# ioLogik 2500 Series User's Manual

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www.moxa.com/product

# ioLogik 2500 Series User's Manual



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# 1

# Overview

The ioLogik 2500 supports Moxa's patented Active OPC Server with push communications technology, and provides an economical solution for accessing multiple remote I/O devices connected to the same private IP network, which itself links to the outside world over a cellular connection using dynamic IP addresses.

The following topics are covered in this chapter:

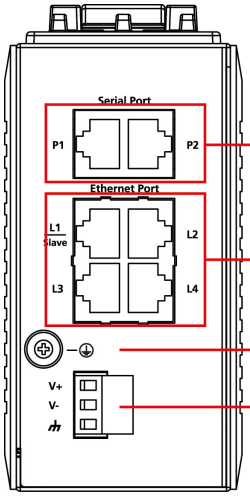
- **ioLogik 2500 Overview**
  - Appearance
  - Dimensions Diagram
  - Package Checklist
  - Product Features
  - I/O Channels Available on ioLogik 2500 Models
- **Product Specifications**
  - Common Specifications
  - ioLogik 2512 Specifications
  - ioLogik 2542 Specifications

# ioLogik 2500 Overview

The ioLogik 2500 combines a remote I/O device and data logger into one box, dramatically reducing the amount of effort required to integrate devices from multiple vendors. I/O and serial data can be logged onto an SD card (supports cards with up to 32 GB of storage space), and the ioLogik 2500 can be programmed with Moxa's convenient Click&Go™ Plus control logic, which can be used to easily construct customized control systems. As a rugged industrial device, the ioLogik 2500 operates reliably at a wide range of temperatures, and is well suited for hard-to-wire remote monitoring and alarm applications at unmanned sites like riversides and pipelines.

## Appearance

**Top View**



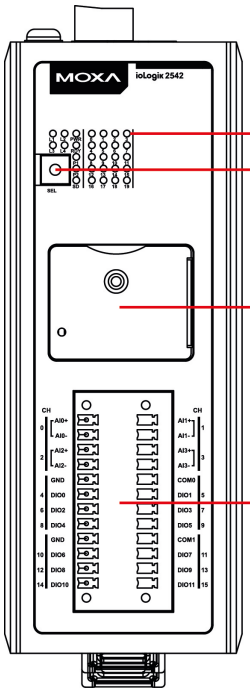

3-in-1 serial ports (2 RJ45-to-DB9 serial port cables are provided with the product)

Ethernet ports
(L1/Slave port for I/O expansion)

Ground screw

Power terminal

**Front View**




LED indicators for selected I/O module

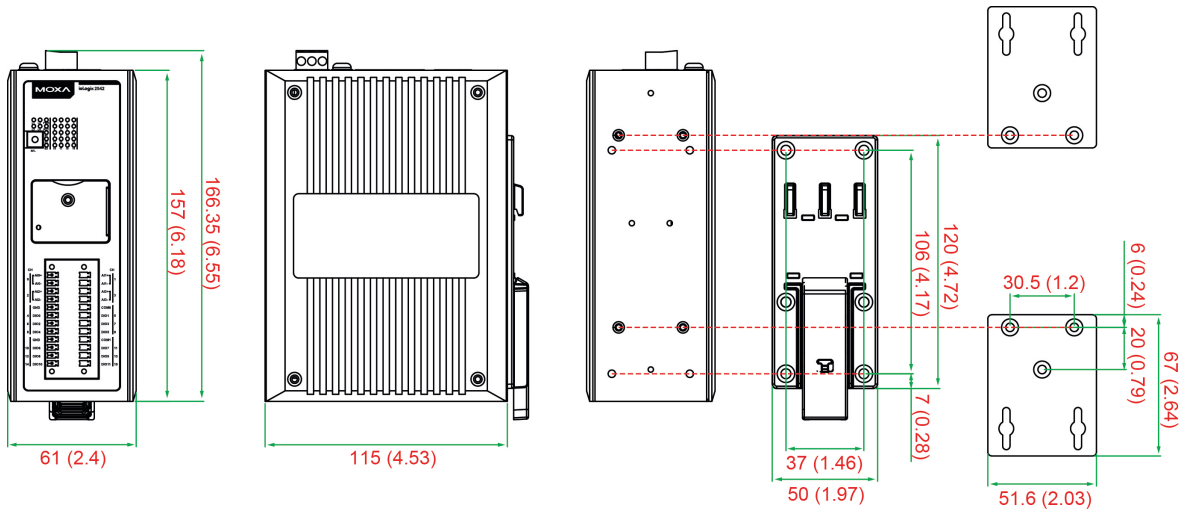
Dial for selecting I/O module

- Micro SD card
- DIP switch for I/O expansion
- Reset button
- Debug port

I/O terminal block

# Dimensions Diagram

**Units: mm (in)**




# Package Checklist

The ioLogik 2500 is shipped with the following items:

- ioLogik 2500 series device
- 2 RJ45-to-DB9 connection cables
- Documentation and software CD
- Hardware installation guide

