pulse Output Count Value Hi Word
40006	0x0005	1 word	CH2 DO Pulse Output Count Value Lo Word
40007	0x0006	1 word	CH3 DO Pulse Output Count Value Hi Word
40008	0x0007	1 word	CH3 DO Pulse Output Count Value Lo Word
40009	**0x0008**	**1 word**	**CH0 DO Pulse Output Low Signal Width – Hi Word <RW> 0~4294967295**
40010	**0x0009**	**1 word**	**CH0 DO Pulse Output Low Signal Width – Lo Word <RW> 0~4294967295**
40011	0x000A	1 word	CH1 DO Pulse Output Low Signal Width – Hi Word
40012	0x000B	1 word	CH1 DO Pulse Output Low Signal Width – Lo Word
40013	0x000C	1 word	CH2 DO Pulse Output Low Signal Width – Hi Word

40014	0x000D	1 word	CH2 DO Pulse Output Low Signal Width – Lo Word
40015	0x000E	1 word	CH3 DO Pulse Output Low Signal Width – Hi Word
40016	0x000F	1 word	CH3 DO Pulse Output Low Signal Width – Lo Word
40017	**0x0010**	**1 word**	**CH0 DO Pulse Output High Signal Width – Hi Word** **<RW> 0~4294967295**
40018	**0x0011**	**1 word**	**CH0 DO Pulse Output High Signal Width – Lo Word** **<RW> 0~4294967295**
40019	0x0012	1 word	CH1 DO Pulse Output High Signal Width – Hi Word
40020	0x0013	1 word	CH1 DO Pulse Output High Signal Width – Lo Word
40021	0x0014	1 word	CH2 DO Pulse Output High Signal Width – Hi Word
40022	0x0015	1 word	CH2 DO Pulse Output High Signal Width – Lo Word
40023	0x0016	1 word	CH3 DO Pulse Output High Signal Width – Hi Word
40024	0x0017	1 word	CH3 DO Pulse Output High Signal Width – Lo Word
40025	**0x0018**	**1 word**	**CH0 DO Operation Mode** **<RW> 0=DO Mode, 1=Pulse Output Mode**
40026	0x0019	1 word	CH1 DO Operation Mode
40027	0x001A	1 word	CH2 DO Operation Mode
40028	0x001B	1 word	CH3 DO Operation Mode
40029	**0x001C**	**1 word**	**CH0 TC Engineering Unit** **0=Celsius, 1=Fahrenheit, 2=millivolt**
40030	0x001D	1 word	CH1 TC Engineering Unit
40031	0x001E	1 word	CH2 TC Engineering Unit
40032	0x001F	1 word	CH3 TC Engineering Unit
40033	0x0020	1 word	CH4 TC Engineering Unit
40034	0x0021	1 word	CH5 TC Engineering Unit
40035	0x0022	1 word	CH6 TC Engineering Unit
40036	0x0023	1 word	CH7 TC Engineering Unit
40037	**0x0024**	**1 word**	**Virtual CH8 TC Engineering Unit** **0=Celsius, 1=Fahrenheit, 2= millivolt**
40038	0x0025	1 word	Virtual CH9 TC Engineering Unit
40039	0x0026	1 word	Virtual CH10 TC Engineering Unit
40040	0x0027	1 word	Virtual CH11 TC Engineering Unit
40041	0x0028	1 word	Virtual CH12 TC Engineering Unit
40042	0x0029	1 word	Virtual CH13 TC Engineering Unit
40043	0x002A	1 word	Virtual CH14 TC Engineering Unit
40044	0x002B	1 word	Virtual CH15 TC Engineering Unit
40045	**0x002C**	**1 word**	**CH0 TC Sensor Type** **0=J Type**

