

# Active Ethernet Micro Controller User's Manual

ioLogik E2210, E2212, E2214, E2240, E2242, E2260, E2262,  
ioLogik E2210-T, E2212-T, E2214-T, E2240-T, E2242-T, E2260-T, E2262-T

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# Active Ethernet Micro Controller User's Manual

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The ioLogik E2200 Series is a standalone Active Micro Controller product. The DIN-Rail mountable E2200 Series allows users to connect to both digital and analog inputs, and connects digital outputs to switches, buzzers, and alarm lights over Ethernet and IP-based networks.

The following topics are covered in this chapter:

- ❑ **Overview**
  - Active Micro Controller
  - Click&Go
  - Optional Liquid Crystal Display Module (LCM)
- ❑ **Product Features**
- ❑ **Package Checklist**
- ❑ **Product Selection Guide**
- ❑ **Product Specifications**
  - Common Specifications
  - ioLogik E2210 Specifications
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  - Pin Assignments
  - LED Indicators

## Overview



(shown with and without optional LCM)

The ioLogik E2200 Active Ethernet Micro Controllers are designed for attaching sensors, transmitters, and transducers, and for active status reporting over a network with intelligent logic. The ioLogik E2200 comes with 2 MB of Flash ROM, 8 MB of SDRAM, and supports an optional hot-pluggable Liquid Crystal Display Module (LCM) to view and configure device settings.

## Active Micro Controller

Moxa's **Active Micro Controller** line was developed specifically to overcome the limitations of the traditional passive approach. Instead of the host computer polling I/O data over the network to get the status of each I/O device, the **Active Micro Controller** intelligently sends status information to the host computer when pre-specified conditions are met. 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 E2200 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, the Active Micro Controller is backwards compatible, with all of the functions and capabilities of traditional passive remote I/O devices.

## Click&Go

Moxa developed the Click&Go logic control interface for easy configuration and deployment of the Active Micro Controller. Click&Go's intuitive, graphical interface lets administrators use simple IF/THEN statements as rules to determine how the Active Micro Controller responds to different I/O conditions. For example, the Active Micro Controller could be set to turn on an attached switch as well as send an e-mail or SNMP trap when an attached event counter reaches a certain value. Click&Go makes it easy to define a set of these rules, which become the basis for your Active Micro Controller system.

## Optional Liquid Crystal Display Module (LCM)

The ioLogik E2200 series supports an optional hot-pluggable Liquid Crystal Module (LCM) for field management and configuration. The LCM can display network and I/O settings such as digital input mode and value. The ioLogik E2200 series' IP address and netmask can also be configured using the LCM, and one LCM can be used to maintain and configure multiple ioLogik products.



## Product Features

### Analog inputs

The ioLogik E2200 Series supports both current and voltage as analog inputs, connecting various kinds of sensors with a 16-bit high resolution and a sampling rate of 100 samples/second (all channels).

### Configurable I/O channels

The ioLogik E2200 Series provides the flexibility of handling almost any field installation with some configurable input/output channels. This enables you to define a wide range of custom configurations, such as 6 inputs and 6 outputs, 8 inputs and 4 outputs, or 10 inputs and 2 outputs.

### Patented Click&Go logic for easy local control without programming

Moxa's Click&Go logic is used with Active Micro Controller products to make it easy to define a set of rules for local control of attached output devices. For example, you can define a rule that activates an attached switch and sends an e-mail when a sensor event occurs a certain number of times.

### Instant event reporting by TCP, UDP, e-mail, or SNMP trap

Active Micro Controller products can report I/O events automatically to any network host. Reports are fully customizable and can be sent by TCP, UDP, e-mail, or SNMP trap.

### Peer-to-peer I/O for transmission of sensor signals over Ethernet without controller

The ioLogik E2200 series supports Peer-to-Peer I/O operation, in which sensor signals are transmitted over Ethernet to another ioLogik E2200 device. For typical 100 Mbps LANs, latency is only 100 ms.

### Power fail counter storage memory

The micro controllers can store event counter values for digital inputs. Moreover, these values will not be lost during a power failure or after disconnection.

### RoHS compliance

As required by EU regulations, the Active Ethernet Micro Controller is fully RoHS-compliant.

## Package Checklist

The ioLogik E2200 Series is shipped with the following items:

#### *Standard Accessories*

- ioLogik E22xx micro controller x1
- Document and Software CD

#### *Optional Accessories*

- LDP1602 ioLogik LCM (Liquid Crystal Display Module)

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

## Product Selection Guide

The operating temperature for standard models is -10 to 60°C.

	Digital Inputs	Selectable DIO	Digital Outputs	Relay Outputs	Analog Inputs	Analog Outputs	RTD Inputs	TC Inputs
E2210	12		8					
E2212	8	4	8					
E2214	6			6				
E2240					8	2		
E2242		12			4			
E2260			4				6	
E2262			4				8	

The operating temperature for wide temperature models is -40 to 75°C

	Digital Inputs	Selectable DIO	Digital Outputs	Relay Outputs	Analog Inputs	Analog Outputs	RTD Inputs	TC Inputs
E2210-T	12		8					
E2212-T	8	4	8					
E2214-T	6			6				
E2240-T					8	2		
E2242-T		12			4			
E2260-T			4				6	
E2262-T			4				8	

## Product Specifications

### Common Specifications

#### LAN

**Ethernet:** 1 x 10/100 Mbps, RJ45

**Protection:** 1.5 KV magnetic isolation

**Protocols:** Modbus/TCP, TCP/IP, UDP, DHCP, Bootp, SNMP, HTTP, CGI, SNTp

#### Serial Communication

**Interface:** RS-485-2w: 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

**Baudrate:** 1200 to 115200 bps

**Protocol:** Modbus/RTU

#### Power Requirements

**Power Input:** 24 VDC nominal, 12 to 36 VDC

**Power Consumption:** 282 mA typical @ 24 VDC

**Physical Characteristics**

**Wiring:** I/O cable max. 14 AWG

**Dimensions:** 115 x 79 x 45.6 mm (4.53 x 3.11 x 1.80 in)

**Weight:** under 250 g

**Environmental Limits**

**Operating Temperature:**

Standard Models: -10 to 60°C (14 to 140°F)

Wide Temp. Models: -40 to 75°C (-40 to 167°F)

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

**Regulatory Approvals**

**EMI:** FCC Part 15, CISPR (EN55022) class A

**EMS:** IEC 61000-4, IEC 61000-6

**Safety:** UL508

**Shock:** IEC 60068-2-27

**Freefall:** IEC 60068-2-32

**Vibration:** IEC 60068-2-6

**Note:** Please check Moxa's website for the most up-to-date certification status.

**Warranty**

**Warranty Period:** 2 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## ioLogik E2210 Specifications

**Digital Input**

**Channels:** 12, source type

**Sensor Type:** NPN, Dry contact

**I/O Mode:** DI or Event Counter (up to 900 Hz)

**Dry Contact:**

- Logic 0: short to GND

- Logic 1: open

**Wet Contact:** (source type)

- Logic 0 (On): 0 to 3 VDC

- Logic 1 (Off): 10 to 30 VDC

**Common Type:** 12 points per COM

**Isolation:** 3K VDC or 2K Vrms

**Counter/Frequency:** 900 Hz

**Digital Filtering Time Interval:** Software selectable

**Over-voltage Protection:** 36 VDC

**Digital Output**

**Channels:** 8, sink type, 36 VDC, 200 mA

**I/O Mode:** DO or Pulse Output (up to 100 Hz)

**Pulse Wave Width/Frequency:** 10 ms/100 Hz

**Over-voltage Protection:** 45 VDC

**Over-current Limit:** 400 mA (typical)

**Over-temperature Shutdown:** 175°C (min.)

**Output Current Rating:** Max. 200 mA per channel

**Isolation:** 3K VDC or 2K Vrms

## ioLogik E2212 Specifications

### Digital Input

**Channels:** 8, source/sink selectable

**Sensor Type:** NPN, PNP, and Dry contact

**I/O Mode:** DI or Event Counter (up to 900 Hz)

**Dry Contact:**

- Logic 0: short to GND
- Logic 1: open

**Wet Contact:**

Status \ DI Type	Source	Sink
ON	0 to 3 VDC	10 to 30 VDC
OFF	10 to 30 VDC	0 to 3 VDC

**Common Type:** 6 points per COM

**Isolation:** 3K VDC or 2K Vrms

**Counter/Frequency:** 900 Hz, power off storage

**Digital Filtering Time Interval:** Software selectable

**Over-voltage Protection:** 36 VDC

**Poweroff Counter:** Supports poweroff counter storage function

### Digital Output

**Channels:** 8, sink type, 36 VDC, 200 mA

**I/O Mode:** DO or Pulse Output (up to 100 Hz)

**Pulse Wave Width/Frequency:** 10 ms/100 Hz

**Over-voltage Protection:** 45 VDC

**Over-current Limit:** 400 mA (typical)

**Over-temperature Shutdown:** 175°C (min.)

**Output Current Rating:** Max. 200 mA per channel

**Isolation:** 2K Vrms or 3K VDC (Magnetic)

### DI/DO Configurable Channels

**Channels:** 4

**I/O Mode:**

- DI or Event Counter (up to 900 Hz)
- DO or Pulse Output (up to 100 Hz)

## ioLogik E2214 Specifications

### Digital Input

**Channels:** 6, source/sink selectable

**Sensor Type:** NPN, PNP, and Dry contact

**I/O Mode:** DI or Event Counter (up to 900 Hz)

**Dry Contact:**

- Logic 0: short to GND
- Logic 1: open

**Wet Contact:**

Status \ DI Type	Source	Sink
ON	0 to 3 VDC	10 to 30 VDC
OFF	10 to 30 VDC	0 to 3 VDC

**Common Type:** 3 points per COM

**Isolation:** 3K VDC or 2K Vrms

**Counter/Frequency:** 900 Hz, power off storage

**Digital Filtering Time Interval:** Software selectable

**Over-voltage Protection:** 36 VDC

**Poweroff Counter:** Supports poweroff counter storage function

**Relay Counter:** Supports relay counter storage function

### Relay Output

**Channels:** 6 Form A (N.O.) relay outputs, 5A

**Contact Rating:** 5 A @ 30 VDC, 5 A @ 250 VAC, 5 A @ 110 VAC

**Inductance Load:** 2 A

**Resistance Load:** 5 A

**Breakdown Voltage:** 500 VAC

**Relay On/Off Time:** 10 ms, 5 ms (Max.)

**Initial Insulation Resistance:** 1G min. @ 500 VDC

**Expected Life:** 100,000 times (Typical)

**Initial Contact Resistance:** 30 milli-ohms (Max.)

**Pulse Output:** 0.3 Hz at rated load

## ioLogik E2240 Specifications

### Analog Input

**Channels:** 8 analog inputs with differential input

**Resolution:** 16 bits

**I/O Mode:** Voltage / Current

**Input Range:**  $\pm 150$  mV,  $\pm 500$  mV,  $\pm 5$  V,  $\pm 10$  V, 0 to 20 mA, 4 to 20 mA

**Data Format:** 16-bit integer (2's complement)

**Accuracy:**

$\pm 0.1\%$  FSR @ 25°C

$\pm 0.3\%$  FSR @ -10 and 60°C

**Sampling Rate (all channels):**

- 10 samples/sec for voltage
- 6 samples/sec for current

**Input Impedance:** 900K ohms (min.)

**Built-in Resistor for Current Input:** 106 ohms

**CMR @ 50/60 Hz:** 95 dB min.

**Zero Drift:**  $\pm 9$   $\mu$ V/°C

**Span Drift:**  $\pm 25$  ppm/°C

**Isolation:** 3K VDC or 2K Vrms

### Analog Output

**Channels:** 2

**Resolution:** 12 bits

**Output Range:** 0 to 10 V, 4 to 20 mA

**Drive Voltage:** 15 VDC for current output

**Accuracy:**

$\pm 0.1\%$  FSR @ 25°C,

$\pm 0.3\%$  FSR @ -10 and 60°C

**Zero Drift:**  $\pm 9$   $\mu$ V/°C

**Span Drift:**  $\pm 25$  ppm/°C

**Load Resistor:** Less than 250 ohms

## ioLogik E2242 Specifications

### Analog Input

**Channels:** 4 analog inputs with differential input

**Resolution:** 16 bits

**I/O Mode:** Voltage / Current

**Input Range:**  $\pm 150$  mV, 0 to 150 mV,  $\pm 500$  V, 0 to 500 mV,  $\pm 5$  V, 0 to 5 V,  $\pm 10$  V, 0 to 10 V, 0 to 20 mA, 4 to 20 mA

**Accuracy:**

$\pm 0.1\%$  FSR @ 25°C

$\pm 0.3\%$  FSR @ -10 and 60°C

**Sampling Rate (all channels):** 100 samples/sec

**Input Impedance:** 200K ohms (min.)

**Built-in Resistor for Current Input:** 102 ohms

### DI/DO Configurable Channels

**Channels:** 12

**I/O Mode:**

- DI or Event Counter (up to 900 Hz)
- DO or Pulse Output (up to 100 Hz)

### Digital Input

**Channels:** Up to 12, source/sink selectable

**Sensor Type:** NPN, PNP, and Dry contact

**I/O Mode:** DI or event counter (up to 900 Hz)

**Dry Contact:**

- Logic 0: short to GND
- Logic 1: Open

**Wet Contact:**

DI Type \ Status	Source	Sink
ON	0 to 3 VDC	10 to 30 VDC
OFF	10 to 30 VDC	0 to 3 VDC

**Common Type:** 6 points per COM

**Isolation:** 3K VDC or 2K Vrms

**Counter/Frequency:** 900 Hz, power off storage

**Digital Filtering Time Interval:** Software selectable

**Over-voltage Protection:** 36 VDC

**Poweroff Counter:** Supports poweroff counter storage function

### Digital Output

**Channels:** Up to 12, sink type, 36 VDC, 200 mA

**I/O Mode:** DO or Pulse Output (up to 100 Hz)

**Pulse Wave Width/Frequency:** 10 ms/100 Hz

**Over-voltage Protection:** 45 VDC

**Over-current Limit:** 400 mA (typical)

**Over-temperature Shutdown:** 175°C (min.)

**Output Current Rating:** Max. 200 mA per channel

**Isolation:** 2K Vrms or 3K VDC (Magnetic)

## ioLogik E2260 Specifications

### RTD

**Channels:** 6

**Input Type:** Pt, JPt, Ni, RTD sensor, resistor

**Sampling Rate:** 12 samples/sec (all channels)

**Resolution:** 0.1°C or 0.1 ohm

**Accuracy:**

±0.1% FSR @ 25°C

±0.3% FSR @ -10 and 60°C

**Input Impedance:** 625K ohms (min.)

### Digital Output

**Channels:** 4, sink, 36 VDC, 200 mA

**I/O Mode:** DO or Pulse Output

**Pulse Wave Width/Frequency:** 10 ms/100 Hz

**Over-voltage Protection:** 45 VDC

**Over-current Limit:** 750 mA

**Over-temperature Shutdown:** 175°C

**Isolation:** 3K VDC or 2K Vrms

## ioLogik E2262 Specifications

### Thermocouple Input

**Channels:** 8

**Sensor Type:** J, K, T, E, R, S, B, N type TC and mV mode

**Conversion Time:** Less than 90 ms

**Effective Resolution:** 16 bits

**Accuracy:**

±0.1% FSR @ 25°C

±0.3% FSR @ -10 and 60°C

**Input Impedance:** 1 M ohm or better

### Digital Output

**Channels:** 4, sink type, 36 VDC, 200 mA

**I/O Mode:** DO or Pulse Output (up to 100 Hz)

**Pulse Wave Width/Frequency:** 10 ms/100 Hz

**Over-voltage Protection:** 45 VDC

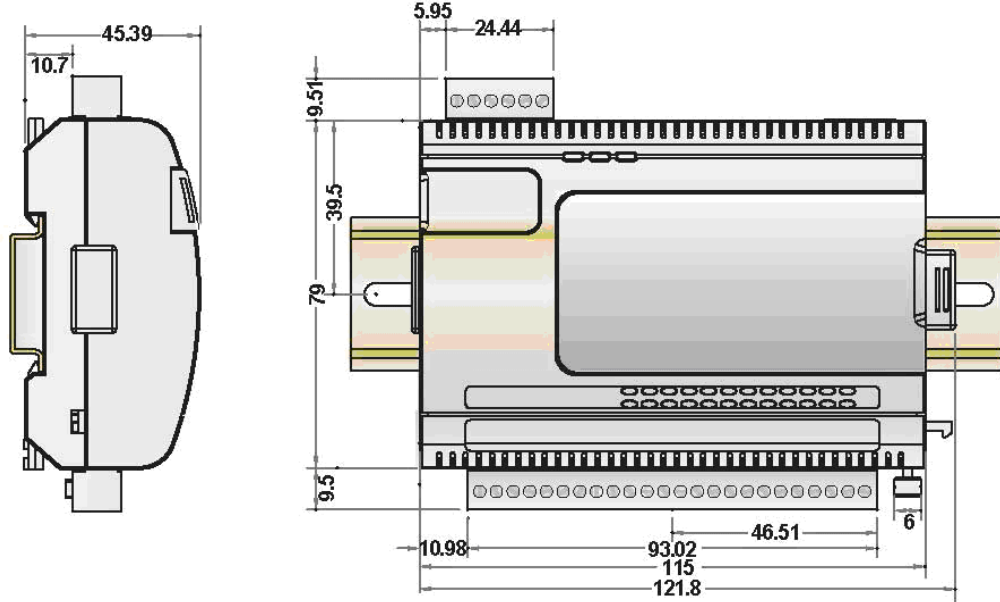
**Over-current Limit:** 750 mA

**Over-temperature Shutdown:** 175°C

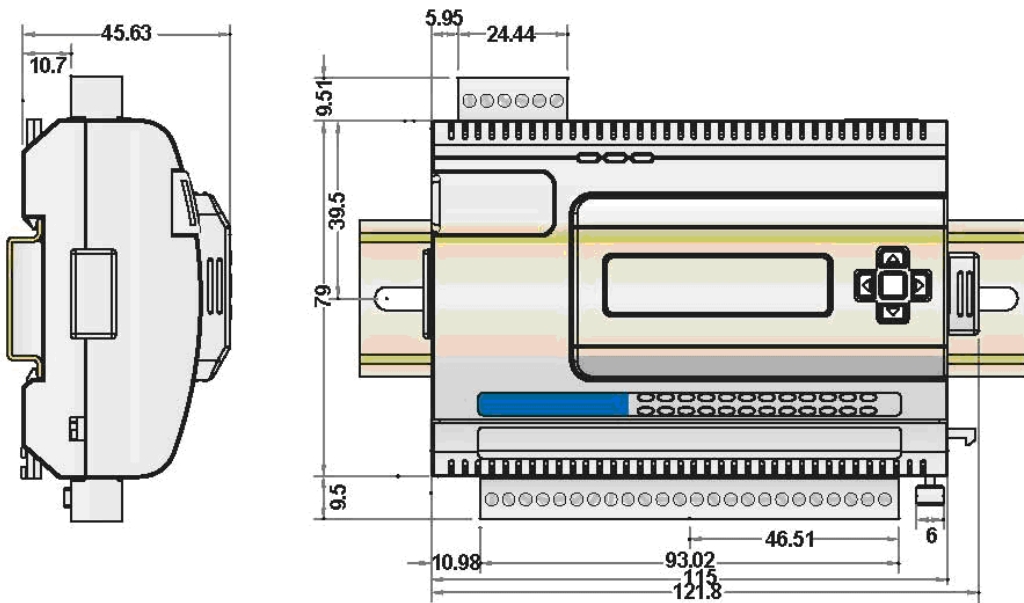
**Isolation:** 3K VDC or 2K Vrms

# Physical Dimensions (Unit = mm)

Without LCM



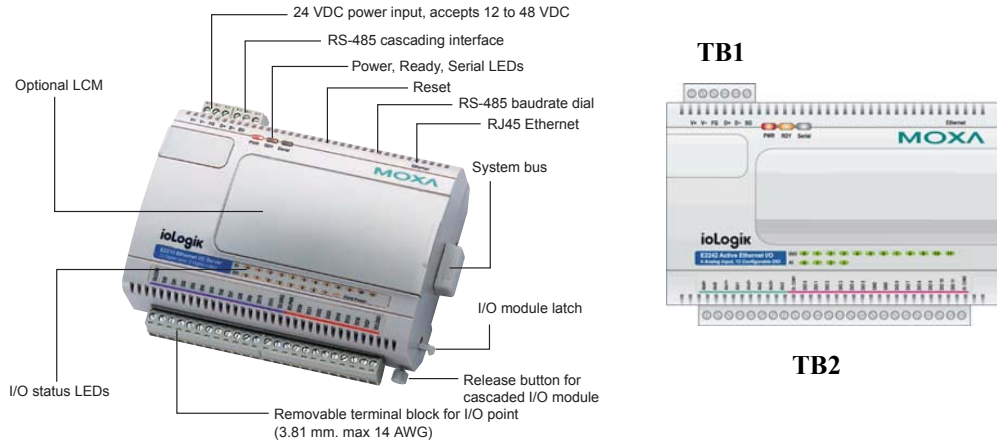
With LCM





# Hardware Reference

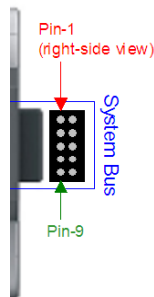
## Panel Guide



**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 5 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.

## Pin Assignments

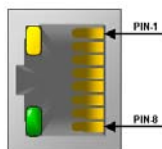
### System Bus



<b>Pin</b>	1	2	3	4	5
<b>Signal</b>	V+	V-	V+	V-	NC

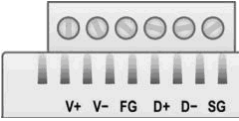
<b>Pin</b>	6	7	8	9	10
<b>Signal</b>	NC	Data+	SYNC	Data-	GND

### Ethernet Port



<b>Pin</b>	1	2	3	4
<b>Signal</b>	TXD <sup>+</sup>	TXD <sup>-</sup>	RXD <sup>+</sup>	X

<b>Pin</b>	5	6	7	8
<b>Signal</b>	X	RXD <sup>-</sup>	X	X

**TB1 (Power Input & RS-485 Connector)**


<b>Pin</b>	1	2	3	4	5	6
<b>Signal</b>	V+	V-	FG	D+	D-	SG

(V+: 12 to 48V)

**TB2 (Input and Output Terminal)**

Refer to the figure of the product's rear panel.

**LED Indicators**

<b>Ethernet</b>		
Ethernet	Orange	Live 10 Mbps Ethernet connection
	Green	Live 100 Mbps Ethernet connection
	Flashing	Transmitting or receiving data
<b>System LEDs</b>		
PWR	Red	Power is on
Ready	Red	System error
	Green	(steady) ioLogik E2242 is functioning normally (flashing) Click&Go logic is active
	Green & red	(flashing) ioLogik E2242 is in Safe Status
Serial	(flashing)	Serial port is receiving or transmitting data
<b>I/O LEDs</b>		
Analog Inputs (Voltage, Current, RTD, TC)	Green	Channel is transmitting
	Off	Channel is OFF or 4-20 mA measurement is selected
DIO	Green	Operating as DI channel, status is ON
	Orange	Operating as DO channel, status is ON
	Off	Status is OFF
Digital Input and Output	Green	DI status is ON
	RED	DO status is ON
	OFF	Status is OFF

# 2

## Initial Setup

---

This chapter describes how to install the ioLogik E2200 Series.

The following topics are covered in this chapter:

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

## Hardware Installation

### Connecting the Power

In the section, we will use the E2242 to demonstrate how to start using the Active Ethernet Micro Controller.

Connect the 12 to 36 VDC power line to the ioLogik'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 doing the installation and connecting the wiring!**

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

**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 Unit

The ioLogik is equipped with two grounding points, one on the wall mount socket and the other on the DIN-Rail mount. Both grounding points are connected to the same conducting pathway.

### Connecting to the Network

1. Connect the ioLogik to the host PC with an Ethernet cable. For initial configuration, it is recommended that the ioLogik E2242 be configured using a direct connection to a host computer rather than remotely over the Internet.
2. Set the host PC's IP address to 192.168.127.xxx. (xxx: from 001 to 253). In Windows, you can adjust this setting through the Control Panel.

Default IP Address	Default Netmask	Default Gateway
192.168.127.254	255.255.255.0	None

3. Use ioAdmin or the web console to detect the ioLogik. Once the ioLogik has been detected, modify the settings as needed for your network environment, then restart the server.

### Adding More I/O Channels

A cost effective way to add more I/O channels to your ioLogik is to attach an appropriate ioLogik R2100 series I/O. The 2 ioLogiks can be snapped together using the RS-485 System Bus connector, as shown in the following figure. For the ioLogik E2200 series, additional digital I/O channels are added using the ioLogik R2110. Additional analog channels are added using the ioLogik R2140.





**ATTENTION**

Multiple ioLogik E2200/R2100 units can be snapped together as part of the same RS-485 system, but when connecting the power, be sure to use the following steps, in the order shown here:

1. Remove the first ioLogik's TB1 terminal block.
2. Snap all ioLogik units together, with the system bus on the side panel.
3. Install the first ioLogik's TB1 terminal block.
4. Turn on the system power.



**ATTENTION**

A total of 31 additional ioLogik R2100 products can be attached to one ioLogik E2200. The best space-saving arrangement is to use the TB1 terminal block for the cascaded RS-485 connections, instead of using the system bus.



**ATTENTION**

All I/O channels of the ioLogik E2200+R2100 system can be polled by a remote host PC, but Click&Go logic can only be used with the ioLogik E2200. Click&Go local logic control is currently not supported by R2100 products.




**ATTENTION**

When using the RS-485 cascading interface or system bus to add more I/O channels or to connect to RS-485 Modbus devices, the ioLogik E2200 will have an RS-485 Unit ID of 1. The ID of the attached ioLogik R2100 or other devices should always have a Unit ID of 2 or greater, with an upper limit of 99. Although the ioLogik E2200 series allows the attached Modbus devices to have IDs up to 247, the maximum ID on the ioLogik R2100 is 99.

## Setting the RS-485 Baudrate

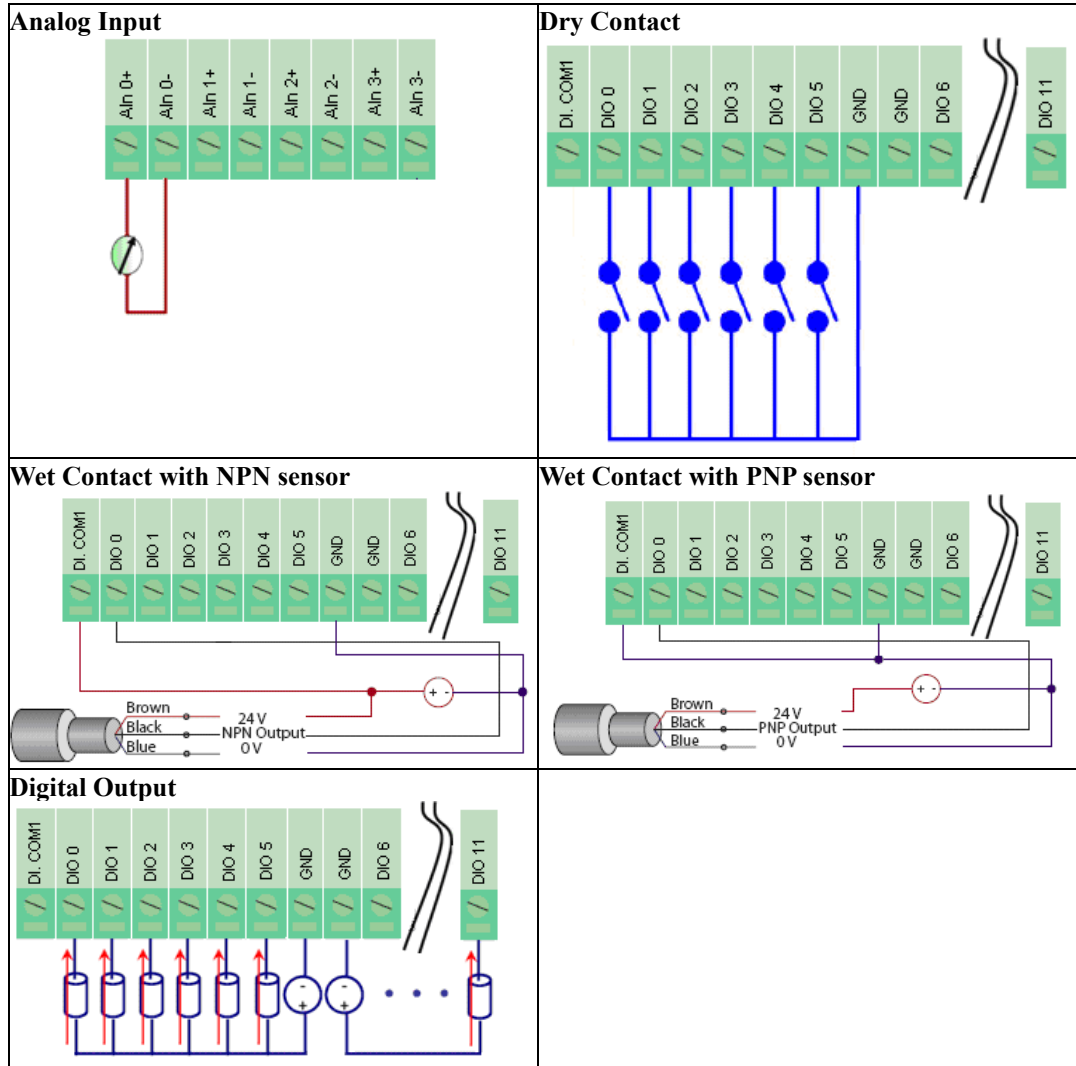
The RS-485 port on the ioLogik E2200 series is reserved to connect to another RS-485 I/O device. The RS-485 port can run Modbus/RTU or I/O command sets. The baudrate is set by a physical dial on the back of the ioLogik. The default settings are baudrate = 115200, parity check = N, data bits = 8, and 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 E2242 after making any changes to the RS-485 baudrate.

## Connecting the I/O Device

With 4 analog input channels and 12 configurable DIOs, the ioLogik E2242 offers greater flexibility for connecting I/O devices. Unlike traditional micro controller products, the ioLogik E2242 can connect to analog sensors, dry contacts, PNP, and NPN sensors at the same time. The sensor type determines your wiring approach, as shown in the following examples:



### ATTENTION—Dry Contacts

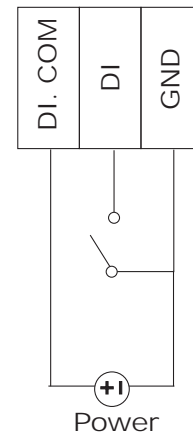
When connecting the I/O device to the ioLogik's dry contacts, we strongly recommend connecting DI.COM to the power of the external sensor to avoid affecting other channels. The DI.COM input power should be limited to 12 to 36 VDC.



### ATTENTION—DIO Channels

Sensor types are in groups, with DIO-0 to DIO-5 forming one group and DIO-6- to DIO-11 forming another group. If an NPN sensor is connected to DI-0, then only NPN sensors can be connected to the other DI channels in the group (i.e., DIO-4 and DIO-5). Likewise, if a PNP sensor is connected to DIO-6, then only PNP sensors can be connected to the other DI channels in the group (i.e., DIO-10 and DIO-11).

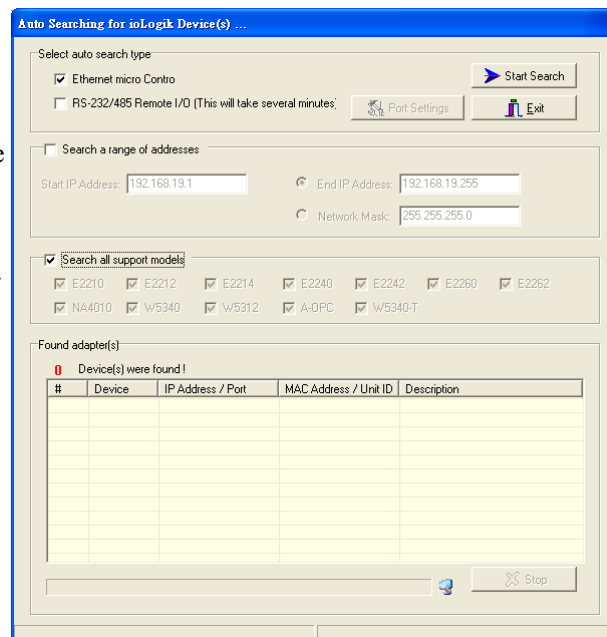
DI Dry Contact



## Software Installation

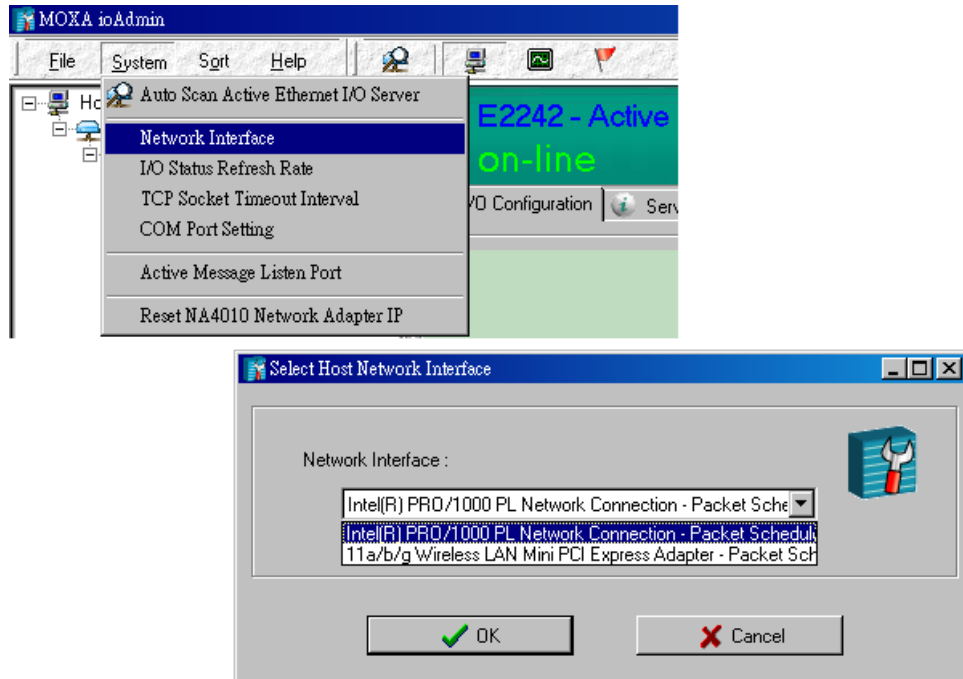
ioAdmin is a Windows utility provided for the configuration and management of ioLogik E2200 products and attached I/O devices. ioAdmin can be used from anywhere on the network to monitor and configure ioLogik E2200 products. You can also configure some of the settings through the web console or optional LCM.

1. **Installing from the CD:** Insert the Document and Software CD into the host computer. In the Software\ioAdmin 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 the Windows Start menu: **Start → Program Files → MOXA → IO Server → Utility → ioAdmin.**
3. **Search the network for ioLogik:** When ioAdmin is started, it will automatically run the auto search program. You can also find the program on the menu bar; select **System → Auto Scan Active ioLogik devices.** A dialog window will appear. Click **Start Search** to begin searching for your unit.



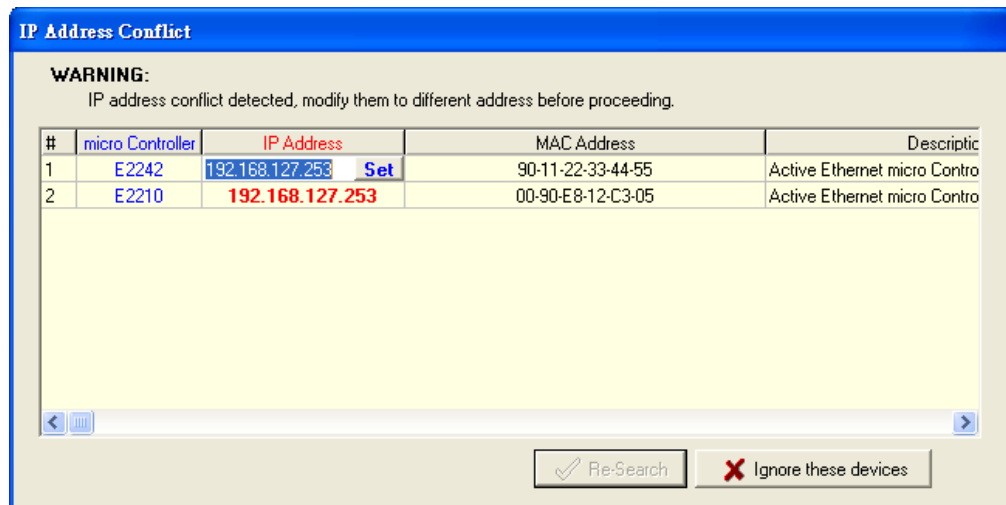
**NOTE:** The best approach to setting up a previously configured ioLogik is to reset it to the factory default using the reset button (see Chap. 1). You can then use ioAdmin to configure the ioLogik.

**NOTE:** If the host computer has multiple network interfaces, be sure to select the correct interface before searching.



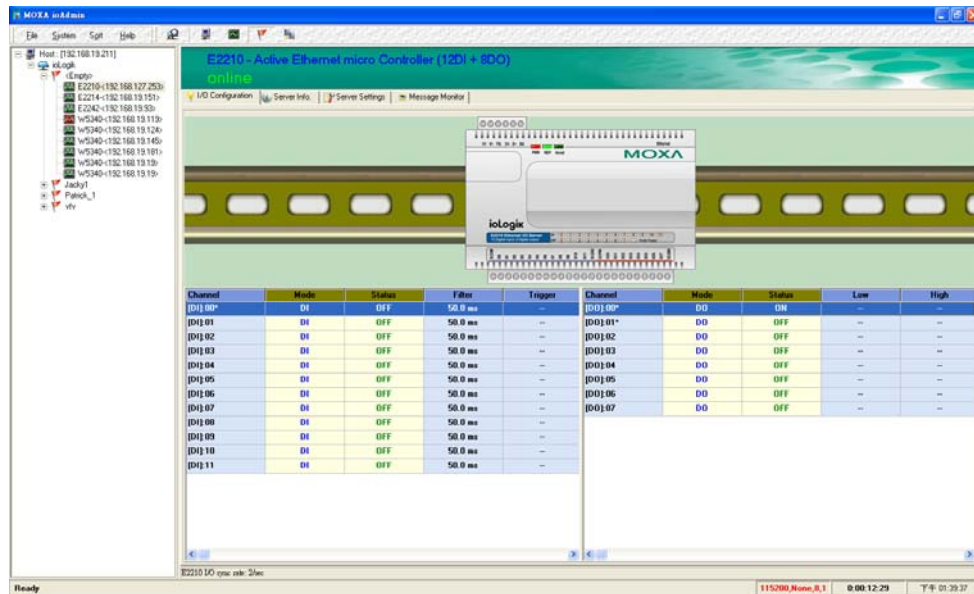
**Connecting Multiple ioLogik E2200 Units**

If multiple ioLogik E2200 units are installed 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 your unit has been found by ioAdmin, you can view the status of all attached I/O devices on ioAdmin's main screen.



You can now use ioAdmin to set up or configure your unit. Refer to Chapter 3 for additional information on using ioAdmin.

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

The following topics are covered in this chapter:

- ❑ **Introduction to ioAdmin**
- ❑ **Features of ioAdmin**
- ❑ **ioAdmin Main Screen**
  - Main Screen Overview
  - Wiring Guide
  - Menu Items
- ❑ **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)
  - Alias Name
  - Relay Count Monitoring
  - Alias Name Set
  - Server Settings Tab (Administrator)
  - Network Tab
  - Firmware Update Tab
  - Watchdog Tab
  - Click&Go Logic Tab
  - Active Tags Tab
  - SNMP Settings Tab
- ❑ **Server Context Menu**
- ❑ **Using TFTP to Import/Export the Configuration**
- ❑ **Using ioEventLog**
  - Installing ioEventLog
  - Basic Functions
  - Configuration
  - Checking Connected Devices
  - Opening Log Files
  - Clearing the Log

## Introduction to ioAdmin

Your ioLogik Micro Controller can be managed and configured over the Ethernet with ioAdmin, a Windows utility that comes with your ioLogik. ioAdmin's graphical-user interface gives you easy access to all status information and settings.

The ioLogik E2200 series also supports configuration by web console and by optional LCM, but full configuration and management is only available through the ioAdmin utility.

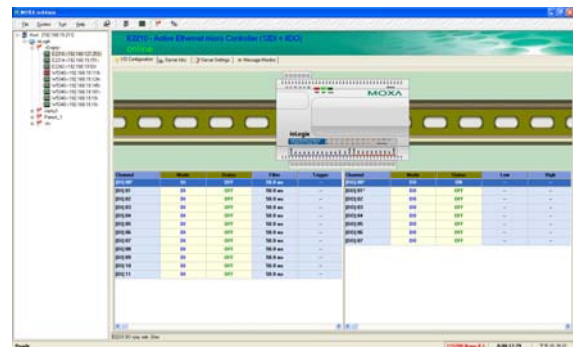
A new feature in ioAdmin automatically detects IP conflicts between ioLogik E2200 units. If ioAdmin detects an IP conflict, a window will appear that allows you to resolve the IP conflict immediately and restart each unit. ioAdmin can also be used to configure Click&go local logic control to control your ioLogik system.

## Features of ioAdmin

### Remote management

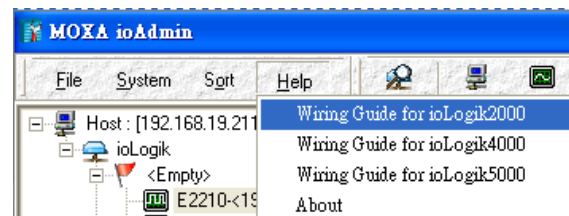
Over the Ethernet network, ioAdmin allows users to:

- Search and configure multiple ioLogiks.
- Perform I/O status monitoring and control.
- Use active message monitoring.
- Use Click&Go local logic control configuration.
- Use the firmware upgrade interface.
- Restart the ioLogik.
- Reset to factory defaults.



### On-line Wiring Guide

A 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 E2200 series 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 ioLogik E2200 units.
- As a quick reference guide for you to configure Modbus drivers in a SCADA system

The file includes the following information:

- File title, Date, and Time
- Model Information
- System Configuration
- Modbus Address

```

ioLogik E2242 Network I/O Server Configuration
=====
[System Information]
Date: 2010/04/07
Time: 06:10:56
Firmware: V3.4 Build10032218
Click&Go=2.1
MOS= V3.2.34

[1. Model]
-----
MOD_TYPE=E2242 - Active Ethernet I/O Server (12DIO + 4AI)
MOD_LOC=
MOD_NAME=

[2. I/O Configurations]
-----
DI00=1,(Counter),      DI00_PWN=0,(Stop),    DI00_SAFE=0,(Stop),    DI00_FILTER=1,(0.500ms),
                        DI00_TRIGGER=0,(L2H),
DI01=0,(DI),          DI01_FILTER=100,(50.000ms)
DI02=0,(DI),          DI02_FILTER=100,(50.000ms)
DI03=0,(DI),          DI03_FILTER=100,(50.000ms)
DI04=0,(DI),          DI04_FILTER=100,(50.000ms)
DI05=0,(DI),          DI05_FILTER=100,(50.000ms)

DO06=1,(Pulse),       DO06_PWN=0,(Stop),    DO06_SAFE=0,(Stop),    DO06_CNT=2000
                        DO06_LOW=2,(5.000ms), DO06_HIGH=2,(5.000ms),
DO07=1,(Pulse),       DO07_PWN=1,(Start),   DO07_SAFE=1,(Start),   DO07_CNT=0
                        DO07_LOW=1,(5.000ms), DO07_HIGH=1,(5.000ms),
DO08=0,(DO),          DO08_PWN=0,(Off),     DO08_SAFE=0,(Off)
DO09=0,(DO),          DO09_PWN=0,(Off),     DO09_SAFE=0,(Off)
DO10=0,(DO),          DO10_PWN=0,(Off),     DO10_SAFE=0,(Off)
DO11=0,(DO),          DO11_PWN=0,(Off),     DO11_SAFE=0,(Off)

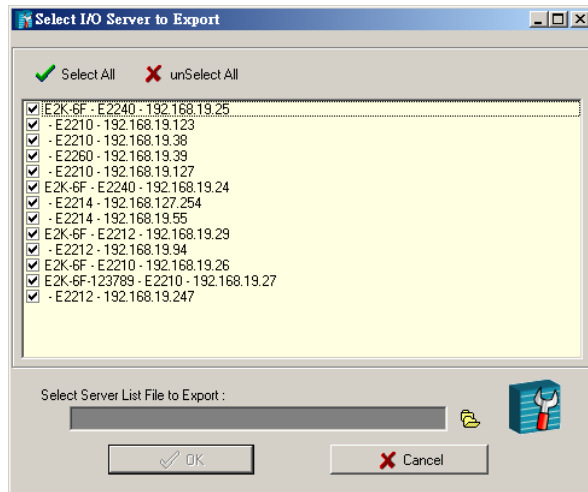
AI00=5,(4-20mA),      AI00_EN=1
AI01=3,(+/-10V),      AI01_EN=1
AI02=3,(+/-10V),      AI02_EN=1
AI03=3,(+/-10V),      AI03_EN=1
AI00_SCALEN=0,        AI00_ACTmin=0.000,    AI00_ACTmax=0.000,    AI00_SCALmin=0.000,
                        AI00_SCALmax=0.000,    AI00_UNIT=V
AI01_SCALEN=0,        AI01_ACTmin=0.000,    AI01_ACTmax=0.000,    AI01_SCALmin=0.000,
                        AI01_SCALmax=0.000,    AI01_UNIT=V
AI02_SCALEN=0,        AI02_ACTmin=0.000,    AI02_ACTmax=0.000,    AI02_SCALmin=0.000,
                        AI02_SCALmax=0.000,    AI02_UNIT=V
AI03_SCALEN=0,        AI03_ACTmin=0.000,    AI03_ACTmax=0.000,    AI03_SCALmin=0.000,
                        AI03_SCALmax=0.000,    AI03_UNIT=V
AI00_SCALE2_M=1.000,  AI00_SCALE2_D=0.000,
AI01_SCALE2_M=1.000,  AI01_SCALE2_D=0.000,
AI02_SCALE2_M=1.000,  AI02_SCALE2_D=0.000,
AI03_SCALE2_M=1.000,  AI03_SCALE2_D=0.000,

```

**Server Management List**

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

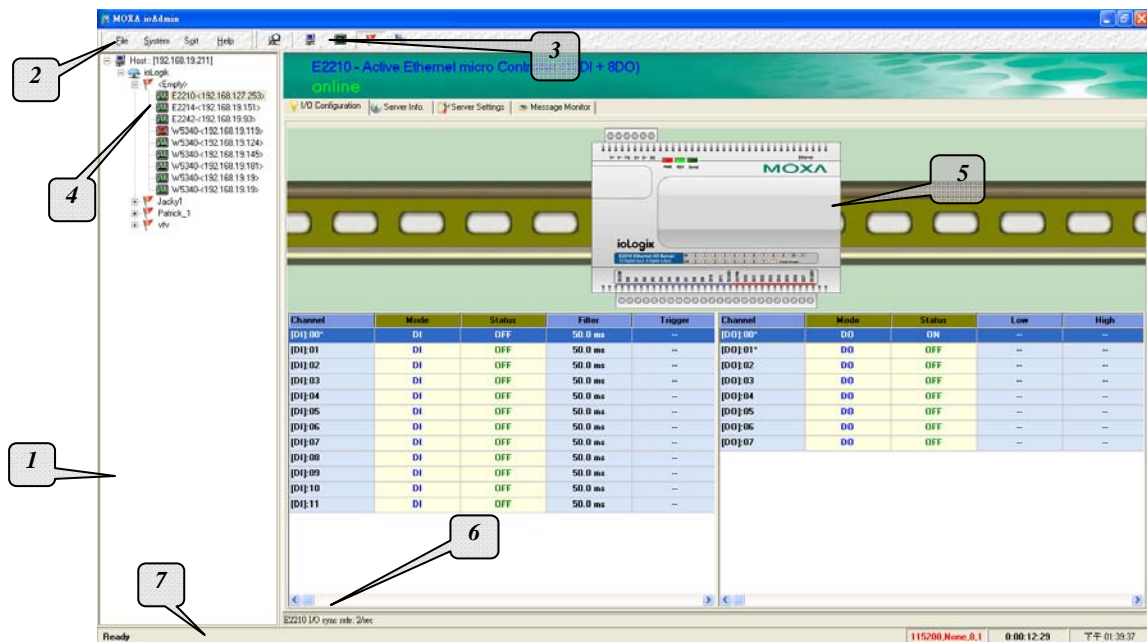
- Server name
- Module
- IP address
- Unit ID



**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 your unit with the status of every I/O channel. The other tabs in the main window take you to server and network settings, and further functions are available when you log on to ioLogik. Note that configuration options are not available until you log on as an administrator.



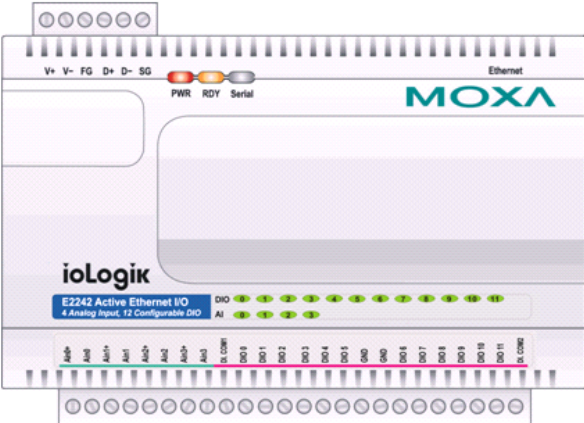
ioAdmin Main Screen	
1. Title	5. Main window
2. Menu bar	6. Sync. rate status
3. Quick link	7. Status bar
4. Navigation panel	

### Wiring Guide


ioAdmin provides a wiring guide for the ioLogik E2200 series. You can access the wiring guide by right-clicking the ioLogik figure in the I/O Configuration tab. Select "Wiring Guide" in the submenu to open a help file showing the unit's wiring information and electrical characteristics.