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

# Product Features

- New Click&Go Plus logic provides powerful front-end intelligence
- 4-port unmanaged switch built in for linking to Ethernet devices
- Optimized I/O expansion port for daisy chaining up to 8 ioLogik E1200 units
- 2 serial ports (RS-232/422/485) for connecting field devices
- Built-in data logger supports an FTP server and microSD™ card with up to a 32 GB
- Transforms Modbus RTU into Modbus TCP or Active Tags
- Active communication with patented MX-AOPC UA Server
- Smart alarm management: Email, SNMP traps, TCP, UDP
- Wide operating temperature: -40 to 75°C (-40 to 167°F)

# I/O Channels Available on ioLogik 2500 Models

| Model Name | Digital Inputs | DI/DO Configurable | Analog Inputs |
|---|---|---|---|
| ioLogik 2512 | 8 | 8 | – |
| ioLogik 2542 | – | 12 | 4 |

# Product Specifications

## Common Specifications

### LAN

**Ethernet:**

• 4 switched 10/100 Mbps RJ45 ports

• 1 optimized port for faster downstream communications with daisy-chained ioLogik E1200 units

Note: The optimized daisy-chain port is not supported on wind industry devices (ioLogik E1261W-T, E1261H-T, or E1263H-T).

**Protection:** 1.5 kV magnetic isolation

**Protocols:** Modbus/TCP, TCP/IP, UDP, DHCP, BOOTP, SNMP, HTTP, CGI, SNTP, SMTP, FTP

### Serial Communication

**Serial Ports:** 2, RJ45, 3-in-1 interface

**Protocols:** Modbus RTU (master), serial tunnel mode (client/server)

**Serial Line Protection:** ≥ 8 kV ESD for all signals

### Serial Communication Parameters

**Parity:** None, Odd, Even

**Data Bits:** 5, 6, 7, 8

**Stop Bits:** 1, 1.5, 2

**Flow Control:** None, RTS/CTS, XON/XOFF

**Baudrate:** 1200 to 115200 bps

**Protocol:** Modbus RTU

### Power Requirements

**Power Input:** 24 VDC nominal, 9 to 48 VDC

### Physical Characteristics

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

**Mounting:** DIN rail, wall

### Storage

**Expansion Slot:** Up to 32 GB microSD™ memory card (SDHC compatible)

Note: For units operating in extreme temperatures, industrial grade, wide-temperature SD cards are required.

### 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)

**Altitude:** Up to 2000 m

Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

### Standards and Certifications

**Safety:** UL 508, EN 60950-1, NCC
**EMI:**
EN 55022; EN 61000-3-2; EN 61000-3-3;
FCC Part 15, Subpart B, Class A
**EMS:** EN 55024, EN 61000-4-2, EN 61000-4-3,
EN 61000-4-4, EN 61000-4-5, EN 61000-4-6,
EN 61000-4-8, EN 61000-4-11, EN 61000-6-2
**Radio:** FCC Part 22H, FCC Part 24E,
EN 301 489-1, EN 301 489-7, EN 301 511
**Shock:** IEC 60068-2-27
**Freefall:** IEC 60068-2-32
**Vibration:** IEC 60068-2-6
**Green Product:** RoHS, CRoHS, WEEE
Note: Please check Moxa's website for the most up-to-date certification status.

### Warranty

**Warranty Period:** 5 years
**Details:** See www.moxa.com/warranty

# ioLogik 2512 Specifications

### Inputs and Outputs

**Digital Inputs:** 8 channels
**Configurable DI/Os:** 8 channels
**Isolation:** 3k VDC or 2k Vrms

### Digital Input

**Sensor Type:** Wet Contact (NPN or PNP) and Dry Contact
**Input Leakage Current:** < 1 mA (@ 30 VDC)
**I/O Mode:** DI or Event Counter
**Dry Contact:**
• On: short to GND
• Off: open
**Wet Contact (DI to COM):**
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
**Common Type:** 8 points per COM
**Counter Frequency:** 2.5 kHz
**Digital Filtering Time Interval:** Software configurable

### Digital Output

**Type:** Sink
**I/O Mode:** DO or Pulse Output
**Pulse Output Frequency:** 5 kHz
**Over-voltage Protection:** 45 VDC
**Over-current Protection:** 1.5 A per channel @ 25°C
**Over-temperature Shutdown:** 175°C (min.)
**Current Rating:** 500 mA per channel