			1=K Type **2=T Type** **3=E Type** **4=R Type** **5=S Type** **6=B Type** **7=N Type** **8=Voltage:78.126mV** **9=Voltage:39.062mV** **10=Voltage:19.532mV**
40046	0x002D	1 word	CH1 TC Sensor Type
40047	0x002E	1 word	CH2 TC Sensor Type
40048	0x002F	1 word	CH3 TC Sensor Type
40049	0x0030	1 word	CH4 TC Sensor Type
40050	0x0031	1 word	CH5 TC Sensor Type
40051	0x0032	1 word	CH6 TC Sensor Type
40052	0x0033	1 word	CH7 TC Sensor Type
40053	**0x0034**	**1 word**	**CH8 TC Sensor Type** **20=AVG** **21=DIF**
40054	0x0035	1 word	Virtual CH9 TC Sensor Type
40055	0x0036	1 word	Virtual CH10 TC Sensor Type
40056	0x0037	1 word	Virtual CH11 TC Sensor Type
40057	0x0038	1 word	Virtual CH12 TC Sensor Type
40058	0x0039	1 word	Virtual CH13 TC Sensor Type
40059	0x003A	1 word	Virtual CH14 TC Sensor Type
40060	0x003B	1 word	Virtual CH15 TC Sensor Type
40061	**0x003C**	**1 word**	**CH0 TC Reset Minimum Value** **<R> Always 0** **<W> 1=Reset, 0=return illegal data value**
40062	0x003D	1 word	CH1 TC Reset Minimum Value
40063	0x003E	1 word	CH2 TC Reset Minimum Value
40064	0x003F	1 word	CH3 TC Reset Minimum Value
40065	0x0040	1 word	CH4 TC Reset Minimum Value
40066	0x0041	1 word	CH5 TC Reset Minimum Value
40067	0x0042	1 word	CH6 TC Reset Minimum Value
40068	0x0043	1 word	CH7 TC Reset Minimum Value
40069	0x0044	1 word	Virtual CH8 TC Reset Minimum Value
40070	0x0045	1 word	Virtual CH9 TC Reset Minimum Value
40071	0x0046	1 word	Virtual CH10 TC Reset Minimum Value
40072	0x0047	1 word	Virtual CH11 TC Reset Minimum Value
40073	0x0048	1 word	Virtual CH12 TC Reset Minimum Value
40074	0x0049	1 word	Virtual CH13 TC Reset Minimum Value
40075	0x004A	1 word	Virtual CH14 TC Reset Minimum Value
40076	0x004B	1 word	Virtual CH15 TC Reset Minimum Value
40077	**0x004C**	**1 word**	**CH0 TC Reset Maximum Value** **<R> Always 0** **<W> 1=Reset, 0=return illegal data value**

40078	0x004D	1 word	CH1 TC Reset Maximum Value
40079	0x004E	1 word	CH2 TC Reset Maximum Value
40080	0x004F	1 word	CH3 TC Reset Maximum Value
40081	0x0050	1 word	CH4 TC Reset Maximum Value
40082	0x0051	1 word	CH5 TC Reset Maximum Value
40083	0x0052	1 word	CH6 TC Reset Maximum Value
40084	0x0053	1 word	CH7 TC Reset Maximum Value
40085	0x0054	1 word	Virtual CH8 TC Reset Maximum Value
40086	0x0055	1 word	Virtual CH9 TC Reset Maximum Value
40087	0x0056	1 word	Virtual CH10 TC Reset Maximum Value
40088	0x0057	1 word	Virtual CH11 TC Reset Maximum Value
40089	0x0058	1 word	Virtual CH12 TC Reset Maximum Value
40090	0x0059	1 word	Virtual CH13 TC Reset Maximum Value
40091	0x005A	1 word	Virtual CH14 TC Reset Maximum Value
40092	0x005B	1 word	Virtual CH15 TC Reset Maximum Value
40093	**0x005C**	**1 word**	**CH0 DO Status** **<RW> 0=OFF, 1=ON**
40094	0x005D	1 word	CH1 DO Status
40095	0x005E	1 word	CH2 DO Status
40096	0x005F	1 word	CH3 DO Status
40097	**0x0060**	**1 word**	**CH0 DO Power On Status** **<RW> 0=OFF, 1=ON**
40098	0x0061	1 word	CH1 DO Status
40099	0x0062	1 word	CH2 DO Status
40100	0x0063	1 word	CH3 DO Status
40101	**0x0064**	**1 word**	**CH0 DO Safe Status** **<RW> 0=OFF, 1=ON**
40102	0x0065	1 word	CH1 DO Status
40103	0x0066	1 word	CH2 DO Status
40104	0x0067	1 word	CH3 DO Status
40105	**0x0068**	**1 word**	**CH0 DO Pulse Output Status** **<RW> 0=Stop, 1=Start**
40106	0x0069	1 word	CH1 DO Pulse Output Status
40107	0x006A	1 word	CH2 DO Pulse Output Status
40108	0x006B	1 word	CH3 DO Pulse Output Status
40109	**0x006C**	**1 word**	**CH0 DO Power On Pulse Output Status** **<RW> 0=Stop, 1=Start**
40110	0x006D	1 word	CH1 DO Pulse Output Status
40111	0x006E	1 word	CH2 DO Pulse Output Status
40112	0x006F	1 word	CH3 DO Pulse Output Status
40113	**0x0070**	**1 word**	**CH0 DO Safe Pulse Output Status** **<RW> 0=Stop, 1=Start**
40114	0x0071	1 word	CH1 DO Pulse Output Status
40115	0x0072	1 word	CH2 DO Pulse Output Status
40116	0x0073	1 word	CH3 DO Pulse Output Status
40117	**0x0074**	**1 word**	**CH0 TC Enable** **<RW> 0 =Disable, 1=Enable**
40118	0x0075	1 word	CH1 TC Enable
40119	0x0076	1 word	CH2 TC Enable
40120	0x0077	1 word	CH3 TC Enable