E2242/E2242-T Active Ethernet micro controller, 4 Analog Inputs and 12 Configurable DIO


#### System Overview



#### Ethernet pin assignment

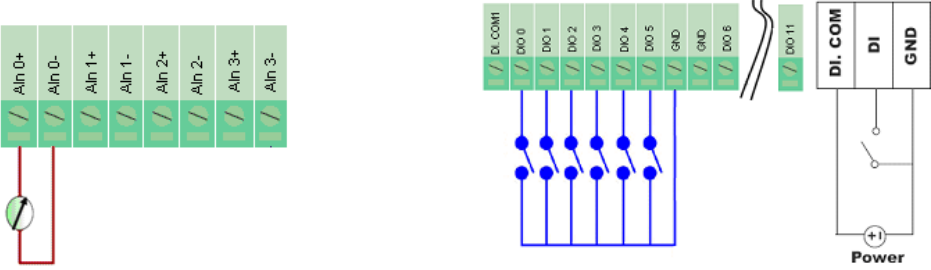


#### RS-485 Communication Settings



- 0: 115200ps, N81
- 1: 57600bps, N81
- 2: 38400bps, N81
- 3: 19200bps, N81
- 4: 9600bps, N81
- 5: 4800bps, N81
- 6: 2400bps N81
- 7: 1200bps, N81

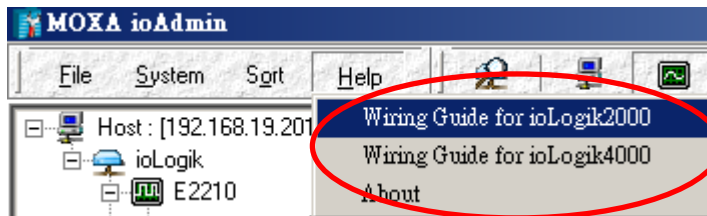
#### Wiring Examples:



(1) Analog Input

(2) Digital Input (Dry Contact)

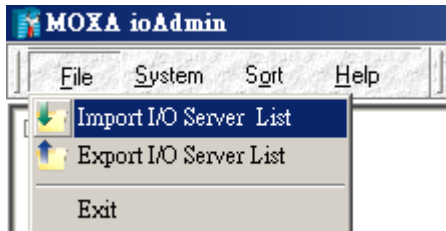
You can also access the On-line Wiring Guide through the Help menu on the menu bar.



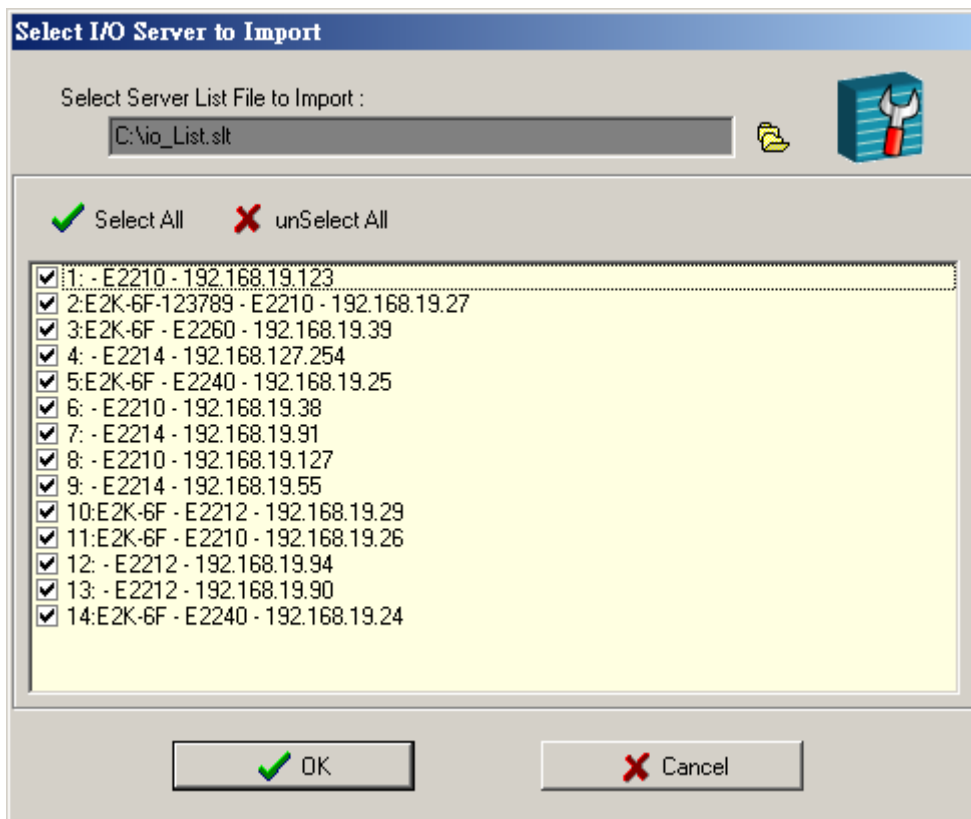
## Menu Items

### File

From the **File** menu, you can export the list of ioLogiks currently displayed in the navigation panel. You also can import a list into ioAdmin.



When importing a server list, you will be prompted to select which ioLogik in the list needs to be imported.



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

- Server name
- Model
- IP address
- Unit ID

## System

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

**Auto Scan Active Ethernet I/O Server** searches for ioLogiks on the network. When connecting for the first time, or when recovering from a network disconnection, you can use this command to find any ioLogik that is connected to the physical network.

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

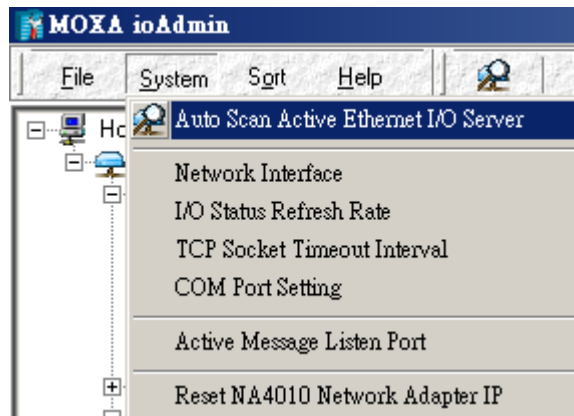
**I/O Status Refresh Rate** is used to adjust how often the ioLogik is polled for device status from the ioAdmin utility. The current rate is displayed on the status bar at the bottom of the window. Note that higher sync rates result in higher loads on the network.

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

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

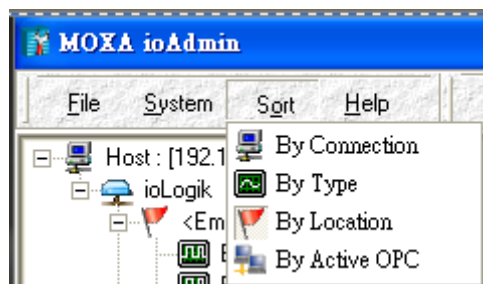
**Active Message Listen Port** specifies the port number to use for Active Messages. If your network uses a firewall, you can coordinate this setting with your firewall settings to ensure that active messages get through.

**Reset NA4010 Network Adaptor IP** is used to re-assign an IP address to the NA-4010 network as reported by the ioLogik E2200 series adaptor, for ioLogik 4000 systems.



## Sort

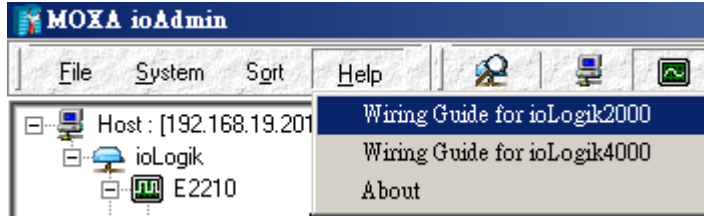
The **Sort** menu allows the server list in the navigation panel to be sorted by connection, model, and location.





### Help

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



### Quick Links

Quick links are provided to search for the ioLogik 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
	Sort by Active OPC Server

## 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. Input channels are listed on the left and output channels are listed on the right.

Channel	Mode	Status	Filter	Trigger	Channel	Mode	Status	Low	High
[DI]: 00	DI	Off	50.0 ms	--	[DO]: 00	DO	Off	--	--
[DI]: 01	DI	Off	50.0 ms	--	[DO]: 01	DO	Off	--	--
[DI]: 02	DI	Off	50.0 ms	--	[DO]: 02	DO	Off	--	--
[DI]: 03	DI	Off	50.0 ms	--	[DO]: 03	DO	Off	--	--
[DI]: 04	DI	Off	50.0 ms	--	[DO]: 04	DO	Off	--	--
[DI]: 05	DI	Off	50.0 ms	--	[DO]: 05	DO	Off	--	--
[DI]: 06	DI	Off	50.0 ms	--	[DO]: 06	DO	Off	--	--
[DI]: 07	DI	Off	50.0 ms	--	[DO]: 07	DO	Off	--	--
[DI]: 08	DI	Off	50.0 ms	--					
[DI]: 09	DI	Off	50.0 ms	--					
[DI]: 10	DI	Off	50.0 ms	--					
[DI]: 11	DI	Off	50.0 ms	--					

## Server Info Tab

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

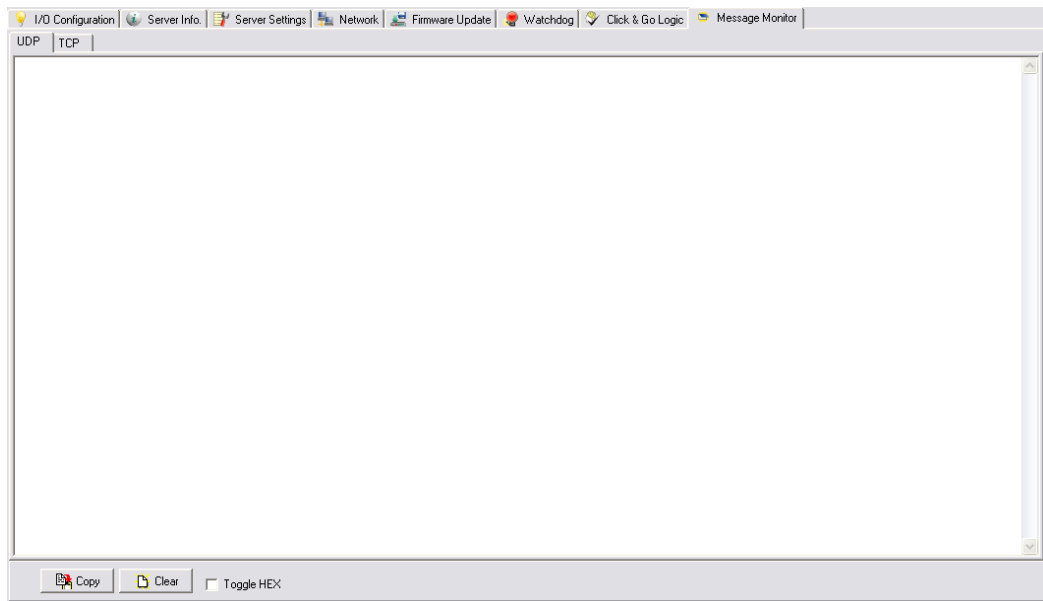
Address	Value/Status	Access	Description
34097	0x1393	Read	Vendor ID
34098	0x0001	Read	Unit ID for MODBUS/RTU
34100	Moxa Technologies Inc.	Read	Vendor Name
34101	E2242 Active Ethernet I/O Server	Read	Product Name
34103	V3.4	Read	Firmware Version
34104	Build10032218 (03/22/2010)	Read	Firmware Release Date
34117	V2.1	Read	Click&Go Version
34118	V3.2.34	Read	MOS Version
34120	V1.2	Read	ADC Version
34105	2	Read	Number of TCP connection
34106	0x0100	Read	Ethernet Interface Speed, 10/100
34107	90-11-22-33-44-55	Read	MAC Address
34108	0	Read	LDM Detection
34109	V0.0	Read	LDM Firmware Revision
34110	Build00000000 (00/00/0000)	Read	LDM Firmware Release Date
34111	45	Read	System Elapsed Time (in sec)
44097	192.168.19.93	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	0019 0038 0005 0007 0004 2010	Read/Write	System Local Time
44102	24	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
44106	1	Read/Write	Enable/Disable Web Access
44111	0	Read/Write	Timeout for Communication Watchdog
44112	0	Read/Write	Flag for Communication Watchdog

## Server Settings Tab (General)

The **Server Settings** tab is where you log in as an ioAdmin administrator. This is required in order to gain access to the ioLogik configuration options. If a password has not been configured, simply click **Login** and leave the **Password** entry field blank. Refer to the ioAdmin Administrator Functions section later on in this chapter for details.

## Message Monitor Tab

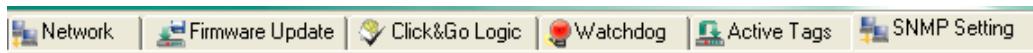
The **Message Monitor** tab will display any TCP/UDP Active Messages reported by the ioLogik E2200 series. When you install the unit for the first time, the ruleset will not have been defined yet, so there will be no messages in the Message Monitor Tab. When a ruleset has been defined and activated, any TCP/UDP messages that have been triggered by sensor events will be shown in the Message Monitor tab. Please refer to Chapter 5 for information on how to define rules for active I/O messaging.



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. When you install the ioLogik for the first time, the password will be blank and you can simply click **Login**. Additional functions will be 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 that the unit be restarted in order to take effect.



### ATTENTION

You **MUST** log in to access administrator functions, including Network, Communication Watchdog Timer, and Firmware Update tabs. If you forget the password, hold down the 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 rules that have already been configured.**

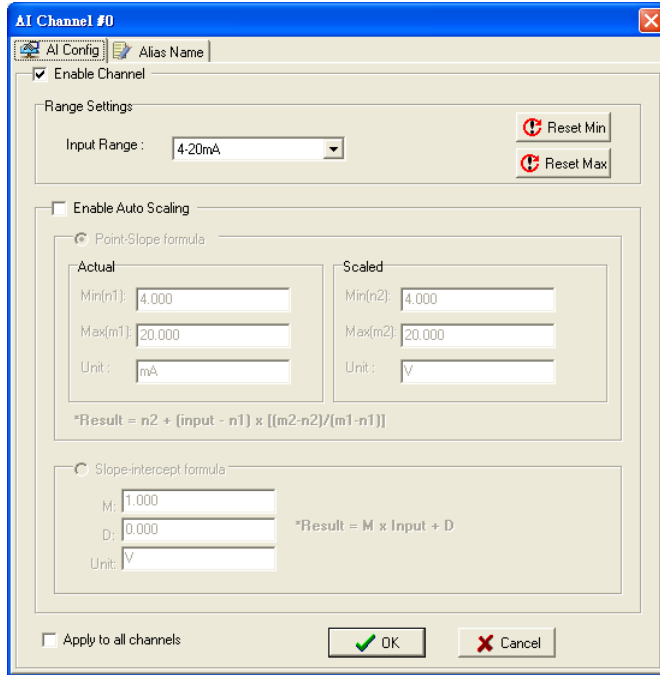
## I/O Configuration Tab (Administrator)

When logged in as an administrator, 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. After the channel has been configured as desired, click **Apply** to implement the new settings.

### Configuring Analog Input Channels

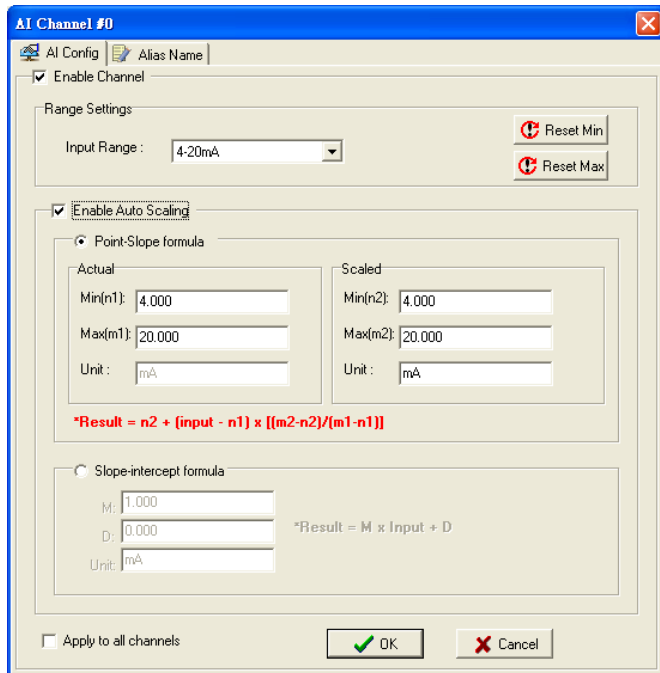
The ioLogik E2242 is equipped with 4 AI (analog input) channels that can be set individually to  $\pm 150$  mV, 0 to 150mV,  $\pm 500$  mV, 0 to 500 mV,  $\pm 5$ V, 0 to 5V,  $\pm 10$ V, 0 to 10V, 0 to 20 mA, and 4 to

20 mA. You may also set all channels at the same time using the “Apply to all channels” checkbox.



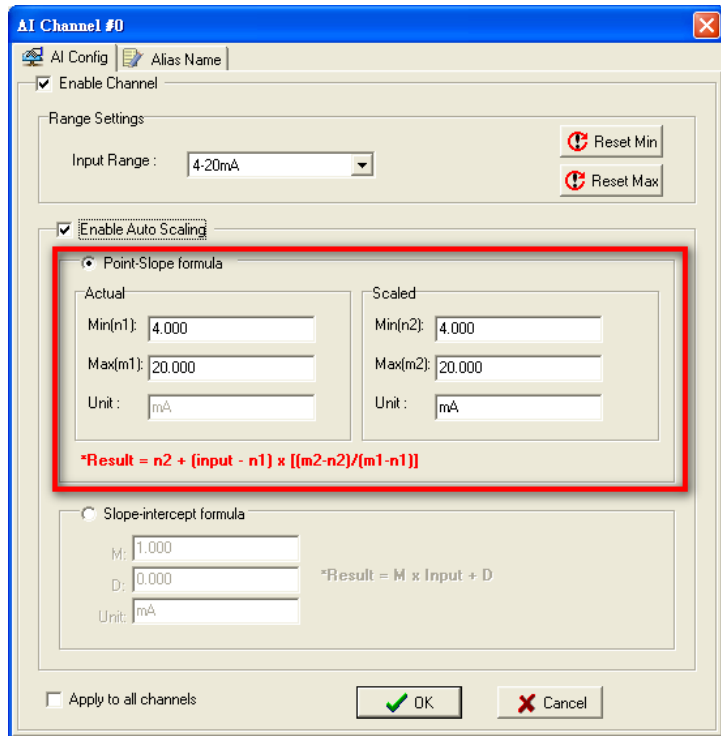
The sampling rate of analog inputs on the ioLogik E2242 is 100 samples/second for all channels. Users can disable the unused AI channel by un-checking the **Enable** check box to increase the sampling rate.

**Enabling** the Auto Scaling function will linearly convert the actual current or voltage value into other user defined units, such as percentage or ppm (parts per million).

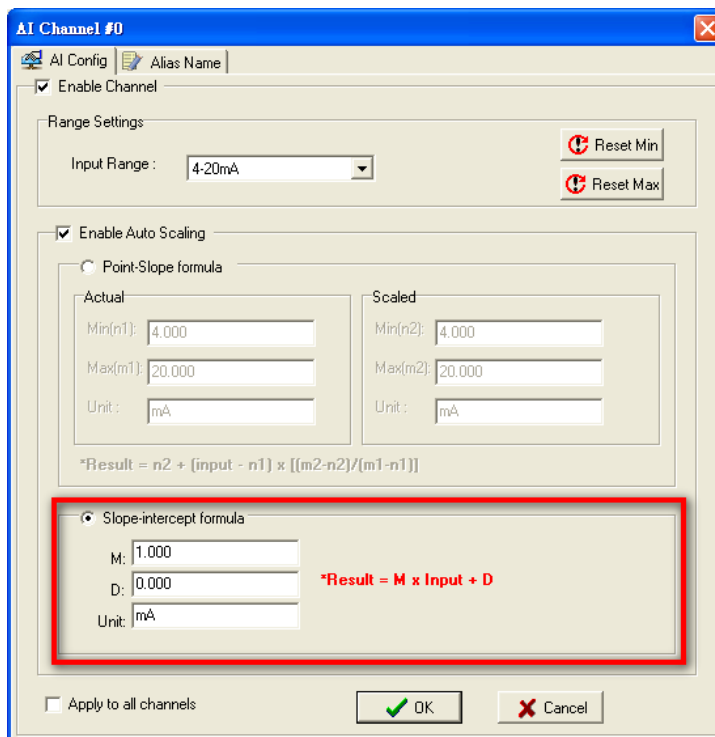


Two math formulas are used to convert actual values and user defined units: the point-slope formula and the slope-intercept formula.

**Auto Scaling with the point-slope formula** can help to eliminate high end and low end extremes. For example, if 17 mA represents a dangerous situation of high temperature, it will not be necessary to get a temperature that is even higher. In this case, users can cut off values beyond 17 mA and convert it to a proprietary level of danger, such as Level 5.



**Auto Scaling by slope-intercept formula** provides linear conversion with one ratio (M) and offset (D). Offset can be an initial value of field device. Ratio can help enlarge or reduce the scale by specify a proportion. It is also easy to modify the values in the database if we need to use new ratio and offset values in the future.



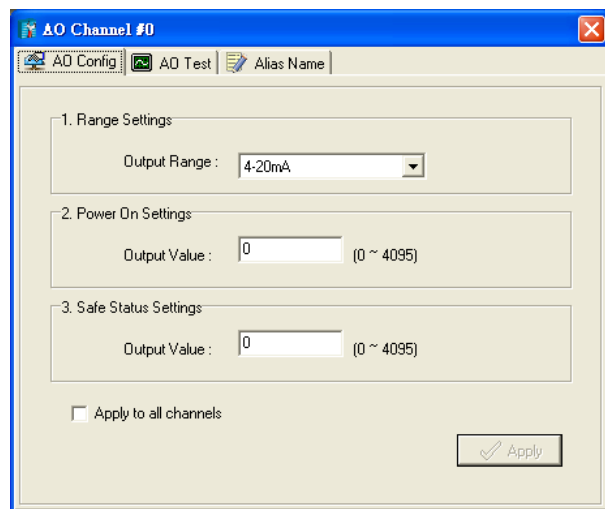
The **Reset Min** and **Reset Max** buttons will clear the minimum or maximum values recorded and displayed in the ioAdmin main window.

Channel#	Range	Value	Min.	Max.
[AI]:00	+/-10V	0.000 V	0.000 V	0.683 V
[AI]:01	+/-10V	0.000 V	0.000 V	0.672 V
[AI]:02	+/-10V	0.001 V	0.000 V	0.001 V
[AI]:03	+/-10V	0.001 V	0.000 V	0.001 V

### Configuring Analog Output Channels

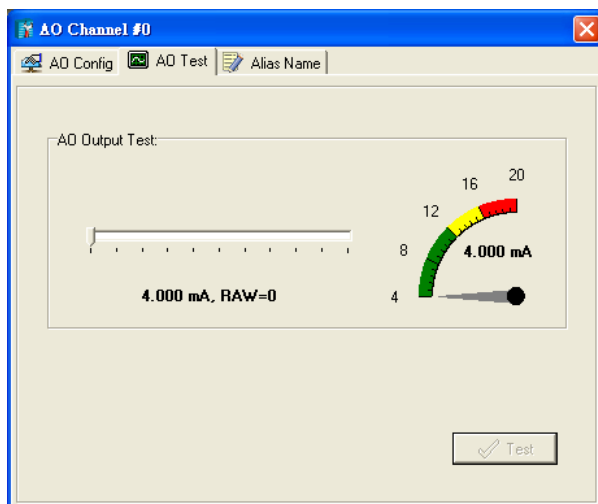
The ioLogik E2240 is equipped with 2 AO (analog output) channels that can be set individually to 0-10 V, 4 to 20 mA. You may also set all channels at the same time using the “Apply to all channels” checkbox.

**Power On Settings:** Use this field to set the initial value for the AO channel when the ioLogik E2240 is powered on. The **Power On Settings** field uses raw data values. If you do not know how to translate the raw data values into real values, use the **Test** function for assistance.



**Safe Status Settings:** Use this field to specify how the AO channel responds to a break in network communication. When the network connection is lost for the amount of time specified in the Host Connection Watchdog, the ioLogik E2240 enters Safe Status, and the AO channel’s Safe Status settings will go into effect. Note that the Host Connection Watchdog is disabled by default. If the Host Connection Watchdog is disabled, the ioLogik E2240 will never enter Safe Status and the Safe Status settings will have no effect.

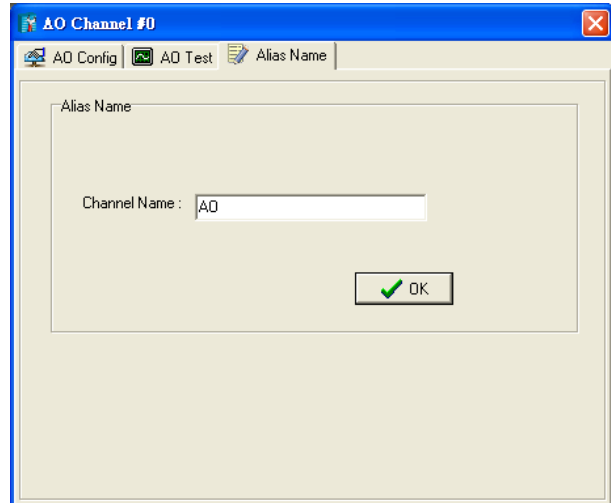
**Test I/O:** You can test the AO channel in the **Test** tab,



Note that the slider shows both the raw data value and the engineering value (V/mA). You may use this as a guide when entering values for the Power On and Safe Status settings.

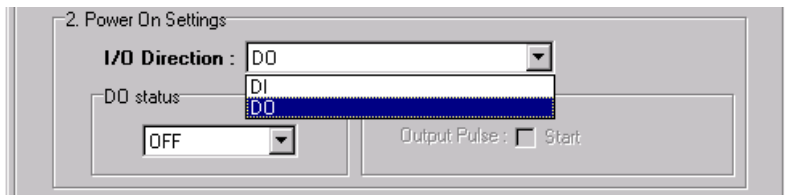
### Alias Name

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

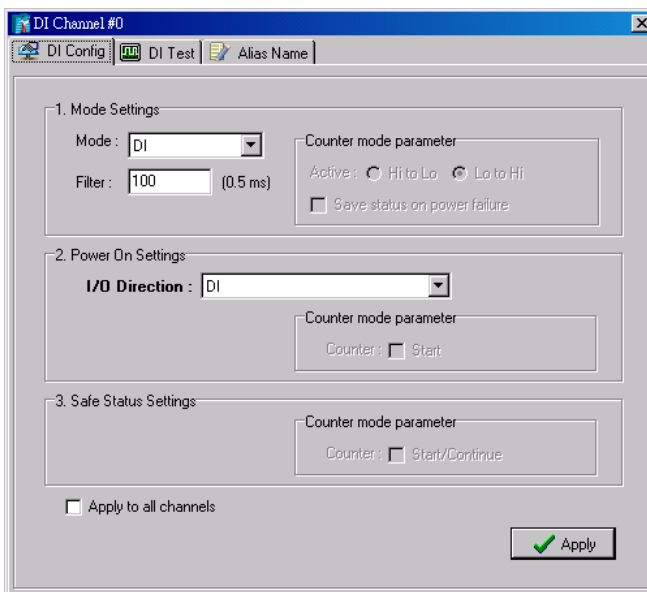


### Configuring Selectable DIO Channels

Channels DIO-0 to DIO-11 support both DI and DO channel operations. When the ioLogik E2200 unit is turned on, each DIO channel will be configured to act as either a DI or DO channel, according to the **Power On Settings**. To switch between DI and DO channel operation, select the desired mode in the **I/O Direction** field under **Power On Settings**. After clicking **Apply**, you will need to restart the ioLogik E2242 for the new setting to take effect.



### Configuring Digital Input Channels



The ioLogik E2242 provides up to 12 digital input (DI) channels. Software filtering is used to control switch bounces. The filter is configurable in multiples of 0.5 ms and accepts values between 1 and 65535. For example, a setting of **2** would mean a 1 ms filter (2 × 0.5 ms).

A DI channel can be set to “DI” or “Event Counter” mode. In DI mode, the specifications are as follows:

Type	Logic 0	Logic 1
Dry contact	close to GND	open
Wet contact	0 to 3 V	10 to 30 V

In Event Counter mode, the channel accepts limit or proximity switches and counts events according to the ON/OFF status. When “Lo to Hi” is selected, the counter value increases when the attached switch is pushed. When “Hi to Lo” is selected, the counter value increases when the switch is pushed and released.

By default, the Event Counter value will be reset to zero if power is disconnected. If you select **Save status on power failure**, the Event Counter value will be saved when power is disconnected. When power is reconnected, the value will be as you left it. You can set **Power On Settings** so that counting resumes immediately.

The Event Counter starts counting events when specified by a Modbus command or a Click&Go Logic rule. You can also specify counting to begin automatically when the ioLogik is powered on. To activate this function, select **Start** under **Counter mode parameter** in the **Power On Settings**.

You can control how an Event Counter channel behaves when the network is disconnected with the **Safe Status Settings** and the **Host Connection Watchdog** in the **Watchdog**. When the **Host Connection Watchdog** is enabled, a network disconnection will activate the **Safe Status Settings**. The Event Counter channel can be configured to continue counting by selecting **Start/Continue** under **Counter mode parameter**. If **Start/Continue** is not selected, the Event Counter channel will suspend counting. If the **Host Connection Watchdog** is not enabled, then the **Safe Status Settings** will be ignored and the Event Counter channel will continue counting during a network disconnection.



**ATTENTION**

The **Host Connection Watchdog** is disabled by default and must be enabled for Safe Status Settings to take effect.



The **Apply to all channels** option applies all settings to DI channels.



## Configuring Digital Output Channels

The ioLogik E2242 provides up to 12 digital output channels.

A DO channel can be set to “DO” or “Pulse Output” mode. In DO mode, the specifications are 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 specified in multiples of 0.5 ms, with a maximum setting of 65,535 (32,767 ms). For example, you would enter 1000 for a width of 500 ms. If the low width value is 5000 and the high width value is 5000, the pulse output would be a square wave with a 5-second pulse cycle. For the number of pulses, you can specify between 1 and 4,294,967,295 pulses or enter “0” for continuous pulse output.

When the ioLogik is first powered on, the status for each DO channel will be set to “OFF” by default. This behavior can be modified using the **Power On Settings**. You can set a DO channel to turn “ON” when the ioLogik is powered on, or to commence pulse output.

You can control how a DO channel acts when the network is disconnected by using the **Safe Status Settings** and the **Host Connection Watchdog**. When the **Host Connection Watchdog** is enabled, a network disconnection will activate the **Safe Status Settings**. The DO channel can be configured to turn on, turn off, or commence pulse output. If the **Host Connection Watchdog** is not enabled, then the DO channel status will remain unchanged during a network disconnection.

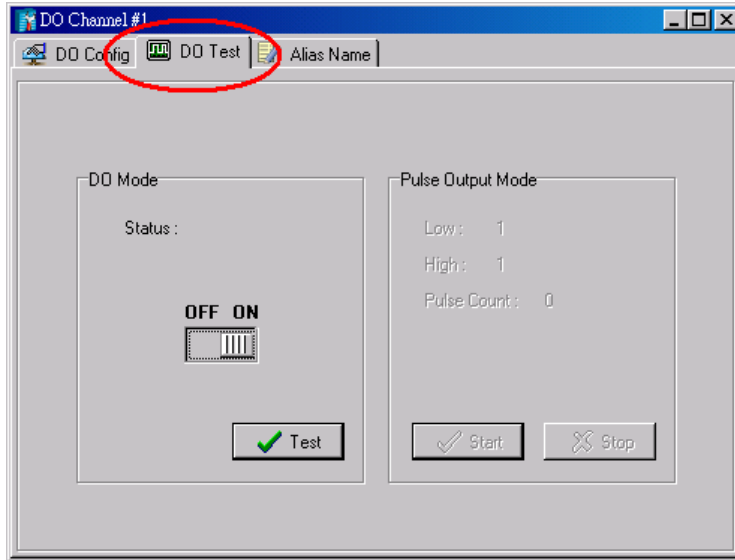


### ATTENTION

The **Host Connection Watchdog** is disabled by default and must be enabled for **Safe Status Settings** to take effect.

### Testing DI and DO Channels

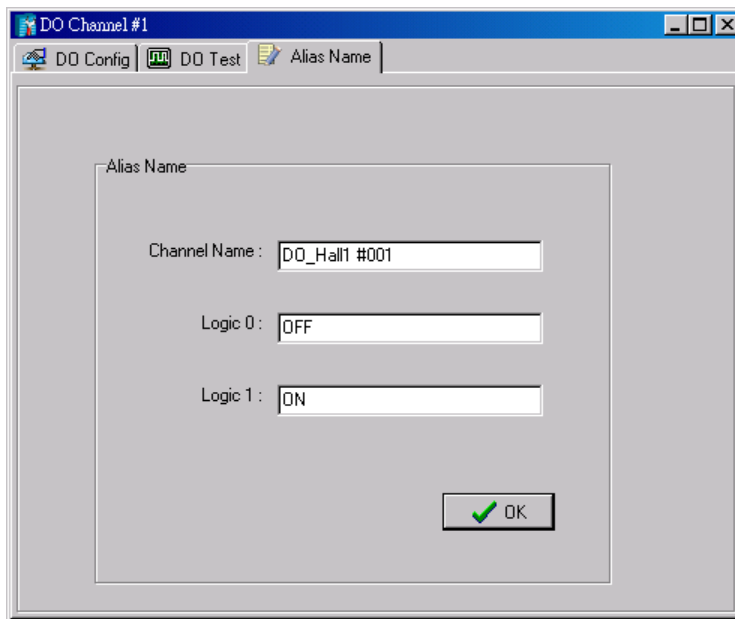
You can test each channel by opening the channel's configuration window and selecting the Test tab.



On the Test tab, you can see how a channel's status affects or is affected by the attached device. For DO channels, you can set the on/off status or start and stop pulse output. For DI channels, you can monitor the attached device's on/off status, or monitor the counter.

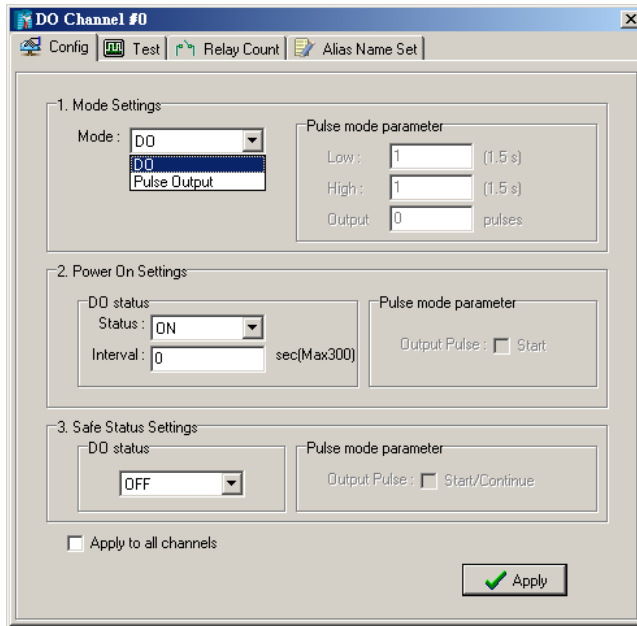
### Alias Name

**Alias Name** helps users configure the alias of a DI or DO channel and define the status for logic 0/1 to be On/Off or vice versa. The Alias can be monitored by the ioAdmin utility, or can be queried using a user-defined program based on the Moxa MXIO library, or a standard Modbus/TCP protocol.



The **Apply to all channels** option applies all settings to DI channels.

### Configuring Digital Output (Relay) Channels



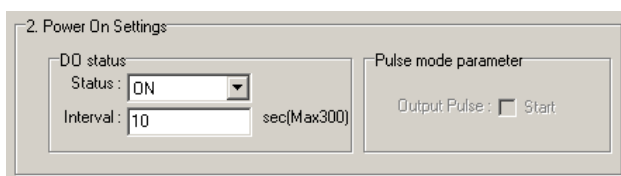
The ioLogik E2214 provides up to 6 digital output (relay) channels.

A DO channel can be set to “DO” or “Pulse Output” mode. In DO mode, the specifications are as follows.

Type	Logic 0	Logic 1
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 specified in multiples of 0.5 ms, with a maximum setting of 65,535 (32,767 ms). For example, you would enter 1000 for a width of 500 ms. If the low width value is 5000 and the high width value is 5000, the pulse output would be a square wave with a 5-second pulse cycle. For the number of pulses, you can specify between 1 and 4,294,967,295 pulses or enter “0” for continuous pulse output.

When the ioLogik is first powered on, the status for each DO channel will be set to “OFF” by default. This behavior can be modified using the **Power On Settings**. You can set a DO channel to turn “ON” when the ioLogik is powered on, or to commence pulse output. The Interval of the Power On Settings provides sequential control of the DO outputs while powering up the ioLogik E2214. The value ranges from 0 to 300 seconds. For example, if all of the DO channels are configured to be On and the interval is set to “0” seconds, the all of the DO channels will be switched to On at the same time. If DO 0 is set to On and 10 sec, there will be a 10-second delay, after which the DO will switch to On as the default status once the ioLogik E2214 system is ready. The Interval with DO default status setting provides the ability to switch on the DO channels sequentially to avoid the sudden high power burst caused by attached devices and sensors.



You can control how a DO channel acts when the network is disconnected by using the **Safe Status Settings** and the **Host Connection Watchdog**. When the **Host Connection Watchdog** is enabled, a network disconnection will activate the **Safe Status Settings**. The DO channel can be configured to turn on, turn off, or commence pulse output. If the **Host Connection Watchdog** is not enabled, then the DO channel status will remain unchanged during a network disconnection.

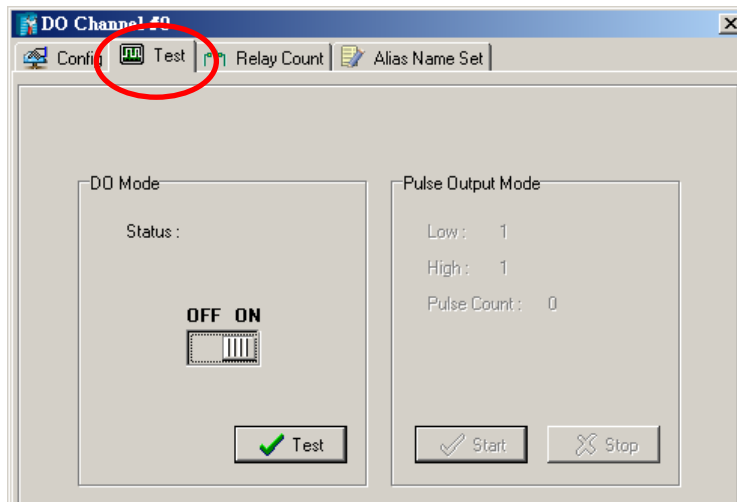


#### ATTENTION

The **Host Connection Watchdog** is disabled by default and must be enabled for **Safe Status Settings** to take effect.

## Testing DI and DO Channels

You can test each channel by opening the channel's configuration window and selecting the Test tab.

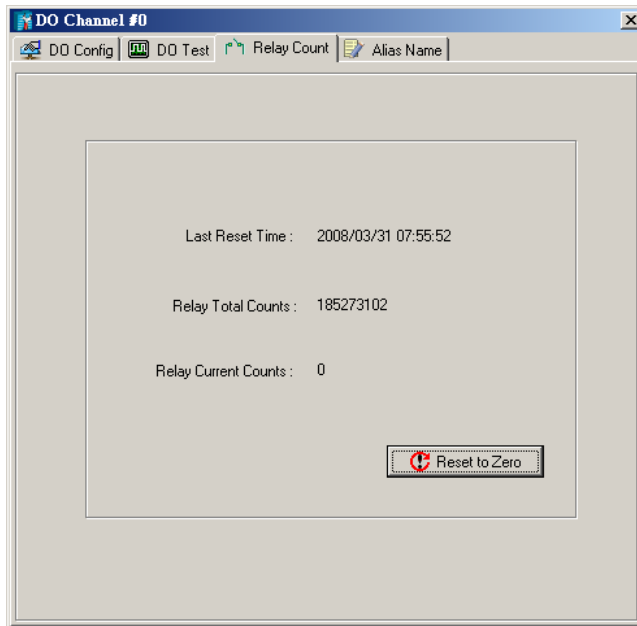


On the Test tab, you can see how a channel's status affects or is affected by the attached device. For DO channels, you can set the on/off status or start and stop pulse output. For DI channels, you can monitor the attached device's on/off status, or count switch press events.

## Relay Count Monitoring

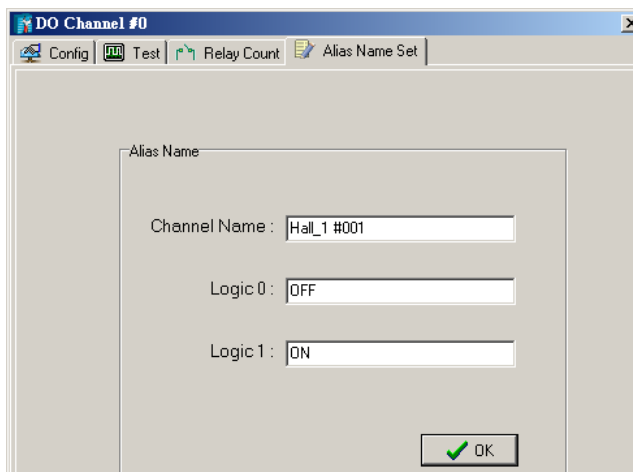
Two types of relay counts can be recorded in the ioLogik E2214: Total Counts and Current Counts. Total counts records how many times a DO (relay) channel has been used. In general, each DO (relay) channel can be used an average of 100,000 times. Users can monitor these counts to know when the module should be replaced, or to switch to a different channel if the total counts approaches the upper limit. Current Counts can be reset to zero to record the usage of the external device by monitoring the counts. For example, if D0 0 is connected to an external relay control board, you can monitor the current counts to know when to replace the external relay component in advance before it fails.

Last Reset Time records the time when Current Counts was reset. Both Total Counts and Current Counts will be saved when there is a power failure. The Last Reset Time will be saved only when the user manually presses the Reset to Zero button.



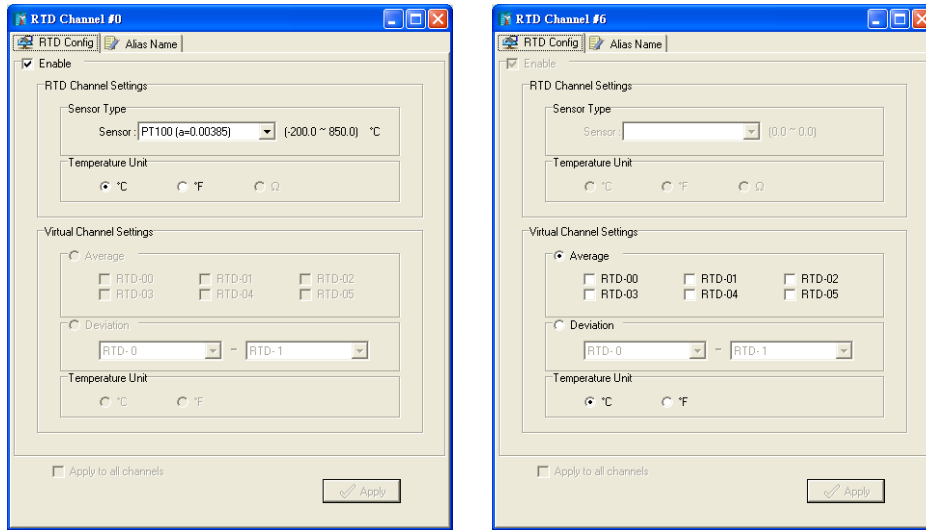
## Alias Name Set

**Alias Name Set** helps users configure the alias of a DI or DO channel and define the status for logic 0/1 to be On/Off or vice versa. The Alias can be monitored by the ioAdmin utility, or can be queried using a user-defined program based on the Moxa MXIO library, or a standard Modbus/TCP protocol.



## Configuring RTD Input Channels

The ioLogik E2260 provides 6 fixed physical RTD input (Resistance Temperature Detector) channels, each supporting up to 18 different types including PT50, PT100, JPT100, and more. The RTD channels are numbered from channel 0 to channel 5. Channels 6 through 11 are virtual temperature channels that report running averages or deviations of selected RTD channels.



### Alias Name

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

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

Sensor Type	Degree	Degree	Count
Res. 100 mΩ	1 to 2200 Ω	1 to 2200 Ω	10 to 22000
Res. 50 mΩ	1 to 1250 Ω	1 to 1250 Ω	20 to 25000
Res. 20 mΩ	1 to 620 Ω	1 to 620 Ω	50 to 31000
Res. 10 mΩ	1 to 310 Ω	1 to 310 Ω	100 to 31000
PT50, 0.00385	-200 to 850°C	-328 to 1562°F	-2000 to 8500
PT100, 0.00385	-200 to 850°C	-328 to 1562°F	-2000 to 8500
PT200, 0.00385	-200 to 850°C	-328 to 1562°F	-2000 to 8500
PT500, 0.00385	-200 to 850°C	-328 to 1562°F	-2000 to 8500
PT1000, 0.00385	-200 to 350°C	-328 to 662°F	-2000 to 3500
JPT100, 0.003916	-200 to 640°C	-328 to 1184°F	-2000 to 6400
JPT200, 0.003916	-200 to 640°C	-328 to 1184°F	-2000 to 6400
JPT500, 0.003916	-200 to 640°C	-328 to 1184°F	-2000 to 6400
JPT1000, 0.003916	-200 to 350°C	-328 to 662°F	-2000 to 3500
Ni100, 0.00618	-60 to 250°C	-76 to 482°F	-600 to 2500
Ni200, 0.00618	-60 to 250°C	-76 to 482°F	-600 to 2500
Ni500, 0.00618	-60 to 250°C	-76 to 482°F	-600 to 2500
Ni1000, 0.00618	-60 to 180°C	-76 to 356°F	-600 to 1800
Ni120, 0.00672	-80 to 260°C	-112 to 500°F	-800 to 2600

The status of attached sensors will be reported by the count value, which corresponds to the sensor ranges shown above. For example, for a 100 mΩ resistor, a count value of 10 corresponds to a 1 Ω 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 E2260 provides virtual channels so you can easily determine the average or deviation

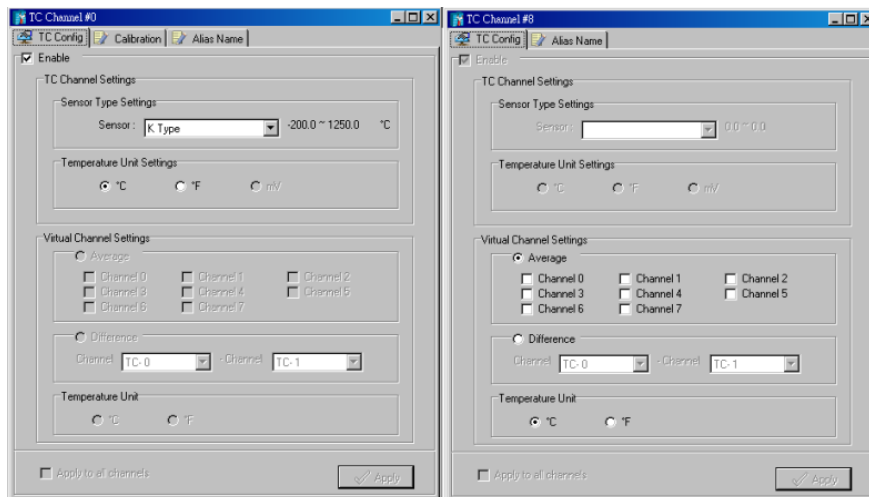
values for any attached temperature sensor. A virtual channel can operate in Average Mode or Deviation Mode. In Average Mode, up to 6 physical channels are selected and the virtual channel reports the average value of the selected channels. In Deviation mode, two physical channels are selected and the 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 resistance sensor will be treated as an error channel.

## 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	0°C to 750°C	0 to 7,500
K	-200°C to 1250°C	-2,000 to 12,500
T	-200°C to 350°C	-2,000 to 3,500
E	-200°C to 900°C	-2,000 to 9,000
R	-50°C to 1600°C	-500 to 16,000
S	-50°C to 1760°C	-500 to 17,600
B	600°C to 1700°C	6,000 to 17,000
N	-200°C to 1300°C	-2,000 to 13,000
2.3 $\mu$ V	- 78.126mV to + 78.126mV	-781,260 to 781,260
1.15 $\mu$ V	- 39.062mV to + 39.062mV	-390,620 to 390,620
0.5 $\mu$ V	- 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

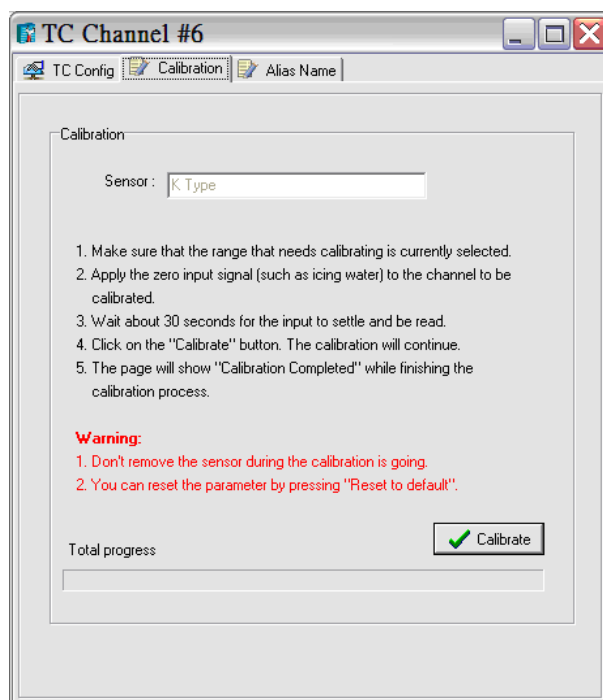
The ioLogik E2262 provides virtual channels so you can easily determine the average or deviation values for any attached temperature sensor. A virtual channel can operate in Average Mode or Deviation Mode. In Average Mode, up to 8 physical channels are selected and the virtual channel reports the average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



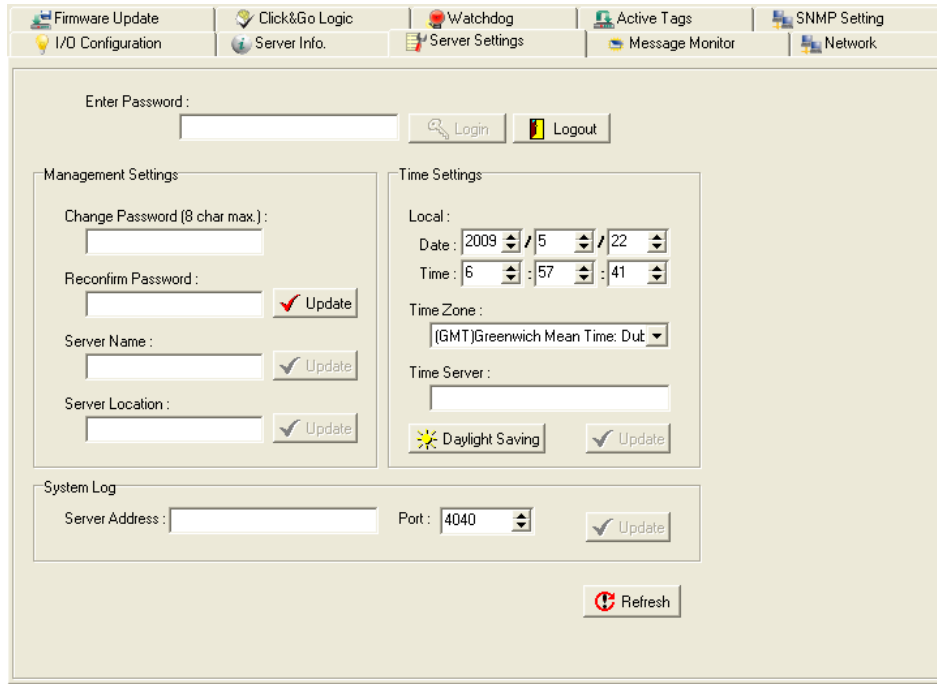
## Alias Name

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.