# ioLogik 2542 Specifications

## Inputs and Outputs

**Analog Inputs:** 4 channels

**Configurable DI/Os:** 12 channels

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

## Analog Input

**Type:** Differential input

**Resolution:** 16 bits

**I/O Mode:** Voltage / Current (software selectable)

**Input Range:** ±10 V, 0 to 10 V, 0 to 20 mA, 4 to 20 mA (with burn-out detection)

**Accuracy:**

- ±0.1% FSR @ 25°C
- ±0.3% FSR @ -10 and 60°C
- ±0.5% FSR @ -40 and 75°C

**Sampling Rate:**

- All channels: 400 samples/sec
- Per channel: 100 samples/sec

**Input Impedance:** > 1M ohms (min.)

**Built-in Resistor for Current Input:** 120 ohms

## Digital Input

**Sensor Type:** Wet Contact (NPN or PNP) and Dry Contact

**Input Leakage Current:** < 1 mA (@ 30 VDC)

**I/O Mode:** DI or Event Counter

**Dry Contact:**

- On: short to GND
- Off: open

**Wet Contact (DI to COM):**

- On: 10 to 30 VDC
- Off: 0 to 3 VDC

**Common Type:** 6 points per COM

**Counter Frequency:** 2.5 kHz

**Digital Filtering Time Interval:** Software configurable

## Digital Output

**Type:** Sink

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

**Pulse Output Frequency:** 5 kHz

**Over-voltage Protection:** 45 VDC

**Over-current Protection:** 1.5 A per channel @ 25°C

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

**Current Rating:** 500 mA per channel

# 2

# Installation

In this chapter, we provide instructions on how to install the ioLogik 2500 I/O server to connect to the network and serial devices.

The following topics are covered in this chapter:

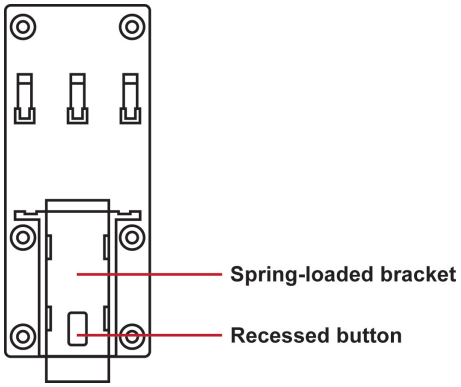
- **Hardware Installation**
  - Installing the ioLogik 2500 on a DIN Rail
  - Removing the ioLogik 2500 from a DIN Rail
- **Powering on the ioLogik 2500**
- **Installing a microSD Card**
- **I/O Wiring Diagrams**
- **LED Indicators**
- **DIP Switch**
- **Daisy-Chaining for I/O Expansion**
- **Reset to Factory Defaults**
- **Network Installation**
  - Ethernet Communication
  - Serial Communication
- **Installing the IOxpress Utility**
  - System Requirements
  - Installing IOxpress from the CD
  - Installing IOxpress from the Internet

# Hardware Installation

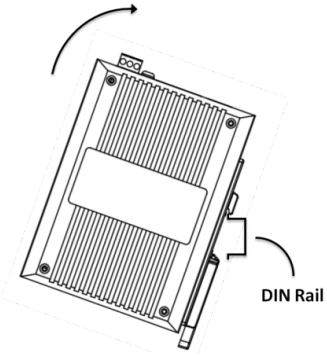
## Installing the ioLogik 2500 on a DIN Rail

The DIN-rail attachment plate should already be fixed to the back panel of your ioLogik 2500. If you need to reattach the plate, be sure the spring-loaded bracket is oriented towards the bottom, as shown in the figures below.

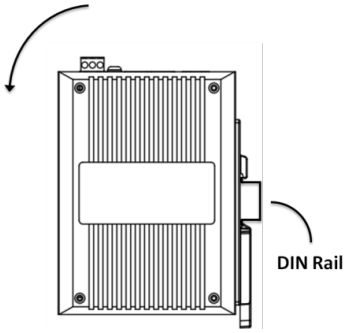
**STEP 1:** If the spring-loaded bracket is locked in place, push the recessed button to release it. Once released, you should feel some resistance from the spring as you slide the bracket up and down a few millimeters in each direction.




**STEP 2:** Insert the top of the rail into the upper lip of the attachment plate's slot.

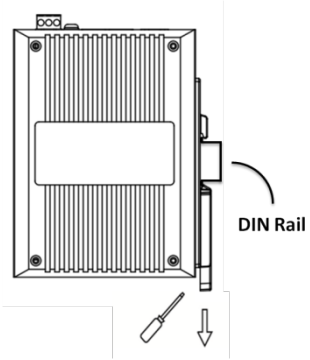



**STEP 3:** The attachment unit should now snap into place along the rail, as shown below.




## Removing the ioLogik 2500 from a DIN Rail

To remove the ioLogik 2500 from a DIN rail, use a screwdriver to pull down the spring-loaded bracket until it locks in place, as shown in the diagram at the right. Next, rotate the bottom of the ioLogik 2500 upwards until you can remove it from the DIN rail.



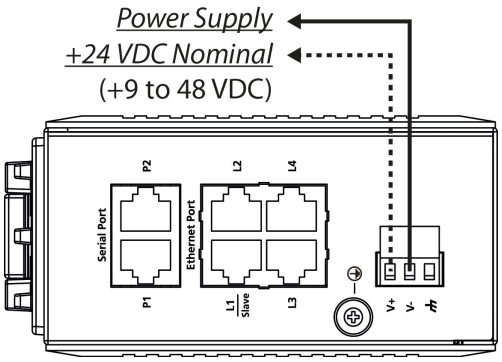

**WARNING**

This equipment is intended to be used in Restricted Access Locations. External metal parts will be hot! Maintenance personnel should wear protective gear before touching outside surface.