40121	0x0078	1 word	CH4 TC Enable
40122	0x0079	1 word	CH5 TC Enable
40123	0x007A	1 word	CH6 TC Enable
40124	0x007B	1 word	CH7 TC Enable
40337	0x0150	1 word	Internal Register 00 Value
40338	0x0151	1 word	Internal Register 01 Value
40339	0x0152	1 word	Internal Register 02 Value
40340	0x0153	1 word	Internal Register 03 Value
40341	0x0154	1 word	Internal Register 04 Value
40342	0x0155	1 word	Internal Register 05 Value
40343	0x0156	1 word	Internal Register 06 Value
40344	0x0157	1 word	Internal Register 07 Value
40345	0x0158	1 word	Internal Register 08 Value
40346	0x0159	1 word	Internal Register 09 Value
40347	0x015A	1 word	Internal Register 10 Value
40348	0x015B	1 word	Internal Register 11 Value
40349	0x015C	1 word	Internal Register 12 Value
40350	0x015D	1 word	Internal Register 13 Value
40351	0x015E	1 word	Internal Register 14 Value
40352	0x015F	1 word	Internal Register 15 Value
40353	0x0160	1 word	Internal Register 16 Value
40354	0x0161	1 word	Internal Register 17 Value
40355	0x0162	1 word	Internal Register 18 Value
40356	0x0163	1 word	Internal Register 19 Value
40357	0x0164	1 word	Internal Register 20 Value
40358	0x0165	1 word	Internal Register 21 Value
40359	0x0166	1 word	Internal Register 22 Value
40360	0x0167	1 word	Internal Register 23 Value

C
Used Network Port Numbers

E2262 Network Port Usage

Port	Type	Usage
68	UDP	BOOTPC
68	UDP	DHCP
69	UDP	Export/Import File
80	TCP	Web Server
161	TCP	SNMP
502	TCP	Modbus Communication
4040	TCP	ioEventLog
4800	UDP	Auto Search
9000	TCP	Active Message (Default)
9000	UDP	Active Message (Default)
9900	TCP	Active Tags updates (default)

D
SNMP MIB II

RFC1213 MIB II Supported SNMP Variables

The following SNMP variables are built into the ioLogik firmware and are compliant with RFC1213 MIB II.