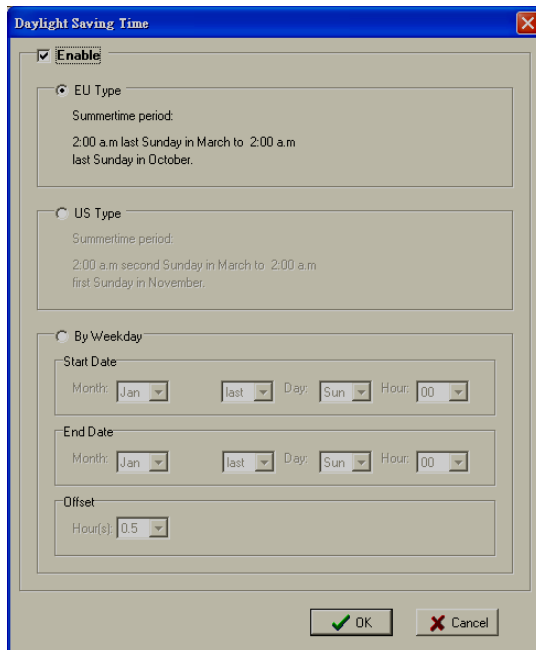


## Server Settings Tab (Administrator)

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 with 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 available after you log in as an administrator. You can now configure IP settings, Modbus/TCP Alive Check Timeout settings, DNS settings, Serial settings, and Web Access settings for the ioLogik.

Number of Modbus/TCP connection(s) : 2

**IP Settings**

IP Configuration : Static

IP Address : 192.168.127.254

Subnet Mask : 255.255.255.0

Gateway : 0.0.0.0

MAC : 00-90-E8-14-05-19

Accessible IP  Update

**Serial Settings**

Unit ID : 1

Baud Rate : 115200

Data Bits : 8

Stop Bits : 1

Parity : None

Timeout (ms) : 2500

Update

**Modbus/TCP Alive Check Timeout**

Enable Modbus/TCP idle connection timeout interval:

60 sec

Update

**Web Access Settings**

Enable

Update

**DNS Settings**

DNS #1 : 255.255.255.255

DNS #2 : 255.255.255.255

Update

Refresh

### IP Settings

You can set up a static or dynamic IP address for the ioLogik, as well as the subnet mask and gateway address. Click **Accessible IP** if you wish to allow only certain IP addresses to have network access to the ioLogik and attached sensors. Access will be granted only to the IP addresses that you list in the Accessible IP screen. Any requests from sources that are not on the accessible IP list will be unable to use Modbus/TCP or ioAdmin to access the ioLogik.

### Modbus/TCP Alive Check Timeout Settings

The Modbus/TCP Alive Check Timeout is designed to avoid TCP connection failure. If the network host is unable to respond due to hardware failure or a network problem, the ioLogik will continue to wait for a response from the host. This will cause the TCP port to be occupied indefinitely by the host. When **Modbus/TCP idle connection timeout interval** is enabled, the ioLogik will automatically close the TCP connection when there is no TCP activity for the specified time.

### DNS Settings

Use this field to specify the IP addresses of one or two DNS servers. DNS servers can be used to find available e-mail addresses when setting up Click & Go rules.

### Serial Settings

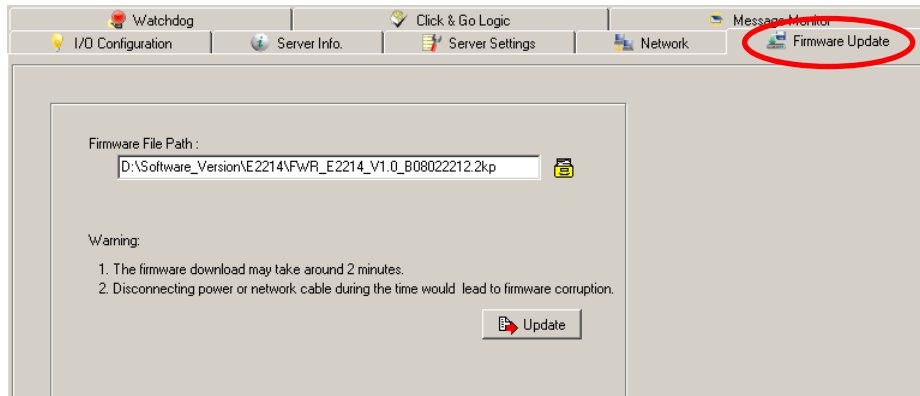
You can view the reserved RS-485 communication parameters here, and set the timeout value for breaks in RS-485 communication. Note that the other serial communication parameters cannot be modified. If you wish to adjust the baudrate, you will need to use the physical dial on the back panel of the ioLogik.

### Web Access Settings

This field enables and disables the web console, which allows the ioLogik to be configured from a web browser. If this field is not enabled, you will not be able to open the web console.

### Firmware Update Tab

The **Firmware Update** tab is available after you log in as an administrator. Enter the path to the firmware file or click on the icon to browse for the file. Click **Update** to update the ioLogik firmware. The wizard will lead you through the process until the ioLogik has restarted.



#### ATTENTION

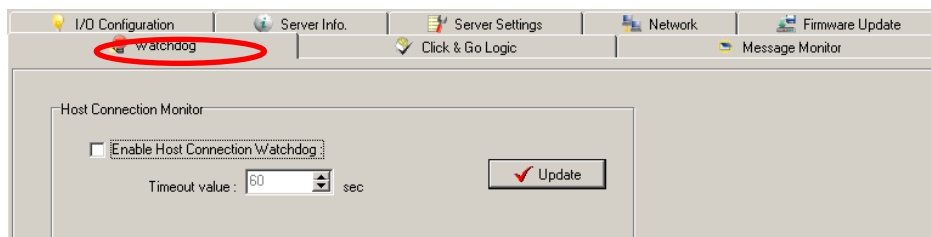
**Do not interrupt the firmware update process!** An interruption in the process might result in your device becoming unrecoverable.

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

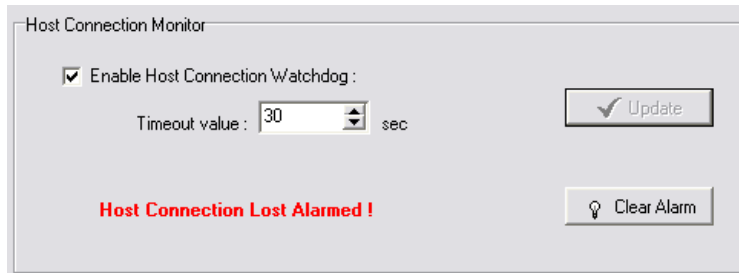
The firmware on any attached I/O expansion module, such as an ioLogik R2100 server, must be updated over the RS-485 bus. Firmware on cascaded modules cannot be updated over an Ethernet network.

### Watchdog Tab

The **Watchdog** tab is available after you log in as an administrator. When enabled, the **Host Connection Watchdog** monitors the network connection. If the connection is lost for the specified **Timeout value**, the Watchdog will display a warning and activate the Safe Status settings for each DO channel and Event Counter channel. By default, the Watchdog is disabled. To enable the Watchdog, make sure that **Enable Host Connection Watchdog** is checked, set the **Timeout value**, and then click **Update**.



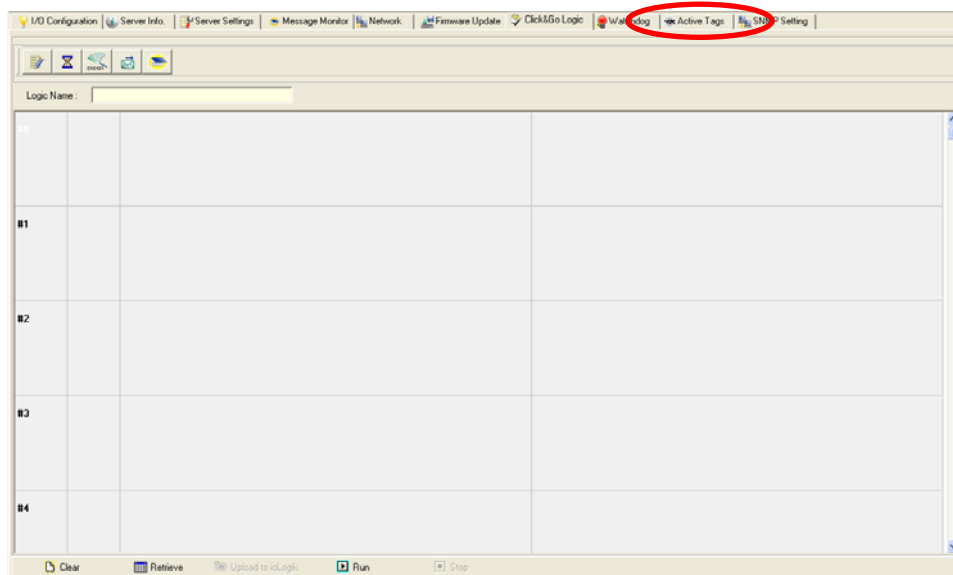
After the Watchdog is enabled, a warning will be displayed on the Watchdog tab if the network connection is lost.



After you restore the network connection, click **Clear Alarm** to reset the Watchdog and return to normal operation.

## Click&Go Logic Tab

The Click&Go Logic tab is available after logging in as an administrator. This is where the ioLogik's Active Micro Controller system is configured. With a set of rules (known as a ruleset) defined through Click&Go, the ioLogik can report I/O status to a host as soon as user-defined I/O conditions have been met. Refer to the Click&Go V2 User's Manual, which can be downloaded from Moxa's website, for more detailed information on defining rules.



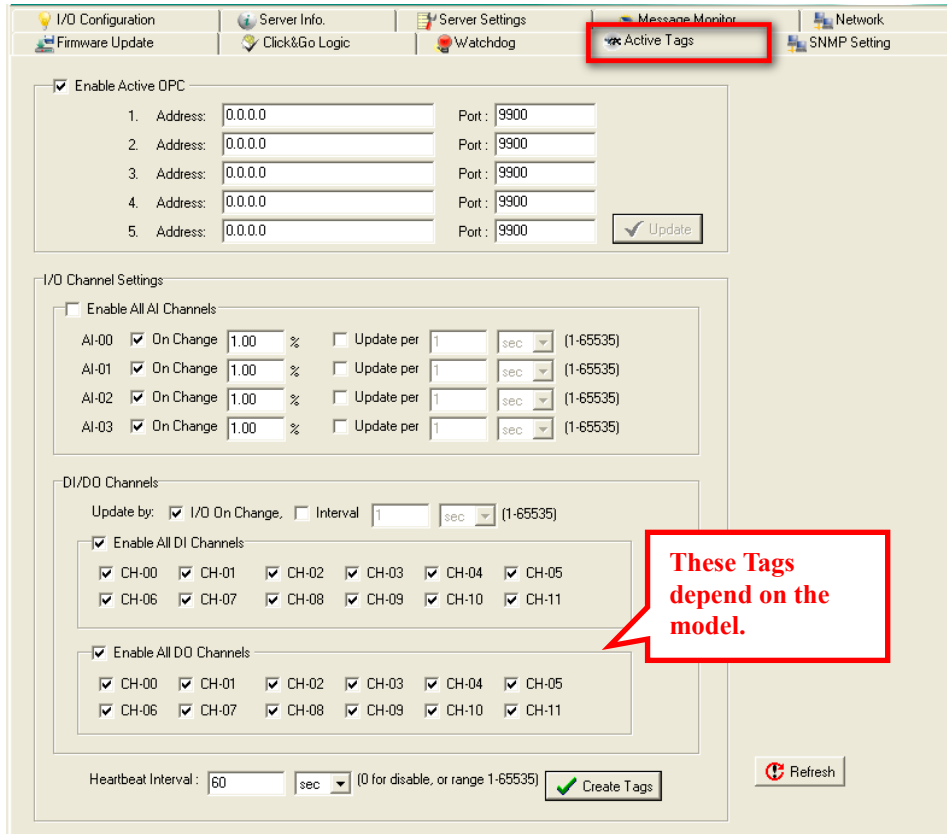
Changes in the Click&Go Logic tab are not effective until the ioLogik E2200 series has restarted, as with changes made on other tabs. After logging back in as an administrator and returning to the Click&Go Logic tab, click **Download** to view the current ruleset. Click **Run** to activate the ruleset and **Stop** to deactivate it.

I/O channels used by the Click&Go Logic cannot be controlled externally using ioAdmin's "Test" function, or from other Modbus software.

## 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. The ioLogik Active Micro Controller 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 Micro Controller 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, and TC, are synchronized with pre-defined percentages that are entered 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. Refer to the Active OPC Server section for more details about how to use Active OPC server.

For Analog Input/Output channels, the timing of updating I/O data can be set to "report by On-Change" or "report periodically." Report by On-Change is triggered by the percentage of a variable, where the percentage is based on the full range scale of the selected mode. Report periodically is based on a time interval that can be set as per second, minute, hour, or day. Each channel can have its own settings.

For Digital Input/Output channels, the update timing of I/O data can be set to "On-Change" or "periodically." Report by On-Change is triggered by the I/O status change, e.g., ON to OFF or OFF to ON. Report periodically is based on a time interval that can be set as per second, minute, hour, or day. All channels have the same settings.

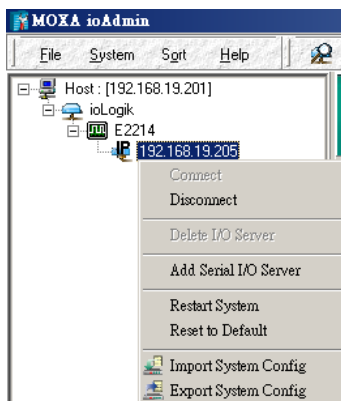
## SNMP Settings Tab

The ioLogik Micro Controller 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 try connecting over the network to the selected ioLogik.

### Disconnect

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

### Delete I/O Server

Select this command to remove the selected ioLogik. The ioLogik must be disconnected first.

### Add Serial I/O Server

Select this command to add an ioLogik I/O server by specifying its Unit ID.

### Restart System

Select this command to restart the selected ioLogik. You will need to be logged in as an administrator to use this command.

## Reset to Default

Select this command to reset all settings on the selected ioLogik, including console password, to factory default values. You will need to be logged in as an administrator to use this command.

## Export System Config

Select this command to export the selected ioLogik's configuration to a text file. You will need to be logged in as an administrator to use this command. 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 a sample configuration file:

```

ioLogik E2242 Network I/O Server Configuration
=====
[System Information]
Date: 2010/04/07
Time: 06:10:56
Firmware: V3.4 Build10032218
Click&Go=2.1
MOS= V3.2.34

[1. Model]
-----
MOD_TYPE=E2242 - Active Ethernet I/O Server (12DIO + 4AI)
MOD_LOC=
MOD_NAME=

[2. I/O Configurations]
-----
DI00=1,(Counter),      DI00_PWN=0,(Stop),      DI00_SAFE=0,(Stop),      DI00_FILTER=1,(0.500ms),
                        DI00_TRIGGER=0,(L2H),
DI01=0,(DI),           DI01_FILTER=100,(50.000ms)
DI02=0,(DI),           DI02_FILTER=100,(50.000ms)
DI03=0,(DI),           DI03_FILTER=100,(50.000ms)
DI04=0,(DI),           DI04_FILTER=100,(50.000ms)
DI05=0,(DI),           DI05_FILTER=100,(50.000ms)

DO06=1,(Pulse),       DO06_PWN=0,(Stop),      DO06_SAFE=0,(Stop),
                        DO06_LOW=2,(5.000ms), DO06_HIGH=2,(5.000ms), DO06_CNT=2000
DO07=1,(Pulse),       DO07_PWN=1,(Start),     DO07_SAFE=1,(Start),
                        DO07_LOW=1,(5.000ms), DO07_HIGH=1,(5.000ms), DO07_CNT=0
DO08=0,(DO),          DO08_PWN=0,(Off),
DO09=0,(DO),          DO09_PWN=0,(Off),
DO10=0,(DO),          DO10_PWN=0,(Off),
DO11=0,(DO),          DO11_PWN=0,(Off),
                        DO11_SAFE=0,(Off)

AI00=5,(4-20mA),      AI00_EN=1
AI01=3,(+/-10V),      AI01_EN=1
AI02=3,(+/-10V),      AI02_EN=1
AI03=3,(+/-10V),      AI03_EN=1
AI00_SCALEN=0,        AI00_ACTmin=0.000,      AI00_ACTmax=0.000,      AI00_SCALmin=0.000,
                        AI00_SCALmax=0.000,      AI00_UNIT=V
AI01_SCALEN=0,        AI01_ACTmin=0.000,      AI01_ACTmax=0.000,      AI01_SCALmin=0.000,
                        AI01_SCALmax=0.000,      AI01_UNIT=V
AI02_SCALEN=0,        AI02_ACTmin=0.000,      AI02_ACTmax=0.000,      AI02_SCALmin=0.000,
                        AI02_SCALmax=0.000,      AI02_UNIT=V
AI03_SCALEN=0,        AI03_ACTmin=0.000,      AI03_ACTmax=0.000,      AI03_SCALmin=0.000,
                        AI03_SCALmax=0.000,      AI03_UNIT=V
AI00_SCALE2_M=1.000,  AI00_SCALE2_D=0.000,
AI01_SCALE2_M=1.000,  AI01_SCALE2_D=0.000,
AI02_SCALE2_M=1.000,  AI02_SCALE2_D=0.000,
AI03_SCALE2_M=1.000,  AI03_SCALE2_D=0.000,

```

## Import System Config

Select this command to load a configuration for the selected ioLogik from a configuration text file. You will need to be logged in as an administrator to use this command. The new configuration will not take effect until the ioLogik has been restarted. This command can be used to restore a configuration after loading the factory defaults, or to duplicate a configuration to multiple ioLogik units.

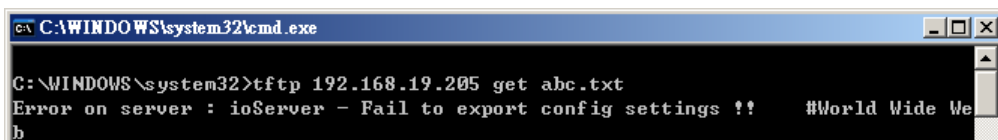
## Using TFTP to Import/Export the Configuration

TFTP (Trivial File Transfer Protocol) was defined in 1980 to provide basic FTP functionality in a very simple protocol, and requires only a small amount of memory. ioLogik E2200 I/O servers use TFTP to import and export configuration files.

The following example uses Windows TFTP and an ioLogik E2242 with an IP address of 192.168.127.254:

1. Enter "TFTP 192.168.127.254 GET ik2242.txt" to get the ioLogik's configuration file.
2. Enter "TFTP 192.168.127.254 PUT ik2242.txt" to load a configuration file onto the ioLogik

You must use **ik2242.txt** as the destination filename when copying a configuration file to the ioLogik E2200 unit. Otherwise, you will receive an error message, as shown below:



```

c:\C:\WINDOWS\system32\cmd.exe
C:\WINDOWS\system32>tftp 192.168.19.205 get abc.txt
Error on server : ioServer - Fail to export config settings !! #World Wide We
b
  
```

You can use TFTP in a batch file to transfer configuration files for different units. For example, if you have two configuration files that need to be copied to two different servers, **ik2242\_1.txt** for 192.168.127.253, and **ik2242\_2.txt** for 192.168.127.254, the batch file could be written as follows:

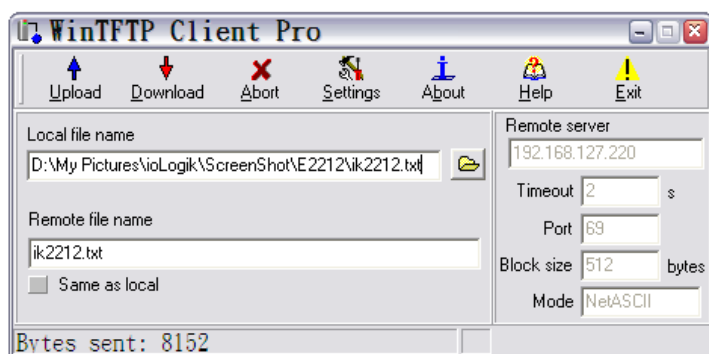
```

tftp 192.168.127.253 put ik2242_1.txt ik2242.txt
tftp 192.168.127.254 put ik2242_2.txt ik2242.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 to monitor the ioLogik E2200 series and attached I/O devices. It can be used from anywhere on the network.

1. **Installing from the 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 has finished, run ioEventLog from **Start → Program Files → MOXA → IO Server → Utility → ioEventLog**.

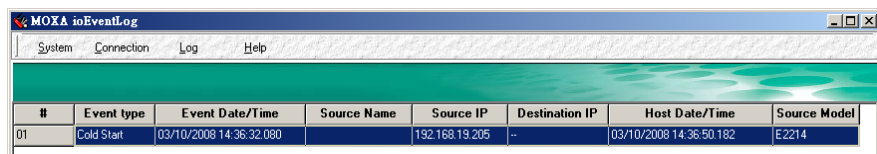
### Basic Functions

ioEventLog is installed along with ioAdmin from 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 E2200 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:

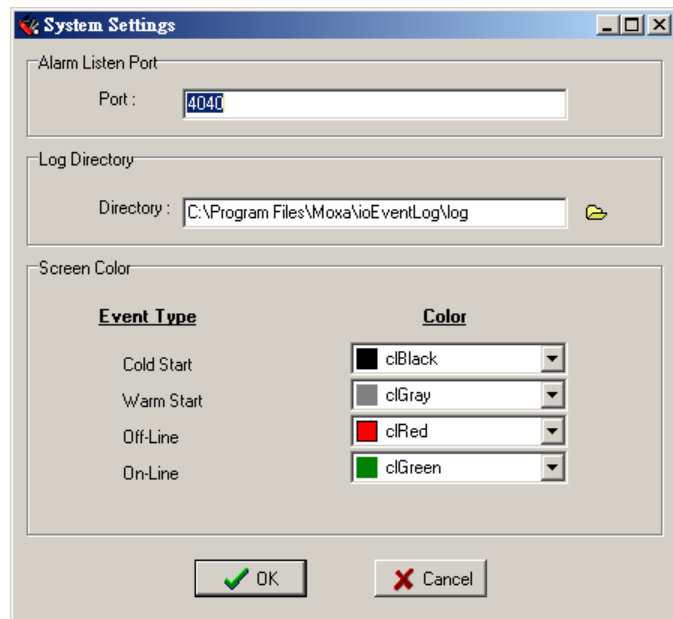
- event type
- event date and time
- ioLogik server source name
- source IP
- destination IP
- host date and time
- source model



#	Event type	Event Date/Time	Source Name	Source IP	Destination IP	Host Date/Time	Source Model
01	Cold Start	03/10/2008 14:36:32.080		192.168.19.205	--	03/10/2008 14:36:50.182	E2214

### Configuration

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

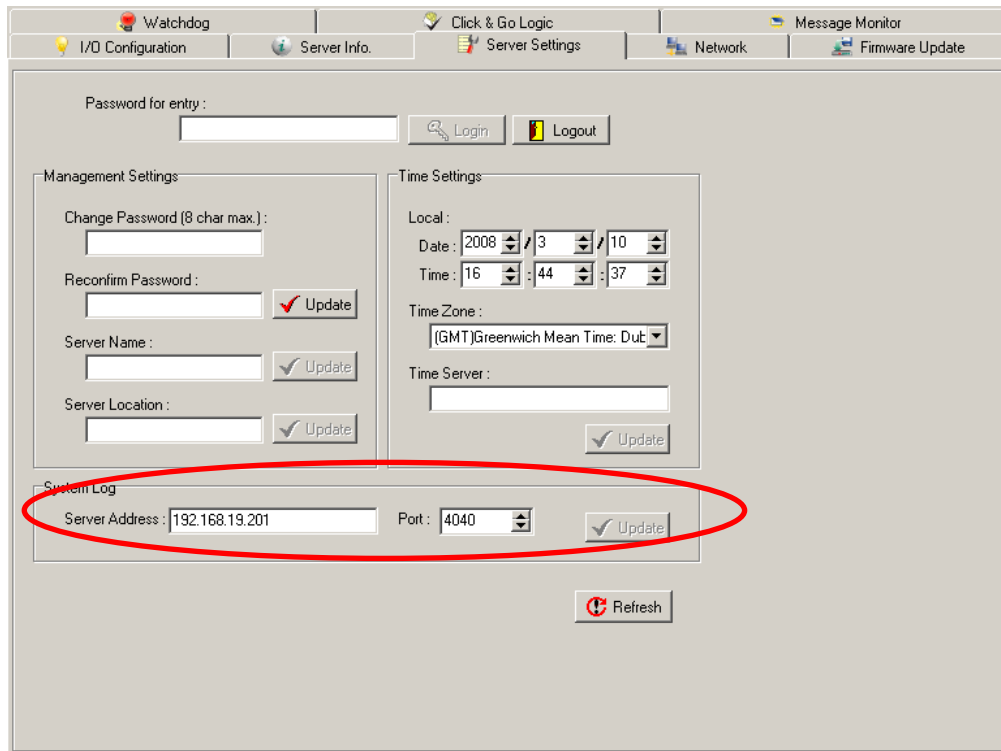


The **Alarm Listen Port** is the TCP port number that will be monitored for status events. You can modify this setting as necessary to receive signals through a firewall. It will need to match the settings for the ioLogik server that is being monitored.

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.

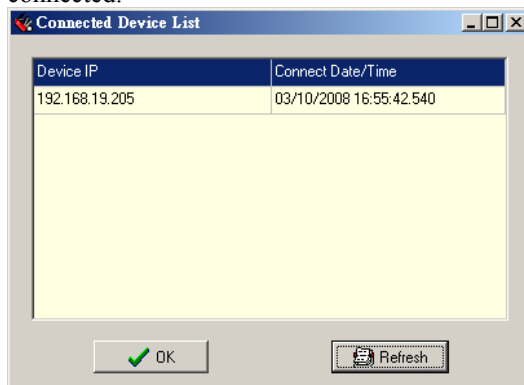
You can also select the color of each event type in the log.

To configure the ioLogik to report to the ioEventLog, use ioAdmin to configure the ioLogik in **Server Settings**.



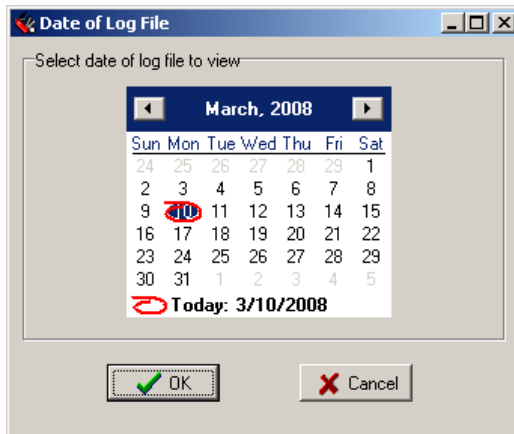
### Checking Connected Devices

You can see which I/O servers are 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 the 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.

# Web Console Configuration

---

The ioLogik E2200 series has a built-in web console can be used to configure many of the ioLogik's settings.

The following topics are covered in this chapter:

- ❑ **Introduction to the Web Console**

- ❑ **Basic Settings**

- ❑ **Network Settings**

- General Settings
- Ethernet Configurations
- RS-485 Settings

- ❑ **I/O Settings**

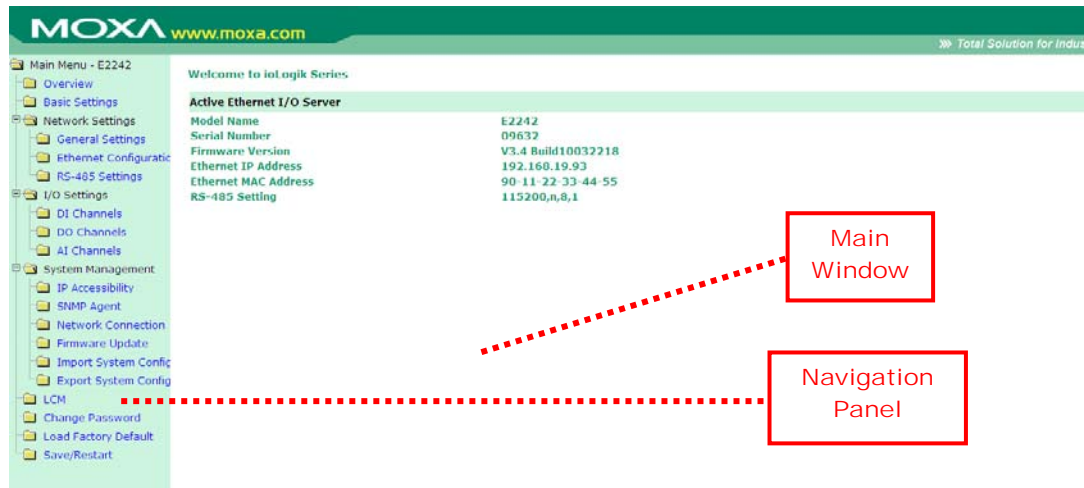
- DI Channels
- DO Channels
- AI Channels
- Alias Name
- AO Channels
- Relay Output Channel
- Relay Count Motoring
- Alias Name set
- RTD Channels
- TC Channels

- ❑ **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 web console is a browser-based configuration utility. When the ioLogik is connected to your network, type the server's IP address in your web browser address box 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 tree menu 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 click **Basic Settings** in the navigation panel, the main window will show a page of basic settings that you can configure.

You must click **Submit** after making configuration changes. The Submit button is 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 is restarted!** You can save and restart the server in one step by clicking on 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 without saving your configuration, the ioLogik will discard all submitted changes.

## Basic Settings

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

**Basic Settings**

**Time Settings**

Time zone (24 hour) (GMT)Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London

Local time 2009 / 05 / 22 09 : 54 : 14 [ Modify ]

System Elapsed Time 0:43:36

Time server

Web console  Enable  Disable

**SummerTime Settings**

Enable

**SummerTime period**

EU 2:00am last Sunday in March to 2:00am last Sunday in October

US 2:00am Second Sunday in March to 2:00am first Sunday in November

Start Date

Month: Jan Day: Sun Hour: 0

End Date

Month: Jan Day: Sun Hour: 0

Forward 0.5 Hour

Submit

## 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, and enable the Host Communication Watchdog and define the timeout value.

**MOXA www.moxa.com** Total Solution for Industrial Device Networking

Main Menu - E2242

**General Settings**

**I/O Server Settings**

Server Name

Server Location

DNS Server 1 255.255.255.255

DNS Server 2 255.255.255.255

Enable communication watchdog

0 sec

Submit

When enabled, the **communication watchdog** monitors the network connection. If the connection is lost for the specified number of seconds, the watchdog will activate the Safe Status settings for each DO channel and Event Counter channel. By default, the watchdog is disabled. To enable the Watchdog, select **Enable communication watchdog** and set the timeout value.

### Ethernet Configurations

On the **Ethernet Configurations** page, you can set up a static or dynamic IP address for the ioLogik to configure the subnet mask and gateway address.

**MOXA www.moxa.com** Total Solution for Industrial Device Networking

Main Menu - E2242

**Ethernet Configurations**

**Ethernet Parameters**

IP Configuration Static

IP Address 192.168.19.205

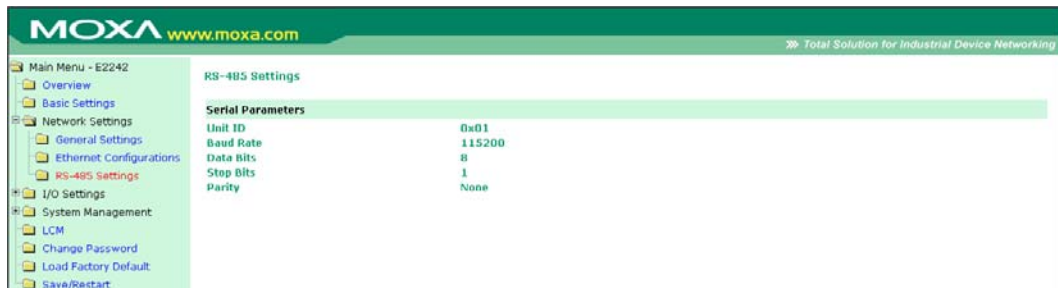
Subnet Mask 255.255.255.0

Gateway 0.0.0.0

Submit

## 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 using the physical dial on the back of the unit. This is a reserved function.



## I/O Settings

You can view the settings for DI and DO channels in the web console. DIO channels will be listed according to the configured channel type (DI or DO).

### DI Channels

On the **DI Channels** page, you can view the status of each DI (digital input) channel. Only DIO channels that are acting as DI channels will be displayed.

The screenshot shows the MOXA web console interface. The left sidebar contains a navigation menu with categories like Main Menu, Basic Settings, Network Settings, I/O Settings, and System Management. The main content area is titled 'DI Channel Settings' and displays a table of DI channels:

DI Channel #	Mode	Status	Filter	Counter Trigger
[ DIO-00 ]	DI	Off	50.0 ms	--
[ DIO-01 ]	DI	Off	50.0 ms	--
[ DIO-02 ]	DI	Off	50.0 ms	--
[ DIO-03 ]	DI	Off	50.0 ms	--
[ DIO-04 ]	DI	Off	50.0 ms	--
[ DIO-05 ]	DI	Off	50.0 ms	--

Click on a channel to see that channel's configuration options. DI channels can operate in DI mode or Event Counter mode. Software filtering is used to control switch bounces. The filter is configurable in multiples of 0.5 ms and accepts values between 1 and 65535. For example, a setting of 2 would mean a 1 ms filter ( $2 \times 0.5$  ms). For Event Counter channels, make sure that the filter is not set to 0, otherwise the counter will never be activated.

**NOTE:** DI/DO mode must be configured via ioAdmin.

**DI Channel #0 Settings**

Mode	Counter Filter*	Counter Trigger	Counter Start
[1. Current Setting] : DI	100	Save Status On Power Failure	
[2. Power On Setting] :			
[3. Safe Status Setting] :			
<b>Alias name of channel</b>			
DI			
<b>Alias name of logic 0</b>			
OFF			
<b>Alias name of logic 1</b>			
ON			
Submit		Close	
[*Note]: Filter unit=0.5ms, range= 1~65535.			

A DI channel can be set to “DI” or “Event Counter” mode. In DI mode, the specifications are as follows:

Type	Logic 0	Logic 1
Dry contact	close to GND	open
Wet contact	0 to 3 V	3.5 to 30 V

In Event Counter mode, the channel accepts limit or proximity switches and counts events according to the ON/OFF status. When “Lo to Hi” is selected, the counter value increases when the attached switch is pushed. When “Hi to Lo” is selected, the counter value increases when the switch is pushed and released.

By default, the Event Counter value will be reset to zero if power is disconnected. If you select **Save Status on Power Failure**, the Event Counter value will be saved when power is disconnected. When power is reconnected, the value will be as you left it. You can set **Power On Setting** to have counting resume immediately.

DI channels that are in Event Counter mode can begin counting automatically when the ioLogik is powered on. To activate this function, enable **Power On Setting**. If **Power On Setting** is not enabled, the channel will only start counting events when specified by a Modbus command or Click&Go Logic rule.

You can control how an Event Counter channel behaves during a network disconnection with the **Safe Status Setting** and the **Host Connection Watchdog**. With the Watchdog disabled, the Event Counter continues counting events even when there is a network disconnection. With the Watchdog enabled, the **Safe Status Setting** specifies whether the Event Counter continues or suspends counting when there is a network disconnection. Counting will continue if **Safe Status Setting** is enabled; counting will be suspended if **Safe Status Setting** is not enabled.



## DO Channels

On the **DO Channels** page, you can view the status of each DO (digital output) channel. Only DIO channels that are acting as DO channels will be displayed.

DO Channel #	Mode	Status	Low Width	High Width
[ DIO-06 ]	DO	Off	--	--
[ DIO-07 ]	DO	Off	--	--
[ DIO-08 ]	DO	Off	--	--
[ DIO-09 ]	DO	Off	--	--
[ DIO-10 ]	DO	Off	--	--
[ DIO-11 ]	DO	Off	--	--

[NOTE]: \* channel is locked by logic

Click on a channel to see that channel's configuration options. 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.

**DO Channel #6 Settings**

Mode	DO Status	Pulse Low*	Pulse High*	Pulse Count	Pulse Start
<b>[ 1. Current Setting ] :</b>					
DO					
<b>[ 2. Power On Setting ] :</b>					
Off					
<b>[ 3. Safe Status Setting ] :</b>					
Off					
<b>[ 4. Alias Name Settings ] :</b>					
Alias name of channel					
DO					
Alias name of logic 0					
OFF					
Alias name of logic 1					
ON					

Submit Close

**[\*Note]: Pulse width unit=0.5ms, range= 1~65535.**

**[Warning]! Be sure to Save/Restart your setting.**

By default, DO and Pulse Output channels are set to “off” when the ioLogik is powered on. You can set a channel to automatically turn on or begin pulse output when the ioLogik is powered on, by enabling **Power On Setting**.

## AI Channels

On the **AI Channels** page, you can view the status of each AI (analog input) channel.

AI Channel #	Range	Value	Min.	Max.
[ AI-00 ]	+/-10V	0.000V	-0.000V	0.000V
[ AI-01 ]	+/-10V	0.000V	-0.085V	0.086V
[ AI-02 ]	+/-10V	0.001V	-0.081V	0.001V
[ AI-03 ]	+/-10V	0.000V	-0.085V	0.001V

[NOTE]: \* channel is locked by logic

Click on a channel to see that channel's configuration options. AO Channels can operate in different input modes, such as ±10V, or 4-20mA.

### AI Channel 0 Settings

AI Channel Enable

#### Input Range

4~20mA

#### Auto Scaling Settings

- Scaling Disable
- Point-Slope formula Enable

	Actual (x.xxx)		Scaled (x.xxx)
Min(n1)	<input type="text"/>	Min(n2)	<input type="text"/>
Max(m1)	<input type="text"/>	Max(m2)	<input type="text"/>
Unit	<input type="text" value="mA"/>	Unit	<input type="text"/>

\*Result = n2 + (input - n1) x [(m2-n2)/(m1-n1)]

Slope-intercept Enable

M=

D=

Unit <SzUnit1>

\*Result= M x Input + D

#### Alias Name Settings

Alias Name of Channel

**Warning: Be sure to Save/Restart your setting.**

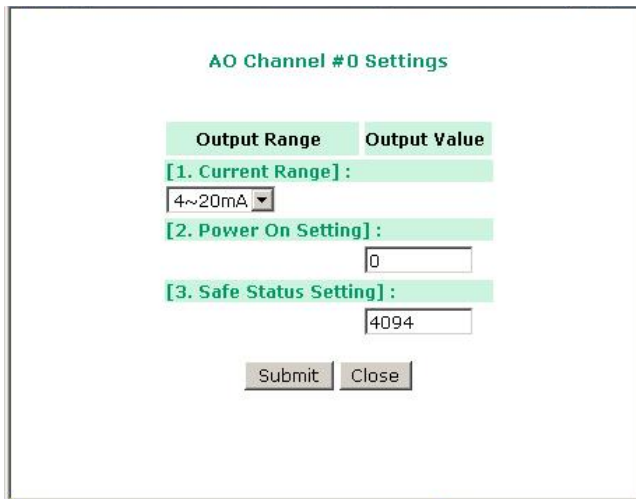
Auto Scaling can also help to eliminate high or low end extremes. For example, if 17 mA represents a dangerous high temperature situation, it will not be necessary to get a temperature that is even higher. In this case, users can cut off values beyond 17 mA and convert it to a proprietary level of danger, such as Level 5.

### Alias Name

**Alias Name** helps users configure the alias of a DI, DO, or AI channel and define the status for logic 0/1 to be On/Off or vice versa.

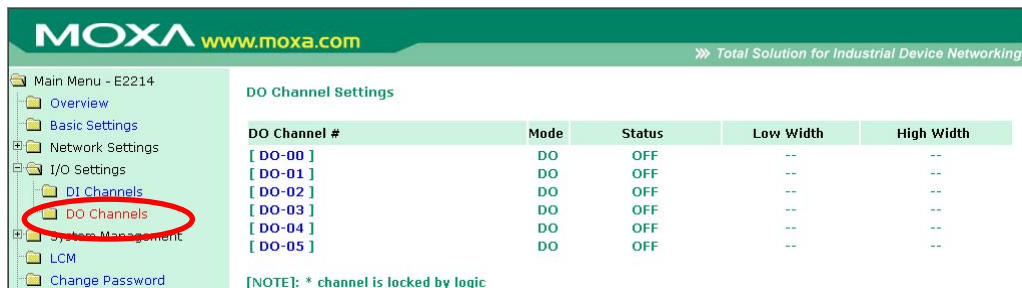
### AO Channels

On the **AO Channels** page, you may configure each AO (analog output) channel by clicking on the channel. The available options are 0-10 V, and 4-20 mA. You may use the **Power On** field to specify the channel's initial value when the ioLogik E2240 is powered on, and the **Safe Status** field to specify the channel's value when the ioLogik E2240 enters Safe Status. Note that Safe Status is controlled by the Host Connection Watchdog, which is disabled by default. If the Host Connection Watchdog is disabled, the ioLogik E2240 will never enter Safe Status and your Safe Status settings will have no effect.



### Relay Output Channel

On the **DO Channels** page, you can view the status of each DO (digital output) channel. Both fixed DO channels and DIO channels that are acting as DO channels will be displayed.



Click on a channel to see that channel's configuration options. 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.

DO Channel #2 Settings

Mode	DO Status	Pulse Low*	Pulse High*	Pulse Count	Pulse Start
[1. Current Setting] :					
DO					
[2. Power On Setting] :					
Off					
Delay: Sec(Max:300)					
[3. Safe Status Setting] :					
Off					
[4. Alias Name]					
Alias name of channel					
DO					
Alias name of logic 0					
OFF					
Alias name of logic 1					
ON					
[5. Relay Count]					
Last Reset Time: 0000/00/00 00:00:00					
Relay Total Counts: 2					
Relay Current Counts: 0					
<input type="checkbox"/> Reset to zero					

Submit Close Reload page

By default, DO and Pulse Output channels are set to “off” when the ioLogik is powered on. You can set a channel to automatically turn on or begin pulse output when the ioLogik is powered on, by enabling **Power On Setting**.

The Interval for **Power On Settings** provides sequential control of the DO outputs while powering up the ioLogik E2214. The value ranges from 0 to 300 seconds. For example, if all of the DO channels are configured to be On, and the interval is set to “0” seconds, then all of the DO channels will be switched to On at the same time. If the DO 0 is set to On and 10 sec, there will be a 10-second delay, and then the DO will be switched to On as the default status after the ioLogik E2214 system is ready. The Interval with DO default status setting provides the ability to switch on the DO channels sequentially to avoid the sudden high power burst of the attached devices and sensors.

You can control how a DO or Pulse Output channel behaves during a network disconnection with the **Safe Status Setting** and the **Host Connection Watchdog**. With the Watchdog disabled, there is no change to the channel’s status when there is a network disconnection. With the Watchdog enabled, the **Safe Status Setting** determines whether the channel will turn off, on, or begin pulse output when there is a network disconnection. The channel will turn on or begin pulse output if **Safe Status Setting** is enabled; the channel will turn off if **Safe Status Setting** is not enabled.

## Relay Count Motoring

Two types of relay counts can be recorded in the ioLogik E2214: **Total Counts** and **Current Counts**. **Total Counts** records how many times a DO (relay) channel has been used. In general, each DO (relay) channel can be used an average of 100,000 times. Users can monitor these counts to determine when the module should be replaced, or to switch to a different channel if the total counts approaches the upper limit. **Current Counts** can be reset to zero to record the usage of the external device by monitoring the counts. For example, if D0 0 is connected to an external relay control board, you can monitor the current counts to determine when to replace the external relay component in advance before it fails.

**Last Reset Time** records the time when **Current Counts** was reset. Both **Total Counts** and **Current Counts** will be saved when there is a power failure. The **Last Reset Time** will be saved only when the user manually presses the **Reset to Zero** button.

## Alias Name set

**Alias Name Set** helps users configure the alias of a DI or DO channel and define the status for logic 0/1 to be On/Off or vice versa.

## RTD Channels

On the RTD Channels page, you may view the status of channels RTD-00 through RTD-11, which includes both physical and virtual channels.

Channel #	Sensor Type	Range	Status	Value	Min	Max
[ RTD-00 ]	PT 100	-200 ~ 850℃	Enabled	--	--	--
[ RTD-01 ]	--	--	Disabled	--	--	--
[ RTD-02 ]	--	--	Disabled	--	--	--
[ RTD-03 ]	--	--	Disabled	--	--	--
[ RTD-04 ]	--	--	Disabled	--	--	--
[ RTD-05 ]	--	--	Disabled	--	--	--
Virtual Channel #	Mode	Unit	Value	Min	Max	
[ RTD-06 ]	AVG	℃	0.0	0.0	0.0	
[ RTD-07 ]	AVG	℃	0.0	0.0	0.0	
[ RTD-08 ]	AVG	℃	0.0	0.0	0.0	
[ RTD-09 ]	AVG	℃	0.0	0.0	0.0	
[ RTD-10 ]	AVG	℃	0.0	0.0	0.0	
[ RTD-11 ]	AVG	℃	0.0	0.0	0.0	

[NOTE]: \* channel is locked by logic

Buttons: Clear (Max & Min), Refresh

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

RTD Channel #0 Settings

Enable:  Sensor Type: PT 100 (α = 0.00385) Range: -200 ~ 850 Unit: ℃

Alias name of channel: RTD

Buttons: Submit, Close

[Warning]!! Be sure to Save/Restart your setting.

RTD Channel #6 Settings

Mode: AVG Selected Channel: [ ] RTD-00 [ ] RTD-03 [ ] RTD-01 [ ] RTD-04 [ ] RTD-02 [ ] RTD-05 Unit: ℃

Alias name of channel: RTD

Buttons: Submit, Close

[Warning]!! Be sure to Save/Restart your setting.

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

Sensor Type	Degree	Count
PT50, 0.00385	-200 to 850°C	-2000 to 8500
PT100, 0.00385	-200 to 850°C	-2000 to 8500
PT200, 0.00385	-200 to 850°C	-2000 to 8500
PT500, 0.00385	-200 to 850°C	-2000 to 8500
PT1000, 0.00385	-200 to 350°C	-2000 to 3500
JPT100, 0.003916	-200 to 640°C	-2000 to 6400
JPT200, 0.003916	-200 to 640°C	-2000 to 6400
JPT500, 0.003916	-200 to 640°C	-2000 to 6400
JPT1000, 0.003916	-200 to 350°C	-2000 to 3500
Res. 100 mΩ	1 to 2200 Ω	10 to 22000
Res. 50 mΩ	1 to 1250 Ω	20 to 25000
Res. 20 mΩ	1 to 620 Ω	50 to 31000
Res. 10 mΩ	1 to 310 Ω	100 to 31000
Ni100, 0.00618	-60 to 250°C	-600 to 2500
Ni200, 0.00618	-60 to 250°C	-600 to 2500
Ni500, 0.00618	-60 to 250°C	-600 to 2500
Ni1000, 0.00618	-60 to 180°C	-600 to 1800
Ni120, 0.00672	-80 to 260°C	-800 to 2600

Channels 6 through 11 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 (RTD-00 through RTD-05).

## TC Channels

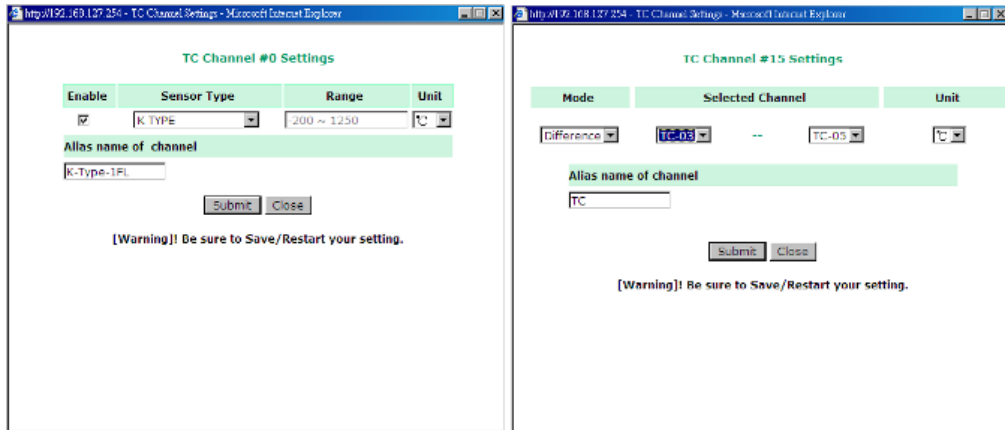
On the TC Channels page, you can view the status of channels TC-00 through TC-15, which includes both physical and virtual channels. You can click the **Channel Name** to enter settings page on which can set the **Alias Name**.

Channel #	Sensor Type	Range	Status	Value	Min	Max
[ K-Type-1Pt-00 ]	K TYPE	-200 ~ 1250°C	Enabled	43.8	0.8	558.3
[ TC-01 ]	K TYPE	-200 ~ 1250°C	Enabled	--	--	--
[ E-Type-WaterTank-02 ]	E TYPE	-200 ~ 900°C	Enabled	27.6	-15.5	107.4
[ Up to 16 chars-03 ]	K TYPE	-200 ~ 1250°C	Enabled	--	--	--
[ TC-04 ]	K TYPE	-200 ~ 1250°C	Enabled	29.7	28.9	612.2
[ CJC Temp-05 ]	K TYPE	-200 ~ 1250°C	Enabled	30.1	-2.1	560.8
[ TC-06 ]	K TYPE	-200 ~ 1250°C	Enabled	--	--	--
[ TC-07 ]	K TYPE	-200 ~ 1250°C	Enabled	--	--	--
Virtual Channel #	Mode	Unit		Value	Min	Max
[ TC-08 ]	Average	°C	--	0.0	0.0	0.0
[ TC-09 ]	Average	°C	--	0.0	0.0	0.0
[ TC-10 ]	Average	°C	--	0.0	0.0	0.0
[ TC-11 ]	Average	°C	--	0.0	0.0	0.0
[ TC-12 ]	Average	°C	--	0.0	0.0	0.0
[ TC-13 ]	Average	°C	--	0.0	0.0	0.0
[ TC-14 ]	Average	°C	--	0.0	0.0	0.0
[ TC-15 ]	Difference	°C	--	39.1	38.3	560.0

[NOTE]: \* channel is locked by logic

Clear (Max & Min) Refresh

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.

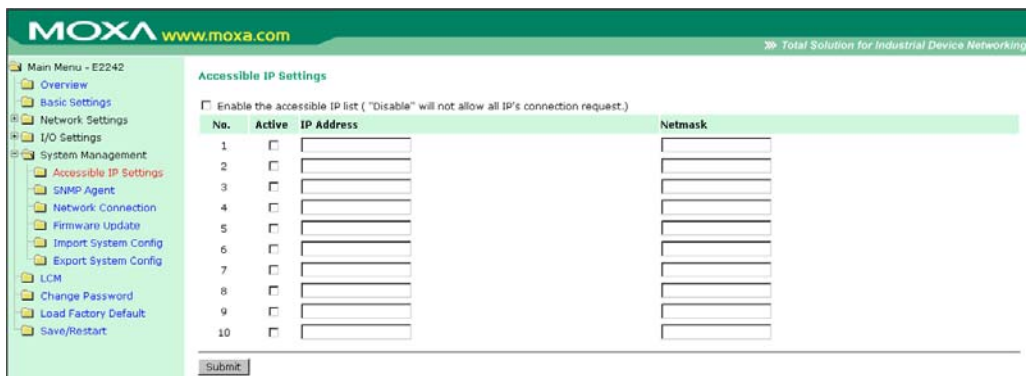
Type	Temperature Range	Count Range
J	0°C to 750°C	0 to 7,500
K	-200°C to 1250°C	-2,000 to 12,500
T	-200°C to 350°C	-2,000 to 3,500
E	-200°C to 900°C	-2,000 to 9,000
R	-50°C to 1600°C	-500 to 16,000
S	-50°C to 1760°C	-500 to 17,600
B	600°C to 1700°C	6,000 to 17,000
N	-200°C to 1300°C	-2,000 to 13,000
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).

## System Management

### Accessible IP Settings

On the **Accessible IP Settings** page, you can control network access to the ioLogik by allowing only specific IP addresses. When the accessible IP list is enabled, a host's IP address must be listed in order to obtain access to the ioLogik.



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 from 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.

The following table shows additional configuration examples.

Allowed Hosts	IP address	Netmask
Any host	Disable	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

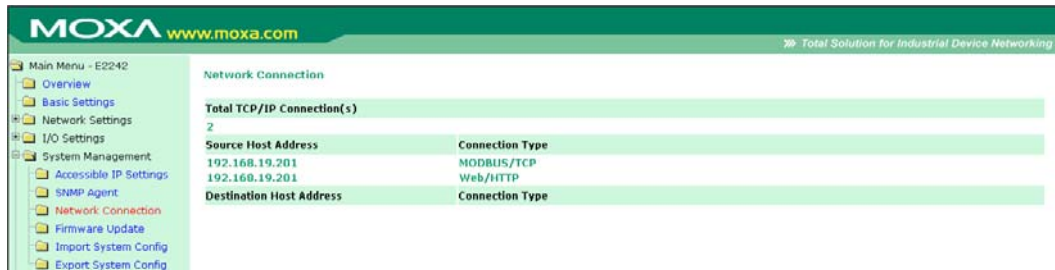
## SNMP Agent

On the SNMP Agent page, you may enable SNMP and set the read and write settings. The ioLogik Micro Controller 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.



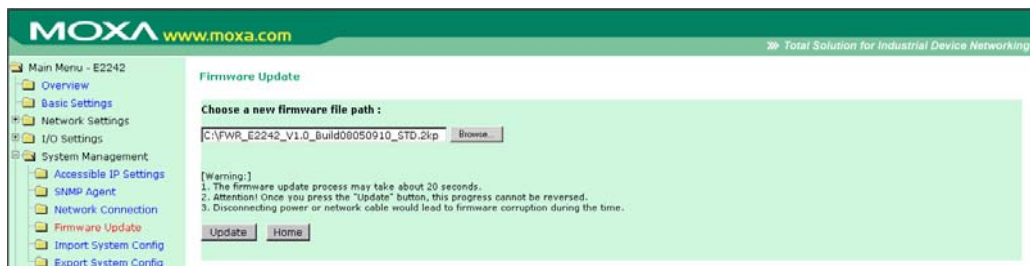
## Network Connection

On the **Network Connection** page, you can view TCP connections from other hosts. This feature can help you manage your devices.



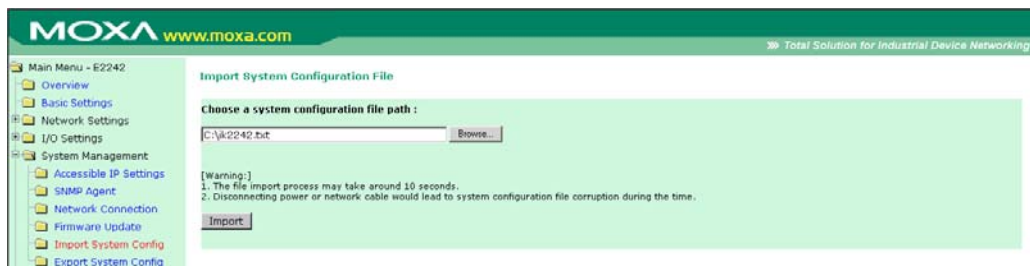
## Firmware Update

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



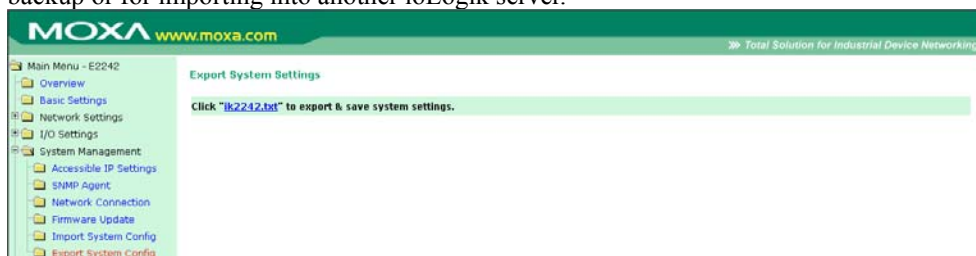
## Import System Config

On the **Import System Config** page, you can import a configuration into the ioLogik server. The configuration file can be generated by ioAdmin or through the web console. This function can be used to duplicate settings between ioLogik servers. You will be prompted for the location of the configuration file (e.g., "ik2242.txt").



## Export System Config

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

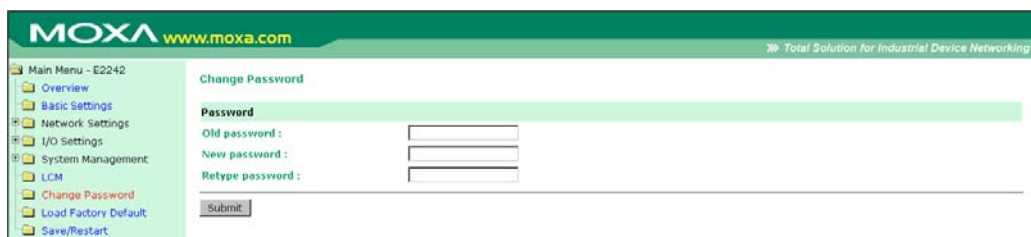


## LCM

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



## Change Password



For all changes to the ioLogik E2200's password protection 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 **New password** and **Confirm password** blank.



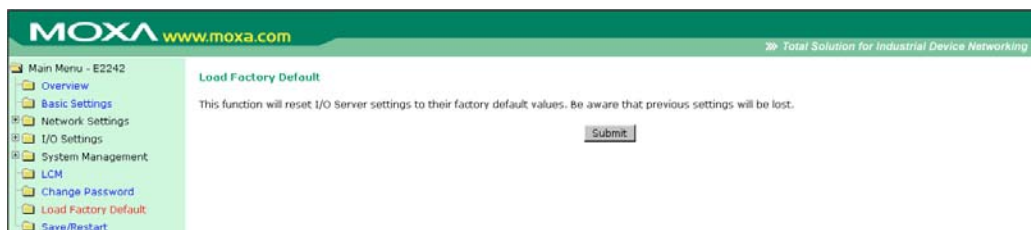
### ATTENTION

If you forget the password, the **ONLY** way to configure the **ioLogik** 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 export the configuration to a file when you have finished setting up your ioLogik. Your configuration can then be easily imported back into the ioLogik. This will be useful if the ioLogik has been reset to factory defaults due to a forgotten password or for other reasons.

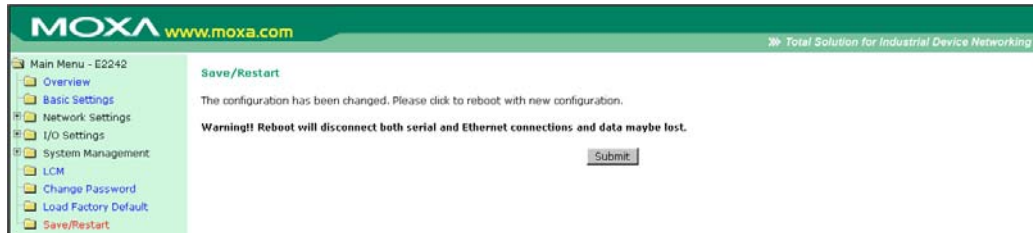
## Load Factory Default

This function will reset the ioLogik to factory default settings. All previous settings, including the console password, will be lost.



## Save/Restart

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



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**
  - Installing Active OPC Server Lite
  - Installation of OPC Core Components
- ❑ **Active OPC Server Lite**
  - Main Screen Overview
- ❑ **Menu Items**
- ❑ **Tag Generation**
  - Configuring Push Tag from ioAdmin
  - Heartbeat Interval
  - Read/Write Privilege
  - OPC Test Client

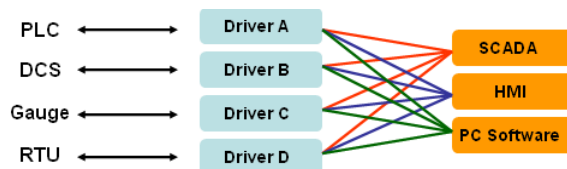
## OLE for Process Control

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.

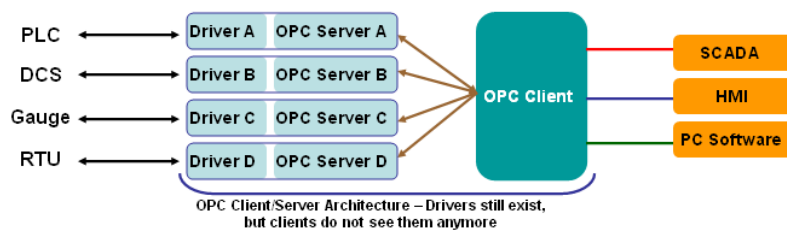
The OPC Specification is a non-proprietary technical specification that defines a set of standard interfaces based upon Microsoft's OLE/COM/DCOM platform and .NET technology. The application of the OPC standard interface makes possible interoperability between automation/control applications, field systems/devices,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

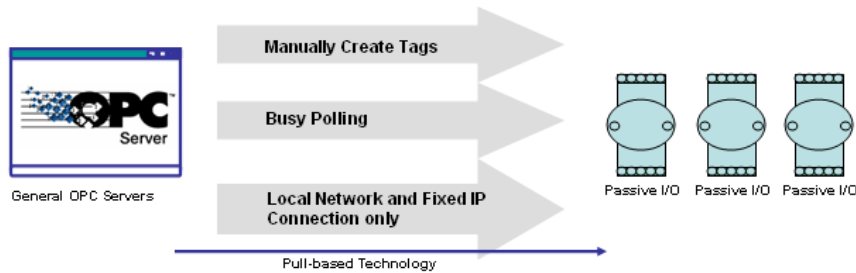
Moxa Active OPC Server Lite is a software package operated as an OPC driver of an HMI or SCADA system. It offers seamless connection from Moxa ioLogik series products to SCADA systems, including the most popular Wonderware, Citect, and iFix. Active OPC Server Lite meets the latest standard of OPC DA3.0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

### Active OPC Server Lite—From Pull to Push

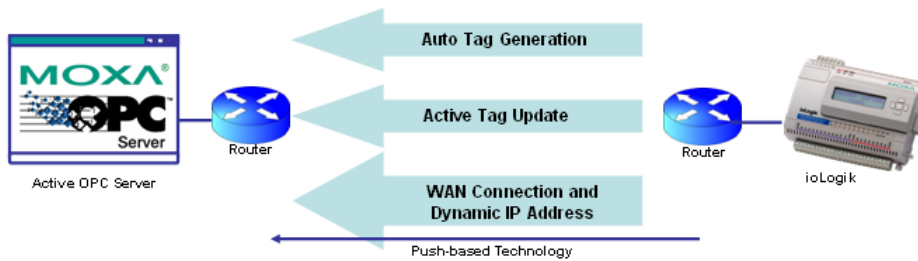
When first looking up the I/O devices' Modbus table, users need to create one tag within 19 or more steps including specifying the IP address, selection of the protocols, and define the data type. The procedure is repeated over and over again until all the devices and tags are created. A technician can 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

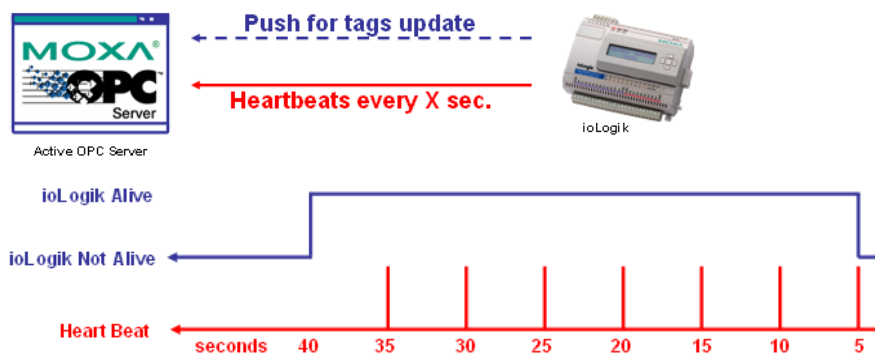
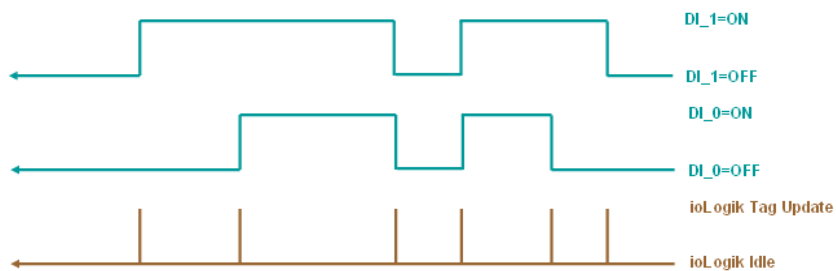
because the OPC server always polls the I/O devices from tag creation, IP connection and the tag status update.



Moxa Active Micro Controller has extended the concept of Active Reporting from TCP/UDP messages, emails, and SNMP Traps to the OPC Server. It is easy to set the IP address of an Active OPC server and choose updated I/O tags. An Active OPC server running on the host PC will receive these I/O tags and tag data automatically.



The “push” technology also includes updates for the tags. Only when the I/O the status changes will the ioLogik will send updates 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 visually confirms that the ioLogik is “alive” and working.



## Features of Active OPC Server Lite

### Automatic tag generation

There are two parts to making the Active OPC technology work. One is in device, and the other is in the host PC. Once your device level settings are completed, the Active OPC server in host PC will run automatically without additional settings.

### 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%. In addition, it increases the response time of the I/O channels 7-fold. The SCADA PC can now also be load balanced for its CPU time because it simply waits for updates instead of continuously polling the I/O channel.

### Dynamic IP Address Support

Active OPC Server also delivers the flexibility of using dynamic IP addresses on the ioLogik. Traditional data acquisition 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	10/100 Mb 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, E2242/E2242-T, E2260, E2262
Firmware version	V3.0 or above
ioAdmin version	V3.0 or above

## Installing Active OPC Server Lite

Active OPC Server Lite can be found in the **Document and Software CD**, or downloaded from the Moxa Website. The following steps describe how to install Active OPC Server Lite from the CD. The Active OPC Lite installer will prompt you to install the software automatically. If it is not currently installed, take the following steps to complete the installation process.

1. **Installation from CD:** Insert the Document and Software CD into the host computer's CD-ROM drive. In the Software\AOPCLite directory of the CD, locate and run INSTALL.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 provide the connection library used by Active OPC Server Lite. This package must be installed on the same computer as Active OPC Server Lite.

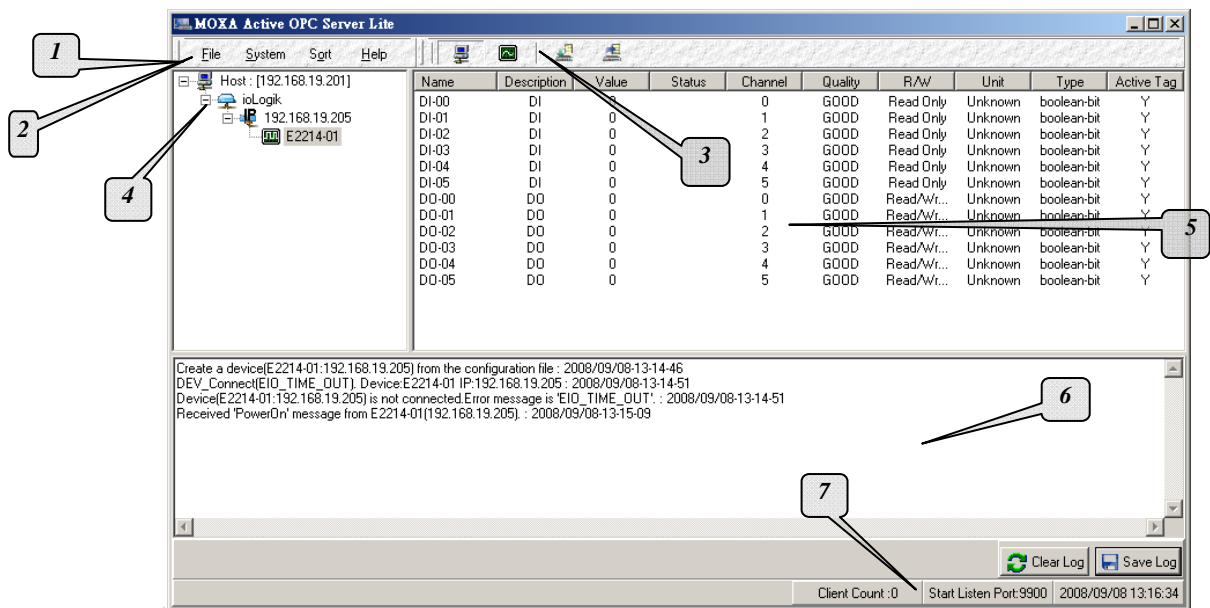
1. After Active OPC Server Lite installation has finished, run Setup OPC Core Components from the Windows Start menu: **Start → Program Files → MOXA → IO Server → ActiveOPC → Setup OPC Core Components**

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 the ioLogik creates 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



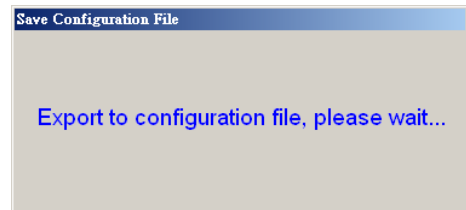
## Menu Items

### File

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



The file will have the **.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.

**Modbus GW(GPRS):** The two options for Modbus gateway functions.

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

**Socket Timeout** allows you to define the time while there is no response for polled Modbus connection.

**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.

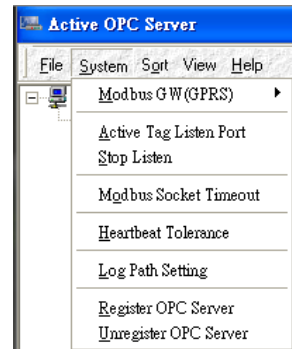
**Register OPC Server** is used to register the DCOM components to the Windows system. After Active OPC Server Lite is installed, it will automatically configure the DCOM.

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

**Modbus Socket Timeout** function is reserved for older version products.

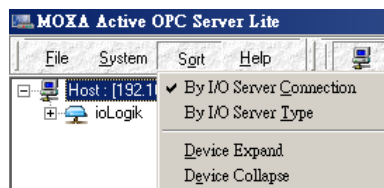
**Heartbeat Tolerance** makes sure the heartbeat is alive within the specified time shift.

**Log Path Setting** allows you to define the location where the system log file be saved.



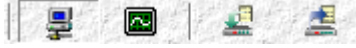
### Sort





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 the configuration.

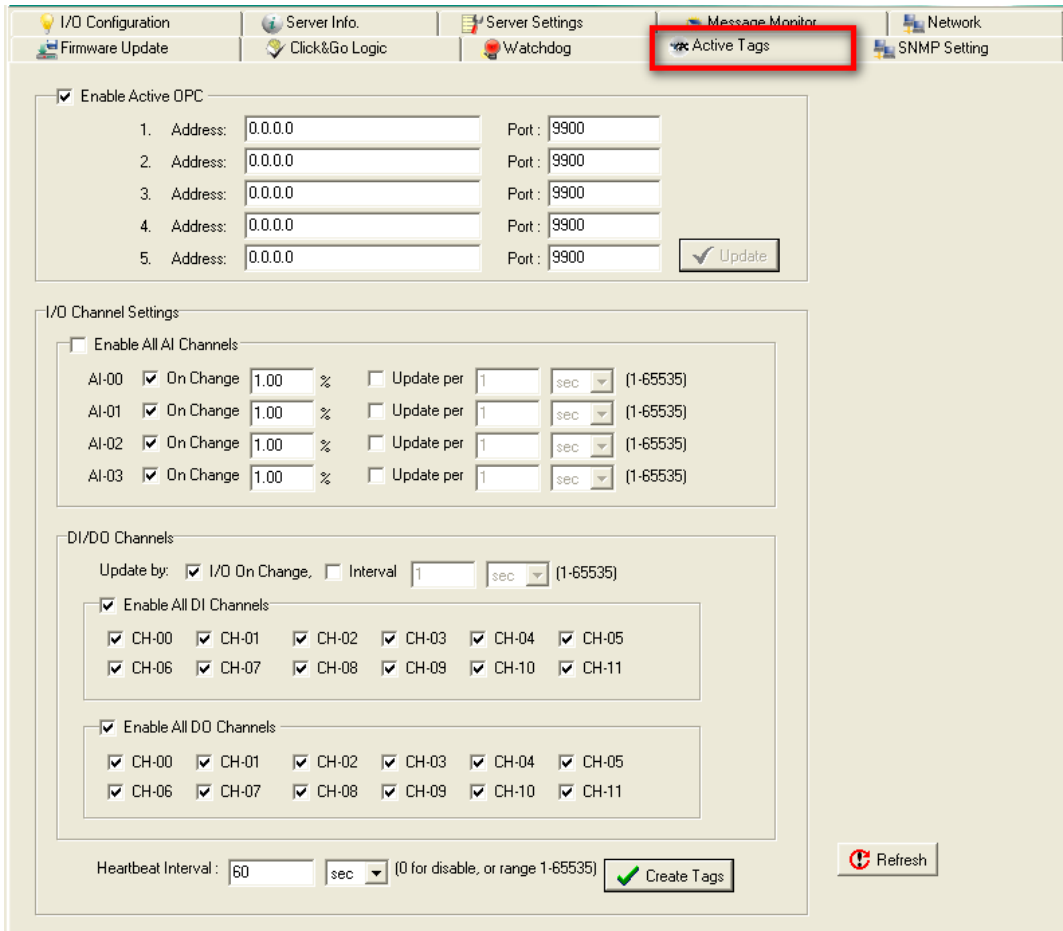


	Sort by connection
	Sort by server type
	Import configuration
	Export configuration

## Tag Generation

### Configuring Push Tag from ioAdmin

Tag configuration of an ioLogik is specified by the ioAdmin configuration utility. Start ioAdmin, log in as an administrator and then click on the **Active Tags** tab.



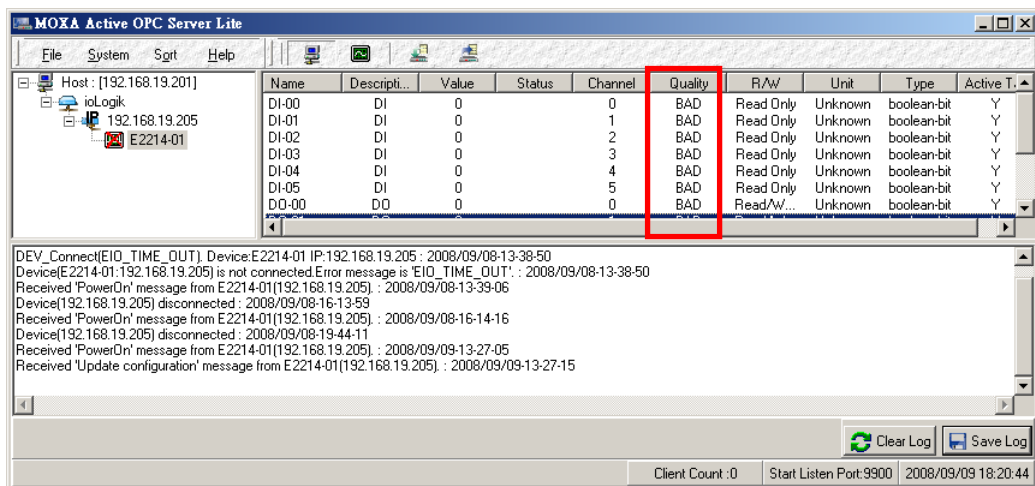
Take the following steps to create the tags.

1. Check mark the “Enable Active OPC” checkbox

2. Type in the Active OPC server IP Address
3. Select that I/O you would like to update
4. Specify the update timing
5. Click on the Create Tags button to push the tag configuration to Active OPC Server Lite
6. Start Active OPC Server Lite from the Windows Start Menu. A message will appear in the log monitor to confirm that the configuration was received. Tags will be created automatically.

## 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 an update will not be sent to Active OPC Server Lite. To ensure that 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. The default interval is set to 0 seconds, which disables the heartbeat. The maximum allowed interval is 65,535 seconds.



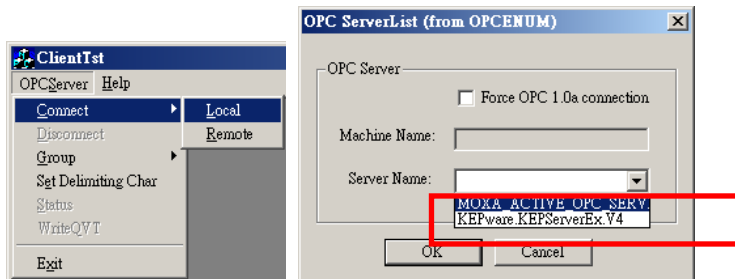
## Read/Write Privilege

The R/W column shows whether a tag is read only, or provides both read and write access. The input channels can be read, but cannot be written to, whereas the output channels can be both read and written to. Note that if an output channel has been used by the Click&Go logic, the tags for that channel are read-only.

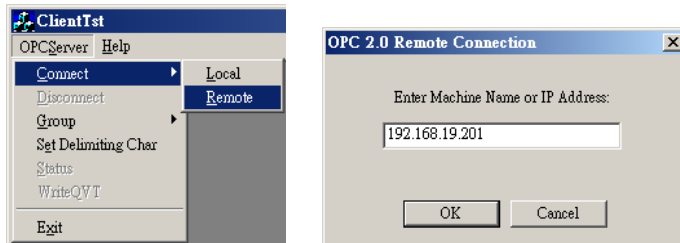
## OPC Test Client

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

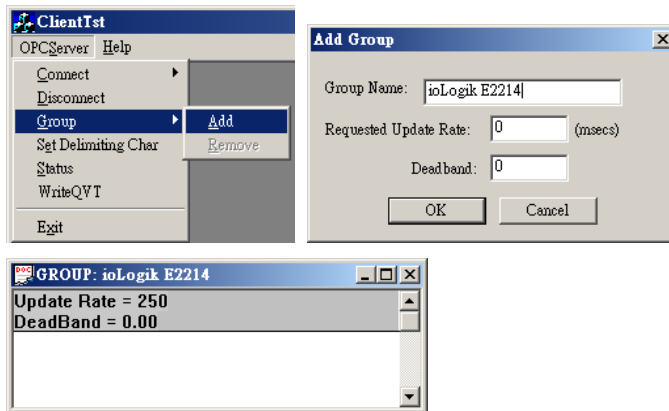
If Active OPC Server Lite is installed locally in the same PC, select **Connect → Local** from the menu bar. Specify the **MOXA ACTIVE OPC SERVER** in the **Server Name** column.



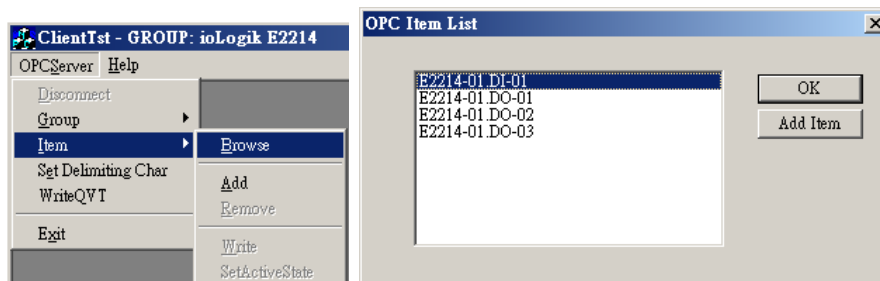
If the Active OPC Server Lite is installed on a remote PC, select **Connect → Remote** from the menu bar. Input the host name (e.g., Moxa\_Client) or IP address and specify **MOXA ACTIVE OPC SERVER** in the **Server Name** column.



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

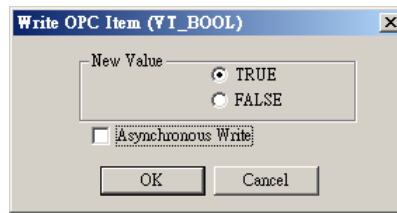
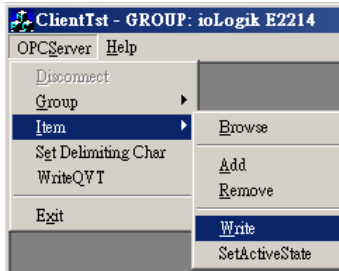


Click **Item → Browse** and select the channel you would like to monitor.



GROUP: ioLogik E2214			
Update Rate = 250			
DeadBand = 0.00			
10:30:13	E2214-01.DI-01	FALSE	(Quality Good)
10:30:13	E2214-01.DO-01	FALSE	(Quality Good)
10:30:13	E2214-01.DO-02	FALSE	(Quality Good)
10:30:13	E2214-01.DO-03	FALSE	(Quality Good)

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



# A

## Liquid Crystal Display Module (LCM)

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The ioLogik E2200 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 and display other settings. When plugged in, the LCM displays the ioLogik “home page.” Other pages and information are accessed by pressing the buttons on the LCM.

### 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 E2242>	This is the default “home page” showing the IP address. Press the down button to view the submenus.
<ioLogik E2242> server	Enter this submenu to display information about the specific server you are viewing: <ul style="list-style-type: none"><li>● serial number</li><li>● name</li><li>● location</li><li>● e2242 f/w ver</li><li>● lcm f/w ver</li><li>● model name</li></ul>

Display	Explanation / Actions
<ioLogik E2242> network	Enter this submenu to display information and settings for the network: <ul style="list-style-type: none"> <li>● ethernet link</li> <li>● mac address</li> <li>● ip mode</li> <li>● ip address</li> <li>● netmask</li> <li>● gateway</li> <li>● dns server-1</li> <li>● dns server-2</li> </ul>
<ioLogik E2242> click&go	Enter this submenu to display information about the Click&Go Logic ruleset currently loaded on the ioLogik: <ul style="list-style-type: none"> <li>● name</li> <li>● status</li> </ul>
<ioLogik E2242> serial port	Enter this submenu to display the RS-485 cascade port settings.
<ioLogik E2242> i/o setting	Enter this submenu to access I/O channel status. Here are examples settings that you might see: <ul style="list-style-type: none"> <li>● DI-00 [di]=off</li> <li>● DO-00 [pulse]=stop</li> </ul> Press up or down to navigate through the different I/O channels without needing to return to the previous menu.
<ioLogik E2242> console	Enter this submenu to see if the web console is enabled or disabled.
<ioLogik E2242> ping	Select this option to enter an IP address to ping. If you get a "timeout" error, it indicates that the ioLogik cannot reach that IP address. Otherwise, the display will show the response time.
<ioLogik E2242> 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.

**ATTENTION**

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

# B

## Used Network Port Numbers

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### ioLogik E2200 Active Ethernet Micro Controller 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
4800	UDP	Auto search
9020	TCP	Peer-to-Peer function
9000	TCP	Active Message (Default)
9000	UDP	Active Message (Default)
9900	TCP	Active Tags updates (default)
4040	TCP	ioEventLog





# Factory Default Settings

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The factory default settings for the ioLogik E2200 Series are as follows:

**IP address:** 192.168.127.254  
**Netmask:** 255.255.255.0  
**Gateway:** None  
**Communication Watchdog:** Disable  
**Modbus/TCP Alive Check:** ON  
**Modbus/TCP Timeout Interval:** 60 sec

**DI Mode:**  
**DI Safe Status:** Off  
**Filter Time for Counter:**  $10 \times 0.5\text{mS}$   
**Counter Trigger Type:** Lo to Hi  
**Counter Status:** Stop  
**AI Mode:** +/- 10V

**AO Mode:** 4~20 mA  
**DO Mode:**  
**DO Safe Status:** Off  
**Pulse Low Width:** 1  
**Pulse Hi Width:** 1  
**No. of Pulses:** 0 (continuous)  
**RTD Mode:** PT 100  
**Unit:** Degree C

**TC Sensor Type:** K type  
**TC Enable:** Enable  
**TC Unit Type:** Degree C  
**Filter Time for Counter:**  $10 \times 0.5\text{mS}$   
**Counter Trigger Type:** Lo to Hi  
**Counter Status:** Stop  
**Counter status:** Stop

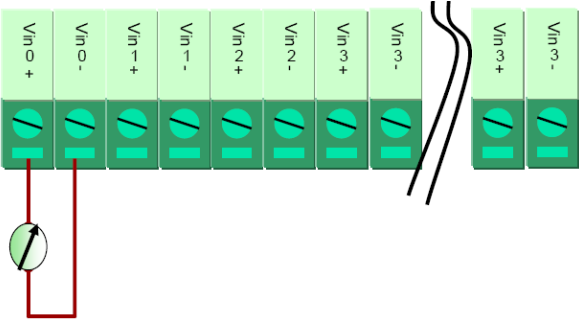
**Password:** "empty"  
**Module Name:** "empty"  
**Module Location:** "empty"

**SNMP:** Enable

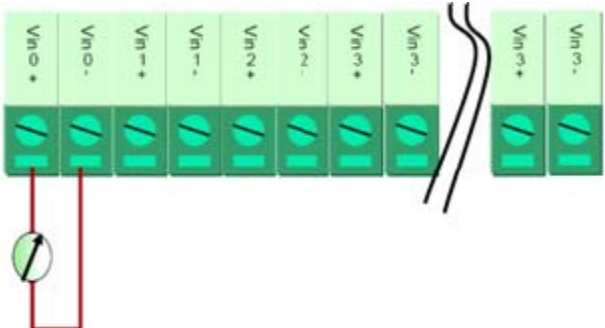
**Versions:** V1, V2c, V3  
SNMP V1, V2c  
Read Community: public  
Write Community: private  
SNMP V3  
Authentication Protocol: Disable  
Privacy Protocol: Disable

### Device Wiring Diagrams

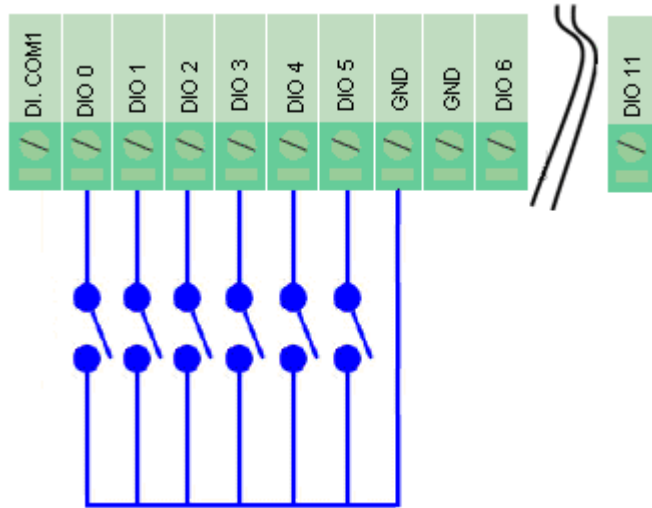
Analog Input



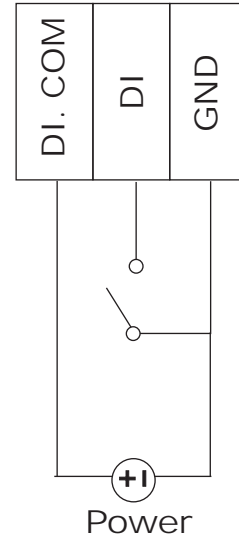
Analog Output



### Digital Input Dry Contact



### DI Dry Contact

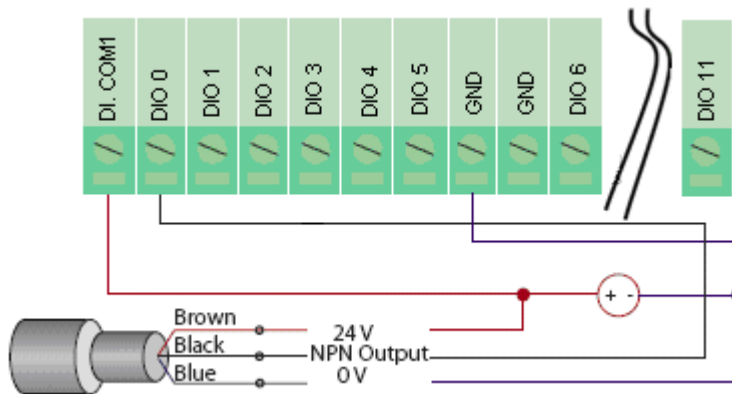


#### ATTENTION

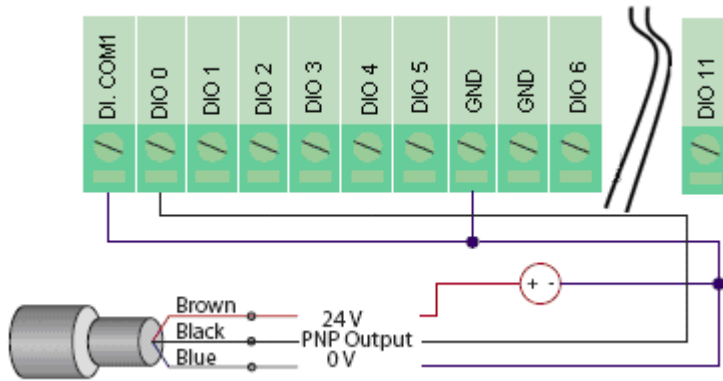
When connecting the I/O device to the ioLogik's dry contacts, we strongly recommended connecting DI.Com to the power of the external sensor to avoid affecting other channels.

### Digital Input Wet Contact

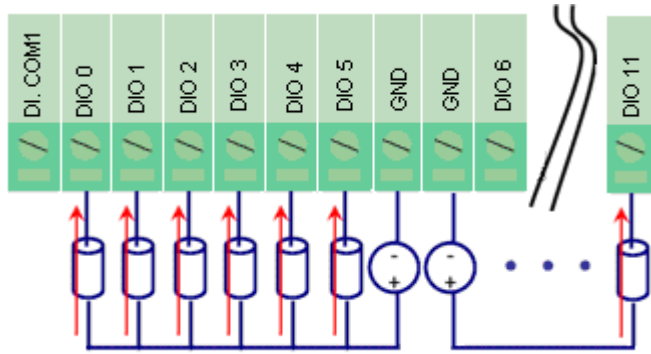
#### NPN Type Sensors Connection



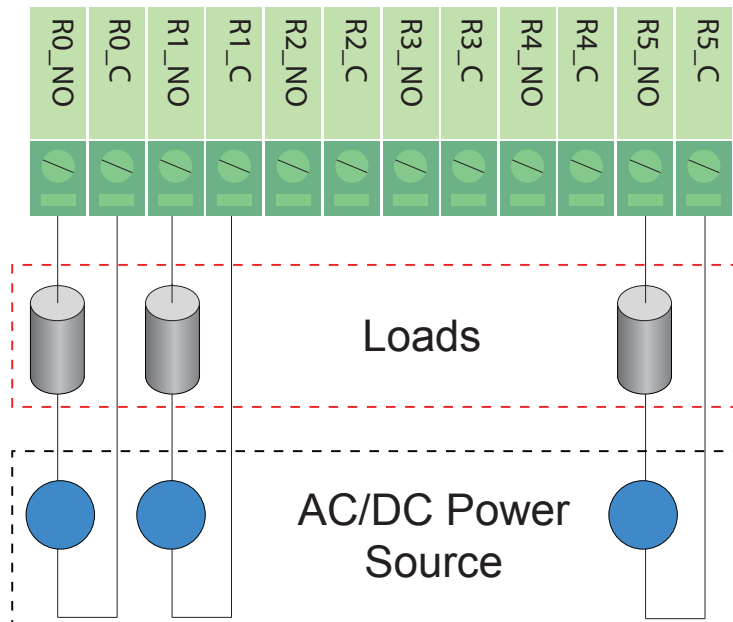
**PNP Type Sensors Connection**



**Digital Output Sink Mode**

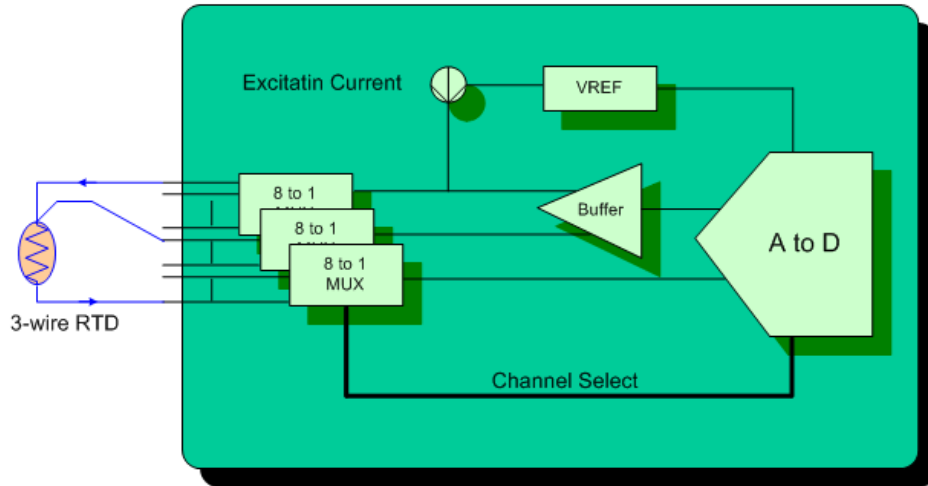


**Digital Output Sink Mode**

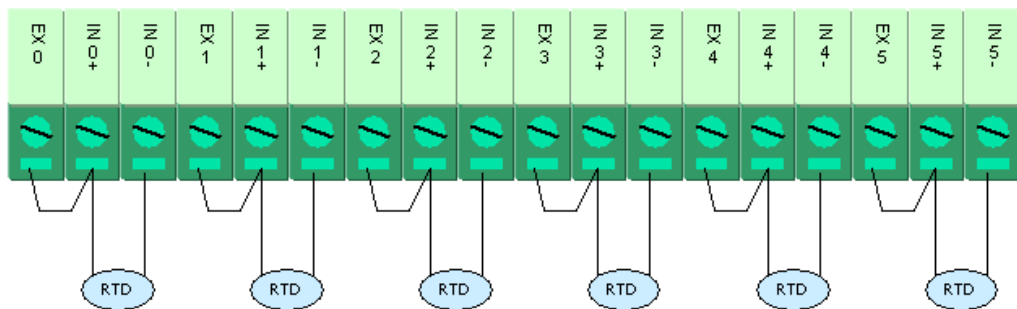


# RTD Input Wiring

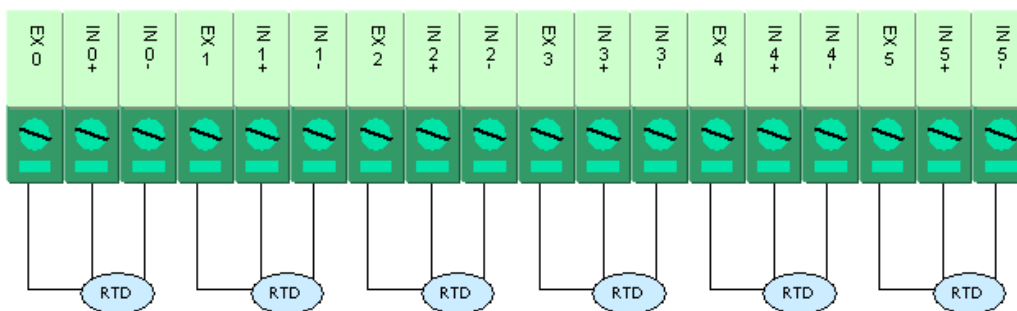
## Structure



## 2-wire

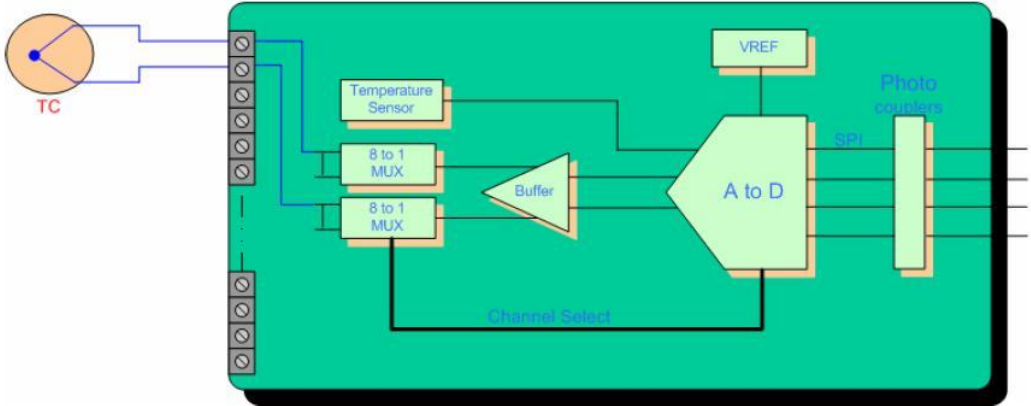


## 3-wire

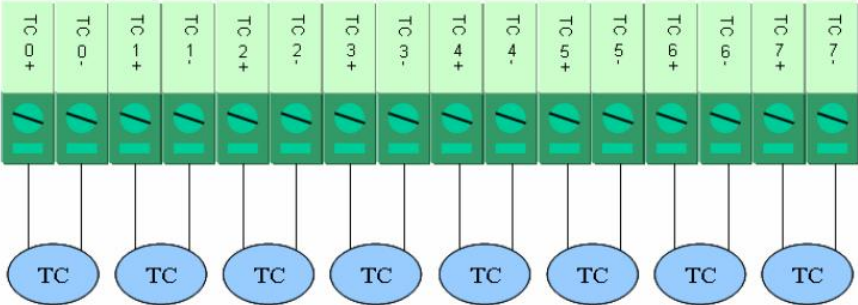


# Thermocouple Input Wiring

## Structure



## 2-wire



## Calibration

The ioLogik E2260 achieves accuracy in temperature measurements as follows:

1. At room temperature ( $25 \pm 3^\circ\text{C}$ ), accuracy should be within 0.1% FSR. The measurement range of a PT-100 sensor is  $-200^\circ\text{C}$  to  $850^\circ\text{C}$ . That means that readings are accurate to within  $\pm 1.05^\circ\text{C}$ . If an object's temperature is measured at  $100^\circ\text{C}$ , the actual temperature should be between  $98.95^\circ\text{C}$  and  $101.05^\circ\text{C}$ . A reading of  $600^\circ\text{C}$  would include temperatures between  $598.95^\circ\text{C}$  and  $601.05^\circ\text{C}$ .
2. At an ambient temperature of  $-10^\circ\text{C}$  or  $60^\circ\text{C}$ , accuracy should be within 0.3% FSR. If an object's temperature is measured at  $100^\circ\text{C}$  the actual temperature should be between  $96.85^\circ\text{C}$  and  $103.15^\circ\text{C}$ . A reading of  $600^\circ\text{C}$  would include temperatures between  $596.85^\circ\text{C}$  and  $603.15^\circ\text{C}$ .

A calibrator, such as provided by Yokogawa or Fluke, is used for the standard signal source. These products allow Moxa to guarantee accurate measurements to within  $\pm 0.1\%$  of FSR. The actual error rates may differ between products. For example, when measuring a  $500^\circ\text{C}$  object, one product might achieve accuracy to within  $0.1^\circ\text{C}$ , while another product may achieve accuracy to within  $0.5^\circ\text{C}$ .

## Simple Verification at Your Site

Product specifications may be verified by using a qualified RTD sensor. The sensor can be placed into  $0^\circ\text{C}$  or  $100^\circ\text{C}$  water to see if the temperature readings are correct. A high precision resistor may also be used for measurement.

### Verification with RTD Sensor

When using an RTD sensor, measurement errors are introduced through the sensor itself and through the analog-to-digital signal processing. For example, suppose that the RTD sensor introduces 0.05% error and the AD conversion introduces 0.1% error. For water at a  $100^\circ\text{C}$ , the measured temperature would fall somewhere within  $100 \pm 1050 \times (0.1\% + 0.05\%)$ , or between  $98.425^\circ\text{C}$  and  $101.575^\circ\text{C}$ . The 1050 corresponds to the full range of the PT100 RTD sensor, which is  $-200^\circ\text{C}$  to  $850^\circ\text{C}$ .

Therefore, with an RTD sensor that boasts accuracy within 0.05%, the measured temperature will be accurate to within 0.15% of FSR.

### Verification with Precision Resistor

A resistor with Ohm input could be used for verification. Suppose that you use the ioLogik E2260, which is rated at  $100 \Omega$  1%, and select 1-310  $\Omega$  mode. The measured temperature would fall within  $100 \pm (100 \times 1\% + 310 \Omega \times 0.1\%)$ , or between  $98.69 \Omega$  and  $101.31 \Omega$ . The 310 corresponds to the full scale range of 1-310  $\Omega$  mode.



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=?&.....\(Max 200 char\)\*\*](http://IP/getParam.cgi?command_channel=?&command_channel=?&.....(Max 200 char))

## ioLogik E2210

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 DI information	Commands to get DI information
DIMode_00 (0:DI, 1:COUNTER)	DIMode_01 (0:DI, 1:COUNTER)
DIStatus_00 (0:OFF, 1:ON)	DIStatus_01 (0:OFF, 1:ON)
DIFilter_00	DIFilter_01
DITrigger_00 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_01 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_00 (0:STOP, 1:START)	DICntStart_01 (0:STOP, 1:START)
DICNT_00	DICNT_01
DIMode_02 (0:DI, 1:COUNTER)	DIMode_03 (0:DI, 1:COUNTER)
DIStatus_02 (0:OFF, 1:ON)	DIStatus_03 (0:OFF, 1:ON)
DIFilter_02	DIFilter_03
DITrigger_02 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_03 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_02 (0:STOP, 1:START)	DICntStart_03 (0:STOP, 1:START)
DICNT_02	DICNT_03

DIMode_04 (0:DI, 1:COUNTER)	DIMode_05 (0:DI, 1:COUNTER)
DIStatus_04 (0:OFF, 1:ON)	DIStatus_05 (0:OFF, 1:ON)
DIFilter_04	DIFilter_05
DITrigger_04 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_05 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_04 (0:STOP, 1:START)	DICntStart_05 (0:STOP, 1:START)
DICNT_04	DICNT_05
DIMode_06 (0:DI, 1:COUNTER)	DIMode_07 (0:DI, 1:COUNTER)
DIStatus_06 (0:OFF, 1:ON)	DIStatus_07 (0:OFF, 1:ON)
DIFilter_06	DIFilter_07
DITrigger_06 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_07 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_06(0:STOP, 1:START)	DICntStart_07(0:STOP, 1:START)
DICNT_06	DICNT_07
DIMode_08 (0:DI, 1:COUNTER)	DIMode_09 (0:DI, 1:COUNTER)
DIStatus_08 (0:OFF, 1:ON)	DIStatus_09 (0:OFF, 1:ON)
DIFilter_08	DIFilter_09