# Powering on the ioLogik 2500

The ioLogik 2500 can receive power from a 9 to 48 VDC power source. Input power is applied to the positive (V+) and negative (V-) terminals on the connector.

After connecting the ioLogik 2500 to the power supply, it will take 30 to 60 seconds for the operating system to boot up. The green **Ready** LED will illuminate continuously until the operating system is ready.




## Grounding the Unit

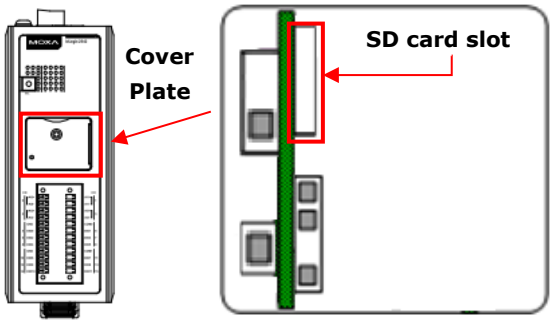
The ioLogik 2500 is equipped with a ground connector labeled ⏚.

**ATTENTION**

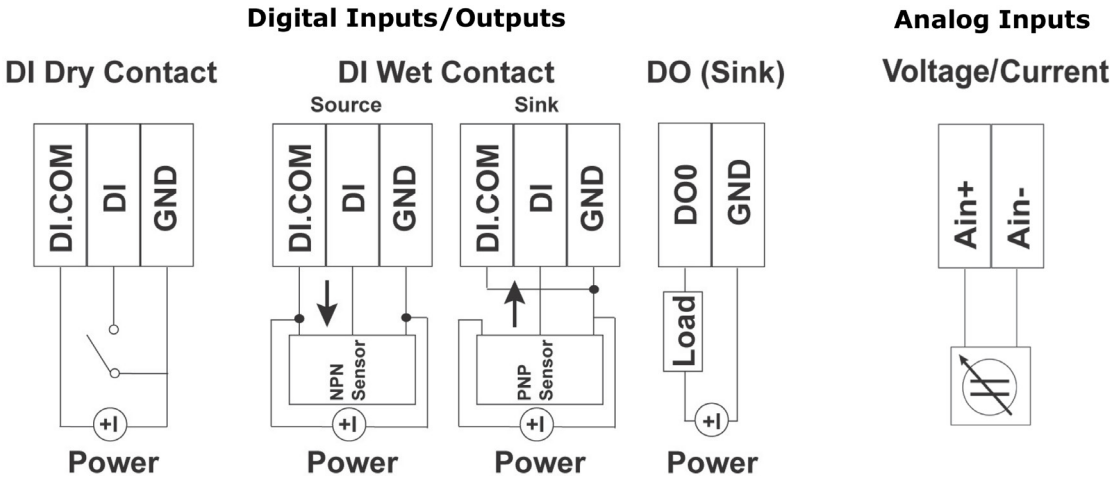
Be sure to note the maximum possible current for each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size. If currents exceed the maximum rating the wires will overheat, and may cause serious damage to the equipment. For safety reasons, wires connecting the power supply should be at least 2 mm in diameter (e.g., 12 gauge).

# Installing a microSD Card

The ioLogik 2500 supports a single microSD card. The card slot is located inside the ioLogik 2500, as shown here. The card slot is hidden beneath a cover plate attached by a screw that must first be removed before the slot can be accessed. After removing the screw holding the cover plate in place you can insert or remove the microSD card. Be sure to refasten the cover plate when you are done.



# I/O Wiring Diagrams




# LED Indicators

| Type | Color | Description |
|---|---|---|
| Power (PWR) | Green | System power is ON |
| | Off | System power is OFF |
| Ready (RDY) | Green | System is ready |
| | Red | System error |
| | Flashing | Locating device |
| | Off | System is not ready |
| Ethernet Port (L1/L2/L3/L4) | Green | Ethernet connection enabled at 100 Mbps |
| | Amber | Ethernet connection enabled at 10 Mbps |
| | Flashing | Data is being transmitted |
| | Off | Disconnected |
| Serial Port (P1/P2) | Green | Tx |
| | Amber | Rx |
| | Flashing | Data is being transmitted |
| | Off | Disconnected |
| SD | Green | SD card inserted |
| | Flashing | SD card is being accessed |
| I/O Channel Status* (0 to 15) | Green | Channel ON |
| | Off | Channel OFF or No Counter/Pulse signal |

*Use the rotary switch to select which module's I/O channel status is displayed.