System MIB	Interfaces MIB	IP MIB	ICMP MIB
SysDescr	ifNumber	ipForwarding	IcmpInMsgs
SysObjectID	ifIndex	ipDefaultTTL	IcmpInErrors
SysUpTime	ifDescr	ipInreceives	IcmpInDestUnreachs
SysContact	ifType	ipInHdrErrors	IcmpInTimeExcds
SysName	ifMtu	ipInAddrErrors	IcmpInParmProbs
SysLocation	ifSpeed	ipForwDatagrams	IcmpInSrcQuenchs
SysServices	ifPhysAddress	ipInUnknownProtos	IcmpInRedirects
	ifAdminStatus	ipInDiscards	IcmpInEchos
	ifOperStatus	ipInDelivers	IcmpInEchoReps
	ifLastChange	ipOutRequests	IcmpInTimestamps
	ifInOctets	ipOutDiscards	IcmpTimestampReps
	ifInUcastPkts	ipOutNoRoutes	IcmpInAddrMasks
	ifInNUcastPkts	ipReasmTimeout	IcmpOutMsgs
	ifInDiscards	ipReasmReqds	IcmpOutErrors
	ifInErrors	ipReasmOKs	IcmpOutDestUnreachs

System MIB	Interfaces MIB	IP MIB	ICMP MIB
SysServices	ifInUnknownProtos	ipReasmFails	IcmpOutTimeExcds
	ifOutOctets	ipFragOKs	IcmpOutParmProbs
	ifOutUcastPkts	ipFragFails	IcmpOutSrcQuenchs
	ifOutNUcastPkts	ipFragCreates	IcmpOutRedirects
	ifOutDiscards	ipAdEntAddr	IcmpOutEchos
	ifOutErrors	ipAdEntIfIndex	IcmpOutEchoReps
	ifOutQLen	ipAdEntNetMask	IcmpOutTimestamps
	ifSpecific	ipAdEntBcastAddr	IcmpOutTimestampReps
		ipAdEntReasmMaxSize	IcmpOutAddrMasks
		ipRouteDest	IcmpOutAddrMaskReps
		ipRouteIfIndex	
		ipRouteMetric1	
		ipRouteMetric2	
		ipRouteMetric3	
		ipRouteMetric4	
		ipRouteNextHop	
		ipRouteType	
		ipRouteProto	
		ipRouteAge	
		ipRouteMask	
		ipRouteMetric5	
		ipRouteInfo	
		IpNetToMediaIfIndex	
		IpNetToMediaPhysAddress	
		IpNetToMediaNetAddress	
		IpNetToMediaType	
		IpRoutingDiscards	

UDP MIB	TCP MIB	SNMP MIB
UdpInDatagrams	tcpRtoAlgorithm	snmpInPkts
UdpNoPorts	tcpRtoMin	snmpOutPkts
UdpInErrors	tcpRtoMax	snmpInBadVersions
UdpOutDatagrams	tcpMaxConn	snmpInBadCommunityNames
UdpLocalAddress	tcpActiveOpens	snmpInBadCommunityUses
UdpLocalPort	tcpPassiveOpens	snmpInASNParseErrs
	tcpAttempFails	snmpInTooBigs
	tcpEstabResets	snmpInNoSuchNames
Address Translation MIB	tcpCurrEstab	snmpInBadValues
AtIfIndex	tcpInSegs	snmpInReadOnlys
AtPhysAddress	tcpOutSegs	snmpInGenErrs
AtNetAddress	tcpRetransSegs	snmpInTotalReqVars

Address Translation MIB	TCP MIB	SNMP MIB
AtNetAddress	tcpConnState	snmpInTotalSetVars
	tcpConnLocalAddress	snmpInGetRequests
	tcpConnLocalPort	snmpInGetNexts
	tcpConnRemAddress	snmpInSetRequests
	tcpConnRemPort	snmpInGetResponses
	tcpInErrs	snmpInTraps
	tcpOutRsts	snmpOutTooBigs
		snmpOutNoSuchNames
		snmpOutBadValues
		snmpOutGenErrs
		snmpOutGetRequests
		snmpOutGetNexts
		snmpOutSetRequests
		snmpOutGetResponses
		snmpOutTraps
		snmpEnableAuthenTraps

Private MIB File and SNMP Variables

Moxa also provides an SNMP to I/O MIB file that can help you monitor I/O status with SNMP software. You can find the MIB file on the Document and Software CD.