DITrigger_08 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_09 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_08 (0:STOP, 1:START)	DICntStart_09 (0:STOP, 1:START)
DICNT_08	DICNT_09
DIMode_10 (0:DI, 1:COUNTER)	DIMode_11 (0:DI, 1:COUNTER)
DIStatus_10(0:OFF, 1:ON)	DIStatus_11(0:OFF, 1:ON)
DIFilter_10	DIFilter_11
DITrigger_10 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_11 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_10 (0:STOP, 1:START)	DICntStart_11 (0:STOP, 1:START)
DICNT_10	DICNT_11

<b>Commands to get DO information</b>	<b>Commands to get DO information</b>
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)
DOMode_04 (0:DO, 1:PULSE OUTPUT)	DOMode_05 (0:DO, 1:PULSE OUTPUT)
DOSTatus_04 (0:OFF, 1:ON)	DOSTatus_05 (0:OFF, 1:ON)
DOLowWidth_04	DOLowWidth_05
DOHighWidth_04	DOHighWidth_05
DOPulseStart_04 (0:STOP, 1:START)	DOPulseStart_05 (0:STOP, 1:START)
DOMode_06 (0:DO, 1:PULSE OUTPUT)	DOMode_07 (0:DO, 1:PULSE OUTPUT)
DOSTatus_06 (0:OFF, 1:ON)	DOSTatus_07 (0:OFF, 1:ON)
DOLowWidth_06	DOLowWidth_07
DOHighWidth_06	DOHighWidth_07
DOPulseStart_06 (0:STOP, 1:START)	DOPulseStart_07 (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 DI channels	Commands to set DI channels
DIMode_00 (0:DI, 1:COUNTER)	DIMode_01 (0:DI, 1:COUNTER)
DIFilter_00	DIFilter_01
DITrigger_00 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_01 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_00 (0:STOP, 1:START)	DICntStart_01 (0:STOP, 1:START)
DIMode_02 (0:DI, 1:COUNTER)	DIMode_03 (0:DI, 1:COUNTER)
DIFilter_02	DIFilter_03
DITrigger_02 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_03 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_02 (0:STOP, 1:START)	DICntStart_03 (0:STOP, 1:START)

DIMode_04 (0:DI, 1:COUNTER)	DIMode_05 (0:DI, 1:COUNTER)
DIFilter_04	DIFilter_05
DITrigger_04 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_05 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_04 (0:STOP, 1:START)	DICntStart_05 (0:STOP, 1:START)
DIMode_06 (0:DI, 1:COUNTER)	DIMode_07 (0:DI, 1:COUNTER)
DIFilter_06	DIFilter_07
DITrigger_06 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_07 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_06 (0:STOP, 1:START)	DICntStart_07 (0:STOP, 1:START)
DIMode_08 (0:DI, 1:COUNTER)	DIMode_09 (0:DI, 1:COUNTER)
DIFilter_08	DIFilter_09
DITrigger_08 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_09 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_08 (0:STOP, 1:START)	DICntStart_09 (0:STOP, 1:START)
DIMode_10 (0:DI, 1:COUNTER)	DIMode_11 (0:DI, 1:COUNTER)
DIFilter_10	DIFilter_11
DITrigger_10 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_11 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_10 (0:STOP, 1:START)	DICntStart_11 (0:STOP, 1:START)

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)

DOMode_04 (0:DO, 1:PULSE OUTPUT)	DOMode_05 (0:DO, 1:PULSE OUTPUT)
DOStatus_04 (0:OFF, 1:ON)	DOStatus_05 (0:OFF, 1:ON)
DOLowWidth_04	DOLowWidth_05
DOHighWidth_04	DOHighWidth_05
DOPulseStart_04 (0:STOP, 1:START)	DOPulseStart_05 (0:STOP, 1:START)
DOMode_06 (0:DO, 1:PULSE OUTPUT)	DOMode_07 (0:DO, 1:PULSE OUTPUT)
DOStatus_06 (0:OFF, 1:ON)	DOStatus_07 (0:OFF, 1:ON)
DOLowWidth_06	DOLowWidth_07
DOHighWidth_06	DOHighWidth_07
DOPulseStart_06 (0:STOP, 1:START)	DOPulseStart_07 (0:STOP, 1:START)

## ioLogik E2212

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 DI information	Commands to get DI information
DIMode_00 (0:DI, 1:COUNTER)	DIMode_01 (0:DI, 1:COUNTER)
DIStatus_00 (0:OFF, 1:ON)	DIStatus_01 (0:OFF, 1:ON)
DIFilter_00	DIFilter_01
DITrigger_00 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_01 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_00 (0:STOP, 1:START)	DICntStart_01 (0:STOP, 1:START)
DICNT_00	DICNT_01
DIMode_02 (0:DI, 1:COUNTER)	DIMode_03 (0:DI, 1:COUNTER)
DIStatus_02 (0:OFF, 1:ON)	DIStatus_03 (0:OFF, 1:ON)
DIFilter_02	DIFilter_03
DITrigger_02 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_03 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_02 (0:STOP, 1:START)	DICntStart_03 (0:STOP, 1:START)
DICNT_02	DICNT_03

DIMode_04 (0:DI, 1:COUNTER)	DIMode_05 (0:DI, 1:COUNTER)
DIStatus_04 (0:OFF, 1:ON)	DIStatus_05 (0:OFF, 1:ON)
DIFilter_04	DIFilter_05
DITrigger_04 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_05 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_04 (0:STOP, 1:START)	DICntStart_05 (0:STOP, 1:START)
DICNT_04	DICNT_05
DIMode_06 (0:DI, 1:COUNTER)	DIMode_07 (0:DI, 1:COUNTER)
DIStatus_06 (0:OFF, 1:ON)	DIStatus_07 (0:OFF, 1:ON)
DIFilter_06	DIFilter_07
DITrigger_06 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_07 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_06 (0:STOP, 1:START)	DICntStart_07 (0:STOP, 1:START)
DICNT_06	DICNT_07
DIMode_08 (0:DI, 1:COUNTER)	DIMode_09 (0:DI, 1:COUNTER)
DIStatus_08 (0:OFF, 1:ON)	DIStatus_09 (0:OFF, 1:ON)
DIFilter_08	DIFilter_09
DITrigger_08 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_09 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_08 (0:STOP, 1:START)	DICntStart_09 (0:STOP, 1:START)
DICNT_08	DICNT_09
DIMode_10 (0:DI, 1:COUNTER)	DIMode_11 (0:DI, 1:COUNTER)
DIStatus_10 (0:OFF, 1:ON)	DIStatus_11 (0:OFF, 1:ON)
DIFilter_10	DIFilter_11
DITrigger_10 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_11 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_10 (0:STOP, 1:START)	DICntStart_11(0:STOP, 1:START)
DICNT_10	DICNT_11

<b>Commands to get DO information</b>	<b>Commands to get DO information</b>
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)
DOMode_04 (0:DO, 1:PULSE OUTPUT)	DOMode_05 (0:DO, 1:PULSE OUTPUT)
DOSTatus_04 (0:OFF, 1:ON)	DOSTatus_05 (0:OFF, 1:ON)
DOLowWidth_04	DOLowWidth_05
DOHighWidth_04	DOHighWidth_05
DOPulseStart_04 (0:STOP, 1:START)	DOPulseStart_05 (0:STOP, 1:START)
DOMode_06 (0:DO, 1:PULSE OUTPUT)	DOMode_07 (0:DO, 1:PULSE OUTPUT)
DOSTatus_06 (0:OFF, 1:ON)	DOSTatus_07 (0:OFF, 1:ON)
DOLowWidth_06	DOLowWidth_07
DOHighWidth_06	DOHighWidth_07
DOPulseStart_06 (0:STOP, 1:START)	DOPulseStart_07 (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.

[http://IP/setParam.cgi?command\\_channel=value&command\\_channel=value&..\(Max 200 char\)](http://IP/setParam.cgi?command_channel=value&command_channel=value&..(Max 200 char))

Commands to set DI channels	Commands to set DI channels
DIMode_00 (0:DI, 1:COUNTER)	DIMode_01 (0:DI, 1:COUNTER)
DIFilter_00	DIFilter_01
DITrigger_00 (0:LOW TO HIGH, 1:HIG TO LOW, 2:BOTH)	DITrigger_01 (0:LOW TO HIGH, 1:HIG TO LOW, 2:BOTH)
DICntStart_00 (0:STOP, 1:START)	DICntStart_01 (0:STOP, 1:START)
DIMode_02 (0:DI, 1:COUNTER)	DIMode_03 (0:DI, 1:COUNTER)
DIFilter_02	DIFilter_03
DITrigger_02 (0:LOW TO HIGH, 1:HIG TO LOW, 2:BOTH)	DITrigger_03 (0:LOW TO HIGH, 1:HIG TO LOW, 2:BOTH)

DICntStart_02 (0:STOP, 1:START)	DICntStart_03 (0:STOP, 1:START)
DIMode_04 (0:DI, 1:COUNTER)	DIMode_05 (0:DI, 1:COUNTER)
DIFilter_04	DIFilter_05
DITrigger_04 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_05 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_04 (0:STOP, 1:START)	DICntStart_05 (0:STOP, 1:START)
DIMode_06 (0:DI, 1:COUNTER)	DIMode_07 (0:DI, 1:COUNTER)
DIFilter_06	DIFilter_07
DITrigger_06 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_07 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_06 (0:STOP, 1:START)	DICntStart_07 (0:STOP, 1:START)
DIMode_08 (0:DI, 1:COUNTER)	DIMode_09 (0:DI, 1:COUNTER)
DIFilter_08	DIFilter_09
DITrigger_08 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_09 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_08 (0:STOP, 1:START)	DICntStart_09 (0:STOP, 1:START)
DIMode_10 (0:DI, 1:COUNTER)	DIMode_11 (0:DI, 1:COUNTER)
DIFilter_10	DIFilter_11
DITrigger_10 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_11 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_10 (0:STOP, 1:START)	DICntStart_11 (0:STOP, 1:START)

<b>Commands to set DO channels</b>	<b>Commands to set DO channels</b>
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)
DOMode_04 (0:DO, 1:PULSE OUTPUT)	DOMode_05 (0:DO, 1:PULSE OUTPUT)
DOStatus_04 (0:OFF, 1:ON)	DOStatus_05 (0:OFF, 1:ON)
DOLowWidth_04	DOLowWidth_05
DOHighWidth_04	DOHighWidth_05
DOPulseStart_04 (0:STOP, 1:START)	DOPulseStart_05 (0:STOP, 1:START)
DOMode_06 (0:DO, 1:PULSE OUTPUT)	DOMode_07 (0:DO, 1:PULSE OUTPUT)
DOStatus_06 (0:OFF, 1:ON)	DOStatus_07 (0:OFF, 1:ON)
DOLowWidth_06	DOLowWidth_07
DOHighWidth_06	DOHighWidth_07
DOPulseStart_06 (0:STOP, 1:START)	DOPulseStart_07 (0:STOP, 1:START)
DOMode_08 (0:DO, 1:PULSE OUTPUT)	DOMode_09 (0:DO, 1:PULSE OUTPUT)
DOStatus_08 (0:OFF, 1:ON)	DOStatus_09 (0:OFF, 1:ON)
DOLowWidth_08	DOLowWidth_09
DOHighWidth_08	DOHighWidth_09
DOPulseStart_08 (0:STOP, 1:START)	DOPulseStart_09 (0:STOP, 1:START)
DOMode_10 (0:DO, 1:PULSE OUTPUT)	DOMode_11 (0:DO, 1:PULSE OUTPUT)
DOStatus_10 (0:OFF, 1:ON)	DOStatus_11 (0:OFF, 1:ON)
DOLowWidth_10	DOLowWidth_11
DOHighWidth_10	DOHighWidth_11
DOPulseStart_10 (0:STOP, 1:START)	DOPulseStart_11 (0:STOP, 1:START)

## ioLogik E2214

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 DI information	Commands to get DI information
DIMode_00 (0:DI, 1:COUNTER)	DIMode_01 (0:DI, 1:COUNTER)
DIStatus_00 (0:OFF, 1:ON)	DIStatus_01 (0:OFF, 1:ON)

DIFilter_00	DIFilter_01
DITrigger_00 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_01 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_00 (0:STOP, 1:START)	DICntStart_01 (0:STOP, 1:START)
DICNT_00	DICNT_01
DIMode_02 (0:DI, 1:COUNTER)	DIMode_03 (0:DI, 1:COUNTER)
DIStatus_02 (0:OFF, 1:ON)	DIStatus_03 (0:OFF, 1:ON)
DIFilter_02	DIFilter_03
DITrigger_02 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_03 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_02 (0:STOP, 1:START)	DICntStart_03 (0:STOP, 1:START)
DICNT_02	DICNT_03
DIMode_04 (0:DI, 1:COUNTER)	DIMode_05 (0:DI, 1:COUNTER)
DIStatus_04 (0:OFF, 1:ON)	DIStatus_05 (0:OFF, 1:ON)
DIFilter_04	DIFilter_05
DITrigger_04 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_05 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_04 (0:STOP, 1:START)	DICntStart_05 (0:STOP, 1:START)
DICNT_04	DICNT_05

<b>Commands to get DO information</b>	<b>Commands to get DO information</b>
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)
DOTotalRelayCNT_00	DOTotalRelayCNT_01
DOCurrentRelayCNT_00	DOCurrentRelayCNT_01
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)
DOTotalRelayCNT_02	DOTotalRelayCNT_03

DOCurrentRelayCNT_02	DOCurrentRelayCNT_03
DOMode_04 (0:DO, 1:PULSE OUTPUT)	DOMode_05 (0:DO, 1:PULSE OUTPUT)
DOStatus_04 (0:OFF, 1:ON)	DOStatus_05 (0:OFF, 1:ON)
DOLowWidth_04	DOLowWidth_05
DOHighWidth_04	DOHighWidth_05
DOPulseStart_04 (0:STOP, 1:START)	DOPulseStart_05 (0:STOP, 1:START)
DOTotalRelayCNT_04	DOTotalRelayCNT_05
DOCurrentRelayCNT_04	DOCurrentRelayCNT_05

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.

[http://IP/setParam.cgi?command\\_channel=value&command\\_channel=value&..\(Max 200 char\)](http://IP/setParam.cgi?command_channel=value&command_channel=value&..(Max 200 char))

Commands to set DI channels	Commands to set DI channels
DIMode_00 (0:DI, 1:COUNTER)	DIMode_01 (0:DI, 1:COUNTER)
DIFilter_00	DIFilter_01
DITrigger_00 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_01 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_00 (0:STOP, 1:START)	DICntStart_01 (0:STOP, 1:START)
DIMode_02 (0:DI, 1:COUNTER)	DIMode_03 (0:DI, 1:COUNTER)
DIFilter_02	DIFilter_03
DITrigger_02 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_03 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_02 (0:STOP, 1:START)	DICntStart_03 (0:STOP, 1:START)
DIMode_04 (0:DI, 1:COUNTER)	DIMode_05 (0:DI, 1:COUNTER)
DIFilter_04	DIFilter_05
DITrigger_04 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_05 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_04 (0:STOP, 1:START)	DICntStart_05 (0:STOP, 1:START)

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)
DOCurrentRelayCNT_00	DOCurrentRelayCNT_01
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)
DOCurrentRelayCNT_02	DOCurrentRelayCNT_03
DOMode_04 (0:DO, 1:PULSE OUTPUT)	DOMode_05 (0:DO, 1:PULSE OUTPUT)
DOStatus_04 (0:OFF, 1:ON)	DOStatus_05 (0:OFF, 1:ON)
DOLowWidth_04	DOLowWidth_05
DOHighWidth_04	DOHighWidth_05
DOPulseStart_04 (0:STOP, 1:START)	DOPulseStart_05 (0:STOP, 1:START)
DOCurrentRelayCNT_04	DOCurrentRelayCNT_05

## ioLogik E2240

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 AI information	Commands to get AI information
AIValue_00	AIValue_01
AIRange_00 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)	AIRange_01 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)
AIMin_00	AIMin_01
AIMax_00	AIMax_01
AIValue_02	AIValue_03
AIRange_02 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)	AIRange_03 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)
AIMin_02	AIMin_03
AIMax_02	AIMax_03
AIValue_04	AIValue_05
AIRange_04 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)	AIRange_05 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)
AIMin_04	AIMin_05

AIMax_04	AIMax_05
AIValue_06	AIValue_07
AIRange_06 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)	AIRange_07 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)
AIMin_06	AIMin_07
AIMax_06	AIMax_07

Commands to get AO information	Commands to get AO information
AOValue_00	AOValue_01
AOValueP_00 (Power On Value)	AOValueP_01 (Power On Value)
AOValueS_00 (Safe Mode Value)	AOValueS_01 (Safe Mode Value)
AORange_00 (0:0-10V, 1:4-20mA)	AORange_01 (0:0-10V, 1:4-20mA)

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 AI channels	Commands to set AI channels
AIRange_00 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)	AIRange_01 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)
AIRange_02 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)	AIRange_03 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)
AIRange_04 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)	AIRange_05 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)
AIRange_06 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)	AIRange_07 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA)

Commands to set AO channels	Commands to set AO Channels
AOValue_00	AOValue_01
AOValueP_00 (Power On Value)	AOValueP_01 (Power On Value)
AOValueS_00 (Safe Mode Value)	AOValueS_01 (Safe Mode Value)
AORange_00 (0:0-10V, 1:4-20mA)	AORange_01 (0:0-10V, 1:4-20mA)

## ioLogik E2242

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 AI information	Commands to get AI information
AIEnable_00 (0:Disable, 1:Enable)	AIEnable_01 (0:Disable, 1:Enable)
AIValue_00	AIValue_01
AIRange_00 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA, 6:0-100mV, 7:0-500mV, 8:0-5V, 9:0-10V)	AIRange_01 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA, 6:0-100mV, 7:0-500mV, 8:0-5V, 9:0-10V)
AIMin_00	AIMin_01
AIMax_00	AIMax_01
AIEnable_02 (0:Disable, 1:Enable)	AIEnable_03 (0:Disable, 1:Enable)
AIValue_02	AIValue_03
AIRange_02 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA, 6:0-100mV, 7:0-500mV, 8:0-5V, 9:0-10V)	AIRange_03 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA, 6:0-100mV, 7:0-500mV, 8:0-5V, 9:0-10V)
AIMin_02	AIMin_03
AIMax_02	AIMax_03

Commands to get DI information	Commands to get DI information
DIMode_00 (0:DI, 1:COUNTER)	DIMode_01 (0:DI, 1:COUNTER)
DIStatus_00 (0:OFF, 1:ON)	DIStatus_01 (0:OFF, 1:ON)
DIFilter_00	DIFilter_01
DITrigger_00 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_01 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_00 (0:STOP, 1:START)	DICntStart_01 (0:STOP, 1:START)
DICNT_00	DICNT_01
DIMode_02 (0:DI, 1:COUNTER)	DIMode_03 (0:DI, 1:COUNTER)
DIStatus_02 (0:OFF, 1:ON)	DIStatus_03 (0:OFF, 1:ON)
DIFilter_02	DIFilter_03
DITrigger_02 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_03 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_02 (0:STOP, 1:START)	DICntStart_03 (0:STOP, 1:START)
DICNT_02	DICNT_03
DIMode_04 (0:DI, 1:COUNTER)	DIMode_05 (0:DI, 1:COUNTER)
DIStatus_04 (0:OFF, 1:ON)	DIStatus_05 (0:OFF, 1:ON)
DIFilter_04	DIFilter_05
DITrigger_04 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_05 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_04 (0:STOP, 1:START)	DICntStart_05 (0:STOP, 1:START)
DICNT_04	DICNT_05
DIMode_06 (0:DI, 1:COUNTER)	DIMode_07 (0:DI, 1:COUNTER)
DIStatus_06 (0:OFF, 1:ON)	DIStatus_07 (0:OFF, 1:ON)
DIFilter_06	DIFilter_07

DITrigger_06 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_07 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_06 (0:STOP, 1:START)	DICntStart_07 (0:STOP, 1:START)
DICNT_06	DICNT_07
DIMode_08 (0:DI, 1:COUNTER)	DIMode_09 (0:DI, 1:COUNTER)
DIStatus_08 (0:OFF, 1:ON)	DIStatus_09 (0:OFF, 1:ON)
DIFilter_08	DIFilter_09
DITrigger_08 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_09 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_08 (0:STOP, 1:START)	DICntStart_09 (0:STOP, 1:START)
DICNT_08	DICNT_09
DIMode_10 (0:DI, 1:COUNTER)	DIMode_11 (0:DI, 1:COUNTER)
DIStatus_10 (0:OFF, 1:ON)	DIStatus_11 (0:OFF, 1:ON)
DIFilter_10	DIFilter_11
DITrigger_10 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_11 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_10 (0:STOP, 1:START)	DICntStart_11 (0:STOP, 1:START)
DICNT_10	DICNT_11

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)
DOMode_04 (0:DO, 1:PULSE OUTPUT)	DOMode_05 (0:DO, 1:PULSE OUTPUT)
DOStatus_04 (0:OFF, 1:ON)	DOStatus_05 (0:OFF, 1:ON)
DOLowWidth_04	DOLowWidth_05
DOHighWidth_04	DOHighWidth_05
DOPulseStart_04 (0:STOP, 1:START)	DOPulseStart_05 (0:STOP, 1:START)
DOMode_06 (0:DO, 1:PULSE OUTPUT)	DOMode_07 (0:DO, 1:PULSE OUTPUT)

DOSTatus_06 (0:OFF, 1:ON)	DOSTatus_07 (0:OFF, 1:ON)
DOLowWidth_06	DOLowWidth_07
DOHighWidth_06	DOHighWidth_07
DOPulseStart_06 (0:STOP, 1:START)	DOPulseStart_07 (0:STOP, 1:START)
DOMode_08 (0:DO, 1:PULSE OUTPUT)	DOMode_09 (0:DO, 1:PULSE OUTPUT)
DOSTatus_08 (0:OFF, 1:ON)	DOSTatus_09 (0:OFF, 1:ON)
DOLowWidth_08	DOLowWidth_09
DOHighWidth_08	DOHighWidth_09
DOPulseStart_08 (0:STOP, 1:START)	DOPulseStart_09 (0:STOP, 1:START)
DOMode_10 (0:DO, 1:PULSE OUTPUT)	DOMode_11 (0:DO, 1:PULSE OUTPUT)
DOSTatus_10 (0:OFF, 1:ON)	DOSTatus_11 (0:OFF, 1:ON)
DOLowWidth_10	DOLowWidth_11
DOHighWidth_10	DOHighWidth_11
DOPulseStart_10 (0:STOP, 1:START)	DOPulseStart_11 (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 AI channels	Commands to set AI channels
AIEnable_00 (0:Disable, 1:Enable)	AIEnable_01 (0:Disable, 1:Enable)
AIRange_00 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA, 6:0-100mV, 7:0-500mV, 8:0-5V, 9:0-10V)	AIRange_01 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA, 6:0-100mV, 7:0-500mV, 8:0-5V, 9:0-10V)
AIEnable_02 (0:Disable, 1:Enable)	AIEnable_03 (0:Disable, 1:Enable)
AIRange_02 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA, 6:0-100mV, 7:0-500mV, 8:0-5V, 9:0-10V)	AIRange_03 (0:+/-150mV, 1:+/-500mV, 2:+/-5V, 3:+/-10V, 4:0-20mA, 5:4-20mA, 6:0-100mV, 7:0-500mV, 8:0-5V, 9:0-10V)

Commands to set DI channels	Commands to set DI Channels
DIMode_00 (0:DI, 1:COUNTER)	DIMode_01 (0:DI, 1:COUNTER)
DIFilter_00	DIFilter_01
DITrigger_00 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_01 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_00 (0:STOP, 1:START)	DICntStart_01 (0:STOP, 1:START)
DIMode_02 (0:DI, 1:COUNTER)	DIMode_03 (0:DI, 1:COUNTER)
DIFilter_02	DIFilter_03
DITrigger_02 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_03 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)



DICntStart_02 (0:STOP, 1:START)	DICntStart_03 (0:STOP, 1:START)
DIMode_04 (0:DI, 1:COUNTER)	DIMode_05 (0:DI, 1:COUNTER)
DIFilter_04	DIFilter_05
DITrigger_04 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_05 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_04 (0:STOP, 1:START)	DICntStart_05 (0:STOP, 1:START)
DIMode_06 (0:DI, 1:COUNTER)	DIMode_07 (0:DI, 1:COUNTER)
DIFilter_06	DIFilter_07
DITrigger_06 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_07 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_06 (0:STOP, 1:START)	DICntStart_07 (0:STOP, 1:START)
DIMode_08 (0:DI, 1:COUNTER)	DIMode_09 (0:DI, 1:COUNTER)
DIFilter_08	DIFilter_09
DITrigger_08 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_09 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_08 (0:STOP, 1:START)	DICntStart_09 (0:STOP, 1:START)
DIMode_10 (0:DI, 1:COUNTER)	DIMode_11 (0:DI, 1:COUNTER)
DIFilter_10	DIFilter_11
DITrigger_10 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)	DITrigger_11 (0:LOW TO HIGH, 1:HIGH TO LOW, 2:BOTH)
DICntStart_10 (0:STOP, 1:START)	DICntStart_11 (0:STOP, 1:START)

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)
DOMode_04 (0:DO, 1:PULSE OUTPUT)	DOMode_05 (0:DO, 1:PULSE OUTPUT)
DOStatus_04 (0:OFF, 1:ON)	DOStatus_05 (0:OFF, 1:ON)
DOLowWidth_04	DOLowWidth_05
DOHighWidth_04	DOHighWidth_05

DOPulseStart_04 (0:STOP, 1:START)	DOPulseStart_05 (0:STOP, 1:START)
DOMode_06 (0:DO, 1:PULSE OUTPUT)	DOMode_07 (0:DO, 1:PULSE OUTPUT)
DOStatus_06 (0:OFF, 1:ON)	DOStatus_07 (0:OFF, 1:ON)
DOLowWidth_06	DOLowWidth_07
DOHighWidth_06	DOHighWidth_07
DOPulseStart_06 (0:STOP, 1:START)	DOPulseStart_07 (0:STOP, 1:START)
DOMode_08 (0:DO, 1:PULSE OUTPUT)	DOMode_09 (0:DO, 1:PULSE OUTPUT)
DOStatus_08 (0:OFF, 1:ON)	DOStatus_09 (0:OFF, 1:ON)
DOLowWidth_08	DOLowWidth_09
DOHighWidth_08	DOHighWidth_09
DOPulseStart_08 (0:STOP, 1:START)	DOPulseStart_09 (0:STOP, 1:START)
DOMode_10 (0:DO, 1:PULSE OUTPUT)	DOMode_11 (0:DO, 1:PULSE OUTPUT)
DOStatus_10 (0:OFF, 1:ON)	DOStatus_11 (0:OFF, 1:ON)
DOLowWidth_10	DOLowWidth_11
DOHighWidth_10	DOHighWidth_11
DOPulseStart_10 (0:STOP, 1:START)	DOPulseStart_11 (0:STOP, 1:START)

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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 RTD information	Commands to get RTD information
RtdEnable_00 (0:Disable, 1:Enable)	RtdEnable_01 (0:Disable, 1:Enable)
RtdStype_00 (0:PT50, 1:Pt100, 2:Pt200, 3:Pt500, 4:Pt1000, 5:JPt100, 6:JPt200, 7:JPt500, 8:JPt1000, 9 :Ni 100, 10 :Ni 200, 11 :Ni 500, 12 :Ni 1000, 13 :Ni 120, 14 :Resistance (1-310 mΩ), 15:Resistance (1-620 mΩ), 16 :Resistance (1-1250 mΩ), 17:Resistance (1-2200 mΩ))	RtdStype_01 (0:PT50, 1:Pt100, 2:Pt200, 3:Pt500, 4:Pt1000, 5:JPt100, 6:JPt200, 7:JPt500, 8:JPt1000, 9 :Ni 100, 10 :Ni 200, 11 :Ni 500, 12 :Ni 1000, 13 :Ni 120, 14 :Resistance (1-310 mΩ), 15:Resistance (1-620 mΩ), 16 :Resistance (1-1250 mΩ), 17:Resistance (1-2200 mΩ))
RtdUtype_00 (Unit Types. 0:°C, 1:°F, 2:Ω)	RtdUtype_01 (Unit Types. 0:°C, 1:°F, 2:Ω)
RtdStatus_00	RtdStatus_01
RtdEnable_02 (0:Disable, 1:Enable)	RtdEnable_03 (0:Disable, 1:Enable)

RtdStype_02 (0:PT50, 1:Pt100, 2:Pt200, 3:Pt500, 4:Pt1000, 5:JPt100, 6:JPt200, 7:JPt500, 8:JPt1000, 9 :Ni 100, 10 :Ni 200, 11 :Ni 500, 12 :Ni 1000, 13 :Ni 120, 14 :Resistance (1-310 mΩ), 15:Resistance (1-620 mΩ), 16 :Resistance (1-1250 mΩ), 17:Resistance (1-2200 mΩ))	RtdStype_03 (0:PT50, 1:Pt100, 2:Pt200, 3:Pt500, 4:Pt1000, 5:JPt100, 6:JPt200, 7:JPt500, 8:JPt1000, 9 :Ni 100, 10 :Ni 200, 11 :Ni 500, 12 :Ni 1000, 13 :Ni 120, 14 :Resistance (1-310 mΩ), 15:Resistance (1-620 mΩ), 16 :Resistance (1-1250 mΩ), 17:Resistance (1-2200 mΩ))
RtdUtype_02 (Unit Types. 0:°C, 1:°F, 2:Ω)	RtdUtype_03 (Unit Types. 0:°C, 1:°F, 2:Ω)
RtdStatus_02	RtdStatus_03
RtdEnable_04 (0:Disable, 1:Enable)	RtdEnable_05 (0:Disable, 1:Enable)
RtdStype_04 (0:PT50, 1:Pt100, 2:Pt200, 3:Pt500, 4:Pt1000, 5:JPt100, 6:JPt200, 7:JPt500, 8:JPt1000, 9 :Ni 100, 10 :Ni 200, 11 :Ni 500, 12 :Ni 1000, 13 :Ni 120, 14 :Resistance (1-310 mΩ), 15:Resistance (1-620 mΩ), 16 :Resistance (1-1250 mΩ), 17:Resistance (1-2200 mΩ))	RtdStype_05 (0:PT50, 1:Pt100, 2:Pt200, 3:Pt500, 4:Pt1000, 5:JPt100, 6:JPt200, 7:JPt500, 8:JPt1000, 9 :Ni 100, 10 :Ni 200, 11 :Ni 500, 12 :Ni 1000, 13 :Ni 120, 14 :Resistance (1-310 mΩ), 15:Resistance (1-620 mΩ), 16 :Resistance (1-1250 mΩ), 17:Resistance (1-2200 mΩ))
RtdUtype_04 (Unit Types. 0:°C, 1:°F, 2:Ω)	RtdUtype_05 (Unit Types. 0:°C, 1:°F, 2:Ω)
RtdStatus_04	RtdStatus_05

Commands to get RTD Virtual Channel information	Commands to get RTD Virtual Channel information
RtdEnable_06 (0:Disable, 1:Enable)	RtdEnable_07 (0:Disable, 1:Enable)
RtdStype_06 (20:Average – For Virtual Channel only, 21: Deviation – For Virtual Channel Only)	RtdStype_07 (20:Average – For Virtual Channel only, 21: Deviation – For Virtual Channel Only)
RtdUtype_06 (Unit Types. 0:°C, 1:°F, 2:Ω)	RtdUtype_07 (Unit Types. 0:°C, 1:°F, 2:Ω)
RtdStatus_06	RtdStatus_07
RtdEnable_08 (0:Disable, 1:Enable)	RtdEnable_09 (0:Disable, 1:Enable)
RtdStype_08 (20:Average – For Virtual Channel only, 21: Deviation – For Virtual Channel Only)	RtdStype_09 (20:Average – For Virtual Channel only, 21: Deviation – For Virtual Channel Only)
RtdUtype_08 (Unit Types. 0:°C, 1:°F, 2:Ω)	RtdUtype_09 (Unit Types. 0:°C, 1:°F, 2:Ω)
RtdStatus_08	RtdStatus_09
RtdEnable_10 (0:Disable, 1:Enable)	RtdEnable_11 (0:Disable, 1:Enable)
RtdStype_10 (20:Average – For Virtual Channel only, 21: Deviation – For Virtual Channel Only)	RtdStype_11 (20:Average – For Virtual Channel only, 21: Deviation – For Virtual Channel Only)
RtdUtype_10 (Unit Types. 0:°C, 1:°F, 2:Ω)	RtdUtype_11 (Unit Types. 0:°C, 1:°F, 2:Ω)
RtdStatus_10	RtdStatus_11

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 RTD channels	Commands to set RTD channels
RtdEnable_00 (0:Disable, 1:Enable)	RtdEnable_01 (0:Disable, 1:Enable)
RtdStype_00 (0:PT50, 1:Pt100, 2:Pt200, 3:Pt500, 4:Pt1000, 5:JPt100, 6:JPt200, 7:JPt500, 8:JPt1000, 9 :Ni 100, 10 :Ni 200, 11 :Ni 500, 12 :Ni 1000, 13 :Ni 120, 14 :Resistance (1-310 mΩ), 15:Resistance (1-620 mΩ), 16 :Resistance (1-1250 mΩ), 17:Resistance (1-2200 mΩ))	RtdStype_01 (0:PT50, 1:Pt100, 2:Pt200, 3:Pt500, 4:Pt1000, 5:JPt100, 6:JPt200, 7:JPt500, 8:JPt1000, 9 :Ni 100, 10 :Ni 200, 11 :Ni 500, 12 :Ni 1000, 13 :Ni 120, 14 :Resistance (1-310 mΩ), 15:Resistance (1-620 mΩ), 16 :Resistance (1-1250 mΩ), 17:Resistance (1-2200 mΩ))
RtdUtype_00 (Unit Types. 0:°C, 1:°F, 2:Ω)	RtdUtype_01 (Unit Types. 0:°C, 1:°F, 2:Ω)
RtdEnable_02 (0:Disable, 1:Enable)	RtdEnable_03 (0:Disable, 1:Enable)
RtdStype_02 (0:PT50, 1:Pt100, 2:Pt200, 3:Pt500, 4:Pt1000, 5:JPt100, 6:JPt200, 7:JPt500, 8:JPt1000, 9 :Ni 100, 10 :Ni 200, 11 :Ni 500, 12 :Ni 1000, 13 :Ni 120, 14 :Resistance (1-310 mΩ), 15:Resistance (1-620 mΩ), 16 :Resistance (1-1250 mΩ), 17:Resistance (1-2200 mΩ))	RtdStype_03 (0:PT50, 1:Pt100, 2:Pt200, 3:Pt500, 4:Pt1000, 5:JPt100, 6:JPt200, 7:JPt500, 8:JPt1000, 9 :Ni 100, 10 :Ni 200, 11 :Ni 500, 12 :Ni 1000, 13 :Ni 120, 14 :Resistance (1-310 mΩ), 15:Resistance (1-620 mΩ), 16 :Resistance (1-1250 mΩ), 17:Resistance (1-2200 mΩ))
RtdUtype_02 (Unit Types. 0:°C, 1:°F, 2:Ω)	RtdUtype_03 (Unit Types. 0:°C, 1:°F, 2:Ω)
RtdEnable_04 (0:Disable, 1:Enable)	RtdEnable_05 (0:Disable, 1:Enable)
RtdStype_04 (0:PT50, 1:Pt100, 2:Pt200, 3:Pt500, 4:Pt1000, 5:JPt100, 6:JPt200, 7:JPt500, 8:JPt1000, 9 :Ni 100, 10 :Ni 200, 11 :Ni 500, 12 :Ni 1000, 13 :Ni 120, 14 :Resistance (1-310 mΩ), 15:Resistance (1-620 mΩ), 16 :Resistance (1-1250 mΩ), 17:Resistance (1-2200 mΩ))	RtdStype_05 (0:PT50, 1:Pt100, 2:Pt200, 3:Pt500, 4:Pt1000, 5:JPt100, 6:JPt200, 7:JPt500, 8:JPt1000, 9 :Ni 100, 10 :Ni 200, 11 :Ni 500, 12 :Ni 1000, 13 :Ni 120, 14 :Resistance (1-310 mΩ), 15:Resistance (1-620 mΩ), 16 :Resistance (1-1250 mΩ), 17:Resistance (1-2200 mΩ))
RtdUtype_04 (Unit Types. 0:°C, 1:°F, 2:Ω)	RtdUtype_05 (Unit Types. 0:°C, 1:°F, 2:Ω)

Commands to set RTD Virtual Channel information	Commands to set RTD Virtual Channel information
RtdStype_06 (20:Average, 21: Deviation)	RtdStype_07 (20:Average, 21: Deviation)
RtdUtype_06 (Unit Types. 0:°C, 1:°F, 2:Ω)	RtdUtype_07 (Unit Types. 0:°C, 1:°F, 2:Ω)
RtdStype_08 (20:Average, 21: Deviation)	RtdStype_09 (20:Average, 21: Deviation)

RtdUtype_08 (Unit Types. 0:°C, 1:°F, 2:Ω)	RtdUtype_09 (Unit Types. 0:°C, 1:°F, 2:Ω)
RtdStype_10 (20:Average, 21: Deviation)	RtdStype_11 (20:Average, 21: Deviation)
RtdUtype_10 (Unit Types. 0:°C, 1:°F, 2:Ω)	RtdUtype_11 (Unit Types. 0:°C, 1:°F, 2:Ω)

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)

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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

<b>Commands to get TC Virtual channels</b>	<b>Commands to get TC Virtual channels</b>
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)
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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)





# SNMP Agents with MIB II, RS-232-like Groups

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## ioLogik E2242

### 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
SysServices	ifAdminStatus	ipInDiscards	IcmpInEchos
	ifOperStatus	ipInDelivers	IcmpInEchoReps
	ifLastChange	ipOutRequests	IcmpInTimestamps
	ifInOctets	ipOutDiscards	IcmpTimestampReps
	ifInUcastPkts	ipOutNoRoutes	IcmpInAddrMasks
	ifInNUcastPkts	ipReasmTimeout	IcmpOutMsgs
	ifInDiscards	ipReasmReqds	IcmpOutErrors
	ifInErrors	ipReasmOKs	IcmpOutDestUnreachs

Interfaces MIB	IP MIB	ICMP MIB
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
<b>Address Translation MIB</b>	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
totalChannelNumber	DI004-Tigger
serverModel	DI004-CntStart
systemTime	DIO04-LowWidth
firmwareVersion	DIO04-HighWidth
DI000-Index	DIO05-LowWidth
DI000-Type	DIO05-HighWidth
DI000-Mode	DI006-Index
DI000-Status	DI006-Type
DI000-Filter	DI006-Mode
DI000-Tigger	DI006-Status
DI000-CntStart	DI006-Filter
DIO00-LowWidth	DI006-Tigger
DIO00-HighWidth	DI006-CntStart
DI001-Index	DIO06-LowWidth
DI001-Type	DIO06-HighWidth
DI001-Mode	DI007-Index
DI001-Status	DI007-Type
DI001-Filter	DI007-Mode
DI001-Tigger	DI007-Status

DI001-CntStart	DI007-Filter
DIO01-LowWidth	DI007-Tigger
DIO01-HighWidth	DI007-CntStart
DI002-Index	DIO07-LowWidth
DI002-Type	DIO07-HighWidth
DI002-Mode	DI008-Index
DI002-Status	DI008-Type
DI002-Filter	DI008-Mode
DI002-Tigger	DI008-Status
DI002-CntStart	DI008-Filter
DIO02-LowWidth	DI008-Tigger
DIO02-HighWidth	DI008-CntStart
DI003-Index	DIO08-LowWidth
DI003-Type	DIO08-HighWidth
DI003-Mode	DI009-Index
DI003-Status	DI009-Type
DI003-Filter	DI009-Mode
DI003-Tigger	DI009-Status
DI003-CntStart	DI009-Filter
DIO03-LowWidth	DI009-Tigger
DIO03-HighWidth	DI009-CntStart
DI004-Index	DIO09-LowWidth
DI004-Type	DIO09-HighWidth
DI004-Mode	DI010-Index
DI004-Status	DI010-Type
DI004-Filter	DI010-Mode
DI010-Status	
DI010-Filter	
DI010-Tigger	
DI010-CntStart	
DIO10-LowWidth	
DIO10-HighWidth	
DI011-Index	
DI011-Type	
DI011-Mode	
DI011-Status	
DI011-Filter	
DI011-Tigger	
DI011-CntStart	
DIO11-LowWidth	
DIO11-HighWidth	

<b>Moxa IO MIB</b>	<b>Moxa IO MIB</b>
AI00-Index	AI02-Index
AI00-Type	AI02-Type

AI00-Range	AI02-Range
AI00-Value	AI02-Value
AI00-Min	AI02-Min
AI00-Max	AI02-Max
AI01-Index	AI03-Index
AI01-Type	AI03-Type
AI01-Range	AI03-Range
AI01-Value	AI03-Value
AI01-Min	AI03-Min
AI01-Max	AI03-Max



# Modbus/TCP Address Mappings

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## ioLogik E2210 Modbus Mapping

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

Reference Addr	Address	Data Type	Description
00001	0x0000	1 bit	CH0 DO Value 0: Off 1: On
00002	0x0001	1 bit	CH1 DO Value 0: Off 1: On
00003	0x0002	1 bit	CH2 DO Value 0: Off 1: On
00004	0x0003	1 bit	CH3 DO Value 0: Off 1: On
00005	0x0004	1 bit	CH4 DO Value 0: Off 1: On
00006	0x0005	1 bit	CH5 DO Value 0: Off 1: On
00007	0x0006	1 bit	CH6 DO Value 0: Off 1: On
00008	0x0007	1 bit	CH7 DO Value 0: Off 1: On
00009	0x0008	1 bit	CH0 DO Power On Value 0: Off 1: On
00010	0x0009	1 bit	CH1 DO Power On Value 0: Off 1: On
00011	0x000A	1 bit	CH2 DO Power On Value 0: Off 1: On
00012	0x000B	1 bit	CH3 DO Power On Value 0: Off 1: On
00013	0x000C	1 bit	CH4 DO Power On Value 0: Off 1: On
00014	0x000D	1 bit	CH5 DO Power On Value 0: Off 1: On
00015	0x000E	1 bit	CH6 DO Power On Value 0: Off 1: On
00016	0x000F	1 bit	CH7 DO Power On Value 0: Off 1: On
00017	0x0010	1 bit	CH0 DO Safe Value 0: Off 1: On
00018	0x0011	1 bit	CH1 DO Safe Value 0: Off 1: On
00019	0x0012	1 bit	CH2 DO Safe Value 0: Off 1: On
00020	0x0013	1 bit	CH3 DO Safe Value 0: Off 1: On
00021	0x0014	1 bit	CH4 DO Safe Value 0: Off 1: On
00022	0x0015	1 bit	CH5 DO Safe Value 0: Off 1: On
00023	0x0016	1 bit	CH6 DO Safe Value 0: Off 1: On
00024	0x0017	1 bit	CH7 DO Safe Value 0: Off 1: On
00025	0x0018	1 bit	CH0 DO Pulse Operate Status 0: Off 1: On
00026	0x0019	1 bit	CH1 DO Pulse Operate Status 0: Off 1: On
00027	0x001A	1 bit	CH2 DO Pulse Operate Status 0: Off 1: On
00028	0x001B	1 bit	CH3 DO Pulse Operate Status 0: Off 1: On
00029	0x001C	1 bit	CH4 DO Pulse Operate Status 0: Off 1: On
00030	0x001D	1 bit	CH5 DO Pulse Operate Status 0: Off 1: On
00031	0x001E	1 bit	CH6 DO Pulse Operate Status 0: Off 1: On
00032	0x001F	1 bit	CH7 DO Pulse Operate Status 0: Off 1: On
00033	0x0020	1 bit	CH0 DI Pulse Operate Status 0: Off 1: On

00034	0x0021	1 bit	CH1 DI Pulse Operate Status 0: Off 1: On
00035	0x0022	1 bit	CH2 DI Pulse Operate Status 0: Off 1: On
00036	0x0023	1 bit	CH3 DI Pulse Operate Status 0: Off 1: On
00037	0x0024	1 bit	CH4 DI Pulse Operate Status 0: Off 1: On
00038	0x0025	1 bit	CH5 DI Pulse Operate Status 0: Off 1: On
00039	0x0026	1 bit	CH6 DI Pulse Operate Status 0: Off 1: On
00040	0x0027	1 bit	CH7 DI Pulse Operate Status 0: Off 1: On
00041	0x0028	1 bit	CH8 DI Pulse Operate Status 0: Off 1: On
00042	0x0029	1 bit	CH9 DI Pulse Operate Status 0: Off 1: On
00043	0x002A	1 bit	CH10 DI Pulse Operate Status 0: Off 1: On
00044	0x002B	1 bit	CH11 DI Pulse Operate Status 0: Off 1: On
00045	0x002C	1 bit	CH0 DI Clear Count Value Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00046	0x002D	1 bit	CH1 DI Clear Count Value Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00047	0x002E	1 bit	CH2 DI Clear Count Value Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00048	0x002F	1 bit	CH3 DI Clear Count Value Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00049	0x0030	1 bit	CH4 DI Clear Count Value Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00050	0x0031	1 bit	CH5 DI Clear Count Value Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00051	0x0032	1 bit	CH6 DI Clear Count Value Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00052	0x0033	1 bit	CH7 DI Clear Count Value Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00053	0x0034	1 bit	CH8 DI Clear Count Value Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00054	0x0035	1 bit	CH9 DI Clear Count Value Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00055	0x0036	1 bit	CH10 DI Clear Count Value Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00056	0x0037	1 bit	CH11 DI Clear Count Value Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value

00057	0x0038	1 bit	CH0 DI OverFlow Status   Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00058	0x0039	1 bit	CH1 DI OverFlow Status   Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00059	0x003A	1 bit	CH2 DI OverFlow Status   Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00060	0x003B	1 bit	CH3 DI OverFlow Status   Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00061	0x003C	1 bit	CH4 DI OverFlow Status   Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00062	0x003D	1 bit	CH5 DI OverFlow Status   Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00063	0x003E	1 bit	CH6 DI OverFlow Status   Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00065	0x003F	1 bit	CH7 DI OverFlow Status   Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00066	0x0040	1 bit	CH8 DI OverFlow Status   Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00067	0x0041	1 bit	CH9 DI OverFlow Status   Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00068	0x0042	1 bit	CH10 DI OverFlow Status   Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00069	0x0043	1 bit	CH11 DI OverFlow Status   Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00069	0x0044	1 bit	CH0 DI Count Trigger
00070	0x0045	1 bit	CH1 DI Count Trigger
00071	0x0046	1 bit	CH2 DI Count Trigger



00072	0x0047	1 bit	CH3 DI Count Trigger
00073	0x0048	1 bit	CH4 DI Count Trigger
00074	0x0049	1 bit	CH5 DI Count Trigger
00075	0x004A	1 bit	CH6 DI Count Trigger
00076	0x004B	1 bit	CH7 DI Count Trigger
00077	0x004C	1 bit	CH8 DI Count Trigger
00078	0x004D	1 bit	CH9 DI Count Trigger
00079	0x004E	1 bit	CH10 DI Count Trigger
00070	0x004F	1 bit	CH11 DI Count Trigger

### 1xxxx Read Only Coils (Function 2)

Reference Addr	Address	Data Type	Description
10001	0x0000	1 bit	CH0 DI Value
10002	0x0001	1 bit	CH1 DI Value
10003	0x0002	1 bit	CH2 DI Value
10004	0x0003	1 bit	CH3 DI Value
10005	0x0004	1 bit	CH4 DI Value
10006	0x0005	1 bit	CH5 DI Value
10007	0x0006	1 bit	CH6 DI Value
10008	0x0007	1 bit	CH7 DI Value
10009	0x0008	1 bit	CH8 DI Value
10010	0x0009	1 bit	CH9 DI Value
10011	0x000A	1 bit	CH10 DI Value
10012	0x000B	1 bit	CH11 DI Value

### 3xxxx Read Only Registers (Function 4)

Reference Addr	Address	Data Type	Description
30001	0x0000	word	CH0 DI Count Value Hi-Byte
30002	0x0001	word	CH0 DI Count Value Lo-Byte
30003	0x0002	word	CH1 DI Count Value Hi-Byte
30004	0x0003	word	CH1 DI Count Value Lo-Byte
30005	0x0004	word	CH2 DI Count Value Hi-Byte
30006	0x0005	word	CH2 DI Count Value Lo-Byte
30007	0x0006	word	CH3 DI Count Value Hi-Byte
30008	0x0007	word	CH3 DI Count Value Lo-Byte
30009	0x0008	word	CH4 DI Count Value Hi-Byte
30010	0x0009	word	CH4 DI Count Value Lo-Byte
30011	0x000A	word	CH5 DI Count Value Hi-Byte
30012	0x000B	word	CH5 DI Count Value Lo-Byte
30013	0x000C	word	CH6 DI Count Value Hi-Byte
30014	0x000D	word	CH6 DI Count Value Lo-Byte
30015	0x000E	word	CH7 DI Count Value Hi-Byte
30016	0x000F	word	CH7 DI Count Value Lo-Byte
30017	0x0010	word	CH8 DI Count Value Hi-Byte
30018	0x0011	word	CH8 DI Count Value Lo-Byte
30019	0x0012	word	CH9 DI Count Value Hi-Byte
30020	0x0013	word	CH9 DI Count Value Lo-Byte

30021	0x0014	word	CH10 DI Count Value Hi-Byte
30022	0x0015	word	CH10 DI Count Value Lo-Byte
30023	0x0016	word	CH11 DI Count Value Hi-Byte
30024	0x0017	word	CH11 DI Count Value Lo-Byte
<b>// for Citect SCADA compatibility, I/O data can be WORD accessed as well</b>			
312289	0x3000	word	CH0 DI Value
312290	0x3001	word	CH1 DI Value
312291	0x3002	word	CH2 DI Value
312292	0x3003	word	CH3 DI Value
312293	0x3004	word	CH4 DI Value
312294	0x3005	word	CH5 DI Value
312295	0x3006	word	CH6 DI Value
312296	0x3007	word	CH7 DI Value
312297	0x3008	word	CH8 DI Value
312298	0x3009	word	CH9 DI Value
312299	0x300A	word	CH10 DI Value
312300	0x300B	word	CH11 DI Value

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

Reference Address	Address	Data Type	Description
40001	0x0000	word	CH0 DO Pulse Output Count Value Hi-Byte
40002	0x0001	word	CH0 DO Pulse Output Count Value Lo-Byte
40003	0x0002	word	CH1 DO Pulse Output Count Value Hi-Byte
40004	0x0003	word	CH1 DO Pulse Output Count Value Lo-Byte
40005	0x0004	word	CH2 DO Pulse Output Count Value Hi-Byte
40006	0x0005	word	CH2 DO Pulse Output Count Value Lo-Byte
40007	0x0006	word	CH3 DO Pulse Output Count Value Hi-Byte
40008	0x0007	word	CH3 DO Pulse Output Count Value Lo-Byte
40009	0x0008	word	CH4 DO Pulse Output Count Value Hi-Byte
40010	0x0009	word	CH4 DO Pulse Output Count Value Lo-Byte
40011	0x000A	word	CH5 DO Pulse Output Count Value Hi-Byte
40012	0x000B	word	CH5 DO Pulse Output Count Value Lo-Byte
40013	0x000C	word	CH6 DO Pulse Output Count Value Hi-Byte
40014	0x000D	word	CH6 DO Pulse Output Count Value Lo-Byte
40015	0x000E	word	CH7 DO Pulse Output Count Value Hi-Byte
40016	0x000F	word	CH7 DO Pulse Output Count Value Lo-Byte
40017	0x0010	word	CH0 DO Pulse Low Signal Width
40018	0x0011	word	CH1 DO Pulse Low Signal Width
40019	0x0012	word	CH2 DO Pulse Low Signal Width
40020	0x0013	word	CH3 DO Pulse Low Signal Width
40021	0x0014	word	CH4 DO Pulse Low Signal Width
40022	0x0015	word	CH5 DO Pulse Low Signal Width
40023	0x0016	word	CH6 DO Pulse Low Signal Width
40024	0x0017	word	CH7 DO Pulse Low Signal Width
40025	0x0018	word	CH0 DO PulseHigh Signal Width
40026	0x0019	word	CH1 DO PulseHigh Signal Width
40027	0x001A	word	CH2 DO PulseHigh Signal Width
40028	0x001B	word	CH3 DO PulseHigh Signal Width

40029	0x001C	word	CH4 DO PulseHigh Signal Width
40030	0x001D	word	CH5 DO PulseHigh Signal Width
40031	0x001E	word	CH6 DO PulseHigh Signal Width
40032	0x001F	word	CH7 DO PulseHigh Signal Width
40033	0x0020	word	CH0 DO Mode 0: DO 1: Pulse
40034	0x0021	word	CH1 DO Mode 0: DO 1: Pulse
40035	0x0022	word	CH2 DO Mode 0: DO 1: Pulse
40036	0x0023	word	CH3 DO Mode 0: DO 1: Pulse
40037	0x0024	word	CH4 DO Mode 0: DO 1: Pulse
40038	0x0025	word	CH5 DO Mode 0: DO 1: Pulse
40039	0x0026	word	CH6 DO Mode 0: DO 1: Pulse
40040	0x0027	word	CH7 DO Mode 0: DO 1: Pulse
40041	0x0028	word	CH0 DI Count Filter
40042	0x0029	word	CH1 DI Count Filter
40043	0x002A	word	CH2 DI Count Filter
40044	0x002B	word	CH3 DI Count Filter
40045	0x002C	word	CH4 DI Count Filter