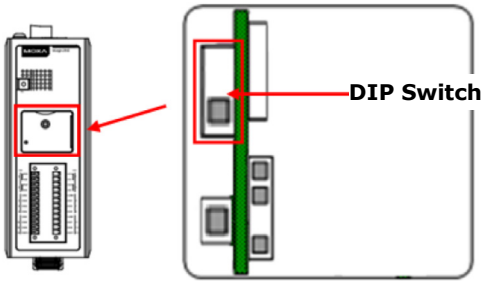
0 = ioLogik 2500

1 to 8 = E1200 expansion

9 to F = Reserved

# DIP Switch

The DIP switch is used to trigger the ioLogik 2500 to refresh its connection with the attached ioLogik E1200 modules. When a module is disconnected, or if you replace one module with a new module, remove the screw holding the cover plate to access the DIP switch (shown in the figure), and then move the DIP switch from the down position to the up position. If the DIP switch is already in the up position, move it down and then back up again.

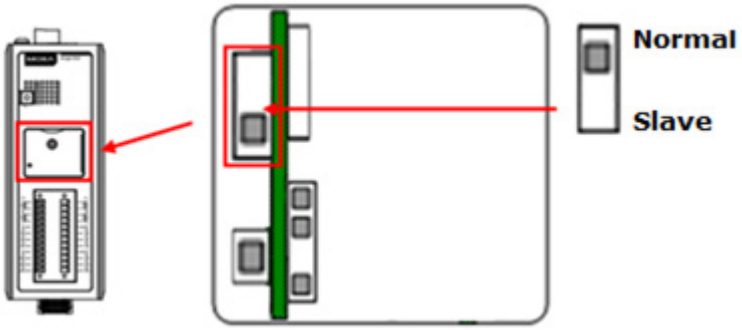



# Daisy-Chaining for I/O Expansion

Up to 8 ioLogik E1200 devices can be connected in a daisy chain configuration to the ioLogik 2500 via the L1/Slave port on the ioLogik 2500. An IOxpress configuration scheme is called a project. If the IOxpress project includes expansion devices, the ioLogik 2500 will automatically start running in expansion mode.

If the ioLogik 2500 is running, you can replace one of the expansion units without powering down the ioLogik 2500. Take the following steps to replace an expansion unit:

1. Power-off the expansion unit.
2. Replace the unit with another expansion unit of the same model.
3. Access the DIP switch beneath the cover plate (as shown below).
4. Move the DIP switch from the down position to the up position to trigger the ioLogik 2500 to refresh its connection with the expansion units. If the DIP switch is already in the up position, move it down and then back up again.
5. The expansion unit will start running.

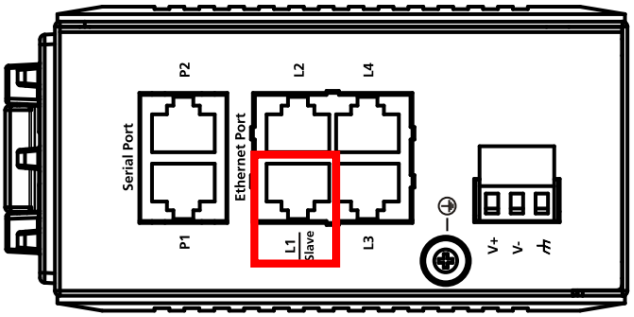



**NOTE** Expansion units must be replaced with the same model of expansion unit. If you would like to use a different expansion unit model, you must first change the relevant IOxpress settings.

The following figure illustrates a simple daisy-chain of I/O modules using the ioLogik 2500 for wireless connectivity.

**ioLogik2500** **ioLogik E1200** **ioLogik E1200** **ioLogik E1200** **ioLogik E1200** **ioLogik E1200**

When daisy-chaining an array of devices, the first device in the chain (after the ioLogik 2500) must be connected to the **L1 Slave** port on the top of the ioLogik 2500 (outlined in red in the diagram).



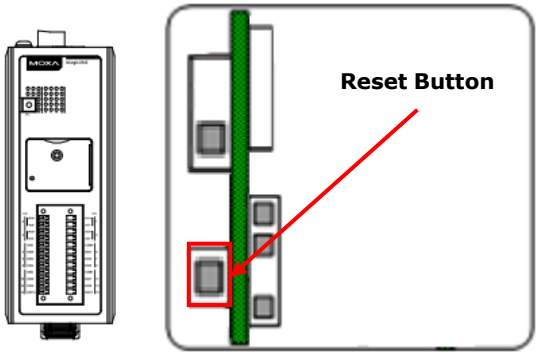

**ATTENTION**

When using the ioLogik 2500 as the wireless head of an array of ioLogik E1200 modules, make sure that:

1. You connect the first E1200 expansion module in the array to the ioLogik 2500's **L1 Slave** port.
2. A maximum of 8 ioLogik E1200 devices are connected in a single array.

# Reset to Factory Defaults

If you need to reset the ioLogik 2500 to factory defaults, press and hold the reset button (located under the cover-plate, as shown in the diagram) for 5 seconds.




**WARNING**

Resetting your device to factory defaults will result in the loss of all configuration settings and any Click&Go Plus logic settings that have already been configured.