Moxa-IO-MIB	Moxa-IO-MIB	Moxa-IO-MIB
totalChannelNumber	TC03-Index	TC07-Index
serverMode	TC03-Type	TC07-Type
systemTime	TC03-Range	TC07-Range
firmwareVersion	TC03-Value	TC07-Value
TC00-Index	TC03-Min	TC07-Min
TC00-Type	TC03-Max	TC07-Max
TC00-Range	TC04-Index	DO00-Index
TC00-Value	TC04-Type	DO00-Type
TC00-Min	TC04-Range	DO00-Range
TC00-Max	TC04-Value	DO00-Value
TC01-Index	TC04-Min	DO01-Index
TC01-Type	TC04-Max	DO01-Type
TC01-Range	TC05-Index	DO01-Range
TC01-Value	TC05-Type	DO01-Value
TC01-Min	TC05-Range	DO02-Index
TC01-Max	TC05-Value	DO02-Type
TC02-Index	TC05-Min	DO02-Range
TC02-Type	TC05-Max	DO02-Value
TC02-Range	TC06Index	DO03-Index
TC02-Value	TC06-Type	DO03-Type
TC02-Min	TC06-Range	DO03-Range
TC02-Max	TC06-Value	DO03-Value
	TC06-Min	
	TC06-Max	

E
CGI Commands

Using a web browser or standard HTTP protocol will make it easier for a Security SCADA system to monitor and control an ioLogik via CGI commands.

Syntax to get the settings is as follows. Starting with the ioLogik's IP or URL, specify **getParam.cgi** with a question mark. Then specify the command with another question mark as the ending. The commands are case sensitive and the **&** sign is used to combine multiple commands.

http://IP/getParam.cgi?command _channel=?&command _channel=?&.....(Max 200 char)

Commands to get system information	Commands to get system information
DATE	FWR_V
TIME	MOD_NAME
IP	SN_NUM
LOC	MAC_ADDR
DESC	

Commands to get TC information	Commands to get TC information
TcEnable_00 (0:Disable, 1:Enable)	TcEnable_01 (0:Disable, 1:Enable)
TcStype_00 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)	TcStype_01 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)
TcUtype_00 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_01 (Unit Types. 0:°C, 1:°F, 2:mV)
TcStatus_00	TcStatus_01
TcEnable_02 (0:Disable, 1:Enable)	TcEnable_03 (0:Disable, 1:Enable)
TcStype_02 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)	TcStype_03 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)
TcUtype_02 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_03 (Unit Types. 0:°C, 1:°F, 2:mV)
TcStatus_02	TcStatus_03
TcEnable_04 (0:Disable, 1:Enable)	TcEnable_05 (0:Disable, 1:Enable)
TcStype_04 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)	TcStype_05 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)
TcUtype_04 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_05 (Unit Types. 0:°C, 1:°F, 2:mV)

TcStatus_04	TcStatus_05
TcEnable_06 (0:Disable, 1:Enable)	TcEnable_07 (0:Disable, 1:Enable)
TcStype_06 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)	TcStype_07 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)
TcUtype_06 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_07 (Unit Types. 0:°C, 1:°F, 2:mV)
TcStatus_06	TcStatus_07

Commands to get TC Virtual channels	**Commands to get TC Virtual channels**
TcEnable_08 (0:Disable, 1:Enable)	TcEnable_09 (0:Disable, 1:Enable)
TcStype_08 (20: Average, 21: Difference)	TcStype_09 (20: Average, 21: Difference)
TcUtype_08 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_09 (Unit Types. 0:°C, 1:°F, 2:mV)
TcStatus_08	TcStatus_09
TcEnable_10 (0:Disable, 1:Enable)	TcEnable_11 (0:Disable, 1:Enable)
TcStype_10 (20: Average, 21: Difference)	TcStype_11 (20: Average, 21: Difference)
TcUtype_10 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_11 (Unit Types. 0:°C, 1:°F, 2:mV)
TcStatus_10	TcStatus_11
TcEnable_12 (0:Disable, 1:Enable)	TcEnable_13 (0:Disable, 1:Enable)
TcStype_12 (20: Average, 21: Difference)	TcStype_13 (20: Average, 21: Difference)
TcUtype_12 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_13 (Unit Types. 0:°C, 1:°F, 2:mV)
TcStatus_12	TcStatus_13
TcEnable_14 (0:Disable, 1:Enable)	TcEnable_15 (0:Disable, 1:Enable)
TcStype_14 (20: Average, 21: Difference)	TcStype_15 (20: Average, 21: Difference)
TcUtype_14 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_15 (Unit Types. 0:°C, 1:°F, 2:mV)
TcStatus_14	TcStatus_15