40046	0x002D	word	CH5 DI Count Filter
40047	0x002E	word	CH6 DI Count Filter
40048	0x002F	word	CH7 DI Count Filter
40049	0x0030	word	CH8 DI Count Filter
40050	0x0031	word	CH9 DI Count Filter
40051	0x0032	word	CH10 DI Count Filter
40052	0x0033	word	CH11 DI Count Filter
40053	0x0034	word	CH0 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40054	0x0035	word	CH1 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40055	0x0036	word	CH2 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40056	0x0037	word	CH3 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40057	0x0038	word	CH4 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40058	0x0039	word	CH5 DI Mode 0: DI 1: Count Others : return Illegal Data Value

40059	0x003A	word	CH6 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40060	0x003B	word	CH7 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40061	0x003C	word	CH8 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40062	0x003D	word	CH9 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40063	0x003E	word	CH10 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40064	0x003F	word	CH11 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40377	0x0178	word	Internal Register 00 Value
40378	0x0179	word	Internal Register 01 Value
40379	0x017A	word	Internal Register 02 Value
40380	0x017B	word	Internal Register 03 Value
40381	0x017C	word	Internal Register 04 Value
40382	0x017D	word	Internal Register 05 Value
40383	0x017E	word	Internal Register 06 Value
40384	0x017F	word	Internal Register 07 Value
40385	0x0180	word	Internal Register 08 Value
40386	0x0181	word	Internal Register 09 Value
40387	0x0182	word	Internal Register 10 Value
40388	0x0183	word	Internal Register 11 Value
40389	0x0184	word	Internal Register 12 Value
40390	0x0185	word	Internal Register 13 Value
40391	0x0186	word	Internal Register 14 Value
40392	0x0187	word	Internal Register 15 Value
40393	0x0188	word	Internal Register 16 Value
40394	0x0189	word	Internal Register 17 Value
40395	0x018A	word	Internal Register 18 Value
40396	0x018B	word	Internal Register 19 Value
40397	0x018C	word	Internal Register 20 Value
40398	0x018D	word	Internal Register 21 Value
40389	0x0184	word	Internal Register 12 Value
40390	0x0185	word	Internal Register 13 Value
40391	0x0186	word	Internal Register 14 Value
40392	0x0187	word	Internal Register 15 Value
40393	0x0188	word	Internal Register 16 Value
40394	0x0189	word	Internal Register 17 Value
40395	0x018A	word	Internal Register 18 Value
40396	0x018B	word	Internal Register 19 Value
40397	0x018C	word	Internal Register 20 Value
40398	0x018D	word	Internal Register 21 Value

40399	0x018E	word	Internal Register 22 Value
40400	0x018F	word	Internal Register 23 Value
<b>// for Citect SCADA compatibility, I/O data can be WORD accessed as well</b>			
40257	0x0100	1 word	CH0 DO Value 0: Off 1: On
40258	0x0101	1 word	CH1 DO Value 0: Off 1: On
40259	0x0102	1 word	CH2 DO Value 0: Off 1: On
40260	0x0103	1 word	CH3 DO Value 0: Off 1: On
40261	0x0104	1 word	CH4 DO Value 0: Off 1: On
40262	0x0105	1 word	CH5 DO Value 0: Off 1: On
40263	0x0106	1 word	CH6 DO Value 0: Off 1: On
40264	0x0107	1 word	CH7 DO Value 0: Off 1: On
40265	0x0108	1 word	CH0 DO Power On Value 0: Off 1: On
40266	0x0109	1 word	CH1 DO Power On Value 0: Off 1: On
40267	0x010A	1 word	CH2 DO Power On Value 0: Off 1: On
40268	0x010B	1 word	CH3 DO Power On Value 0: Off 1: On
40269	0x010C	1 word	CH4 DO Power On Value 0: Off 1: On
40270	0x010D	1 word	CH5 DO Power On Value 0: Off 1: On
40271	0x010E	1 word	CH6 DO Power On Value 0: Off 1: On
40272	0x010F	1 word	CH7 DO Power On Value 0: Off 1: On
40273	0x0110	1 word	CH0 DO Safe Mode Value 0: Off 1: On
40274	0x0111	1 word	CH1 DO Safe Mode Value 0: Off 1: On
40275	0x0112	1 word	CH2 DO Safe Mode Value 0: Off 1: On
40276	0x0113	1 word	CH3 DO Safe Mode Value 0: Off 1: On
40277	0x0114	1 word	CH4 DO Safe Mode Value 0: Off 1: On
40278	0x0115	1 word	CH5 DO Safe Mode Value 0: Off 1: On
40279	0x0116	1 word	CH6 DO Safe Mode Value 0: Off 1: On
40280	0x0117	1 word	CH7 DO Safe Mode Value 0: Off 1: On
40281	0x0118	1 word	CH0 DO Pulse Operate Status 0: Stop 1: Start
40282	0x0119	1 word	CH1 DO Pulse Operate Status 0: Stop 1: Start
40283	0x011A	1 word	CH2 DO Pulse Operate Status 0: Stop 1: Start
40284	0x011B	1 word	CH3 DO Pulse Operate Status 0: Stop 1: Start
40285	0x011C	1 word	CH4 DO Pulse Operate Status 0: Stop 1: Start
40286	0x011D	1 word	CH5 DO Pulse Operate Status 0: Stop 1: Start
40287	0x011E	1 word	CH6 DO Pulse Operate Status 0: Stop 1: Start
40288	0x011F	1 word	CH7 DO Pulse Operate Status 0: Stop 1: Start
40289	0x0120	1 word	CH0 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40290	0x0121	1 word	CH1 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40291	0x0122	1 word	CH2 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40292	0x0123	1 word	CH3 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40293	0x0124	1 word	CH4 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40294	0x0125	1 word	CH5 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40295	0x0126	1 word	CH6 DO PowerOn Pulse Operate Status 0: Stop 1: Start

40296	0x0127	1 word	CH7 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40297	0x0128	1 word	CH0 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40298	0x0129	1 word	CH1 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40299	0x012A	1 word	CH2 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40300	0x012B	1 word	CH3 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40301	0x012C	1 word	CH4 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40302	0x012D	1 word	CH5 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40303	0x012E	1 word	CH6 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40304	0x012F	1 word	CH7 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40305	0x0130	1 word	CH0 DI Counter Operate Status 0: Stop 1: Start
40306	0x0131	1 word	CH1 DI Counter Operate Status 0: Stop 1: Start
40307	0x0132	1 word	CH2 DI Counter Operate Status 0: Stop 1: Start
40308	0x0133	1 word	CH3 DI Counter Operate Status 0: Stop 1: Start
40309	0x0134	1 word	CH4 DI Counter Operate Status 0: Stop 1: Start
40310	0x0135	1 word	CH5 DI Counter Operate Status 0: Stop 1: Start
40311	0x0136	1 word	CH6 DI Counter Operate Status 0: Stop 1: Start
40312	0x0137	1 word	CH7 DI Counter Operate Status 0: Stop 1: Start
40313	0x0138	1 word	CH8 DI Counter Operate Status 0: Stop 1: Start
40314	0x0139	1 word	CH9 DI Counter Operate Status 0: Stop 1: Start
40315	0x013A	1 word	CH10 DI Counter Operate Status 0: Stop 1: Start
40316	0x013B	1 word	CH11 DI Counter Operate Status 0: Stop 1: Start
40317	0x013C	1 word	CH0 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value0 : Return illegal data value(0x03)
40318	0x013D	1 word	CH1 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40319	0x013E	1 word	CH2 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40320	0x013F	1 word	CH3 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40321	0x0140	1 word	CH4 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40322	0x0141	1 word	CH5 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)

40323	0x0142	1 word	CH6 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40324	0x0143	1 word	CH7 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40325	0x0144	1 word	CH8 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40326	0x0145	1 word	CH9 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40327	0x0146	1 word	CH10 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40328	0x0147	1 word	CH11 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40329	0x0148	1 word	CH0 DI OverFlow Status Read: 0 : Normal  1 : Overflow Write : 0 : Clear overflow status 1 : Return illegal data value (0x03)
40330	0x0149	1 word	CH1 DI OverFlow Status Read: 0 : Normal  1 : Overflow Write : 0 : Clear overflow status 1 : Return illegal data value (0x03)
40331	0x014A	1 word	CH2 DI OverFlow Status Read: 0 : Normal  1 : Overflow Write : 0 : Clear overflow status 1 : Return illegal data value (0x03)

40332	0x014B	1 word	CH3 DI OverFlow Status Read: 0 : Normal  Write : 0 : Clear overflow status 1 : Overflow 1 : Return illegal data value (0x03)
40333	0x014C	1 word	CH4 DI OverFlow Status Read: 0 : Normal  Write : 0 : Clear overflow status 1 : Overflow 1 : Return illegal data value (0x03)
40334	0x014D	1 word	CH5 DI OverFlow Status Read: 0 : Normal  Write : 0 : Clear overflow status 1 : Overflow 1 : Return illegal data value (0x03)
40335	0x014E	1 word	CH6 DI OverFlow Status Read: 0 : Normal  Write : 0 : Clear overflow status 1 : Overflow 1 : Return illegal data value (0x03)
40336	0x014F	1 word	CH7 DI OverFlow Status Read: 0 : Normal  Write : 0 : Clear overflow status 1 : Overflow 1 : Return illegal data value (0x03)



40337	0x0150	1 word	CH8 DI OverFlow Status Read: 0 : Normal  1 : Overflow Write : 0 : Clear overflow status 1 : Return illegal data value (0x03)
40338	0x0151	1 word	CH9 DI OverFlow Status Read: 0 : Normal  1 : Overflow Write : 0 : Clear overflow status 1 : Return illegal data value (0x03)
40339	0x0152	1 word	CH10 DI OverFlow Status Read: 0 : Normal  1 : Overflow Write : 0 : Clear overflow status 1 : Return illegal data value (0x03)
40340	0x0153	1 word	CH11 DI OverFlow Status Read: 0 : Normal  1 : Overflow Write : 0 : Clear overflow stat 1 : Return illegal data value (0x03)
40341	0x0154	1 word	CH0 DI Counter Trigger , 0=Low to High, 1=High to Low
40342	0x0155	1 word	CH1 DI Counter Trigger , 0=Low to High, 1=High to Low
40343	0x0156	1 word	CH2 DI Counter Trigger , 0=Low to High, 1=High to Low
40344	0x0157	1 word	CH3 DI Counter Trigger , 0=Low to High, 1=High to Low
40345	0x0158	1 word	CH4 DI Counter Trigger , 0=Low to High, 1=High to Low
40346	0x0159	1 word	CH5 DI Counter Trigger , 0=Low to High, 1=High to Low
40347	0x015A	1 word	CH6 DI Counter Trigger , 0=Low to High, 1=High to Low

40348	0x015B	1 word	CH7 DI Counter Trigger , 0=Low to High, 1=High to Low
40349	0x015C	1 word	CH8 DI Counter Trigger , 0=Low to High, 1=High to Low
40350	0x015D	1 word	CH9 DI Counter Trigger , 0=Low to High, 1=High to Low
40351	0x015E	1 word	CH10 DI Counter Trigger , 0=Low to High, 1=High to Low
40352	0x015F	1 word	CH11 DI Counter Trigger , 0=Low to High, 1=High to Low
40353	0x0160	1 word	CH0 DI PowerOn Counter Operate Status 0: Stop 1: Start
40354	0x0161	1 word	CH1 DI PowerOn Counter Operate Status 0: Stop 1: Start
40355	0x0162	1 word	CH2 DI PowerOn Counter Operate Status 0: Stop 1: Start
40356	0x0163	1 word	CH3 DI PowerOn Counter Operate Status 0: Stop 1: Start
40357	0x0164	1 word	CH4 DI PowerOn Counter Operate Status 0: Stop 1: Start
40358	0x0165	1 word	CH5 DI PowerOn Counter Operate Status 0: Stop 1: Start
40359	0x0166	1 word	CH6 DI PowerOn Counter Operate Status 0: Stop 1: Start
40360	0x0167	1 word	CH7 DI PowerOn Counter Operate Status 0: Stop 1: Start
40361	0x0168	1 word	CH8 DI PowerOn Counter Operate Status 0: Stop 1: Start
40362	0x0169	1 word	CH9 DI PowerOn Counter Operate Status 0: Stop 1: Start
40363	0x016A	1 word	CH10 DI PowerOn Counter Operate Status 0: Stop 1: Start
40364	0x016B	1 word	CH11 DI PowerOn Counter Operate Status 0: Stop 1: Start
40365	0x016C	1 word	CH0 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40366	0x016D	1 word	CH1 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40367	0x016E	1 word	CH2 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40368	0x016F	1 word	CH3 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40369	0x0170	1 word	CH4 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40370	0x0171	1 word	CH5 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40371	0x0172	1 word	CH6 DI Safe Mode Counter Operate Status 0: Stop 1: Start

40372	0x0173	1 word	CH7 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40373	0x0174	1 word	CH8 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40374	0x0175	1 word	CH9 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40375	0x0176	1 word	CH10 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40376	0x0177	1 word	CH11 DI Safe Mode Counter Operate Status 0: Stop 1: Start

## ioLogik E2212 Modbus Mapping

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

Reference	Address	Data Type	Description
00001	0x0000	1 bit	CH0 DO value 0: off 1: on
00002	0x0001	1 bit	CH1 DO value 0: off 1: on
00003	0x0002	1 bit	CH2 DO value 0: off 1: on
00004	0x0003	1 bit	CH3 DO value 0: off 1: on
00005	0x0004	1 bit	CH4 DO value 0: off 1: on
00006	0x0005	1 bit	CH5 DO value 0: off 1: on
00007	0x0006	1 bit	CH6 DO value 0: off 1: on
00008	0x0007	1 bit	CH7 DO value 0: off 1: on
00009	0x0008	1 bit	CH8 DO value 0: off 1: on
00010	0x0009	1 bit	CH9 DO value 0: off 1: on
00011	0x000A	1 bit	CH10 DO value 0: off 1: on
00012	0x000B	1 bit	CH11 DO value 0: off 1: on
00013	0x000C	1 bit	CH0 DO power-on value 0: off 1: on
00014	0x000D	1 bit	CH1 DO power-on value 0: off 1: on

Reference	Address	Data Type	Description
00015	0x000E	1 bit	CH2 DO power-on value 0: off 1: on
00016	0x000F	1 bit	CH3 DO power-on value 0: off 1: on
00017	0x0010	1 bit	CH4 DO power-on value 0: off 1: on
00018	0x0011	1 bit	CH5 DO power-on value 0: off 1: on
00019	0x0012	1 bit	CH6 DO power-on value 0: off 1: on
00020	0x0013	1 bit	CH7 DO power-on value 0: off 1: on
00021	0x0014	1 bit	CH8 DO power-on value 0: off 1: on
00022	0x0015	1 bit	CH9 DO power-on value 0: off 1: on
00023	0x0016	1 bit	CH10 DO power-on value 0: off 1: on
00024	0x0017	1 bit	CH11 DO power-on value 0: off 1: on
00025	0x0018	1 bit	CH0 DO safe value 0: off 1: on
00026	0x0019	1 bit	CH1 DO safe value 0: off 1: on
00027	0x001A	1 bit	CH2 DO safe value 0: off 1: on
00028	0x001B	1 bit	CH3 DO safe value 0: off 1: on
00029	0x001C	1 bit	CH4 DO safe value 0: off 1: on
00030	0x001D	1 bit	CH5 DO safe value 0: off 1: on
00031	0x001E	1 bit	CH6 DO safe value 0: off 1: on
00032	0x001F	1 bit	CH7 DO safe value 0: off 1: on
00033	0x0020	1 bit	CH8 DO safe value 0: off 1: on
00034	0x0021	1 bit	CH9 DO safe value 0: off 1: on
00035	0x0022	1 bit	CH10 DO safe value 0: off 1: on

Reference	Address	Data Type	Description
00036	0x0023	1 bit	CH11 DO safe value 0: off 1: on
00037	0x0024	1 bit	CH0 DO pulse operate status 0: off 1: on
00038	0x0025	1 bit	CH1 DO pulse operate status 0: off 1: on
00039	0x0026	1 bit	CH2 DO pulse operate status 0: off 1: on
00040	0x0027	1 bit	CH3 DO pulse operate status 0: off 1: on
00041	0x0028	1 bit	CH4 DO pulse operate status 0: off 1: on
00042	0x0029	1 bit	CH5 DO pulse operate status 0: off 1: on
00043	0x002A	1 bit	CH6 DO pulse operate status 0: off 1: on
00044	0x002B	1 bit	CH7 DO pulse operate status 0: off 1: on
00045	0x002C	1 bit	CH8 DO pulse operate status 0: off 1: on
00046	0x002D	1 bit	CH9 DO pulse operate status 0: off 1: on
00047	0x002E	1 bit	CH10 DO pulse operate status 0: off 1: on
00048	0x002F	1 bit	CH11 DO pulse operate status 0: off 1: on
00049	0x0030	1 bit	CH0 DO power-on pulse operate status 0: off 1: on
00050	0x0031	1 bit	CH1 DO power-on pulse operate status 0: off 1: on
00051	0x0032	1 bit	CH2 DO power-on pulse operate status 0: off 1: on
00052	0x0033	1 bit	CH3 DO power-on pulse operate status 0: off 1: on
00053	0x0034	1 bit	CH4 DO power-on pulse operate status 0: off 1: on
00054	0x0035	1 bit	CH5 DO power-on pulse operate status 0: off 1: on
00055	0x0036	1 bit	CH6 DO power-on pulse operate status 0: off 1: on
00056	0x0037	1 bit	CH7 DO power-on pulse operate status 0: off 1: on

Reference	Address	Data Type	Description
00057	0x0038	1 bit	CH8 DO power-on pulse operate status 0: off 1: on
00058	0x0039	1 bit	CH9 DO power-on pulse operate status 0: off 1: on
00059	0x003A	1 bit	CH10 DO power-on pulse operate status 0: off 1: on
00060	0x003B	1 bit	CH11 DO power-on pulse operate status 0: off 1: on
00061	0x003C	1 bit	CH0 DO safe pulse operate status 0: off 1: on
00062	0x003D	1 bit	CH1 DO safe pulse operate status 0: off 1: on
00063	0x003E	1 bit	CH2 DO safe pulse operate status 0: off 1: on
00064	0x003F	1 bit	CH3 DO safe pulse operate status 0: off 1: on
00065	0x0040	1 bit	CH4 DO safe pulse operate status 0: off 1: on
00066	0x0041	1 bit	CH5 DO safe pulse operate status 0: off 1: on
00067	0x0042	1 bit	CH6 DO safe pulse operate status 0: off 1: on
00068	0x0043	1 bit	CH7 DO safe pulse operate status 0: off 1: on
00069	0x0044	1 bit	CH8 DO safe pulse operate status 0: off 1: on
00070	0x0045	1 bit	CH9 DO safe pulse operate status 0: off 1: on
00071	0x0046	1 bit	CH10 DO safe pulse operate status 0: off 1: on
00072	0x0047	1 bit	CH11 DO safe pulse operate status 0: off 1: on
00073	0x0048	1 bit	CH0 DI counter status 0: off 1: on
00074	0x0049	1 bit	CH1 DI counter status 0: off 1: on
00075	0x004A	1 bit	CH2 DI counter status 0: off 1: on
00076	0x004B	1 bit	CH3 DI counter status 0: off 1: on
00077	0x004C	1 bit	CH4 DI counter status 0: off 1: on

Reference	Address	Data Type	Description
00078	0x004D	1 bit	CH5 DI counter status 0: off 1: on
00079	0x004E	1 bit	CH6 DI counter status 0: off 1: on
00080	0x004F	1 bit	CH7 DI counter status 0: off 1: on
00081	0x0050	1 bit	CH8 DI counter status 0: off 1: on
00082	0x0051	1 bit	CH9 DI counter status 0: off 1: on
00083	0x0052	1 bit	CH10 DI counter status 0: off 1: on
00084	0x0053	1 bit	CH11 DI counter status 0: off 1: on
00085	0x0054	1 bit	CH0 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value
00086	0x0055	1 bit	CH1 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value
00087	0x0056	1 bit	CH2 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value
00088	0x0057	1 bit	CH3 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value

Reference	Address	Data Type	Description
00089	0x0058	1 bit	CH4 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value
00090	0x0059	1 bit	CH5 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value
00091	0x005A	1 bit	CH6 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value
00092	0x005B	1 bit	CH7 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value
00093	0x005C	1 bit	CH8 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value
00094	0x005D	1 bit	CH9 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value
00095	0x005E	1 bit	CH10 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value



Reference	Address	Data Type	Description
00096	0x005F	1 bit	CH11 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value
00097	0x0060	1 bit	CH0 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value
00098	0x0061	1 bit	CH1 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value
00099	0x0062	1 bit	CH2 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value
00100	0x0063	1 bit	CH3 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value
00101	0x0064	1 bit	CH4 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value
00102	0x0065	1 bit	CH5 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value

Reference	Address	Data Type	Description
00103	0x0066	1 bit	CH6 DI overflow status Read: 0: normal          1: overflow Write: 0: clear overflow status 1: return illegal data value
00104	0x0067	1 bit	CH7 DI overflow status Read: 0: normal          1: overflow Write: 0: clear overflow status 1: return illegal data value
00105	0x0068	1 bit	CH8 DI overflow status Read: 0: normal          1: overflow Write: 0: clear overflow status 1: return illegal data value
00106	0x0069	1 bit	CH9 DI overflow status Read: 0: normal          1: overflow Write: 0: clear overflow status 1: return illegal data value
00107	0x006A	1 bit	CH10 DI overflow status Read: 0: normal          1: overflow Write: 0: clear overflow status 1: return illegal data value
00108	0x006B	1 bit	CH11 DI overflow status Read: 0: normal          1: overflow Write: 0: clear overflow status 1: return illegal data value
00109	0x006C	1 bit	CH0 DI count trigger
00110	0x006D	1 bit	CH1 DI count trigger
00111	0x006E	1 bit	CH2 DI count trigger
00112	0x006F	1 bit	CH3 DI count trigger
00113	0x0070	1 bit	CH4 DI count trigger
00114	0x0071	1 bit	CH5 DI count trigger
00115	0x0072	1 bit	CH6 DI count trigger

Reference	Address	Data Type	Description
00116	0x0073	1 bit	CH7 DI count trigger
00117	0x0074	1 bit	CH8 DI count trigger
00118	0x0075	1 bit	CH9 DI count trigger
00119	0x0076	1 bit	CH10 DI count trigger
00120	0x0077	1 bit	CH11 DI count trigger
00121	0x0078	1 bit	CH0 DI power-on status 0: off 1: on
00122	0x0079	1 bit	CH1 DI power-on status 0: off 1: on
00123	0x007A	1 bit	CH2 DI power-on status 0: off 1: on
00124	0x007B	1 bit	CH3 DI power-on status 0: off 1: on
00125	0x007C	1 bit	CH4 DI power-on status 0: off 1: on
00126	0x007D	1 bit	CH5 DI power-on status 0: off 1: on
00127	0x007E	1 bit	CH6 DI power-on status 0: off 1: on
00128	0x007F	1 bit	CH7 DI power-on status 0: off 1: on
00129	0x0080	1 bit	CH8 DI power-on status 0: off 1: on
00130	0x0081	1 bit	CH9 DI power-on status 0: off 1: on
00131	0x0082	1 bit	CH10 DI power-on status 0: off 1: on
00132	0x0083	1 bit	CH11 DI power-on status 0: off 1: on
00133	0x0084	1 bit	CH0 DI safe operate status 0: off 1: on
00134	0x0085	1 bit	CH1 DI safe operate status 0: off 1: on
00135	0x0086	1 bit	CH2 DI safe operate status 0: off 1: on
00136	0x0087	1 bit	CH3 DI safe operate status 0: off 1: on
00137	0x0088	1 bit	CH4 DI safe operate status 0: off 1: on
00138	0x0089	1 bit	CH5 DI safe operate status 0: off 1: on

Reference	Address	Data Type	Description
00139	0x008A	1 bit	CH6 DI safe operate status 0: off 1: on
00140	0x008B	1 bit	CH7 DI safe operate status 0: off 1: on
00141	0x008C	1 bit	CH8 DI safe operate status 0: off 1: on
00142	0x008D	1 bit	CH9 DI safe operate status 0: off 1: on
00143	0x008E	1 bit	CH10 DI safe operate status 0: off 1: on
00144	0x008F	1 bit	CH11 DI safe operate status 0: off 1: on
00145	0x0090	1 bit	CH0 DI set channel Power-off storage enable on/off 1: on 0: off
00146	0x0091	1 bit	CH1 DI set channel Power-off storage enable on/off 1: on 0: off
00147	0x0092	1 bit	CH2 DI set channel Power-off storage enable on/off 1: on 0: off
00148	0x0093	1 bit	CH3 DI set channel Power-off storage enable on/off 1: on 0: off
00149	0x0094	1 bit	CH4 DI set channel Power-off storage enable on/off 1: on 0: off
00150	0x0095	1 bit	CH5 DI set channel Power-off storage enable on/off 1: on 0: off
00151	0x0096	1 bit	CH6 DI set channel Power-off storage enable on/off 1: on 0: off
00152	0x0097	1 bit	CH7 DI set channel Power-off storage enable on/off 1: on 0: off
00153	0x0098	1 bit	CH8 DI set channel Power-off storage enable on/off 1: on 0: off
00154	0x0099	1 bit	CH9 DI set channel Power-off storage enable on/off 1: on 0: off

Reference	Address	Data Type	Description
00155	0x009A	1 bit	CH10 DI set channel Power-off storage enable on/off 1: on 0: off
00156	0x009B	1 bit	CH11 DI set channel Power-off storage enable on/off 1: on 0: off
00157	0x009C	1 bit	DIO 0 1: output DO mode 0: input DI mode
00158	0x009D	1 bit	DIO 1 1: output DO mode 0: input DI mode
00159	0x009E	1 bit	DIO 2 1: output DO mode 0: input DI mode
00160	0x009F	1 bit	DIO 3 1: output DO mode 0: input DI mode

### 1xxxx Read Only Coils (Function 2)

Reference	Address	Data Type	Description
10001	0x0000	1 bit	CH0 DI value
10002	0x0001	1 bit	CH1 DI value
10003	0x0002	1 bit	CH2 DI value
10004	0x0003	1 bit	CH3 DI value
10005	0x0004	1 bit	CH4 DI value
10006	0x0005	1 bit	CH5 DI value
10007	0x0006	1 bit	CH6 DI value
10008	0x0007	1 bit	CH7 DI value
10009	0x0008	1 bit	CH8 DI value
10010	0x0009	1 bit	CH9 DI value
10011	0x000A	1 bit	CH10 DI value
10012	0x000B	1 bit	CH11 DI value
10013	0x000C	1 bit	Non-active
10014	0x000D	1 bit	Non-active
10015	0x000E	1 bit	Non-active
10016	0x000F	1 bit	Non-active

### 3xxxx Read Only Registers (Function 4)

Reference	Address	Data Type	Description
30001	0x0000	1 word	CH0 DI count value hi-byte

Reference	Address	Data Type	Description
30002	0x0001	1 word	CH0 DI count value lo-byte
30003	0x0002	1 word	CH1 DI count value hi-byte
30004	0x0003	1 word	CH1 DI count value lo-byte
30005	0x0004	1 word	CH2 DI count value hi-byte
30006	0x0005	1 word	CH2 DI count value lo-byte
30007	0x0006	1 word	CH3 DI count value hi-byte
30008	0x0007	1 word	CH3 DI count value lo-byte
30009	0x0008	1 word	CH4 DI count value hi-byte
30010	0x0009	1 word	CH4 DI count value lo-byte
30011	0x000A	1 word	CH5 DI count value hi-byte
30012	0x000B	1 word	CH5 DI count value lo-byte
30013	0x000C	1 word	CH6 DI count value hi-byte
30014	0x000D	1 word	CH6 DI count value lo-byte
30015	0x000E	1 word	CH7 DI count value hi-byte
30016	0x000F	1 word	CH7 DI count value lo-byte
30017	0x0010	1 word	CH8 DI count value hi-byte
30018	0x0011	1 word	CH8 DI count value lo-byte
30019	0x0012	1 word	CH9 DI count value hi-byte
30020	0x0013	1 word	CH9 DI count value lo-byte
30021	0x0014	1 word	CH10 DI count value hi-byte
30022	0x0015	1 word	CH10 DI count value lo-byte
30023	0x0016	1 word	CH11 DI count value hi-byte
30024	0x0017	1 word	CH11 DI count value lo-byte
312289	0x3000	1 word	CH0 DI value
312290	0x3001	1 word	CH1 DI value
312291	0x3002	1 word	CH2 DI value
312292	0x3003	1 word	CH3 DI value
312293	0x3004	1 word	CH4 DI value
312294	0x3005	1 word	CH5 DI value
312295	0x3006	1 word	CH6 DI value
312296	0x3007	1 word	CH7 DI value
312297	0x3008	1 word	CH8 DI value
312298	0x3009	1 word	CH9 DI value
312299	0x300A	1 word	CH10 DI value
312300	0x300B	1 word	CH11 DI value

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

Reference	Address	Data Type	Description
40001	0x0000	word	CH0 DO pulse output count value hi-word
40002	0x0001	word	CH0 DO pulse output count value lo-word
40003	0x0002	word	CH1 DO pulse output count value hi-word

40004	0x0003	word	CH1 DO pulse output count value lo- word
40005	0x0004	word	CH2 DO pulse output count value hi- word
40006	0x0005	word	CH2 DO pulse output count value lo- word
40007	0x0006	word	CH3 DO pulse output count value hi- word
40008	0x0007	word	CH3 DO pulse output count value lo- word
40009	0x0008	word	CH4 DO pulse output count value hi- word
40010	0x0009	word	CH4 DO pulse output count value lo- word
40011	0x000A	word	CH5 DO pulse output count value hi- word
40012	0x000B	word	CH5 DO pulse output count value lo- word
40013	0x000C	word	CH6 DO pulse output count value hi- word
40014	0x000D	word	CH6 DO pulse output count value lo- word
40015	0x000E	word	CH7 DO pulse output count value hi- word
40016	0x000F	word	CH7 DO pulse output count value lo- word
40017	0x0010	word	CH8 DO pulse output count value hi- word
40018	0x0011	word	CH8 DO pulse output count value lo- word
40019	0x0012	word	CH9 DO pulse output count value hi- word
40020	0x0013	word	CH9 DO pulse output count value lo- word
40021	0x0014	word	CH10 DO pulse output count value hi- word
40022	0x0015	word	CH10 DO pulse output count value lo- word
40023	0x0016	word	CH11 DO pulse output count value hi- word
40024	0x0017	word	CH11 DO pulse output count value lo- word
40025	0x0018	word	CH0 DO pulse low signal width
40026	0x0019	word	CH1 DO pulse low signal width
40027	0x001A	word	CH2 DO pulse low signal width
40028	0x001B	word	CH3 DO pulse low signal width
40029	0x001C	word	CH4 DO pulse low signal width
40030	0x001D	word	CH5 DO pulse low signal width
40031	0x001E	word	CH6 DO pulse low signal width
40032	0x001F	word	CH7 DO pulse low signal width
40033	0x0020	word	CH8 DO pulse low signal width
40034	0x0021	word	CH9 DO pulse low signal width
40035	0x0022	word	CH10 DO pulse low signal width
40036	0x0023	word	CH11 DO pulse low signal width
40037	0x0024	word	CH0 DO pulse high signal width
40038	0x0025	word	CH1 DO pulse high signal width
40039	0x0026	word	CH2 DO pulse high signal width
40040	0x0027	word	CH3 DO pulse high signal width
40041	0x0028	word	CH4 DO pulse high signal width
40042	0x0029	word	CH5 DO pulse high signal width
40043	0x002A	word	CH6 DO pulse high signal width
40044	0x002B	word	CH7 DO pulse high signal width
40045	0x002C	word	CH8 DO pulse high signal width

40046	0x002D	word	CH9 DO pulse high signal width
40047	0x002E	word	CH10 DO pulse high signal width
40048	0x002F	word	CH11 DO pulse high signal width
40049	0x0030	word	CH0 DO mode 0: DO    1: pulse
40050	0x0031	word	CH1 DO mode 0: DO    1: pulse
40051	0x0032	word	CH2 DO mode 0: DO    1: pulse
40052	0x0033	word	CH3 DO mode 0: DO    1: pulse
40053	0x0034	word	CH4 DO mode 0: DO    1: pulse
40054	0x0035	word	CH5 DO mode 0: DO    1: pulse
40055	0x0036	word	CH6 DO mode 0: DO    1: pulse
40056	0x0037	word	CH7 DO mode 0: DO    1: pulse
40057	0x0038	word	CH8 DO mode 0: DO    1: pulse
40058	0x0039	word	CH9 DO mode 0: DO    1: pulse
40059	0x003A	word	CH10 DO mode 0: DO    1: pulse
40060	0x003B	word	CH11 DO mode 0: DO    1: pulse
40061	0x003C	word	CH0 DI count filter
40062	0x003D	word	CH1 DI count filter
40063	0x003E	word	CH2 DI count filter
40064	0x003F	word	CH3 DI count filter
40065	0x0040	word	CH4 DI count filter
40066	0x0041	word	CH5 DI count filter
40067	0x0042	word	CH6 DI count filter
40068	0x0043	word	CH7 DI count filter
40069	0x0044	word	CH8 DI count filter
40070	0x0045	word	CH9 DI count filter
40071	0x0046	word	CH10 DI count filter
40072	0x0047	word	CH11 DI count filter
40073	0x0048	word	CH0 DI mode 0: DI 1: count Other: return illegal data value



40074	0x0049	word	CH1 DI mode 0: DI 1: count Other: return illegal data value
40075	0x004A	word	CH2 DI mode 0: DI 1: count Other: return illegal data value
40076	0x004B	word	CH3 DI mode 0: DI 1: count Other: return illegal data value
40077	0x004C	word	CH4 DI mode 0: DI 1: count Other: return illegal data value
40078	0x004D	word	CH5 DI mode 0: DI 1: count Other: return illegal data value
40079	0x004E	word	CH6 DI mode 0: DI 1: count Other: return illegal data value
40080	0x004F	word	CH7 DI mode 0: DI 1: count Other: return illegal data value
40081	0x0050	word	CH8 DI mode 0: DI 1: count Other: return illegal data value
40082	0x0051	word	CH9 DI mode 0: DI 1: count Other: return illegal data value
40083	0x0052	word	CH10 DI mode 0: DI 1: count Other: return illegal data value
40084	0x0053	word	CH11 DI mode 0: DI 1: count Other: return illegal data value

For Citect SCADA compatibility, I/O data can be WORD accessed as well			
40085	0x0054	1 word	CH0 DO value 0: off 1: on
40086	0x0055	1 word	CH1 DO value 0: off 1: on
40087	0x0056	1 word	CH2 DO value 0: off 1: on
40088	0x0057	1 word	CH3 DO value 0: off 1: on
40089	0x0058	1 word	CH4 DO value 0: off 1: on
40090	0x0059	1 word	CH5 DO value 0: off 1: on
40091	0x005A	1 word	CH6 DO value 0: off 1: on
40092	0x005B	1 word	CH7 DO value 0: off 1: on
40093	0x005C	1 word	CH8 DO value 0: off 1: on
40094	0x005D	1 word	CH9 DO value 0: off 1: on
40095	0x005E	1 word	CH10 DO value 0: off 1: on
40096	0x005F	1 word	CH11 DO value 0: off 1: on
40097	0x0060	1 word	CH0 DO power on value 0: off 1: on
40098	0x0061	1 word	CH1 DO power on value 0: off 1: on
40099	0x0062	1 word	CH2 DO power on value 0: off 1: on
40100	0x0063	1 word	CH3 DO power on value 0: off 1: on
40101	0x0064	1 word	CH4 DO power on value 0: off 1: on
40102	0x0065	1 word	CH5 DO power on value 0: off 1: on
40103	0x0066	1 word	CH6 DO power on value 0: off 1: on
40104	0x0067	1 word	CH7 DO power on value 0: off 1: on
40105	0x0068	1 word	CH8 DO power on value 0: off 1: on

40106	0x0069	1 word	CH9 DO power on value 0: off 1: on
40107	0x006A	1 word	CH10 DO power on value 0: off 1: on
40108	0x006B	1 word	CH11 DO power on value 0: off 1: on
40109	0x006C	1 word	CH0 DO safe mode value 0: off 1: on
40110	0x006D	1 word	CH1 DO safe mode value 0: off 1: on
40111	0x006E	1 word	CH2 DO safe mode value 0: off 1: on
40112	0x006F	1 word	CH3 DO safe mode value 0: off 1: on
40113	0x0070	1 word	CH4 DO safe mode value 0: off 1: on
40114	0x0071	1 word	CH5 DO safe mode value 0: off 1: on
40115	0x0072	1 word	CH6 DO safe mode value 0: off 1: on
40116	0x0073	1 word	CH7 DO safe mode value 0: off 1: on
40117	0x0074	1 word	CH8 DO safe mode value 0: off 1: on
40118	0x0075	1 word	CH9 DO safe mode value 0: off 1: on
40119	0x0076	1 word	CH10 DO safe mode value 0: off 1: on
40120	0x0077	1 word	CH11 DO safe mode value 0: off 1: on
40121	0x0078	1 word	CH0 DO pulse operate status 0: stop 1: start
40122	0x0079	1 word	CH1 DO pulse operate status 0: stop 1: start
40123	0x007A	1 word	CH2 DO pulse operate status 0: stop 1: start
40124	0x007B	1 word	CH3 DO pulse operate status 0: stop 1: start
40125	0x007C	1 word	CH4 DO pulse operate status 0: stop 1: start
40126	0x007D	1 word	CH5 DO pulse operate status 0: stop 1: start

40127	0x007E	1 word	CH6 DO pulse operate status 0: stop 1: start
40128	0x007F	1 word	CH7 DO pulse operate status 0: stop 1: start
40129	0x0080	1 word	CH8 DO pulse operate status 0: stop 1: start
40130	0x0081	1 word	CH9 DO pulse operate status 0: stop 1: start
40131	0x0082	1 word	CH10 DO pulse operate status 0: stop 1: start
40132	0x0083	1 word	CH11 DO pulse operate status 0: stop 1: start
40133	0x0084	1 word	CH0 DO power-on pulse operate status 0: stop 1: start
40134	0x0085	1 word	CH1 DO power-on pulse operate status 0: stop 1: start
40135	0x0086	1 word	CH2 DO power-on pulse operate status 0: stop 1: start
40136	0x0087	1 word	CH3 DO power-on pulse operate status 0: stop 1: start
40137	0x0088	1 word	CH4 DO power-on pulse operate status 0: stop 1: start
40138	0x0089	1 word	CH5 DO power-on pulse operate status 0: stop 1: start
40139	0x008A	1 word	CH6 DO power-on pulse operate status 0: stop 1: start
40140	0x008B	1 word	CH7 DO power-on pulse operate status 0: stop 1: start
40141	0x008C	1 word	CH8 DO power-on pulse operate status 0: stop 1: start
40142	0x008D	1 word	CH9 DO power-on pulse operate status 0: stop 1: start
40143	0x008E	1 word	CH10 DO power-on pulse operate status 0: stop 1: start
40144	0x008F	1 word	CH11 DO power-on pulse operate status 0: stop 1: start
40145	0x0090	1 word	CH0 DO safe mode pulse operate status 0: stop 1: start
40146	0x0091	1 word	CH1 DO safe mode pulse operate status 0: stop 1: start
40147	0x0092	1 word	CH2 DO safe mode pulse operate status 0: stop 1: start

40148	0x0093	1 word	CH3 DO safe mode pulse operate status 0: stop 1: start
40149	0x0094	1 word	CH4 DO safe mode pulse operate status 0: stop 1: start
40150	0x0095	1 word	CH5 DO safe mode pulse operate status 0: stop 1: start
40151	0x0096	1 word	CH6 DO safe mode pulse operate status 0: stop 1: start
40152	0x0097	1 word	CH7 DO safe mode pulse operate status 0: stop 1: start
40153	0x0098	1 word	CH8 DO safe mode pulse operate status 0: stop 1: start
40154	0x0099	1 word	CH9 DO safe mode pulse operate status 0: stop 1: start
40155	0x009A	1 word	CH10 DO safe mode pulse operate status 0: stop 1: start
40156	0x009B	1 word	CH11 DO safe mode pulse operate status 0: stop 1: start
40157	0x009C	1 word	CH0 DI counter operate status 0: stop 1: start
40158	0x009D	1 word	CH1 DI counter operate status 0: stop 1: start
40159	0x009E	1 word	CH2 DI counter operate status 0: stop 1: start
40160	0x009F	1 word	CH3 DI counter operate status 0: stop 1: start
40161	0x00A0	1 word	CH4 DI counter operate status 0: stop 1: start
40162	0x00A1	1 word	CH5 DI counter operate status 0: stop 1: start
40163	0x00A2	1 word	CH6 DI counter operate status 0: stop 1: start
40164	0x00A3	1 word	CH7 DI counter operate status 0: stop 1: start
40165	0x00A4	1 word	CH8 DI counter operate status 0: stop 1: start
40166	0x00A5	1 word	CH9 DI counter operate status 0: stop 1: start
40167	0x00A6	1 word	CH10 DI counter operate status 0: stop 1: start
40168	0x00A7	1 word	CH11 DI counter operate status 0: stop 1: start

40169	0x00A8	1 word	CH0 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value(0x03)
40170	0x00A9	1 word	CH1 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value(0x03)
40171	0x00AA	1 word	CH2 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value(0x03)
40172	0x00AB	1 word	CH3 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value(0x03)
40173	0x00AC	1 word	CH4 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value(0x03)
40174	0x00AD	1 word	CH5 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value(0x03)
40175	0x00AE	1 word	CH6 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value(0x03)

40176	0x00AF	1 word	CH7 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value(0x03)
40177	0x00B0	1 word	CH8 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value(0x03)
40178	0x00B1	1 word	CH9 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value(0x03)
40179	0x00B2	1 word	CH10 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value (0x03)
40180	0x00B3	1 word	CH11 DI clear count value Read: 0: no action Write: 1: clear counter value 0: return illegal data value (0x03)
40181	0x00B4	1 word	CH0 DI overflow status Read: 0: normal      1: overflow Write : 0: clear overflow status 1: return illegal data value (0x03)
40182	0x00B5	1 word	CH1 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value (0x03)

40183	0x00B6	1 word	CH2 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value (0x03)
40184	0x00B7	1 word	CH3 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value (0x03)
40185	0x00B8	1 word	CH4 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value (0x03)
40186	0x00B9	1 word	CH5 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value (0x03)
40187	0x00BA	1 word	CH6 DI overflow status Read: 0: Normal      1: Overflow Write: 0: clear overflow status 1: return illegal data value (0x03)
40188	0x00BB	1 word	CH7 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value (0x03)
40189	0x00BC	1 word	CH8 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value (0x03)



40190	0x00BD	1 word	CH9 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value (0x03)
40191	0x00BE	1 word	CH10 DI overflow Status Read : 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value (0x03)
40192	0x00BF	1 word	CH11 DI overflow status Read: 0: normal      1: overflow Write: 0: clear overflow status 1: return illegal data value (0x03)
40193	0x00C0	1 word	CH0 DI counter trigger 0=low to high, 1=high to low
40194	0x00C1	1 word	CH1 DI counter trigger 0=low to high, 1=high to low
40195	0x00C2	1 word	CH2 DI counter trigger 0=low to high, 1=high to low
40196	0x00C3	1 word	CH3 DI counter trigger 0=low to high, 1=high to low
40197	0x00C4	1 word	CH4 DI counter trigger 0=low to high, 1=high to low
40198	0x00C5	1 word	CH5 DI counter trigger 0=low to high, 1=high to low
40199	0x00C6	1 word	CH6 DI counter trigger 0=low to high, 1=high to low
40200	0x00C7	1 word	CH7 DI counter trigger 0=low to high, 1=high to low
40201	0x00C8	1 word	CH8 DI counter trigger 0=low to high, 1=high to low
40202	0x00C9	1 word	CH9 DI counter trigger 0=low to high, 1=high to low
40203	0x00CA	1 word	CH10 DI counter trigger 0=low to high, 1=high to low
40204	0x00CB	1 word	CH11 DI counter trigger 0=low to high, 1=high to low

40205	0x00CC	1 word	CH0 DI power-on counter operate status 0: stop 1: start
40206	0x00CD	1 word	CH1 DI power-on counter operate status 0: stop 1: start
40207	0x00CE	1 word	CH2 DI power-on counter operate status 0: stop 1: start
40208	0x00CF	1 word	CH3 DI power-on counter operate status 0: stop 1: start
40209	0x00D0	1 word	CH4 DI power-on counter operate status 0: stop 1: start
40210	0x00D1	1 word	CH5 DI power-on counter operate status 0: stop 1: start
40211	0x00D2	1 word	CH6 DI power-on counter operate status 0: stop 1: start
40212	0x00D3	1 word	CH7 DI power-on counter operate status 0: stop 1: start
40213	0x00D4	1 word	CH8 DI power-on counter operate status 0: stop 1: start
40214	0x00D5	1 word	CH9 DI power-on counter operate status 0: stop 1: start
40215	0x00D6	1 word	CH10 DI power-on counter operate status 0: stop 1: start
40216	0x00D7	1 word	CH11 DI power-on counter operate status 0: stop 1: start
40217	0x00D8	1 word	CH0 DI safe mode counter operate status 0: stop 1: start
40218	0x00D9	1 word	CH1 DI safe mode counter operate status 0: stop 1: start
40219	0x00DA	1 word	CH2 DI safe mode counter operate status 0: stop 1: start
40220	0x00DB	1 word	CH3 DI safe mode counter operate status 0: stop 1: start
40221	0x00DC	1 word	CH4 DI safe mode counter operate status 0: stop 1: start
40222	0x00DD	1 word	CH5 DI safe mode counter operate status 0: stop 1: start
40223	0x00DE	1 word	CH6 DI safe mode counter operate status 0: stop 1: start
40224	0x00DF	1 word	CH7 DI safe mode counter operate status 0: stop 1: start
40225	0x00E0	1 word	CH8 DI safe mode counter operate status 0: stop 1: start

40226	0x00E1	1 word	CH9 DI safe mode counter operate status 0: stop      1: start
40227	0x00E2	1 word	CH10 DI safe mode counter operate status 0: stop      1: start
40228	0x00E3	1 word	CH11 DI safe mode counter operate status 0: stop      1: start
40229	0x00E4	1 word	CH0 DI set channel Power-off storage enable ON/OFF 1: on      0: off
40230	0x00E5	1 word	CH1 DI set channel Power-off storage enable ON/OFF 1: on      0: off