# Network Installation

## Ethernet Communication

Connections to the LAN port are made through an RJ45 connector on the ioLogik 2500 device. The wiring and pin connections for these connectors are described in separate sections below.

**ATTENTION**

The maximum cable length of a 10/100BaseT connection is 100 m (350 feet), but the actual limit could be shorter depending on the amount of electrical noise in the environment. To minimize the amount of noise, Ethernet cables should not run parallel to power cables or other cables that generate electrical noise.

## TCP/IP Settings

The following table shows the TCP/IP parameters supported by the LAN port. The ioLogik 2500 will revert to these default values whenever it is reset to factory defaults.

| Lan Port | |
|---|---|
| **Parameter** | **Supported Values** |
| IP Address | Default: 192.168.127.253 |
| Subnet Mask | Default: 255.255.255.0 |
| Gateway | Default: 0.0.0.0 |

### IP Address

The ioLogik 2500's IP address.

### Subnet Mask

Determines the subnet on which the device is located.

### Gateway

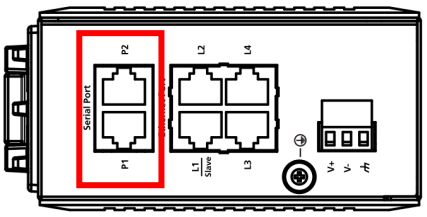
The gateway IP address, which determines how the controller communicates with devices outside its subnet.

The IP address, subnet mask, and gateway are static; contact your network administrator to obtain these addresses for the ioLogik 2500 device.

# Serial Communication

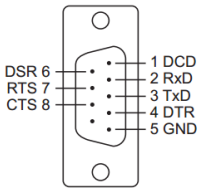
The ioLogik 2500 is equipped with two 3-in-1 software-selectable RS-232/422/485 serial ports, making it more convenient to connect serial devices.

If required, the RJ45 to 8-pin female DB9 converter cables can be used to connect to serial devices.




**NOTE** The ioLogik 2500 is shipped with 2 RJ45 to DB9 connection cables. If you need additional cables, contact your Moxa sales representative.

The model name of the connection cable is **CBL-RJ45M9-150**.




| Pin | RS-232 | RS-422 and 4-wire RS-485 | 2-wire RS-485 |
|---|---|---|---|
| 1 | DCD | TxD-(A) | – |
| 2 | RXD | TxD+(B) | – |
| 3 | TXD | RxD+(B) | Data+(B) |
| 4 | DTR | RxD-(A) | Data-(A) |
| 5 | GND | GND | GND |
| 6 | DSR | – | – |
| 7 | RTS | – | – |
| 8 | CTS | – | – |
| 9 | RI | – | – |

# Installing the IOxpress Utility

The ioLogik 2500 can be remotely managed and configured over an Ethernet with Moxa's **IOxpress** utility. IOxpress is a Windows utility provided for the configuration and management of the ioLogik 2500. IOxpress can be used to remotely monitor and configure devices from any location on the network. The IOxpress graphical user interface provides easy access to all status information and configuration settings, and can also be used to configure Click&Go Plus rules, and to handle front-end events.

## System Requirements

| **Hardware Requirements** | |
|---|---|
| CPU | Intel Pentium 4 CPU and above |
| RAM | Min. 512 MB, 1024 MB is recommended |
| Network Interface | 10/100 Ethernet |
| **Software Requirements** | |
| Operating System | Microsoft Windows 2000, XP or later |
| Editor (not required) | Microsoft Office 2003 (Access 2003) or later |

## Installing IOxpress from the CD

Insert the documentation and software CD into the host computer. Locate the Software/Utility_IOxpress directory and run SETUP.EXE from that location.

The installation program will guide you through the installation process and install the **IOxpress** utility. After the installation is finished, run IOxpress from the Windows Start menu.

## Installing IOxpress from the Internet

You can also download IOxpress from Moxa's website. To do this, first click on the following link to access the website's search utility:

http://www.moxa.com/support/search.aspx?type=soft

When the web page opens, enter the model name of your product in the search box. Navigate to the product page, and then click on **Utilities** (in the middle of the page), located in the box titled **Software**.

**NOTE** Additional information on using IOXpress can be found in **Chapter 3: The IOxpress Utility**.

# 3

# The IOxpress Utility

In this chapter, we explain how to configure the ioLogik 2500.