Commands to get DO information	Commands to get DO information
DOMode_00 (0:DO, 1:PULSE OUTPUT)	DOMode_01 (0:DO, 1:PULSE OUTPUT)
DOStatus_00 (0:OFF, 1:ON)	DOStatus_01 (0:OFF, 1:ON)
DOLowWidth_00	DOLowWidth_01
DOHighWidth_00	DOHighWidth_01
DOPulseStart_00 (0:STOP, 1:START)	DOPulseStart_01 (0:STOP, 1:START)
DOMode_02 (0:DO, 1:PULSE OUTPUT)	DOMode_03 (0:DO, 1:PULSE OUTPUT)
DOStatus_02 (0:OFF, 1:ON)	DOStatus_03 (0:OFF, 1:ON)
DOLowWidth_02	DOLowWidth_03
DOHighWidth_02	DOHighWidth_03
DOPulseStart_02 (0:STOP, 1:START)	DOPulseStart_03 (0:STOP, 1:START)

Syntax to get the settings is as follows. Starting with the ioLogik's IP or URL, specify **setParam.cgi** with a question mark. Then specify the command with another question mark as the ending. Those commands are case sensitive and the **&** sign is used to combine multiple commands.

Commands to set TC channels	Commands to set TC channels
TcEnable_00 (0:Disable, 1:Enable)	TcEnable_01 (0:Disable, 1:Enable)
TcStype_00 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)	TcStype_01 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)
TcUtype_00 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_01 (Unit Types. 0:°C, 1:°F, 2:mV)
TcEnable_02 (0:Disable, 1:Enable)	TcEnable_03 (0:Disable, 1:Enable)
TcStype_02 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)	TcStype_03 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)
TcUtype_02 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_03 (Unit Types. 0:°C, 1:°F, 2:mV)
TcEnable_04 (0:Disable, 1:Enable)	TcEnable_05 (0:Disable, 1:Enable)
TcStype_04 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)	TcStype_05 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)
TcUtype_04 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_05 (Unit Types. 0:°C, 1:°F, 2:mV)
TcEnable_06 (0:Disable, 1:Enable)	TcEnable_07 (0:Disable, 1:Enable)
TcStype_06 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)	TcStype_07 (0:J, 1:K, 2:T, 3:E, 4:R, 5:S, 6:B, 7:N Type and 8:78.126mV, 9:39.062mV, 10:19.532mV)

TcUtype_06 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_07 (Unit Types. 0:°C, 1:°F, 2:mV)

Commands to set TC Virtual channels	Commands to set TC Virtual channels
TcStype_08 (20: Average, 21: Difference)	TcStype_09 (20: Average, 21: Difference)
TcUtype_08 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_09 (Unit Types. 0:°C, 1:°F, 2:mV)
TcStype_10 (20: Average, 21: Difference)	TcStype_11 (20: Average, 21: Difference)
TcUtype_10 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_11 (Unit Types. 0:°C, 1:°F, 2:mV)
TcStype_12 (20: Average, 21: Difference)	TcStype_13 (20: Average, 21: Difference)
TcUtype_12 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_13 (Unit Types. 0:°C, 1:°F, 2:mV)
TcStype_14 (20: Average, 21: Difference)	TcStype_15 (20: Average, 21: Difference)
TcUtype_14 (Unit Types. 0:°C, 1:°F, 2:mV)	TcUtype_15 (Unit Types. 0:°C, 1:°F, 2:mV)