40231	0x00E6	1 word	CH2 DI set channel Power-off storage enable ON/OFF 1: on      0: off
40232	0x00E7	1 word	CH3 DI set channel Power-off storage enable ON/OFF 1: on      0: off
40233	0x00E8	1 word	CH4 DI set channel Power-off storage enable ON/OFF 1: on      0: off
40234	0x00E9	1 word	CH5 DI set channel Power-off storage enable ON/OFF 1: on      0: off
40235	0x00EA	1 word	CH6 DI set channel Power-off storage enable ON/OFF 1: on      0: off
40236	0x00EB	1 word	CH7 DI set channel Power-off storage enable ON/OFF 1: on      0: off
40237	0x00EC	1 word	CH8 DI set channel Power-off storage enable ON/OFF 1: on      0: off
40238	0x00ED	1 word	CH9 DI set channel Power-off storage enable ON/OFF 1: on      0: off
40239	0x00EE	1 word	CH10 DI set channel Power-off storage enable ON/OFF 1: on      0: off
40240	0x00EF	1 word	CH11 DI set channel Power-off storage enable ON/OFF 1: on      0: off

40241	0x00F0	1 word	DIO 0 1: output DO mode 0: input DI mode
40242	0x00F1	1 word	DIO 1 1: output DO mode 0: input DI mode
40243	0x00F2	1 word	DIO 2 1: output DO mode 0: input DI mode
40244	0x00F3	1 word	DIO 3 1: output DO mode 0: input DI mode
40377	0x0178	word	Internal Register 00 Value
40378	0x0179	word	Internal Register 01 Value
40379	0x017A	word	Internal Register 02 Value
40380	0x017B	word	Internal Register 03 Value
40381	0x017C	word	Internal Register 04 Value
40382	0x017D	word	Internal Register 05 Value
40383	0x017E	word	Internal Register 06 Value
40384	0x017F	word	Internal Register 07 Value
40385	0x0180	word	Internal Register 08 Value
40386	0x0181	word	Internal Register 09 Value
40387	0x0182	word	Internal Register 10 Value
40388	0x0183	word	Internal Register 11 Value
40389	0x0184	word	Internal Register 12 Value
40390	0x0185	word	Internal Register 13 Value
40391	0x0186	word	Internal Register 14 Value
40392	0x0187	word	Internal Register 15 Value
40393	0x0188	word	Internal Register 16 Value
40394	0x0189	word	Internal Register 17 Value
40395	0x018A	word	Internal Register 18 Value
40396	0x018B	word	Internal Register 19 Value
40397	0x018C	word	Internal Register 20 Value
40398	0x018D	word	Internal Register 21 Value
40399	0x018E	word	Internal Register 22 Value
40400	0x018F	word	Internal Register 23 Value

## ioLogik E2214 Modbus Mapping

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

Reference	Address	Data Type	Description
00001	0x0000	1 bit	CH0 DO Value 0: Off 1: On
00002	0x0001	1 bit	CH1 DO Value 0: Off 1: On

00003	0x0002	1 bit	CH2 DO Value 0: Off 1: On
00004	0x0003	1 bit	CH3 DO Value 0: Off 1: On
00005	0x0004	1 bit	CH4 DO Value 0: Off 1: On
00006	0x0005	1 bit	CH5 DO Value 0: Off 1: On
00007	0x0006	1 bit	CH0 DO Power On Value 0: Off 1: On
00008	0x0007	1 bit	CH1 DO Power On Value 0: Off 1: On
00009	0x0008	1 bit	CH2 DO Power On Value 0: Off 1: On
00010	0x0009	1 bit	CH3 DO Power On Value 0: Off 1: On
00011	0x000A	1 bit	CH4 DO Power On Value 0: Off 1: On
00012	0x000B	1 bit	CH5 DO Power On Value 0: Off 1: On
00013	0x000C	1 bit	CH0 DO Pulse Operate Status 0: Off 1: On
00014	0x000D	1 bit	CH1 DO Pulse Operate Status 0: Off 1: On
00015	0x000E	1 bit	CH2 DO Pulse Operate Status 0: Off 1: On
00016	0x000F	1 bit	CH3 DO Pulse Operate Status 0: Off 1: On
00017	0x0010	1 bit	CH4 DO Pulse Operate Status 0: Off 1: On
00018	0x0011	1 bit	CH5 DO Pulse Operate Status 0: Off 1: On
00019	0x0012	1 bit	CH0 DO PowerOn Pulse Operate Status 0: Off 1: On
00020	0x0013	1 bit	CH1 DO PowerOn Pulse Operate Status 0: Off 1: On
00021	0x0014	1 bit	CH2 DO PowerOn Pulse Operate Status 0: Off 1: On
00022	0x0015	1 bit	CH3 DO PowerOn Pulse Operate Status 0: Off 1: On
00023	0x0016	1 bit	CH4 DO PowerOn Pulse Operate Status 0: Off 1: On
00024	0x0017	1 bit	CH5 DO PowerOn Pulse Operate Status 0: Off 1: On
00025	0x0018	1 bit	CH0 DO Safe Pulse Operate Status 0: Off 1: On
00026	0x0019	1 bit	CH1 DO Safe Pulse Operate Status 0: Off 1: On
00027	0x001A	1 bit	CH2 DO Safe Pulse Operate Status 0: Off 1: On
00028	0x001B	1 bit	CH3 DO Safe Pulse Operate Status 0: Off 1: On
00029	0x001C	1 bit	CH4 DO Safe Pulse Operate Status 0: Off 1: On
00030	0x001D	1 bit	CH5 DO Safe Pulse Operate Status 0: Off 1: On
00031	0x001E	1 bit	CH0 DI Counter Status 0: Off 1: On
00032	0x001F	1 bit	CH1 DI Counter Status 0: Off 1: On
00033	0x0020	1 bit	CH2 DI Counter Status 0: Off 1: On
00034	0x0021	1 bit	CH3 DI Counter Status 0: Off 1: On
00035	0x0022	1 bit	CH4 DI Counter Status 0: Off 1: On
00036	0x0023	1 bit	CH5 DI Counter Status 0: Off 1: On
00037	0x0024	1 bit	CH0 DI Clear Count Value Read aways :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00038	0x0025	1 bit	CH1 DI Clear Count Value Read aways :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00039	0x0026	1 bit	CH2 DI Clear Count Value Read aways :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00040	0x0027	1 bit	CH3 DI Clear Count Value Read aways :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00041	0x0028	1 bit	CH4 DI Clear Count Value Read aways :0 Write: 1 : Clear counter value 0 : return Illegal Data Value

00042	0x0029	1 bit	CH5 DI Clear Count Value      Read always :0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00043	0x002A	1 bit	CH0 DI OverFlow Status      Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00044	0x002B	1 bit	CH1 DI OverFlow Status      Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00045	0x002C	1 bit	CH2 DI OverFlow Status      Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00046	0x002D	1 bit	CH3 DI OverFlow Status      Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00047	0x002E	1 bit	CH4 DI OverFlow Status      Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00048	0x002F	1 bit	CH5 DI OverFlow Status      Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00049	0x0030	1 bit	CH0 DI Count Trigger
00050	0x0031	1 bit	CH1 DI Count Trigger
00051	0x0032	1 bit	CH2 DI Count Trigger
00052	0x0033	1 bit	CH3 DI Count Trigger
00053	0x0034	1 bit	CH4 DI Count Trigger
00054	0x0035	1 bit	CH5 DI Count Trigger
00055	0x0036	1 bit	CH0 DI PowerOn Status 0: Off 1: On
00056	0x0037	1 bit	CH1 DI PowerOn Status 0: Off 1: On
00057	0x0038	1 bit	CH2 DI PowerOn Status 0: Off 1: On
00058	0x0039	1 bit	CH3 DI PowerOn Status 0: Off 1: On
00059	0x003A	1 bit	CH4 DI PowerOn Status 0: Off 1: On
00060	0x003B	1 bit	CH5 DI PowerOn Status 0: Off 1: On
00061	0x003C	1 bit	CH0 DI Safe Pulse Operate Status 0: Off 1: On
00062	0x003D	1 bit	CH1 DI Safe Pulse Operate Status 0: Off 1: On
00063	0x003E	1 bit	CH2 DI Safe Pulse Operate Status 0: Off 1: On
00064	0x003F	1 bit	CH3 DI Safe Pulse Operate Status 0: Off 1: On
00065	0x0040	1 bit	CH4 DI Safe Pulse Operate Status 0: Off 1: On
00066	0x0041	1 bit	CH5 DI Safe Pulse Operate Status 0: Off 1: On
00067	0x0042	1 bit	CH0 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF

00068	0x0043	1 bit	CH1 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00069	0x0044	1 bit	CH2 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00070	0x0045	1 bit	CH3 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00071	0x0046	1 bit	CH4 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00072	0x0047	1 bit	CH5 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF

### 1xxxx Read Only Coils (Function 2)

Reference	Address	Data Type	Description
10001	0x0000	1 bit	CH0 DI Value
10002	0x0001	1 bit	CH1 DI Value
10003	0x0002	1 bit	CH2 DI Value
10004	0x0003	1 bit	CH3 DI Value
10005	0x0004	1 bit	CH4 DI Value
10006	0x0005	1 bit	CH5 DI Value

### 3xxxx Read Only Registers (Function 4)

Reference	Address	Data Type	Description
30001	0x0000	1 word	CH0 DI Count Value Hi-Byte
30002	0x0001	1 word	CH0 DI Count Value Lo-Byte
30003	0x0002	1 word	CH1 DI Count Value Hi-Byte
30004	0x0003	1 word	CH1 DI Count Value Lo-Byte
30005	0x0004	1 word	CH2 DI Count Value Hi-Byte
30006	0x0005	1 word	CH2 DI Count Value Lo-Byte
30007	0x0006	1 word	CH3 DI Count Value Hi-Byte
30008	0x0007	1 word	CH3 DI Count Value Lo-Byte
30009	0x0008	1 word	CH4 DI Count Value Hi-Byte
30010	0x0009	1 word	CH4 DI Count Value Lo-Byte
30011	0x000A	1 word	CH5 DI Count Value Hi-Byte
30012	0x000B	1 word	CH5 DI Count Value Lo-Byte
30013	0x000C	1 word	CH0 DO Totoal Relay Count Value Hi-Byte
30014	0x000D	1 word	CH0 DO Totoal Relay Count Value Lo-Byte
30015	0x000E	1 word	CH1 DO Totoal Relay Count Value Hi-Byte
30016	0x000F	1 word	CH1 DO Totoal Relay Count Value Lo-Byte

30017	0x0010	1 word	CH2 DO Totoal Relay Count Value Hi-Byte
30018	0x0011	1 word	CH2 DO Totoal Relay Count Value Lo-Byte
30019	0x0012	1 word	CH3 DO Totoal Relay Count Value Hi-Byte
30020	0x0013	1 word	CH3 DO Totoal Relay Count Value Lo-Byte
30021	0x0014	1 word	CH4 DO Totoal Relay Count Value Hi-Byte
30022	0x0015	1 word	CH4 DO Totoal Relay Count Value Lo-Byte
30023	0x0016	1 word	CH5 DO Totoal Relay Count Value Hi-Byte
30024	0x0017	1 word	CH5 DO Totoal Relay Count Value Lo-Byte
30025	0x0018	1 word	CH0 DO Last Reset Time for Current Relay Count Sec Value
30026	0x0019	1 word	CH0 DO Last Reset Time for Current Relay Count Min Value
30027	0x001A	1 word	CH0 DO Last Reset Time for Current Relay Count Hour Value
30028	0x001B	1 word	CH0 DO Last Reset Time for Current Relay Count Mday Value
30029	0x001C	1 word	CH0 DO Last Reset Time for Current Relay Count Month Value
30030	0x001D	1 word	CH0 DO Last Reset Time for Current Relay Count Year Value
30031	0x001E	1 word	CH1 DO Last Reset Time for Current Relay Count Sec Value
30032	0x001F	1 word	CH1 DO Last Reset Time for Current Relay Count Min Value
30033	0x0020	1 word	CH1 DO Last Reset Time for Current Relay Count Hour Value
30034	0x0021	1 word	CH1DO Last Reset Time for Current Relay Count Mday Value
30035	0x0022	1 word	CH1 DO Last Reset Time for Current Relay Count Month Value
30036	0x0023	1 word	CH1 DO Last Reset Time for Current Relay Count Year Value
30037	0x0024	1 word	CH2 DO Last Reset Time for Current Relay Count Sec Value
30038	0x0025	1 word	CH2DO Last Reset Time for Current Relay Count Min Value



30039	0x0026	1 word	CH2 DO Last Reset Time for Current Relay Count Hour Value
30040	0x0027	1 word	CH2 DO Last Reset Time for Current Relay Count Mday Value
30041	0x0028	1 word	CH2 DO Last Reset Time for Current Relay Count Month Value
30042	0x0029	1 word	CH2 DO Last Reset Time for Current Relay Count Year Value
30043	0x002A	1 word	CH3 DO Last Reset Time for Current Relay Count Sec Value
30044	0x002B	1 word	CH3 DO Last Reset Time for Current Relay Count Min Value
30045	0x002C	1 word	CH3DO Last Reset Time for Current Relay Count Hour Value
30046	0x002D	1 word	CH3 DO Last Reset Time for Current Relay Count Mday Value
30047	0x002E	1 word	CH3DO Last Reset Time for Current Relay Count Month Value
30048	0x002F	1 word	CH3 DO Last Reset Time for Current Relay Count Year Value
30049	0x0030	1 word	CH4 DO Last Reset Time for Current Relay Count Sec Value
30050	0x0031	1 word	CH4 DO Last Reset Time for Current Relay Count Min Value
30051	0x0032	1 word	CH4 DO Last Reset Time for Current Relay Count Hour Value
30052	0x0033	1 word	CH4 DO Last Reset Time for Current Relay Count Mday Value
30053	0x0034	1 word	CH4 DO Last Reset Time for Current Relay Count Month Value
30054	0x0035	1 word	CH4 DO Last Reset Time for Current Relay Count Year Value
30055	0x0036	1 word	CH5 DO Last Reset Time for Current Relay Count Sec Value

30056	0x0037	1 word	CH5 DO Last Reset Time for Current Relay Count Min Value
30057	0x0038	1 word	CH5 DO Last Reset Time for Current Relay Count Hour Value
30058	0x0039	1 word	CH5 DO Last Reset Time for Current Relay Count Mday Value
30059	0x003A	1 word	CH5 DO Last Reset Time for Current Relay Count Month Value
30060	0x003B	1 word	CH5 DO Last Reset Time for Current Relay Count Year Value
312289	0x3000	1 word	CH0 DI Value (low byte)
312290	0x3001	1 word	CH1 DI Value (low byte)
312291	0x3002	1 word	CH2 DI Value (low byte)
312292	0x3003	1 word	CH3 DI Value (low byte)
312293	0x3004	1 word	CH4 DI Value (low byte)
312294	0x3005	1 word	CH5 DI Value (low byte)

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

Reference	Address	Data Type	Description
40001	0x0000	word	CH0 DO Pulse Output Count Value Hi-Word
40002	0x0001	word	CH0 DO Pulse Output Count Value Lo-Word
40003	0x0002	word	CH1 DO Pulse Output Count Value Hi-Word
40004	0x0003	word	CH1 DO Pulse Output Count Value Lo-Word
40005	0x0004	word	CH2 DO Pulse Output Count Value Hi-Word
40006	0x0005	word	CH2 DO Pulse Output Count Value Lo-Word
40007	0x0006	word	CH3 DO Pulse Output Count Value Hi-Word
40008	0x0007	word	CH3 DO Pulse Output Count Value Lo-Word
40009	0x0008	word	CH4 DO Pulse Output Count Value Hi-Word
40010	0x0009	word	CH4 DO Pulse Output Count Value Lo-Word
40011	0x000A	word	CH5 DO Pulse Output Count Value Hi-Word
40012	0x000B	word	CH5 DO Pulse Output Count Value Lo-Word
40013	0x000C	word	CH0 DO Pulse Low Signal Width
40014	0x000D	word	CH1 DO Pulse Low Signal Width
40015	0x000E	word	CH2 DO Pulse Low Signal Width

40016	0x000F	word	CH3 DO Pulse Low Signal Width
40017	0x0010	word	CH4 DO Pulse Low Signal Width
40018	0x0011	word	CH5 DO Pulse Low Signal Width
40019	0x0012	word	CH0 DO Pulse High Signal Width
40020	0x0013	word	CH1 DO Pulse High Signal Width
40021	0x0014	word	CH2 DO Pulse High Signal Width
40022	0x0015	word	CH3 DO Pulse High Signal Width
40023	0x0016	word	CH4 DO Pulse High Signal Width
40024	0x0017	word	CH5 DO Pulse High Signal Width
40025	0x0018	word	CH0 DO Mode 0: DO 1: Pulse
40026	0x0019	word	CH1 DO Mode 0: DO 1: Pulse
40027	0x001A	word	CH2 DO Mode 0: DO 1: Pulse
40028	0x001B	word	CH3 DO Mode 0: DO 1: Pulse
40029	0x001C	word	CH4 DO Mode 0: DO 1: Pulse
40030	0x001D	word	CH5 DO Mode 0: DO 1: Pulse
40031	0x001E	word	CH0 DI Count Filter
40032	0x001F	word	CH1 DI Count Filter
40033	0x0020	word	CH2 DI Count Filter
40034	0x0021	word	CH3 DI Count Filter
40035	0x0022	word	CH4 DI Count Filter
40036	0x0023	word	CH5 DI Count Filter
40037	0x0024	word	CH0 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40038	0x0025	word	CH1 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40039	0x0026	word	CH2 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40040	0x0027	word	CH3 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40041	0x0028	word	CH4 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40042	0x0029	word	CH5 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40043	0x002A	1 word	CH0 DO Value 0: Off 1: On
40044	0x002B	1 word	CH1 DO Value 0: Off 1: On
40045	0x002C	1 word	CH2 DO Value 0: Off 1: On
40046	0x002D	1 word	CH3 DO Value 0: Off 1: On
40047	0x002E	1 word	CH4 DO Value 0: Off 1: On

40048	0x002F	1 word	CH5 DO Value 0: Off 1: On
40049	0x0030	1 word	CH0 DO Power On Value 0: Off 1: On
40050	0x0031	1 word	CH1 DO Power On Value 0: Off 1: On
40051	0x0032	1 word	CH2 DO Power On Value 0: Off 1: On
40052	0x0033	1 word	CH3 DO Power On Value 0: Off 1: On
40053	0x0034	1 word	CH4 DO Power On Value 0: Off 1: On
40054	0x0035	1 word	CH5 DO Power On Value 0: Off 1: On
40055	0x0036	1 word	CH0 DO Safe Mode Value 0: Off 1: On 2: Hold Last
40056	0x0037	1 word	CH1 DO Safe Mode Value 0: Off 1: On 2: Hold Last
40057	0x0038	1 word	CH2 DO Safe Mode Value 0: Off 1: On 2: Hold Last
40058	0x0039	1 word	CH3 DO Safe Mode Value 0: Off 1: On 2: Hold Last
40059	0x003A	1 word	CH4 DO Safe Mode Value 0: Off 1: On 2: Hold Last
40060	0x003B	1 word	CH5 DO Safe Mode Value 0: Off 1: On 2: Hold Last
40061	0x003C	1 word	CH0 DO Pulse Operate Status 0: Stop 1: Start
40062	0x003D	1 word	CH1 DO Pulse Operate Status 0: Stop 1: Start
40063	0x003E	1 word	CH2 DO Pulse Operate Status 0: Stop 1: Start
40064	0x003F	1 word	CH3 DO Pulse Operate Status 0: Stop 1: Start
40065	0x0040	1 word	CH4 DO Pulse Operate Status 0: Stop 1: Start
40066	0x0041	1 word	CH5 DO Pulse Operate Status 0: Stop 1: Start
40067	0x0042	1 word	CH0 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40068	0x0043	1 word	CH1 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40069	0x0044	1 word	CH2 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40070	0x0045	1 word	CH3 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40071	0x0046	1 word	CH4 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40072	0x0047	1 word	CH5 DO PowerOn Pulse Operate Status 0: Stop 1: Start
40073	0x0048	1 word	CH0 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40074	0x0049	1 word	CH1 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40075	0x004A	1 word	CH2 DO Safe Mode Pulse Operate Status 0: Stop 1: Start

40076	0x004B	1 word	CH3 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40077	0x004C	1 word	CH4 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40078	0x004D	1 word	CH5 DO Safe Mode Pulse Operate Status 0: Stop 1: Start
40079	0x004E	1 word	CH0 DI Counter Operate Status 0: Stop 1: Start
40080	0x004F	1 word	CH1 DI Counter Operate Status 0: Stop 1: Start
40081	0x0050	1 word	CH2 DI Counter Operate Status 0: Stop 1: Start
40082	0x0051	1 word	CH3 DI Counter Operate Status 0: Stop 1: Start
40083	0x0052	1 word	CH4 DI Counter Operate Status 0: Stop 1: Start
40084	0x0053	1 word	CH5 DI Counter Operate Status 0: Stop 1: Start
40085	0x0054	1 word	CH0 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40086	0x0055	1 word	CH1 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40087	0x0056	1 word	CH2 DI Clear Count Value Read always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40088	0x0057	1 word	CH3 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40089	0x0058	1 word	CH4 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40090	0x0059	1 word	CH5 DI Clear Count Value Read: always return: 0 Write: 1 : Clear counter value 0 : Return illegal data value(0x03)
40091	0x005A	1 word	CH0 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : Clear overflow status 1 : Return illegal data value (0x03)

40092	0x005B	1 word	CH1 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : Clear overflow status 1 : Return illegal data value (0x03)
40093	0x005C	1 word	CH2 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : Clear overflow status 1 : Return illegal data value (0x03)
40094	0x005D	1 word	CH3 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : Clear overflow status 1 : Return illegal data value (0x03)
40095	0x005E	1 word	CH4 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : Clear overflow status 1 : Return illegal data value (0x03)
40096	0x005F	1 word	CH5 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : Clear overflow status 1 : Return illegal data value (0x03)
40097	0x0060	1 word	CH0 DI Counter Trigger, 0=Low to High, 1=High to Low
40098	0x0061	1 word	CH1 DI Counter Trigger, 0=Low to High, 1=High to Low
40099	0x0062	1 word	CH2 DI Counter Trigger, 0=Low to High, 1=High to Low
40100	0x0063	1 word	CH3 DI Counter Trigger, 0=Low to High, 1=High to Low
40101	0x0064	1 word	CH4 DI Counter Trigger, 0=Low to High, 1=High to Low
40102	0x0065	1 word	CH5 DI Counter Trigger, 0=Low to High, 1=High to Low
40103	0x0066	1 word	CH0 DI PowerOn Counter Operate Status 0: Stop 1: Start
40104	0x0067	1 word	CH1 DI PowerOn Counter Operate Status 0: Stop 1: Start
40105	0x0068	1 word	CH2 DI PowerOn Counter Operate Status 0: Stop 1: Start
40106	0x0069	1 word	CH3 DI PowerOn Counter Operate Status 0: Stop 1: Start
40107	0x006A	1 word	CH4 DI PowerOn Counter Operate Status 0: Stop 1: Start
40108	0x006B	1 word	CH5 DI PowerOn Counter Operate Status 0: Stop 1: Start
40109	0x006C	1 word	CH0 DI Safe Mode Counter Operate Status 0: Stop 1: Start

40110	0x006D	1 word	CH1 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40111	0x006E	1 word	CH2 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40112	0x006F	1 word	CH3 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40113	0x0070	1 word	CH4 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40114	0x0071	1 word	CH5 DI Safe Mode Counter Operate Status 0: Stop 1: Start
40115	0x0072	1 Word	CH0 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
40116	0x0073	1 Word	CH1 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
40117	0x0074	1 Word	CH2 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
40118	0x0075	1 Word	CH3 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
40119	0x0076	1 Word	CH4 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
40120	0x0077	1 Word	CH5 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
40121	0x0078	1 Word	CH0 DO Current Relay Count Value Hi-Byte
40122	0x0079	1 Word	CH0 DO Current Relay Count Value Lo-Byte
40123	0x007A	1 Word	CH1 DO Current Relay Count Value Hi-Byte
40124	0x007B	1 Word	CH1 DO Current Relay Count Value Lo-Byte
40125	0x007C	1 Word	CH2 DO Current Relay Count Value Hi-Byte
40126	0x007D	1 Word	CH2 DO Current Relay Count Value Lo-Byte
40127	0x007E	1 Word	CH3 DO Current Relay Count Value Hi-Byte
40128	0x007F	1 Word	CH3 DO Current Relay Count Value Lo-Byte

40129	0x0080	1 Word	CH4 DO Current Relay Count Value Hi-Byte
40130	0x0081	1 Word	CH4 DO Current Relay Count Value Lo-Byte
40131	0x0082	1 Word	CH5 DO Current Relay Count Value Hi-Byte
40132	0x0083	1 Word	CH5 DO Current Relay Count Value Lo-Byte
40133	0x0084	1 Word	Power On Sequence CH0 DO Delay time (MAX 300 Seconds)
40134	0x0085	1 Word	Power On Sequence CH1 DO Delay time(MAX 300 Seconds)
40135	0x0086	1 Word	Power On Sequence CH2 DO Delay time(MAX 300 Seconds)
40136	0x0087	1 Word	Power On Sequence CH3 DO Delay time(MAX 300 Seconds)
40137	0x0088	1 Word	Power On Sequence CH4 DO Delay time(MAX 300 Seconds)
40138	0x0089	1 Word	Power On Sequence CH5 DO Delay time(MAX 300 Seconds)
40377	0x0178	1 Word	Internal Register 00 Value
40378	0x0179	1 Word	Internal Register 01 Value
40379	0x017A	1 Word	Internal Register 02 Value
40380	0x017B	1 Word	Internal Register 03 Value
40381	0x017C	1 Word	Internal Register 04 Value
40382	0x017D	1 Word	Internal Register 05 Value
40383	0x017E	1 Word	Internal Register 06 Value
40384	0x017F	1 Word	Internal Register 07 Value
40385	0x0180	1 Word	Internal Register 08 Value
40386	0x0181	1 Word	Internal Register 09 Value
40387	0x0182	1 Word	Internal Register 10 Value
40388	0x0183	1 Word	Internal Register 11 Value
40389	0x0184	1 Word	Internal Register 12 Value
40390	0x0185	1 Word	Internal Register 13 Value
40391	0x0186	1 Word	Internal Register 14 Value
40392	0x0187	1 Word	Internal Register 15 Value
40393	0x0188	1 Word	Internal Register 16 Value
40394	0x0189	1 Word	Internal Register 17 Value
40395	0x018A	1 Word	Internal Register 18 Value
40396	0x018B	1 Word	Internal Register 19 Value
40397	0x018C	1 Word	Internal Register 20 Value
40398	0x018D	1 Word	Internal Register 21 Value
40399	0x018E	1 Word	Internal Register 22 Value
40400	0x018F	1 Word	Internal Register 23 Value



## ioLogik E2240 Modbus Mapping

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

Reference	Address	Data Type	Description
00001	0x0000	1 bit	Reset CH0 AI min value Read: 0: no action Write: 1: reset AI min value 0: return illegal data value
00002	0x0001	1 bit	Reset CH1 AI min value Read: 0: no action Write: 1: reset AI min value 0: return illegal data value
00003	0x0002	1 bit	Reset CH2 AI min value Read: 0: no action Write: 1: reset AI min value 0: return illegal data value
00004	0x0003	1 bit	Reset CH3 AI min value Read: 0: no action Write: 1: reset AI min value 0: return illegal data value
00005	0x0004	1 bit	Reset CH4 AI min value Read: 0: no action Write: 1: reset AI min value 0: return illegal data value
00006	0x0005	1 bit	Reset CH5 AI min value Read: 0: no action Write: 1: reset AI min value 0: return illegal data value

Reference	Address	Data Type	Description
00007	0x0006	1 bit	Reset CH6 AI min value Read: 0: no action Write: 1: reset AI min value 0: return illegal data value
00008	0x0007	1 bit	Reset CH7 AI min value Read: 0: no action Write: 1: reset AI min value 0: return illegal data value
00009	0x0008	1 bit	Reset CH0 AI max value Read: 0: no action Write: 1: reset AI max value 0: return illegal data value
00010	0x0009	1 bit	Reset CH1 AI max value Read: 0: no action Write: 1: reset AI max value 0: return illegal data value
00011	0x000A	1 bit	Reset CH2 AI max value Read: 0: no action Write: 1: reset AI max value 0: return illegal data value
00012	0x000B	1 bit	Reset CH3 AI max value Read: 0: no action Write: 1: reset AI max value 0: return illegal data value
00013	0x000C	1 bit	Reset CH4 AI max value Read: 0: no action Write: 1: reset AI max value 0: return illegal data value

Reference	Address	Data Type	Description
00014	0x000D	1 bit	Reset CH5 AI max value Read: 0: no action Write: 1: reset AI max value 0: return illegal data value
00015	0x000E	1 bit	Reset CH6 AI max value Read: 0: no action Write: 1: reset AI max value 0: return illegal data value
00016	0x000F	1 bit	Reset CH7 AI max value Read: 0: no action Write: 1: reset AI max value 0: return illegal data value

### 1xxxx Read Only Coils (Function 2)

Reference	Address	Data Type	Description
00001	0x0000	1 bit	CH0 AI LED 1: On 0: Off
00002	0x0001	1 bit	CH1 AI LED 1: On 0: Off
00003	0x0002	1 bit	CH2 AI LED 1: On 0: Off
00004	0x0003	1 bit	CH3 AI LED 1: On 0: Off
00005	0x0004	1 bit	CH4 AI LED 1: On 0: Off
00006	0x0005	1 bit	CH5 AI LED 1: On 0: Off
00007	0x0006	1 bit	CH6 AI LED 1: On 0: Off
00008	0x0007	1 bit	CH7 AI LED 1: On 0: Off

### 3xxxx Read Only Registers (Function 4)

Reference	Address	Data Type	Description
30001	0x0000	1 word	CH0 read AI value

Reference	Address	Data Type	Description
30002	0x0001	1 word	CH1 read AI value
30003	0x0002	1 word	CH2 read AI value
30004	0x0003	1 word	CH3 read AI value
30005	0x0004	1 word	CH4 read AI value
30006	0x0005	1 word	CH5 read AI value
30007	0x0006	1 word	CH6 read AI value
30008	0x0007	1 word	CH7 read AI value
30009	0x0008	1 word	CH0 read AI min value
30010	0x0009	1 word	CH1 read AI min value
30011	0x000A	1 word	CH2 read AI min value
30012	0x000B	1 word	CH3 read AI min value
30013	0x000C	1 word	CH4 read AI min value
30014	0x000D	1 word	CH5 read AI min value
30015	0x000E	1 word	CH6 read AI min value
30016	0x000F	1 word	CH7 read AI min value
30017	0x0010	1 word	CH0 read AI max value
30018	0x0011	1 word	CH1 read AI max value
30019	0x0012	1 word	CH2 read AI max value
30020	0x0013	1 word	CH3 read AI max value
30021	0x0014	1 word	CH4 read AI max value
30022	0x0015	1 word	CH5 read AI max value
30023	0x0016	1 word	CH6 read AI max value
30024	0x0017	1 word	CH7 read AI max value

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

Reference	Address	Data Type	Description
40001	0x0000	1 word	CH0 AO value (0 to 4095)
40002	0x0001	1 word	CH1 AO value (0 to 4095)
40003	0x0002	1 word	CH0 AO power-on value (0 to 4095)
40004	0x0003	1 word	CH1 AO power-on value (0 to 4095)
40005	0x0004	1 word	CH0 AO safe value (0 to 4095)
40006	0x0005	1 word	CH1 AO safe value (0 to 4095)
40007	0x0006	1 word	CH0 AO range 0: 0 to 10 VDC 1: 4 to 20 mA Other: return illegal data value
40008	0x0007	1 word	CH1 AO range 0: 0 to 10 VDC 1: 4 to 20 mA Other: return illegal data value

Reference	Address	Data Type	Description
40009	0x0008	1 word	CH0 AO power-on range 0: 0 to 10 VDC 1: 4 to 20 mA Other: return illegal data value
40010	0x0009	1 word	CH1 AO power-on range 0: 0 to 10 VDC 1: 4 to 20 mA Other: return illegal data value
40011	0x000A	1 word	CH0 AO safe range 0: 0 to 10 VDC 1: 4 to 20 mA Other: return illegal data value
40012	0x000B	1 word	CH1 AO safe range 0: 0 to 10 VDC 1: 4 to 20 mA Other: return illegal data value
40013	0x000C	1 word	CH0 AI range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40014	0x000D	1 word	CH1 AI range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40015	0x000E	1 word	CH2 AI range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value

Reference	Address	Data Type	Description
40016	0x000F	1 word	CH3 AI range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40017	0x0010	1 word	CH4 AI range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40018	0x0011	1 word	CH5 AI range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40019	0x0012	1 word	CH6 AI range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40020	0x0013	1 word	CH7 AI range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value

Reference	Address	Data Type	Description
40021	0x0014	1 word	CH0 AI power-on range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40022	0x0015	1 word	CH1 AI power-on range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40023	0x0016	1 word	CH2 AI power-on range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40024	0x0017	1 word	CH3 AI power-on range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40025	0x0018	1 word	CH4 AI power-on range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value

Reference	Address	Data Type	Description
40026	0x0019	1 word	CH5 AI power-on range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40027	0x001A	1 word	CH6 AI power-on range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40028	0x001B	1 word	CH7 AI power-on range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40029	0x001C	1 word	CH0 AI safe range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40030	0x001D	1 word	CH1 AI safe range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value



Reference	Address	Data Type	Description
40031	0x001E	1 word	CH2 AI safe range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40032	0x001F	1 word	CH3 AI safe range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40033	0x0020	1 word	CH4 AI safe range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40034	0x0021	1 word	CH5 AI safe range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
40035	0x0022	1 word	CH6 AI safe range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value

Reference	Address	Data Type	Description
40036	0x0023	1 word	CH7 AI safe range 00: +/-150 mV 01: +/-500 mV 02: +/-5V 03: +/-10V 04: 0 to 20 mA 05: 4 to 20 mA Other: return illegal data value
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

## ioLogik E2242 Modbus Mapping

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

Reference	Address	Data Type	Description
00001	0x0000	1 bit	CH0 DO Value 0: Off 1: On
00002	0x0001	1 bit	CH1 DO Value 0: Off 1: On
00003	0x0002	1 bit	CH2 DO Value 0: Off 1: On
00004	0x0003	1 bit	CH3 DO Value 0: Off 1: On

00005	0x0004	1 bit	CH4 DO Value 0: Off 1: On
00006	0x0005	1 bit	CH5 DO Value 0: Off 1: On
00007	0x0006	1 bit	CH6 DO Value 0: Off 1: On
00008	0x0007	1 bit	CH7 DO Value 0: Off 1: On
00009	0x0008	1 bit	CH8 DO Value 0: Off 1: On
00010	0x0009	1 bit	CH9 DO Value 0: Off 1: On
00011	0x000A	1 bit	CH10 DO Value 0: Off 1: On
00012	0x000B	1 bit	CH11 DO Value 0: Off 1: On
00013	0x000C	1 bit	CH0 DO Power On Value 0: Off 1: On
00014	0x000D	1 bit	CH1 DO Power On Value 0: Off 1: On
00015	0x000E	1 bit	CH2 DO Power On Value 0: Off 1: On
00016	0x000F	1 bit	CH3 DO Power On Value 0: Off 1: On
00017	0x0010	1 bit	CH4 DO Power On Value 0: Off 1: On
00018	0x0011	1 bit	CH5 DO Power On Value 0: Off 1: On
00019	0x0012	1 bit	CH6 DO Power On Value 0: Off 1: On
00020	0x0013	1 bit	CH7 DO Power On Value 0: Off 1: On
00021	0x0014	1 bit	CH8 DO Power On Value 0: Off 1: On
00022	0x0015	1 bit	CH9 DO Power On Value 0: Off 1: On
00023	0x0016	1 bit	CH10 DO Power On Value 0: Off 1: On
00024	0x0017	1 bit	CH11 DO Power On Value 0: Off 1: On
00025	0x0018	1 bit	CH0 DO Safe Value 0: Off 1: On
00026	0x0019	1 bit	CH1 DO Safe Value 0: Off 1: On
00027	0x001A	1 bit	CH2 DO Safe Value 0: Off 1: On
00028	0x001B	1 bit	CH3 DO Safe Value 0: Off 1: On
00029	0x001C	1 bit	CH4 DO Safe Value 0: Off 1: On
00030	0x001D	1 bit	CH5 DO Safe Value 0: Off 1: On
00031	0x001E	1 bit	CH6 DO Safe Value 0: Off 1: On
00032	0x001F	1 bit	CH7 DO Safe Value 0: Off 1: On
00033	0x0020	1 bit	CH8 DO Safe Value 0: Off 1: On
00034	0x0021	1 bit	CH9 DO Safe Value 0: Off 1: On
00035	0x0022	1 bit	CH10 DO Safe Value 0: Off 1: On
00036	0x0023	1 bit	CH11 DO Safe Value 0: Off 1: On
00037	0x0024	1 bit	CH0 DO Pulse Operate Status 0: Off 1: On
00038	0x0025	1 bit	CH1 DO Pulse Operate Status 0: Off 1: On
00039	0x0026	1 bit	CH2 DO Pulse Operate Status 0: Off 1: On
00040	0x0027	1 bit	CH3 DO Pulse Operate Status 0: Off 1: On
00041	0x0028	1 bit	CH4 DO Pulse Operate Status 0: Off 1: On
00042	0x0029	1 bit	CH5 DO Pulse Operate Status 0: Off 1: On
00043	0x002A	1 bit	CH6 DO Pulse Operate Status 0: Off 1: On
00044	0x002B	1 bit	CH7 DO Pulse Operate Status 0: Off 1: On
00045	0x002C	1 bit	CH8 DO Pulse Operate Status 0: Off 1: On
00046	0x002D	1 bit	CH9 DO Pulse Operate Status 0: Off 1: On
00047	0x002E	1 bit	CH10 DO Pulse Operate Status 0: Off 1: On
00048	0x002F	1 bit	CH11 DO Pulse Operate Status 0: Off 1: On
00049	0x0030	1 bit	CH0 DO PowerOn Pulse Operate Status 0: Off 1: On
00050	0x0031	1 bit	CH1 DO PowerOn Pulse Operate Status 0: Off 1: On
00051	0x0032	1 bit	CH2 DO PowerOn Pulse Operate Status 0: Off 1: On
00052	0x0033	1 bit	CH3 DO PowerOn Pulse Operate Status 0: Off 1: On
00053	0x0034	1 bit	CH4 DO PowerOn Pulse Operate Status 0: Off 1: On

00054	0x0035	1 bit	CH5 DO PowerOn Pulse Operate Status 0: Off 1: On
00055	0x0036	1 bit	CH6 DO PowerOn Pulse Operate Status 0: Off 1: On
00056	0x0037	1 bit	CH7 DO PowerOn Pulse Operate Status 0: Off 1: On
00057	0x0038	1 bit	CH8 DO PowerOn Pulse Operate Status 0: Off 1: On
00058	0x0039	1 bit	CH9 DO PowerOn Pulse Operate Status 0: Off 1: On
00059	0x003A	1 bit	CH10 DO PowerOn Pulse Operate Status 0: Off 1: On
00060	0x003B	1 bit	CH11 DO PowerOn Pulse Operate Status 0: Off 1: On
00061	0x003C	1 bit	CH0 DO Safe Pulse Operate Status 0: Off 1: On
00062	0x003D	1 bit	CH1 DO Safe Pulse Operate Status 0: Off 1: On
00063	0x003E	1 bit	CH2 DO Safe Pulse Operate Status 0: Off 1: On
00064	0x003F	1 bit	CH3 DO Safe Pulse Operate Status 0: Off 1: On
00065	0x0040	1 bit	CH4 DO Safe Pulse Operate Status 0: Off 1: On
00066	0x0041	1 bit	CH5 DO Safe Pulse Operate Status 0: Off 1: On
00067	0x0042	1 bit	CH6 DO Safe Pulse Operate Status 0: Off 1: On
00068	0x0043	1 bit	CH7 DO Safe Pulse Operate Status 0: Off 1: On
00069	0x0044	1 bit	CH8 DO Safe Pulse Operate Status 0: Off 1: On
00070	0x0045	1 bit	CH9 DO Safe Pulse Operate Status 0: Off 1: On
00071	0x0046	1 bit	CH10 DO Safe Pulse Operate Status 0: Off 1: On
00072	0x0047	1 bit	CH11 DO Safe Pulse Operate Status 0: Off 1: On
00073	0x0048	1 bit	CH0 DI Counter Status 0: Off 1: On
00074	0x0049	1 bit	CH1 DI Counter Status 0: Off 1: On
00075	0x004A	1 bit	CH2 DI Counter Status 0: Off 1: On
00076	0x004B	1 bit	CH3 DI Counter Status 0: Off 1: On
00077	0x004C	1 bit	CH4 DI Counter Status 0: Off 1: On
00078	0x004D	1 bit	CH5 DI Counter Status 0: Off 1: On
00079	0x004E	1 bit	CH6 DI Counter Status 0: Off 1: On
00080	0x004F	1 bit	CH7 DI Counter Status 0: Off 1: On
00081	0x0050	1 bit	CH8 DI Counter Status 0: Off 1: On
00082	0x0051	1 bit	CH9 DI Counter Status 0: Off 1: On
00083	0x0052	1 bit	CH10 DI Counter Status 0: Off 1: On
00084	0x0053	1 bit	CH11 DI Counter Status 0: Off 1: On
00085	0x0054	1 bit	CH0 DI Clear Count Value read always: 0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00086	0x0055	1 bit	CH1 DI Clear Count Value read always: 0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00087	0x0056	1 bit	CH2 DI Clear Count Value read always: 0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00088	0x0057	1 bit	CH3 DI Clear Count Value read always: 0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00089	0x0058	1 bit	CH4 DI Clear Count Value read always: 0 Write: 1 : Clear counter value 0 : return Illegal Data Value

00090	0x0059	1 bit	CH5 DI Clear Count Value read always: 0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00091	0x005A	1 bit	CH6 DI Clear Count Value read always: 0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00092	0x005B	1 bit	CH7 DI Clear Count Value read always: 0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00093	0x005C	1 bit	CH8 DI Clear Count Value read always: 0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00094	0x005D	1 bit	CH9 DI Clear Count Value read always: 0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00095	0x005E	1 bit	CH10 DI Clear Count Value read always: 0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00096	0x005F	1 bit	CH11 DI Clear Count Value read always: 0 Write: 1 : Clear counter value 0 : return Illegal Data Value
00097	0x0060	1 bit	CH0 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00098	0x0061	1 bit	CH1 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00099	0x0062	1 bit	CH2 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00100	0x0063	1 bit	CH3 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00101	0x0064	1 bit	CH4 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00102	0x0065	1 bit	CH5 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value

00103	0x0066	1 bit	CH6 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00104	0x0067	1 bit	CH7 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00105	0x0068	1 bit	CH8 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00106	0x0069	1 bit	CH9 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00107	0x006A	1 bit	CH10 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00108	0x006B	1 bit	CH11 DI OverFlow Status Read : 0 : Normal 1 : Overflow Write : 0 : clear overflow status 1 : return Illegal Data Value
00109	0x006C	1 bit	CH0 DI Count Trigger
00110	0x006D	1 bit	CH1 DI Count Trigger
00111	0x006E	1 bit	CH2 DI Count Trigger
00112	0x006F	1 bit	CH3 DI Count Trigger
00113	0x0070	1 bit	CH4 DI Count Trigger
00114	0x0071	1 bit	CH5 DI Count Trigger
00115	0x0072	1 bit	CH6 DI Count Trigger
00116	0x0073	1 bit	CH7 DI Count Trigger
00117	0x0074	1 bit	CH8 DI Count Trigger
00118	0x0075	1 bit	CH9 DI Count Trigger
00119	0x0076	1 bit	CH10 DI Count Trigger
00120	0x0077	1 bit	CH11 DI Count Trigger
00121	0x0078	1 bit	CH0 DI Power On Status 0: Off 1: On
00122	0x0079	1 bit	CH1 DI Power On Status 0: Off 1: On
00123	0x007A	1 bit	CH2 DI Power On Status 0: Off 1: On
00124	0x007B	1 bit	CH3 DI Power On Status 0: Off 1: On
00125	0x007C	1 bit	CH4 DI Power On Status 0: Off 1: On
00126	0x007D	1 bit	CH5 DI Power On Status 0: Off 1: On
00127	0x007E	1 bit	CH6 DI Power On Status 0: Off 1: On
00128	0x007F	1 bit	CH7 DI Power On Status 0: Off 1: On

00129	0x0080	1 bit	CH8 DI Power On Status 0: Off 1: On
00130	0x0081	1 bit	CH9 DI Power On Status 0: Off 1: On
00131	0x0082	1 bit	CH10 DI Power On Status 0: Off 1: On
00132	0x0083	1 bit	CH11 DI Power On Status 0: Off 1: On
00133	0x0084	1 bit	CH0 DI Safe Pulse Operate Status 0: Off 1: On
00134	0x0085	1 bit	CH1 DI Safe Pulse Operate Status 0: Off 1: On
00135	0x0086	1 bit	CH2 DI Safe Pulse Operate Status 0: Off 1: On
00136	0x0087	1 bit	CH3 DI Safe Pulse Operate Status 0: Off 1: On
00137	0x0088	1 bit	CH4 DI Safe Pulse Operate Status 0: Off 1: On
00138	0x0089	1 bit	CH5 DI Safe Pulse Operate Status 0: Off 1: On
00139	0x008A	1 bit	CH6 DI Safe Pulse Operate Status 0: Off 1: On
00140	0x008B	1 bit	CH7 DI Safe Pulse Operate Status 0: Off 1: On
00141	0x008C	1 bit	CH8 DI Safe Pulse Operate Status 0: Off 1: On
00142	0x008D	1 bit	CH9 DI Safe Pulse Operate Status 0: Off 1: On
00143	0x008E	1 bit	CH10 DI Safe Pulse Operate Status 0: Off 1: On
00144	0x008F	1 bit	CH11 DI Safe Pulse Operate Status 0: Off 1: On
00145	0x0090	1 bit	CH0 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00146	0x0091	1 bit	CH1 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00147	0x0092	1 bit	CH2 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00148	0x0093	1 bit	CH3 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00149	0x0094	1 bit	CH4 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00150	0x0095	1 bit	CH5 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00151	0x0096	1 bit	CH6 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00152	0x0097	1 bit	CH7 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF

00153	0x0098	1 bit	CH8 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00154	0x0099	1 bit	CH9 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00155	0x009A	1 bit	CH10 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00156	0x009B	1 bit	CH11 DI set channel Power-off storage enable ON/OFF 1:ON 0:OFF
00157	0x009C	1 bit	DIO 00 1: OUTPUT 0: INPUT (Default: INPUT)
00158	0x009D	1 bit	DIO 01 1: OUTPUT 0: INPUT (Default: INPUT)
00159	0x009E	1 bit	DIO 02 1: OUTPUT 0: INPUT (Default: INPUT)
00160	0x009F	1 bit	DIO 03 1: OUTPUT 0: INPUT (Default: INPUT)
00161	0x00A0	1 bit	DIO 04 1: OUTPUT 0: INPUT (Default: INPUT)
00162	0x00A1	1 bit	DIO 05 1: OUTPUT 0: INPUT (Default: INPUT)
00163	0x00A2	1 bit	DIO 06 1: OUTPUT 0: INPUT (Default: OUTPUT)
00164	0x00A3	1 bit	DIO 07 1: OUTPUT 0: INPUT (Default: OUTPUT)
00165	0x00A4	1 bit	DIO 08 1: OUTPUT 0: INPUT (Default: OUTPUT)
00166	0x00A5	1 bit	DIO 09 1: OUTPUT 0: INPUT (Default: OUTPUT)
00167	0x00A6	1 bit	DIO 10 1: OUTPUT 0: INPUT (Default: OUTPUT)



00168	0x00A7	1 bit	DIO 11 1: OUTPUT 0: INPUT (Default: OUTPUT)