The following topics are covered in this chapter:

# Introduction

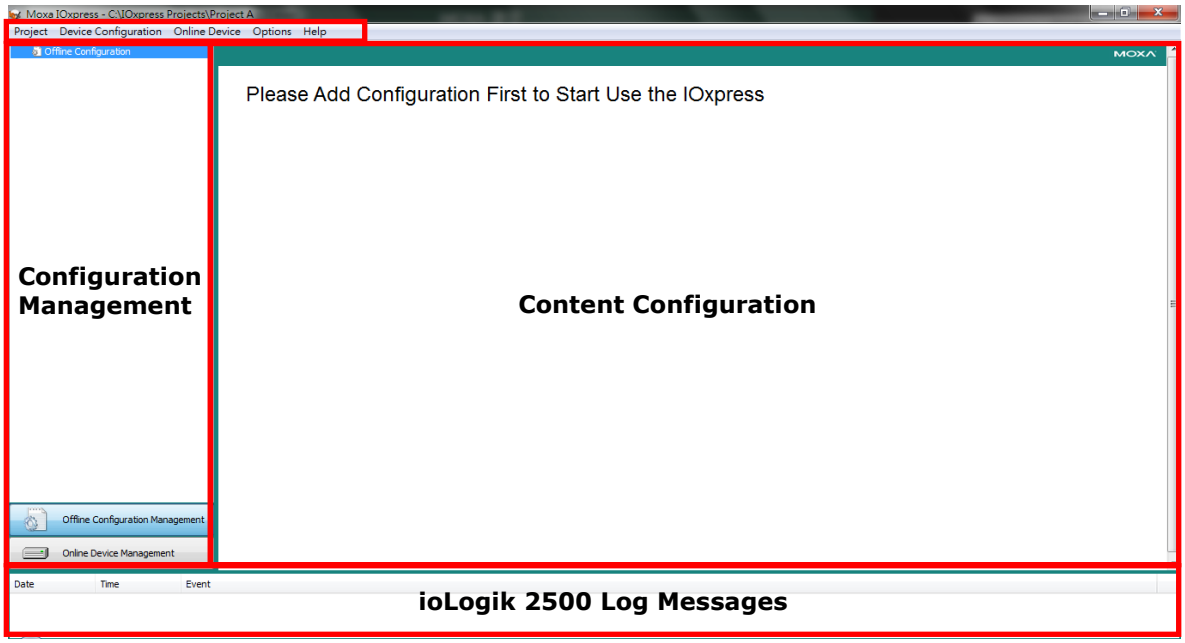
The ioLogik 2500 can be managed and configured over an Ethernet using the IOxpress utility. IOxpress's graphical user interface provides easy access to all status information and settings, and can also be used to configure Click&Go Plus rules to handle front-end events.

# Application Interface

## Main screen

The following figure shows the main screen of the IOxpress utility. There are four main areas:

- **Menu Bar**
- **Configuration Management**
- **Content Configure**
- **Log Messages**




## Menu Bar

There are five tabs in the menu bar:

- **Project:** For managing projects.
- **Device Configuration:** Functions for offline configuration.
- **Online Device:** Functions for online configuration.
- **Options:** Preferences and network interface.
- **Help:** Version information

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

# Using IOxpress

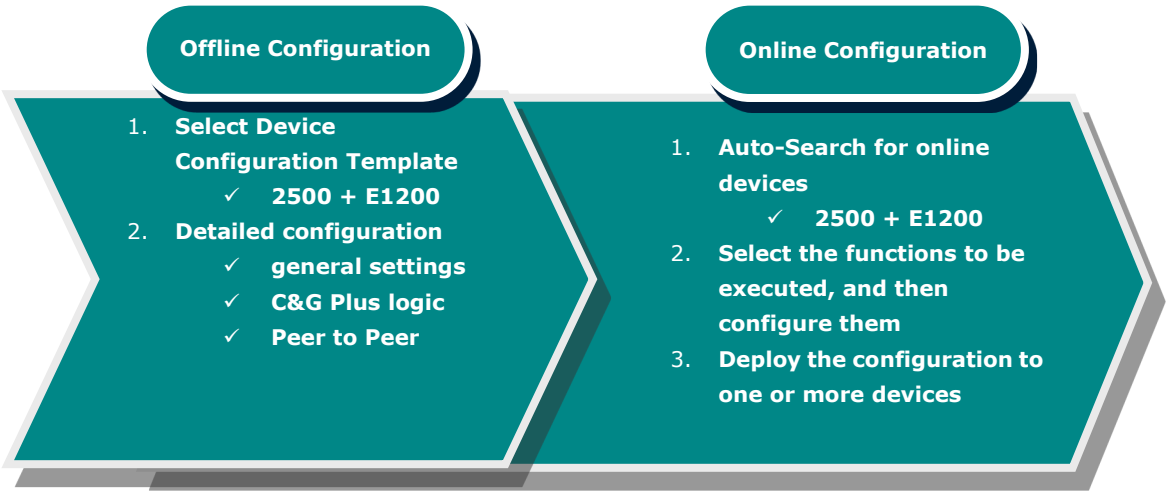
IOxpress is usually configured in two steps:

1. **Offline Configuration:** The operator uses IOxpress to configure settings, which are stored locally.
2. **Online Configuration:** The operator uses IOxpress to export the configuration to devices on the network.

The basic idea is to use a project created offline to set up all of your devices. That is, the settings configured offline are exported over the network to online devices. This can be done either in batch mode, or on a case-by-case basis.

IOxpress can also be used to access online devices directly to check I/O status, upgrade firmware, export configurations, and restart the device.