Commands to set DO channels	Commands to set DO Channels
DOMode_00 (0:DO, 1:PULSE OUTPUT)	DOMode_01 (0:DO, 1:PULSE OUTPUT)
DOStatus_00 (0:OFF, 1:ON)	DOStatus_01 (0:OFF, 1:ON)
DOLowWidth_00	DOLowWidth_01
DOHighWidth_00	DOHighWidth_01
DOPulseStart_00 (0:STOP, 1:START)	DOPulseStart_01 (0:STOP, 1:START)
DOMode_02 (0:DO, 1:PULSE OUTPUT)	DOMode_03 (0:DO, 1:PULSE OUTPUT)
DOStatus_02 (0:OFF, 1:ON)	DOStatus_03 (0:OFF, 1:ON)
DOLowWidth_02	DOLowWidth_03
DOHighWidth_02	DOHighWidth_03
DOPulseStart_02 (0:STOP, 1:START)	DOPulseStart_03 (0:STOP, 1:START)

F

Factory Default Settings

The ioLogik E2262 is configured with the following factory defaults:

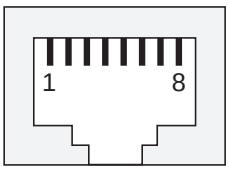
Default IP Address:	192.168.127.254
Default Netmask:	255.255.255.0
Default Gateway:	None
Communication Watchdog:	Disable
Watchdog Timeout:	60 secs
TC Sensor Type:	K type
TC Enable:	Enable
TC Unit Type:	Celsius
DO Mode:	DO
DO Safe Status:	Off
Power On Status:	Off
Low Width for Pulse:	1 × 5 ms
Hi Width for Pulse:	1 × 5 ms
Output Pulses:	0 (continuous)
Password:	NONE
Module Name:	NONE
Module Location:	NONE
SNMP:	Enable
Community:	Public
Contact:	NONE
Location:	NONE
Click&Go	NONE