// AI Channel			
Reference	Address	Data Type	Description
00257	0x0100	1bit	Reset CH0 AI Min Value Read: always 0 Write : 1: reset AI Min value 0: return Illegal Data Value
00258	0x0101	1bit	Reset CH1 AI Min Value Read: always 0 Write : 1: reset AI Min value 0: return Illegal Data Value
00259	0x0102	1bit	Reset CH2 AI Min Value Read: always 0 Write : 1: reset AI Min value 0: return Illegal Data Value
00260	0x0103	1bit	Reset CH3 AI Min Value Read: always 0 Write : 1: reset AI Min value 0: return Illegal Data Value
00265	0x0104	1bit	Reset CH0 AI Max Value Read: always 0 Write : 1: reset AI Max value 0: return Illegal Data Value
00266	0x0105	1bit	Reset CH1 AI Max Value Read: always 0 Write : 1: reset AI Max value 0: return Illegal Data Value
00267	0x0106	1bit	Reset CH2 AI Max Value Read: always 0 Write : 1: reset AI Max value 0: return Illegal Data Value
00268	0x0107	1bit	Reset CH3 AI Max Value Read: always 0 Write : 1: reset AI Max value 0: return Illegal Data Value

### 1xxxx Read Only Coils (Function 2)

Reference	Address	Data Type	Description
10001	0x0000	1 bit	CH0 DI Value
10002	0x0001	1 bit	CH1 DI Value
10003	0x0002	1 bit	CH2 DI Value
10004	0x0003	1 bit	CH3 DI Value
10005	0x0004	1 bit	CH4 DI Value
10006	0x0005	1 bit	CH5 DI Value
10007	0x0006	1 bit	CH6 DI Value
10008	0x0007	1 bit	CH7 DI Value
10009	0x0008	1 bit	CH8 DI Value

10010	0x0009	1 bit	CH9 DI Value
10011	0x000A	1 bit	CH10 DI Value
10012	0x000B	1 bit	CH11 DI Value
10013	0x000C	1 bit	CH0 AI LED 1: On 0: Off
10014	0x000D	1 bit	CH1 AI LED 1: On 0: Off
10015	0x000E	1 bit	CH2 AI LED 1: On 0: Off
10016	0x000F	1 bit	CH3 AI LED 1: On 0: Off

NOTE: As for design purposes, the ioLogik E2242 has changed its Modbus/TCP address mapping for DI channel and AI LED status starting from firmware version V3.0. The earlier Modbus address mapping of this part at firmware V1.x starts from 10257(0x0100) to 10272(0x010F).

### 3xxxx Read Only Registers (Function 4)

Reference	Address	Data Type	Description
30001	0x0000	word	CH0 DI Counter Value Hi- Word
30002	0x0001	word	CH0 DI Counter Value Lo- Word
30003	0x0002	word	CH1 DI Counter Value Hi- Word
30004	0x0003	word	CH1 DI Counter Value Lo- Word
30005	0x0004	word	CH2 DI Counter Value Hi- Word
30006	0x0005	word	CH2 DI Counter Value Lo- Word
30007	0x0006	word	CH3 DI Counter Value Hi- Word
30008	0x0007	word	CH3 DI Counter Value Lo- Word
30009	0x0008	word	CH4 DI Counter Value Hi- Word
30010	0x0009	word	CH4 DI Counter Value Lo- Word
30011	0x000A	word	CH5 DI Counter Value Hi- Word
30012	0x000B	word	CH5 DI Counter Value Lo- Word
30013	0x000C	word	CH6 DI Counter Value Hi- Word
30014	0x000D	word	CH6 DI Counter Value Lo- Word
30015	0x000E	word	CH7 DI Counter Value Hi- Word
30016	0x000F	word	CH7 DI Counter Value Lo- Word
30017	0x0010	word	CH8 DI Counter Value Hi- Word
30018	0x0011	word	CH8 DI Counter Value Lo- Word
30019	0x0012	word	CH9 DI Counter Value Hi- Word
30020	0x0013	word	CH9 DI Counter Value Lo- Word
30021	0x0014	word	CH10 DI Counter Value Hi- Word
30022	0x0015	word	CH10 DI Counter Value Lo- Word
30023	0x0016	word	CH11 DI Counter Value Hi- Word
30024	0x0017	word	CH11 DI Counter Value Lo- Word
30025	0x0018	word	CH0 Read AI Value
30026	0x0019	word	CH1 Read AI Value
30027	0x001A	word	CH2 Read AI Value
30028	0x001B	word	CH3 Read AI Value
30033	0x0020	word	CH0 Read AI Min Value
30034	0x0021	word	CH1 Read AI Min Value
30035	0x0022	word	CH2 Read AI Min Value
30036	0x0023	word	CH3 Read AI Min Value
30041	0x0028	word	CH0 Read AI Max Value
30042	0x0029	word	CH1 Read AI Max Value
30043	0x002A	word	CH2 Read AI Max Value

30044	0x002B	word	CH3 Read AI Max Value
312289	0x3000	1 word	CH0 DI Value (low byte)
312290	0x3001	1 word	CH1 DI Value (low byte)
312291	0x3002	1 word	CH2 DI Value (low byte)
312292	0x3003	1 word	CH3 DI Value (low byte)
312293	0x3004	1 word	CH4 DI Value (low byte)
312294	0x3005	1 word	CH5 DI Value (low byte)
312295	0x3006	1 word	CH6 DI Value (low byte)
312296	0x3007	1 word	CH7 DI Value (low byte)
312297	0x3008	1 word	CH8 DI Value (low byte)
312298	0x3009	1 word	CH9 DI Value (low byte)
312299	0x300A	1 word	CH10 DI Value (low byte)
312300	0x300B	1 word	CH11 DI Value (low byte)

#### 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
40002	0x0001	1 word	CH0 DO Pulse Output Count Value Lo-Word
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	CH4 DO Pulse Output Count Value Hi- Word
40010	0x0009	1 word	CH4 DO Pulse Output Count Value Lo- Word
40011	0x000A	1 word	CH5 DO Pulse Output Count Value Hi- Word
40012	0x000B	1 word	CH5 DO Pulse Output Count Value Lo- Word
40013	0x000C	1 word	CH6 DO Pulse Output Count Value Hi- Word
40014	0x000D	1 word	CH6 DO Pulse Output Count Value Lo- Word
40015	0x000E	1 word	CH7 DO Pulse Output Count Value Hi- Word
40016	0x000F	1 word	CH7 DO Pulse Output Count Value Lo- Word
40017	0x0010	1 word	CH8 DO Pulse Output Count Value Hi- Word
40018	0x0011	1 word	CH8 DO Pulse Output Count Value Lo- Word
40019	0x0012	1 word	CH9 DO Pulse Output Count Value Hi- Word
40020	0x0013	1 word	CH9 DO Pulse Output Count Value Lo- Word
40021	0x0014	1 word	CH10 DO Pulse Output Count Value Hi- Word
40022	0x0015	1 word	CH10 DO Pulse Output Count Value Lo- Word
40023	0x0016	1 word	CH11 DO Pulse Output Count Value Hi- Word
40024	0x0017	1 word	CH11 DO Pulse Output Count Value Lo- Word
40025	0x0018	1 word	CH0 DO Pulse Low Signal Width Hi- Word
40026	0x0019	1 word	CH0 DO Pulse Low Signal Width Lo- Word
40027	0x001A	1 word	CH1 DO Pulse Low Signal Width Hi- Word
40028	0x001B	1 word	CH1 DO Pulse Low Signal Width Lo- Word
40029	0x001C	1 word	CH2 DO Pulse Low Signal Width Hi- Word
40030	0x001D	1 word	CH2 DO Pulse Low Signal Width Lo- Word
40031	0x001E	1 word	CH3 DO Pulse Low Signal Width Hi- Word
40032	0x001F	1 word	CH3 DO Pulse Low Signal Width Lo- Word

40033	0x0020	1 word	CH4 DO Pulse Low Signal Width Hi- Word
40034	0x0021	1 word	CH4 DO Pulse Low Signal Width Lo- Word
40035	0x0022	1 word	CH5 DO Pulse Low Signal Width Hi- Word
40036	0x0023	1 word	CH5 DO Pulse Low Signal Width Lo- Word
40037	0x0024	1 word	CH6 DO Pulse Low Signal Width Hi- Word
40038	0x0025	1 word	CH6 DO Pulse Low Signal Width Lo- Word
40039	0x0026	1 word	CH7 DO Pulse Low Signal Width Hi- Word
40040	0x0027	1 word	CH7 DO Pulse Low Signal Width Lo- Word
40041	0x0028	1 word	CH8 DO Pulse Low Signal Width Hi- Word
40042	0x0029	1 word	CH8 DO Pulse Low Signal Width Lo- Word
40043	0x002A	1 word	CH9 DO Pulse Low Signal Width Hi- Word
40044	0x002B	1 word	CH9 DO Pulse Low Signal Width Lo- Word
40045	0x002C	1 word	CH10 DO Pulse Low Signal Width Hi- Word
40046	0x002D	1 word	CH10 DO Pulse Low Signal Width Lo- Word
40047	0x002E	1 word	CH11 DO Pulse Low Signal Width Hi- Word
40048	0x002F	1 word	CH11 DO Pulse Low Signal Width Lo- Word
40049	0x0030	1 word	CH0 DO Pulse High Signal Width Hi- Word
40050	0x0031	1 word	CH0 DO Pulse High Signal Width Lo- Word
40051	0x0032	1 word	CH1 DO Pulse High Signal Width Hi- Word
40052	0x0033	1 word	CH1 DO Pulse High Signal Width Lo- Word
40053	0x0034	1 word	CH2 DO Pulse High Signal Width Hi- Word
40054	0x0035	1 word	CH2 DO Pulse High Signal Width Lo- Word
40055	0x0036	1 word	CH3 DO Pulse High Signal Width Hi- Word
40056	0x0037	1 word	CH3 DO Pulse High Signal Width Lo- Word
40057	0x0038	1 word	CH4 DO Pulse High Signal Width Hi- Word
40058	0x0039	1 word	CH4 DO Pulse High Signal Width Lo- Word
40059	0x003A	1 word	CH5 DO Pulse High Signal Width Hi- Word
40060	0x003B	1 word	CH5 DO Pulse High Signal Width Lo- Word
40061	0x003C	1 word	CH6 DO Pulse High Signal Width Hi- Word
40062	0x003D	1 word	CH6 DO Pulse High Signal Width Lo- Word
40063	0x003E	1 word	CH7 DO Pulse High Signal Width Hi- Word
40064	0x003F	1 word	CH7 DO Pulse High Signal Width Lo- Word
40065	0x0040	1 word	CH8 DO Pulse High Signal Width Hi- Word
40066	0x0041	1 word	CH8 DO Pulse High Signal Width Lo- Word
40067	0x0042	1 word	CH9 DO Pulse High Signal Width Hi- Word
40068	0x0043	1 word	CH9 DO Pulse High Signal Width Lo- Word
40069	0x0044	1 word	CH10 DO Pulse High Signal Width Hi- Word
40070	0x0045	1 word	CH10 DO Pulse High Signal Width Lo- Word
40071	0x0046	1 word	CH11 DO Pulse High Signal Width Hi- Word
40072	0x0047	1 word	CH11 DO Pulse High Signal Width Lo- Word
40073	0x0048	1 word	CH0 DO Mode 0: DO 1: Pulse
40074	0x0049	1 word	CH1 DO Mode 0: DO 1: Pulse
40075	0x004A	1 word	CH2 DO Mode 0: DO 1: Pulse
40076	0x004B	1 word	CH3 DO Mode 0: DO 1: Pulse
40077	0x004C	1 word	CH4 DO Mode 0: DO 1: Pulse

40078	0x004D	1 word	CH5 DO Mode 0: DO 1: Pulse
40079	0x004E	1 word	CH6 DO Mode 0: DO 1: Pulse
40080	0x004F	1 word	CH7 DO Mode 0: DO 1: Pulse
40081	0x0050	1 word	CH8 DO Mode 0: DO 1: Pulse
40082	0x0051	1 word	CH9 DO Mode 0: DO 1: Pulse
40083	0x0052	1 word	CH10 DO Mode 0: DO 1: Pulse
40084	0x0053	1 word	CH11 DO Mode 0: DO 1: Pulse
40085	0x0054	1 word	CH0 DI Count Filter
40086	0x0055	1 word	CH1 DI Count Filter
40087	0x0056	1 word	CH2 DI Count Filter
40088	0x0057	1 word	CH3 DI Count Filter
40089	0x0058	1 word	CH4 DI Count Filter
40090	0x0059	1 word	CH5 DI Count Filter
40091	0x005A	1 word	CH6 DI Count Filter
40092	0x005B	1 word	CH7 DI Count Filter
40093	0x005C	1 word	CH8 DI Count Filter
40094	0x005D	1 word	CH9 DI Count Filter
40095	0x005E	1 word	CH10 DI Count Filter
40096	0x005F	1 word	CH11 DI Count Filter
40097	0x0060	1 word	CH0 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40098	0x0061	1 word	CH1 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40099	0x0062	1 word	CH2 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40100	0x0063	1 word	CH3 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40101	0x0064	1 word	CH4 DI Mode 0: DI 1: Count Others : return Illegal Data Value

40102	0x0065	1 word	CH5 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40103	0x0066	1 word	CH6 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40104	0x0067	1 word	CH7 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40105	0x0068	1 word	CH8 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40106	0x0069	1 word	CH9 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40107	0x006A	1 word	CH10 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40108	0x006B	1 word	CH11 DI Mode 0: DI 1: Count Others : return Illegal Data Value
40109	0x006C	1 word	CH0 AI set/get Enable     1:Enable , 0: Disable
40110	0x006D	1 word	CH1 AI set/get Enable     1:Enable , 0: Disable
40111	0x006E	1 word	CH2 AI set/get Enable     1:Enable , 0: Disable
40112	0x006F	1 word	CH3 AI set/get Enable     1:Enable , 0: Disable
40129	0x0080	1 word	CH0 DO set/get wordvalue ; 0: Off 1:On
40130	0x0081	1 word	CH1 DO set/get wordvalue ; 0: Off 1:On
40131	0x0082	1 word	CH2 DO set/get wordvalue ; 0: Off 1:On
40132	0x0083	1 word	CH3 DO set/get wordvalue ; 0: Off 1:On
40133	0x0084	1 word	CH4 DO set/get wordvalue ; 0: Off 1:On
40134	0x0085	1 word	CH5 DO set/get wordvalue ; 0: Off 1:On
40135	0x0086	1 word	CH6 DO set/get wordvalue ; 0: Off 1:On
40136	0x0087	1 word	CH7 DO set/get wordvalue ; 0: Off 1:On
40137	0x0088	1 word	CH8 DO set/get wordvalue ; 0: Off 1:On
40138	0x0089	1 word	CH9 DO set/get wordvalue ; 0: Off 1:On
40139	0x008A	1 word	CH10 DO set/get wordvalue ; 0: Off 1:On
40140	0x008B	1 word	CH11 DO set/get wordvalue ; 0: Off 1:On
40141	0x008C	1 word	CH0 DO set/get poweron wordvalue
40142	0x008D	1 word	CH1 DO set/get poweron wordvalue
40143	0x008E	1 word	CH2 DO set/get poweron wordvalue
40144	0x008F	1 word	CH3 DO set/get poweron wordvalue
40145	0x0090	1 word	CH4 DO set/get poweron wordvalue
40146	0x0091	1 word	CH5 DO set/get poweron wordvalue

40147	0x0092	1 word	CH6 DO set/get poweron wordvalue
40148	0x0093	1 word	CH7 DO set/get poweron wordvalue
40149	0x0094	1 word	CH8 DO set/get poweron wordvalue
40150	0x0095	1 word	CH9 DO set/get poweron wordvalue
40151	0x0096	1 word	CH10 DO set/get poweron wordvalue
40152	0x0097	1 word	CH11 DO set/get poweron wordvalue
40153	0x0098	1 word	CH0 DO set/get safe mode wordvalue
40154	0x0099	1 word	CH1 DO set/get safe mode wordvalue
40155	0x009A	1 word	CH2 DO set/get safe mode wordvalue
40156	0x009B	1 word	CH3 DO set/get safe mode wordvalue
40157	0x009C	1 word	CH4 DO set/get safe mode wordvalue
40158	0x009D	1 word	CH5 DO set/get safe mode wordvalue
40159	0x009E	1 word	CH6 DO set/get safe mode wordvalue
40160	0x009F	1 word	CH7 DO set/get safe mode wordvalue
40161	0x00A0	1 word	CH8 DO set/get safe mode wordvalue
40162	0x00A1	1 word	CH9 DO set/get safe mode wordvalue
40163	0x00A2	1 word	CH10 DO set/get safe mode wordvalue
40164	0x00A3	1 word	CH11 DO set/get safe mode wordvalue
40165	0x00A4	1 word	CH0 DO set/get pwm start wordvalue
40166	0x00A5	1 word	CH1 DO set/get pwm start wordvalue
40167	0x00A6	1 word	CH2 DO set/get pwm start wordvalue
40168	0x00A7	1 word	CH3 DO set/get pwm start wordvalue
40169	0x00A8	1 word	CH4 DO set/get pwm start wordvalue
40170	0x00A9	1 word	CH5 DO set/get pwm start wordvalue
40171	0x00AA	1 word	CH6 DO set/get pwm start wordvalue
40172	0x00AB	1 word	CH7 DO set/get pwm start wordvalue
40173	0x00AC	1 word	CH8 DO set/get pwm start wordvalue
40174	0x00AD	1 word	CH9 DO set/get pwm start wordvalue
40175	0x00AE	1 word	CH10 DO set/get pwm start wordvalue
40176	0x00AF	1 word	CH11 DO set/get pwm start wordvalue
40177	0x00B0	1 word	CH0 DO set/get pwm poweron wordvalue
40178	0x00B1	1 word	CH1 DO set/get pwm poweron wordvalue
40179	0x00B2	1 word	CH2 DO set/get pwm poweron wordvalue
40180	0x00B3	1 word	CH3 DO set/get pwm poweron wordvalue
40181	0x00B4	1 word	CH4 DO set/get pwm poweron wordvalue
40182	0x00B5	1 word	CH5 DO set/get pwm poweron wordvalue
40183	0x00B6	1 word	CH6 DO set/get pwm poweron wordvalue
40184	0x00B7	1 word	CH7 DO set/get pwm poweron wordvalue
40185	0x00B8	1 word	CH8 DO set/get pwm poweron wordvalue
40186	0x00B9	1 word	CH9 DO set/get pwm poweron wordvalue
40187	0x00BA	1 word	CH10 DO set/get pwm poweron wordvalue
40188	0x00BB	1 word	CH11 DO set/get pwm poweron wordvalue
40189	0x00BC	1 word	CH0 DO set/get pwm safe mode wordvalue
40190	0x00BD	1 word	CH1 DO set/get pwm safe mode wordvalue
40191	0x00BE	1 word	CH2 DO set/get pwm safe mode wordvalue
40192	0x00BF	1 word	CH3 DO set/get pwm safe mode wordvalue
40193	0x00C0	1 word	CH4 DO set/get pwm safe mode wordvalue
40194	0x00C1	1 word	CH5 DO set/get pwm safe mode wordvalue
40195	0x00C2	1 word	CH6 DO set/get pwm safe mode wordvalue

40196	0x00C3	1 word	CH7 DO set/get pwm safe mode wordvalue
40197	0x00C4	1 word	CH8 DO set/get pwm safe mode wordvalue
40198	0x00C5	1 word	CH9 DO set/get pwm safe mode wordvalue
40199	0x00C6	1 word	CH10 DO set/get pwm safe mode wordvalue
40200	0x00C7	1 word	CH11 DO set/get pwm safe mode wordvalue
40201	0x00C8	1 word	CH0 DI set/get counter start word
40202	0x00C9	1 word	CH1 DI set/get counter start word
40203	0x00CA	1 word	CH2 DI set/get counter start word
40204	0x00CB	1 word	CH3 DI set/get counter start word
40205	0x00CC	1 word	CH4 DI set/get counter start word
40206	0x00CD	1 word	CH5 DI set/get counter start word
40207	0x00CE	1 word	CH6 DI set/get counter start word
40208	0x00CF	1 word	CH7 DI set/get counter start word
40209	0x00D0	1 word	CH8 DI set/get counter start word
40210	0x00D1	1 word	CH9 DI set/get counter start word
40211	0x00D2	1 word	CH10 DI set/get counter start word
40212	0x00D3	1 word	CH11 DI set/get counter start word
40213	0x00D4	1 word	CH0 DI set/get counter clear word
40214	0x00D5	1 word	CH1 DI set/get counter clear word
40215	0x00D6	1 word	CH2 DI set/get counter clear word
40216	0x00D7	1 word	CH3 DI set/get counter clear word
40217	0x00D8	1 word	CH4 DI set/get counter clear word
40218	0x00D9	1 word	CH5 DI set/get counter clear word
40219	0x00DA	1 word	CH6 DI set/get counter clear word
40220	0x00DB	1 word	CH7 DI set/get counter clear word
40221	0x00DC	1 word	CH8 DI set/get counter clear word
40222	0x00DD	1 word	CH9 DI set/get counter clear word
40223	0x00DE	1 word	CH10 DI set/get counter clear word
40224	0x00DF	1 word	CH11 DI set/get counter clear word
40225	0x00E0	1 word	CH0 DI clear/get overflow word
40226	0x00E1	1 word	CH1 DI clear/get overflow word
40227	0x00E2	1 word	CH2 DI clear/get overflow word
40228	0x00E3	1 word	CH3 DI clear/get overflow word
40229	0x00E4	1 word	CH4 DI clear/get overflow word
40230	0x00E5	1 word	CH5 DI clear/get overflow word
40231	0x00E6	1 word	CH6 DI clear/get overflow word
40232	0x00E7	1 word	CH7 DI clear/get overflow word
40233	0x00E8	1 word	CH8 DI clear/get overflow word
40234	0x00E9	1 word	CH9 DI clear/get overflow word
40235	0x00EA	1 word	CH10 DI clear/get overflow word
40236	0x00EB	1 word	CH11 DI clear/get overflow word
40237	0x00EC	1 word	CH0 DI set/get trigger word
40238	0x00ED	1 word	CH1 DI set/get trigger word
40239	0x00EE	1 word	CH2 DI set/get trigger word
40240	0x00EF	1 word	CH3 DI set/get trigger word
40241	0x00F0	1 word	CH4 DI set/get trigger word
40242	0x00F1	1 word	CH5 DI set/get trigger word
40243	0x00F2	1 word	CH6 DI set/get trigger word
40244	0x00F3	1 word	CH7 DI set/get trigger word



40245	0x00F4	1 word	CH8 DI set/get trigger word
40246	0x00F5	1 word	CH9 DI set/get trigger word
40247	0x00F6	1 word	CH10 DI set/get trigger word
40248	0x00F7	1 word	CH11 DI set/get trigger word
40249	0x00F8	1 word	CH0 DI set/get power on start word
40250	0x00F9	1 word	CH1 DI set/get power on start word
40251	0x00FA	1 word	CH2 DI set/get power on start word
40252	0x00FB	1 word	CH3 DI set/get power on start word
40253	0x00FC	1 word	CH4 DI set/get power on start word
40254	0x00FD	1 word	CH5 DI set/get power on start word
40255	0x00FE	1 word	CH6 DI set/get power on start word
40256	0x00FF	1 word	CH7 DI set/get power on start word
40257	0x0100	1 word	CH8 DI set/get power on start word
40258	0x0101	1 word	CH9 DI set/get power on start word
40259	0x0102	1 word	CH10 DI set/get power on start word
40260	0x0103	1 word	CH11 DI set/get power on start word
40261	0x0104	1 word	CH0 DI set/get safe start word
40262	0x0105	1 word	CH1 DI set/get safe start word
40263	0x0106	1 word	CH2 DI set/get safe start word
40264	0x0107	1 word	CH3 DI set/get safe start word
40265	0x0108	1 word	CH4 DI set/get safe start word
40266	0x0109	1 word	CH5 DI set/get safe start word
40267	0x010A	1 word	CH6 DI set/get safe start word
40268	0x010B	1 word	CH7 DI set/get safe start word
40269	0x010C	1 word	CH8 DI set/get safe start word
40270	0x010D	1 word	CH9 DI set/get safe start word
40271	0x010E	1 word	CH10 DI set/get safe start word
40272	0x010F	1 word	CH11 DI set/get safe start word
40273	0x0110	1 word	CH0 Power-off storage enable
40274	0x0111	1 word	CH1 Power-off storage enable
40275	0x0112	1 word	CH2 Power-off storage enable
40276	0x0113	1 word	CH3 Power-off storage enable
40277	0x0114	1 word	CH4 Power-off storage enable
40278	0x0115	1 word	CH5 Power-off storage enable
40279	0x0116	1 word	CH6 Power-off storage enable
40280	0x0117	1 word	CH7 Power-off storage enable
40281	0x0118	1 word	CH8 Power-off storage enable
40282	0x0119	1 word	CH9 Power-off storage enable
40283	0x011A	1 word	CH10 Power-off storage enable
40284	0x011B	1 word	CH11 Power-off storage enable
40285	0x011C	1 word	AI Channel 0 Scaling Enable
40286	0x011D	1 word	AI Channel 1 Scaling Enable
40287	0x011E	1 word	AI Channel 2 Scaling Enable
40288	0x011F	1 word	AI Channel 3 Scaling Enable
40289	0x0120	1 word	AI Channel 0 RAW Min Value
40290	0x0121	1 word	AI Channel 1 RAW Min Value
40291	0x0122	1 word	AI Channel 2 RAW Min Value
40292	0x0123	1 word	AI Channel 3 RAW Min Value
40293	0x0124	1 word	AI Channel 0 RAW Max Value

40294	0x0125	1 word	AI Channel 1 RAW Max Value
40295	0x0126	1 word	AI Channel 2 RAW Max Value
40296	0x0127	1 word	AI Channel 3 RAW Max Value
40297	0x0128	1 word	AI Channel 0 Scale Min Value
40298	0x0129	1 word	AI Channel 1 Scale Min Value
40299	0x012A	1 word	AI Channel 2 Scale Min Value
40300	0x012B	1 word	AI Channel 3 Scale Min Value
40301	0x012C	1 word	AI Channel 0 Scale Max Value
40302	0x012D	1 word	AI Channel 1 Scale Max Value
40303	0x012E	1 word	AI Channel 2 Scale Max Value
40304	0x012F	1 word	AI Channel 3 Scale Max Value
40305	0x0130	1 word	AI Channel 0 Scale Value Hi-Word (float)
40306	0x0131	1 word	AI Channel 0 Scale Value Lo-Word (float)
40307	0x0132	1 word	AI Channel 1 Scale Value Hi-Word (float)
40308	0x0133	1 word	AI Channel 1 Scale Value Lo-Word (float)
40309	0x0134	1 word	AI Channel 2 Scale Value Hi-Word (float)
40310	0x0135	1 word	AI Channel 2 Scale Value Lo-Word (float)
40311	0x0136	1 word	AI Channel 3 Scale Value Hi-Word (float)
40312	0x0137	1 word	AI Channel 3 Scale Value Lo-Word (float)
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
<b>Reference</b>	<b>Address</b>	<b>Data Type</b>	<b>Description</b>

40513	0x0200	1 word	CH0 AI Range 00 : +/-150mV 01: +/-500mV 02: +/-5V 03: +/-10V 04: 0-20mA 05: 4-20mA 06 : 0 -150mV 07 : 0 - 500mV 08: 0 - 5V 09: 0 -10V Others: return Illegal Data Value
40514	0x0201	1 word	CH1 AI Range 00 : +/-150mV 01: +/-500mV 02: +/-5V 03: +/-10V 04: 0-20mA 05: 4-20mA 06 : 0 -150mV 07 : 0 - 500mV 08: 0 - 5V 09: 0 -10V Others: return Illegal Data Value
40515	0x0202	1 word	CH2 AI Range 00: +/-150mV 01: +/-500mV 02: +/-5V 03: +/-10V 04: 0-20mA 05: 4-20mA 06 : 0 -150mV 07 : 0 - 500mV 08: 0 - 5V 09: 0 -10V Others: return Illegal Data Value
40516	0x0203	1 word	CH3 AI Range 00 : +/-150mV 01: +/-500mV 02: +/-5V 03: +/-10V 04: 0-20mA 05: 4-20mA 06 : 0 -150mV 07 : 0 - 500mV 08: 0 - 5V 09: 0 -10V Others: return Illegal Data Value
<b>System information (R/W)</b>			
41000	0x03E8 (1000)	1 word	Load default setting, data=0x0078

44097	0x1000	2 word	IP address (need reboot) Word 0 Hi byte = 192 (0xC0) Word 0 Lo byte = 168 (0xA8) Word 1 Hi byte = 15 (0x0F) Word 1 Lo byte = 1 (0x01) IP address is "192.168.15.1"
44098	0x1001	2 word	Subnet mask (need reboot) Word 0 Hi byte = 255 Word 0 Lo byte = 255 Word 1 Hi byte = 255 Word 1 Lo byte = 0 Subnet mask is "255.255.255.0"
44099	0x1002	2 word	Geteway (need reboot) Word 0 Hi byte = 192 Word 0 Lo byte = 168 Word 1 Hi byte = 15 Word 1 Lo byte = 1 Geteway is "192.168.15.1"
44100	0x1003	1 word	Timeout for idle TCP/IP connection In sec
44101	0x1004	6 word	System Local Time: Word 0= Sec: 00-59 Word 1= Min: 00-59 Word 2= Hour: 00-23 Word 3= Day: 01-31 Word 4= Month: 01-12 Word 5= Year: 2000-2099
44102	0x1005	1 word	System Local Time zone (1 ~ 63), refer to appendix time zone code.
44103	0x1006	20 word	System Time Server Address Word 0 Hi byte = 192 Word 0 Lo byte = 168 Word 1 Hi byte = 15 Word 1 Lo byte = 1 Time Server Address is "192.168.15.1"
44104	0x1007	2 word	DNS Server 1 IP Address Word 0 Hi byte = 192 Word 0 Lo byte = 168 Word 1 Hi byte = 15 Word 1 Lo byte = 1 DNS Server 1 IP="192.168.15.1"
44105	0x1008	2 word	DNS Server 2 IP Address Word 0 Hi byte = 192 Word 0 Lo byte = 168 Word 1 Hi byte = 15 Word 1 Lo byte = 1 DNS Server 2 IP="192.168.15.1"
44106	0x1009	1 word	Allow Web Access 1=Enable, 0=Disable
44107	0x100A	30 word	Module Location String (Terminated by '\0')

44108	0x100B	30 word	Module Description String (Terminated by '\0')
44109	0x100C	5 word	Module Password String (Terminated by '\0')
44110	0x100D	1 word	External Uart Packet RW Timeout Interval (in ms)
44111	0x100E	1 word	Lost Host Connection Timeout Interval (Will enter safe mode if timeout once occured)
44112	0x100F	1 word	Lost Host Connection Timeout Flag 1=Set, 0=Clear
44113	0x1010	1 word	SNMP Enable
44114	0x1011	10 word	SNMP Read Community Name String
44115	0x1012	10 word	SNMP Contact String
44116	0x1013	10 word	SNMP Location String
44117	0x1014	10 word	SNMP RW Community Name String
44118	0x1015	20 word	SNMP Manager IP0 (Server Name or IP String)
44119	0x1016	20 word	SNMP Manager IP1 (Server Name or IP String)
44120	0x1017	20 word	SNMP Manager IP2 (Server Name or IP String)
44121	0x1018	20 word	SNMP Manager IP3 (Server Name or IP String)
44122	0x1019	20 word	SNMP Manager IP4 (Server Name or IP String)
44123	0x101A	20 word	SNMP Manager IP5 (Server Name or IP String)
44124	0x101B	20 word	SNMP Manager IP6 (Server Name or IP String)
44125	0x101C	20 word	SNMP Manager IP7 (Server Name or IP String)
44126	0x101D	20 word	SNMP Manager IP8 (Server Name or IP String)
44127	0x101E	20 word	SNMP Manager IP9 (Server Name or IP String)
44128	0x101F	1 word	IP Configuration Type
44129	0x1020	1 word	IP Filter Global Enable Flag
44130	0x1021	10 word	IP Filter Enable (all entries)
44131	0x1022	20 word	IP Filter Address (all entries)
44132	0x1023	20 word	IP Filter Mask (all entries)

### 5xxxx Write Registers (Function 8)

Sub-function	Data Field (Request)	Data Field (Response)	Description
0x0001	0xFF00	Echo Request Data	Reboot
0x0001	0x55AA	Echo Request Data	Reset with Factory default

## ioLogik E2242 Modbus Mapping

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

Reference	Address	Data Type	Description
00001	0x0000	1 bit	CH0 RTD Reset Minimum Value <R> Always 0 <W> 1=Reset to current value, 0=return illegal data value
00002	0x0001	1 bit	CH1 RTD Reset Minimum Value
00003	0x0002	1 bit	CH2 RTD Reset Minimum Value
00004	0x0003	1 bit	CH3 RTD Reset Minimum Value
00005	0x0004	1 bit	CH4 RTD Reset Minimum Value
00006	0x0005	1 bit	CH5 RTD Reset Minimum Value
00007	0x0006	1 bit	Virtual CH6 RTD Reset Maximum Value
00008	0x0007	1 bit	Virtual CH7 RTD Reset Minimum Value
00009	0x0008	1 bit	Virtual CH8 RTD Reset Minimum Value
00010	0x0009	1 bit	Virtual CH9 RTD Reset Minimum Value
00011	0x000A	1 bit	Virtual CH10 RTD Reset Minimum Value
00012	0x000B	1 bit	Virtual CH11 RTD Reset Minimum Value
00013	0x000C	1 bit	CH0 RTD Reset Maximum Value
00014	0x000D	1 bit	CH1 RTD Reset Maximum Value
00015	0x000E	1 bit	CH2 RTD Reset Maximum Value
00016	0x000F	1 bit	CH3 RTD Reset Maximum Value
00017	0x0010	1 bit	CH4 RTD Reset Maximum Value
00018	0x0011	1 bit	CH5 RTD Reset Maximum Value
00019	0x0012	1 bit	Virtual CH6 RTD Reset Maximum Value
00020	0x0013	1 bit	Virtual CH7 RTD Reset Maximum Value
00021	0x0014	1 bit	Virtual CH8 RTD Reset Maximum Value
00022	0x0015	1 bit	Virtual CH9 RTD Reset Maximum Value
00023	0x0016	1 bit	Virtual CH10 RTD Reset Maximum Value
00024	0x0017	1 bit	Virtual CH11 RTD Reset Maximum Value
00025	0x0018	1 bit	CH0 RTD Enable <RW> 0=Disable, 1=Enable
00026	0x0019	1 bit	CH1 RTD Enable
00027	0x001A	1 bit	CH2 RTD Enable
00028	0x001B	1 bit	CH3 RTD Enable
00029	0x001C	1 bit	CH4 RTD Enable
00030	0x001D	1 bit	CH5 RTD Enable
00031	0x001E	1 bit	CH0 DO Status <RW> 0=OFF, 1=ON
00032	0x001F	1 bit	CH1 DO Status
00033	0x0020	1 bit	CH2 DO Status
00034	0x0021	1 bit	CH3 DO Status
00035	0x0022	1 bit	CH0 DO Power-On Status <RW> 0=OFF, 1=ON
00036	0x0023	1 bit	CH1 DO Power-On Status
00037	0x0024	1 bit	CH2 DO Power-On Status
00038	0x0025	1 bit	CH3 DO Power-On Status

Reference	Address	Data Type	Description
00039	0x0026	1 bit	CH0 DO Safe Status <RW> 0=OFF, 1=ON
00040	0x0027	1 bit	CH1 DO Safe Status
00041	0x0028	1 bit	CH2 DO Safe Status
00042	0x0029	1 bit	CH3 DO Safe Status
00043	0x002A	1 bit	CH0 DO Pulse Output Status <RW> 0=Stop, 1=Start
00044	0x002B	1 bit	CH1 DO Pulse Output Status
00045	0x002C	1 bit	CH2 DO Pulse Output Status
00046	0x002D	1 bit	CH3 DO Pulse Output Status
00047	0x002E	1 bit	CH0 DO Power-On Pulse Output Status <RW> 0=Stop, 1=Start
00048	0x002F	1 bit	CH1 DO Power-On Pulse Output Status
00049	0x0030	1 bit	CH2 DO Power-On Pulse Output Status
00050	0x0031	1 bit	CH3 DO Power-On Pulse Output Status
00051	0x0032	1 bit	CH0 DO Safe Mode Pulse Output Status <RW> 0=Stop, 1=Start
00052	0x0033	1 bit	CH1 DO Safe Mode Pulse Output Status
00053	0x0034	1 bit	CH2 DO Safe Mode Pulse Output Status
00054	0x0035	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 RTD Value <R> 0~65535, Unit:0.1 (Ohm, Celsius, Fahrenheit)
30002	0x0001	1 word	CH1 RTD Value
30003	0x0002	1 word	CH2 RTD Value
30004	0x0003	1 word	CH3 RTD Value
30005	0x0004	1 word	CH4 RTD Value
30006	0x0005	1 word	CH5 RTD Value
30007	0x0006	1 word	Virtual CH6 RTD Value <R> 0~65535, Unit:0.1 (Celsius, Fahrenheit)
30008	0x0007	1 word	Virtual CH7 RTD Value
30009	0x0008	1 word	Virtual CH8 RTD Value
30010	0x0009	1 word	Virtual CH9 RTD Value
30011	0x000A	1 word	Virtual CH10 RTD Value
30012	0x000B	1 word	Virtual CH11 RTD Value
30013	0x000C	1 word	CH0 RTD Minimum Value <R> 0~65535, Unit:0.1 (Ohm, Celsius, Fahrenheit)
30014	0x000D	1 word	CH1 RTD Minimum Value
30015	0x000E	1 word	CH2 RTD Minimum Value
30016	0x000F	1 word	CH3 RTD Minimum Value
30017	0x0010	1 word	CH4 RTD Minimum Value
30018	0x0011	1 word	CH5 RTD Minimum Value
30019	0x0012	1 word	Virtual CH6 RTD Minimum Value
30020	0x0013	1 word	Virtual CH7 RTD Minimum Value
30021	0x0014	1 word	Virtual CH8 RTD Minimum Value
30022	0x0015	1 word	Virtual CH9 RTD Minimum Value

Reference	Address	Data Type	Description
30023	0x0016	1 word	Virtual CH10 RTD Minimum Value
30024	0x0017	1 word	Virtual CH11 RTD Minimum Value
30025	0x0018	1 word	CH0 RTD Maximum Value <R> 0~65535, Unit:0.1 (Ohm, Celsius, Fahrenheit)
30026	0x0019	1 word	CH1 RTD Maximum Value
30027	0x001A	1 word	CH2 RTD Maximum Value
30028	0x001B	1 word	CH3 RTD Maximum Value
30029	0x001C	1 word	CH4 RTD Maximum Value
30030	0x001D	1 word	CH5 RTD Maximum Value
30031	0x001E	1 word	CH1 RTD Maximum Value
30032	0x001F	1 word	CH2 RTD Maximum Value
30033	0x0020	1 word	CH2 RTD Maximum Value
30034	0x0021	1 word	CH3 RTD Maximum Value
30035	0x0022	1 word	CH4 RTD Maximum Value
30036	0x0023	1 word	CH5 RTD Maximum Value

#### 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



Reference	Address	Data Type	Description
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 RTD Engineering Unit 0=Ohm, 1=Celsius, 2=Fahrenheit
40030	0x001D	1 word	CH1 RTD Engineering Unit
40031	0x001E	1 word	CH2 RTD Engineering Unit
40032	0x001F	1 word	CH3 RTD Engineering Unit
40033	0x0020	1 word	CH4 RTD Engineering Unit
40034	0x0021	1 word	CH5 RTD Engineering Unit
40035	0x0022	1 word	Virtual CH6 RTD Engineering Unit 1=Celsius, 2=Fahrenheit
40036	0x0023	1 word	Virtual CH7 RTD Engineering Unit
40037	0x0024	1 word	Virtual CH8 RTD Engineering Unit
40038	0x0025	1 word	Virtual CH9 RTD Engineering Unit
40039	0x0026	1 word	Virtual CH10 RTD Engineering Unit
40040	0x0027	1 word	Virtual CH11 RTD Engineering Unit
40041	0x0028	1 word	CH0 RTD Sensor Type 0=PT50 1=PT100 2=PT200 3=PT500 4=PT1000 5=JPT100 6=JPT200 7=JPT500 8=JPT1000 9=NI100 10=NI200 11=NI500 12=NI1000 13=NI120 14=310 Ohm 15=620 Ohm 16=1250 Ohm 17=2500 Ohm
40042	0x0029	1 word	CH1 RTD Sensor Type
40043	0x002A	1 word	CH2 RTD Sensor Type
40044	0x002B	1 word	CH3 RTD Sensor Type
40045	0x002C	1 word	CH4 RTD Sensor Type
40046	0x002D	1 word	CH5 RTD Sensor Type
40047	0x002E	1 word	CH6 RTD Sensor Type 20=AVG 21=DIV
40048	0x002F	1 word	Virtual CH7 RTD Sensor Type
40049	0x0030	1 word	Virtual CH8 RTD Sensor Type
40050	0x0031	1 word	Virtual CH9 RTD Sensor Type

Reference	Address	Data Type	Description
40051	0x0032	1 word	Virtual CH10 RTD Sensor Type
40052	0x0033	1 word	Virtual CH11 RTD Sensor Type
40053	0x0034	1 word	CH0 RTD Reset Minimum Value <R> Always 0 <W> 1=Reset, 0=return illegal data value
40054	0x0035	1 word	CH1 RTD Reset Minimum Value
40055	0x0036	1 word	CH2 RTD Reset Minimum Value
40056	0x0037	1 word	CH3 RTD Reset Minimum Value
40057	0x0038	1 word	CH4 RTD Reset Minimum Value
40058	0x0039	1 word	CH5 RTD Reset Minimum Value
40059	0x003A	1 word	Virtual CH6 RTD Reset Minimum Value
40060	0x003B	1 word	Virtual CH7 RTD Reset Minimum Value
40061	0x003C	1 word	Virtual CH8 RTD Reset Minimum Value
40062	0x003D	1 word	Virtual CH9 RTD Reset Minimum Value
40063	0x003E	1 word	Virtual CH10 RTD Reset Minimum Value
40064	0x003F	1 word	Virtual CH11 RTD Reset Minimum Value
40065	0x0040	1 word	CH0 RTD Reset Maximum Value <R> Always 0 <W> 1=Reset, 0=return illegal data value
40066	0x0041	1 word	CH1 RTD Reset Maximum Value
40067	0x0042	1 word	CH2 RTD Reset Maximum Value
40068	0x0043	1 word	CH3 RTD Reset Maximum Value
40069	0x0044	1 word	CH4 RTD Reset Maximum Value
40070	0x0045	1 word	CH5 RTD Reset Maximum Value
40071	0x0046	1 word	Virtual CH6 RTD Reset Maximum Value
40072	0x0047	1 word	Virtual CH7 RTD Reset Maximum Value
40073	0x0048	1 word	Virtual CH8 RTD Reset Maximum Value
40074	0x0049	1 word	Virtual CH9 RTD Reset Maximum Value
40075	0x004A	1 word	Virtual CH10 RTD Reset Maximum Value
40076	0x004B	1 word	Virtual CH11 RTD Reset Maximum Value
40077	0x004C	1 word	CH0 DO Status <RW> 0=OFF, 1=ON
40078	0x004D	1 word	CH1 DO Status
40079	0x004E	1 word	CH2 DO Status
40080	0x004F	1 word	CH3 DO Status
40081	0x0050	1 word	CH0 DO Power On Status <RW> 0=OFF, 1=ON
40082	0x0051	1 word	CH1 DO Status
40083	0x0052	1 word	CH2 DO Status
40084	0x0053	1 word	CH3 DO Status
40085	0x0054	1 word	CH0 DO Safe Status <RW> 0=OFF, 1=ON
40086	0x0055	1 word	CH1 DO Status
40087	0x0056	1 word	CH2 DO Status
40088	0x0057	1 word	CH3 DO Status
40089	0x0058	1 word	CH0 DO Pulse Output Status <RW> 0=Stop, 1=Start
40090	0x0059	1 word	CH1 DO Pulse Output Status
40091	0x005A	1 word	CH2 DO Pulse Output Status

Reference	Address	Data Type	Description
40092	0x005B	1 word	CH3 DO Pulse Output Status
40093	0x005C	1 word	CH0 DO Power On Pulse Output Status <RW> 0=Stop, 1=Start
40094	0x005D	1 word	CH1 DO Pulse Output Status
40095	0x005E	1 word	CH2 DO Pulse Output Status
40096	0x005F	1 word	CH3 DO Pulse Output Status
40097	0x0060	1 word	CH0 DO Safe Pulse Output Status <RW> 0=Stop, 1=Start
40098	0x0061	1 word	CH1 DO Pulse Output Status
40099	0x0062	1 word	CH2 DO Pulse Output Status
40100	0x0063	1 word	CH3 DO Pulse Output Status
40101	0x0064	1 word	CH0 RTD Enable <RW> 0 =Disable, 1=Enable
40102	0x0065	1 word	CH1 RTD Enable
40103	0x0066	1 word	CH2 RTD Enable
40104	0x0067	1 word	CH3 RTD Enable
40105	0x0068	1 word	CH4 RTD Enable
40106	0x0069	1 word	CH5 RTD 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

## ioLogik E2262 Modbus Mapping

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

Reference	Address	Data Type	Description
<b>00001</b>	<b>0x0000</b>	<b>1bit</b>	<b>CH0 TC Reset Minimum Value</b> <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
<b>00033</b>	<b>0x0020</b>	<b>1 bit</b>	<b>CH0 TC Enable</b> <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
<b>00041</b>	<b>0x0028</b>	<b>1 bit</b>	<b>CH0 DO Status</b> <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
<b>00045</b>	<b>0x002C</b>	<b>1 bit</b>	<b>CH0 DO Power-On Status</b> <b>&lt;RW&gt; 0=OFF, 1=ON</b>
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
<b>00049</b>	<b>0x0030</b>	<b>1 bit</b>	<b>CH0 DO Safe Status</b> <b>&lt;R W&gt; 0=OFF, 1=ON</b>
00050	0x0031	1 bit	CH1 DO Safe Status
00051	0x0032	1 bit	CH2 DO Safe Status
00052	0x0033	1 bit	CH3 DO Safe Status
<b>00053</b>	<b>0x0034</b>	<b>1 bit</b>	<b>CH0 DO Pulse Output Status</b> <b>&lt;RW&gt; 0=Stop, 1=Start</b>
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
<b>00057</b>	<b>0x0038</b>	<b>1 bit</b>	<b>CH0 DO Power-On Pulse Output Status</b> <b>&lt;R W&gt; 0=Stop, 1=Start</b>
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
<b>00061</b>	<b>0x003C</b>	<b>1 bit</b>	<b>CH0 DO Safe Mode Pulse Output Status</b> <b>&lt;R W&gt; 0=Stop, 1=Start</b>
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
<b>30001</b>	<b>0x0000</b>	<b>1 word</b>	<b>CH0 TC Value Hi Word</b> <b>&lt;R&gt; 0~4294967295,</b> <b>Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)</b>
<b>30002</b>	<b>0x0001</b>	<b>1 word</b>	<b>CH0 TC Value Lo Word</b> <b>&lt;R&gt; 0~4294967295,</b> <b>Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)</b>
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
<b>30017</b>	<b>0x0010</b>	<b>1 word</b>	<b>Virtual CH8 TC Value Hi Word &lt;R&gt; 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)</b>
<b>30018</b>	<b>0x0011</b>	<b>1 word</b>	<b>Virtual CH8 TC Value Lo Word &lt;R&gt; 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)</b>
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
<b>30033</b>	<b>0x0020</b>	<b>1 word</b>	<b>CH0 TC Minimum Value Hi Word &lt;R&gt; 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)</b>
<b>30034</b>	<b>0x0021</b>	<b>1 word</b>	<b>CH0 TC Minimum Value Lo Word &lt;R&gt; 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)</b>
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
<b>30049</b>	<b>0x0030</b>	<b>1 word</b>	<b>Virtual CH8 TC Minimum Value Hi Word &lt;R&gt; 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)</b>
<b>30050</b>	<b>0x0031</b>	<b>1 word</b>	<b>Virtual CH8 TC Minimum Value Lo Word &lt;R&gt; 0~4294967295, Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)</b>
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	<b>0x0040</b>	<b>1 word</b>	<b>CH0 TC Maximum Value Hi Word</b> <b>&lt;R&gt; 0~4294967295,</b> <b>Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)</b>
30066	<b>0x0041</b>	<b>1 word</b>	<b>CH0 TC Maximum Value Lo Word</b> <b>&lt;R&gt; 0~4294967295,</b> <b>Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)</b>
30067	0x0042	1 word	CH1 TC Maximum Value Hi Word
30068	0x0043	1 word	CH1 TC Maximum Value Lo Word
<b>30069</b>	0x0044	1 word	CH2 TC Maximum Value Hi Word
<b>30070</b>	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	<b>0x0050</b>	<b>1 word</b>	<b>Virtual CH8 TC Maximum Value Hi Word</b> <b>&lt;R&gt; 0~4294967295,</b> <b>Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)</b>
30082	<b>0x0051 1</b>	<b>word</b>	<b>Virtual CH8 TC Maximum Value Lo Word</b> <b>&lt;R&gt; 0~4294967295,</b> <b>Unit:0.1 (Celsius, Fahrenheit) 0.0001(mV)</b>
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
<b>40001</b>	<b>0x0000</b>	<b>1 word</b>	<b>CH0 DO Pulse Output Count Value Hi Word</b> <b>&lt;R W&gt; 0~4294967295</b>
<b>40002</b>	<b>0x0001</b>	<b>1 word</b>	<b>CH0 DO Pulse Output Count Value Lo Word</b> <b>&lt;R W&gt; 0~4294967295</b>
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
<b>40009</b>	<b>0x0008</b>	<b>1 word</b>	<b>CH0 DO Pulse Output Low Signal Width – Hi Word</b> <b>&lt;R W&gt; 0~4294967295</b>
<b>40010</b>	<b>0x0009</b>	<b>1 word</b>	<b>CH0 DO Pulse Output Low Signal Width – Lo Word</b> <b>&lt;R W&gt; 0~4294967295</b>
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
<b>40017</b>	<b>0x0010</b>	<b>1 word</b>	<b>CH0 DO Pulse Output High Signal Width – Hi Word</b> <b>&lt;R W&gt; 0~4294967295</b>
<b>40018</b>	<b>0x0011</b>	<b>1 word</b>	<b>CH0 DO Pulse Output High Signal Width – Lo Word</b> <b>&lt;R W&gt; 0~4294967295</b>
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
<b>40025</b>	<b>0x0018</b>	<b>1 word</b>	<b>CH0 DO Operation Mode</b> <b>&lt;RW&gt; 0=DO Mode, 1=Pulse Output Mode</b>
40026	0x0019	1 word	CH1 DO Operation Mode
40027	0x001A	1 word	CH2 DO Operation Mode
40028	0x001B	1 word	CH3 DO Operation Mode
<b>40029</b>	<b>0x001C</b>	<b>1 word</b>	<b>CH0 TC Engineering Unit</b> <b>0=Celsius, 1=Fahrenheit, 2=millivolt</b>
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
<b>40037</b>	<b>0x0024</b>	<b>1 word</b>	<b>Virtual CH8 TC Engineering Unit</b> <b>0=Celsius, 1=Fahrenheit, 2= millivolt</b>
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
<b>40045</b>	<b>0x002C</b>	<b>1 word</b>	<b>CH0 TC Sensor Type</b> <b>0=J Type</b> <b>1=K Type</b> <b>2=T Type</b> <b>3=E Type</b> <b>4=R Type</b> <b>5=S Type</b> <b>6=B Type</b> <b>7=N Type</b> <b>8=Voltage:78.126mV</b> <b>9=Voltage:39.062mV</b> <b>10=Voltage:19.532mV</b>
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
<b>40053</b>	<b>0x0034</b>	<b>1 word</b>	<b>CH8 TC Sensor Type</b> <b>20=AVG</b> <b>21=DIF</b>
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
<b>40061</b>	<b>0x003C</b>	<b>1 word</b>	<b>CH0 TC Reset Minimum Value</b> <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
<b>40077</b>	<b>0x004C</b>	<b>1 word</b>	<b>CH0 TC Reset Maximum Value</b> <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
<b>40093</b>	<b>0x005C</b>	<b>1 word</b>	<b>CH0 DO Status</b> <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
<b>40097</b>	<b>0x0060</b>	<b>1 word</b>	<b>CH0 DO Power On Status</b> <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
<b>40101</b>	<b>0x0064</b>	<b>1 word</b>	<b>CH0 DO Safe Status</b> <b>&lt;RW&gt; 0=OFF, 1=ON</b>
40102	0x0065	1 word	CH1 DO Status
40103	0x0066	1 word	CH2 DO Status
40104	0x0067	1 word	CH3 DO Status
<b>40105</b>	<b>0x0068</b>	<b>1 word</b>	<b>CH0 DO Pulse Output Status</b> <b>&lt;RW&gt; 0=Stop, 1=Start</b>
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
<b>40109</b>	<b>0x006C</b>	<b>1 word</b>	<b>CH0 DO Power On Pulse Output Status</b> <b>&lt;RW&gt; 0=Stop, 1=Start</b>
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
<b>40113</b>	<b>0x0070</b>	<b>1 word</b>	<b>CH0 DO Safe Pulse Output Status</b> <b>&lt;RW&gt; 0=Stop, 1=Start</b>
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
<b>40117</b>	<b>0x0074</b>	<b>1 word</b>	<b>CH0 TC Enable</b> <b>&lt;RW&gt; 0 =Disable, 1=Enable</b>
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