G

Pinouts and Cable Wiring

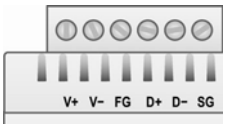
Ethernet Port Pinouts

Pin	Signal
1	Tx+
2	Tx-
3	Rx+
6	Rx-



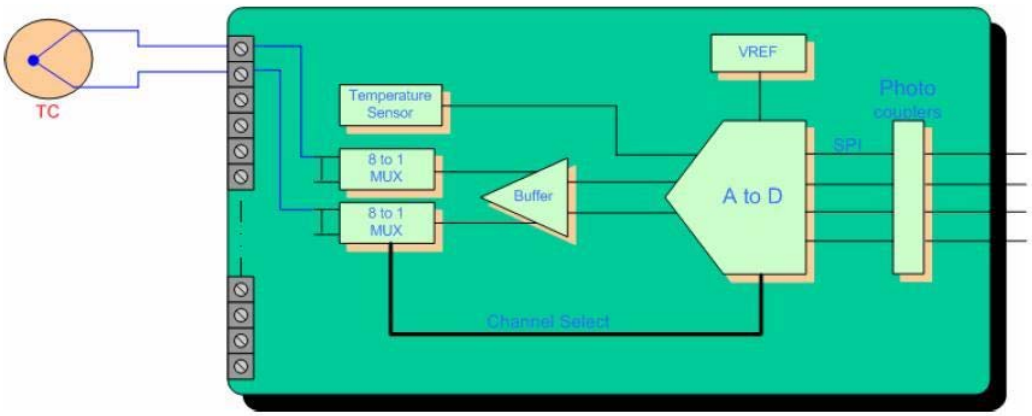
Serial Port Pinouts

E2262 RS-485 Network Adapter Pin Assignment

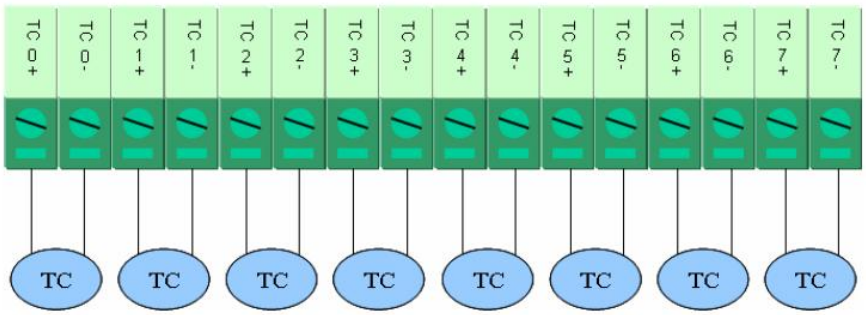


Thermocouple Input Wiring

Structure

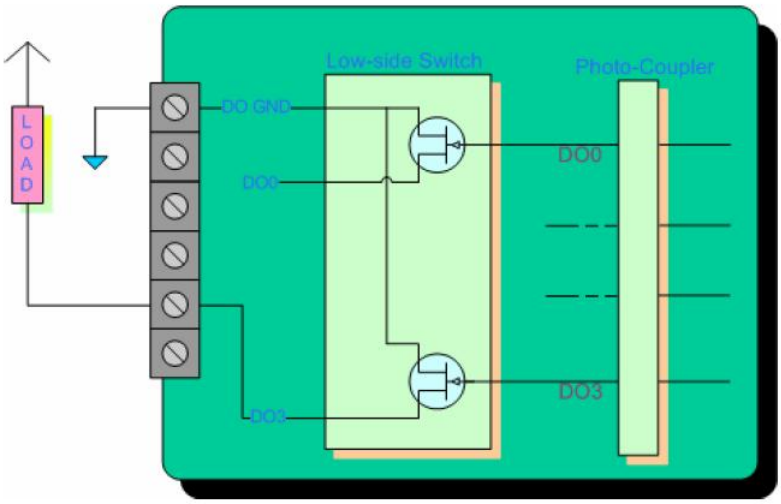


2-wire

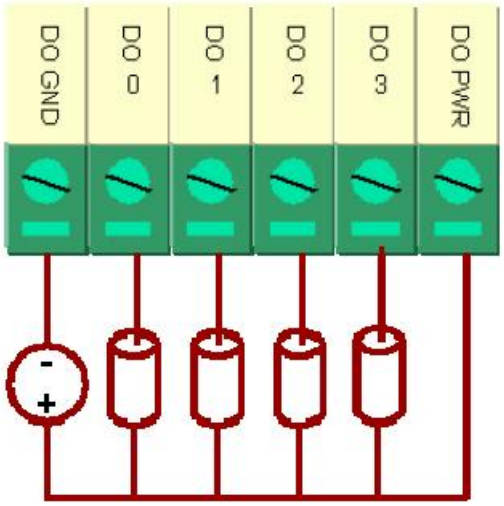


Digital Output

Structure



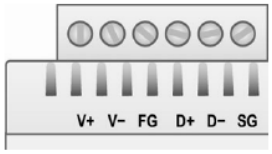
Output Channel



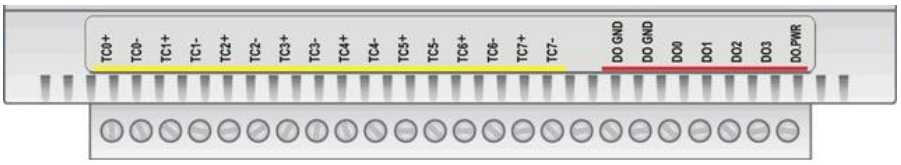
* DO PWR is for powering up the ***field Power*** LED.

Terminal Block Pin Assignments

(TB1)



(TB2)



TB1

(Power Input)			(RS-485)		
1	2	3	4	5	6
V+ (12-48V)	V-	FG	Data+	Data-	SG

TB2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
TC0+	TC0-	TC1+	TC1-	TC2+	TC2-	TC3+	TC3-	TC4+	TC4-	TC5+	TC5-	TC6+	TC6-	TC7+	TC7-		DO GND	DO GND	DO 0	DO 1	DO 2	DO 3	DO PWR