The following flowchart gives an overview of the IOxpress configuration process. Once offline configuration is completed, you can start online configuration.



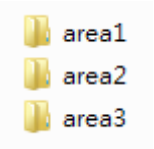

# Offline Configuration

## Creating a Project

IOxpress configuration schemes are called **Projects**. The first step to using IOxpress is to create a project for automating your device configuration processes. This can be done offline, after which the project can be exported to other devices over the network during the online configuration phase, discussed later in this chapter.

Projects are **automatically saved** in the following folder:

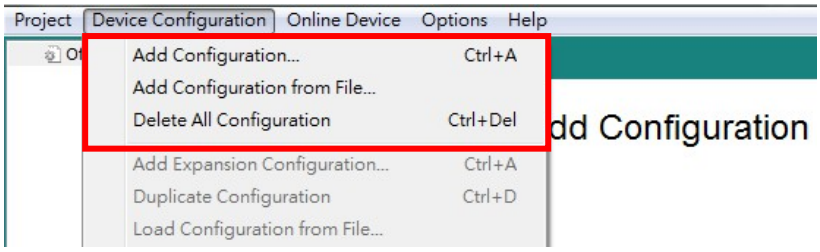
```
C:\Users\Public\Documents\Moxa\IOxpress\Database
```




We recommend using folder names to manage your projects. For example, if you would like to create three projects for three different segments of the network, you could create three folders named area1, area2, and area3.

The first time you use offline configuration, create a new project by clicking **New** from the dropdown menu under the **Project** tab.


Click **Offline configuration**, or select **Device Configuration** from the tool bar. You may click on either the **Add Configuration** or **Add Configuration from File...** option to add a device to the new project.




## Adding an ioLogik 2500 Device to a Project

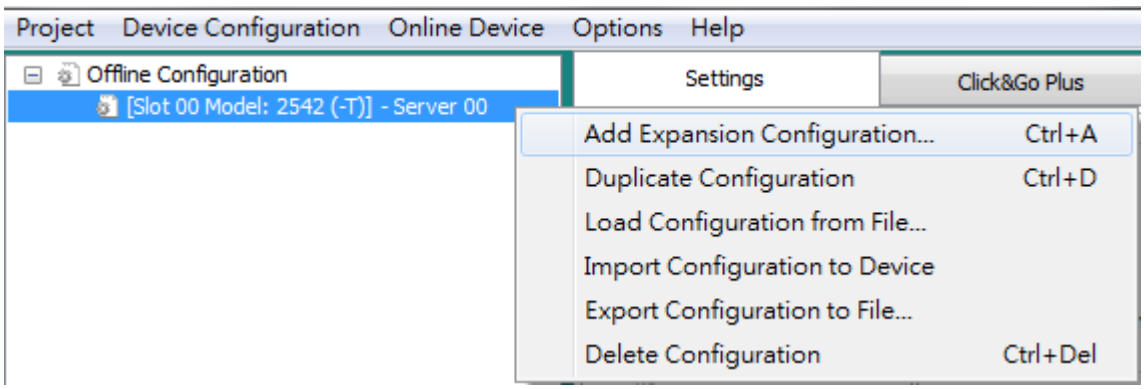
The ioLogik 2500 can be used as the head of a cascaded array of ioLogik E1200 modules, with Click&Go Plus logic used to extend communication capability to the entire array.

## Adding E1200 Devices to a Project

Up to 8 ioLogik E1200 series devices can be connected to the ioLogik 2500 in a daisy-chain configuration.

**ioLogik 2500** **ioLogik E1200** **ioLogik E1200** **ioLogik E1200** **ioLogik E1200** **ioLogik E1200**

Right click on the ioLogik 2500 device you have just added, and then select **Add Expansion Configuration**. After adding an E1200, the settings for the added device can be found in the **I/O settings**, **Tag selection**, and **data logging – profile** areas.



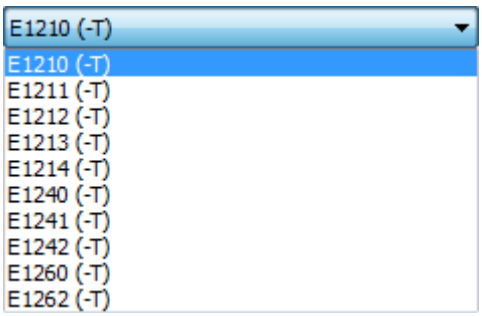

**ATTENTION**

If the IOxpress project includes expansion devices, the ioLogik 2500 will automatically run in expansion mode.

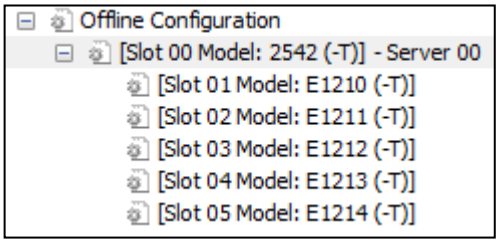
**ATTENTION**

The IP address of the ioLogik 2500 should not be the same as its E1200 expansion units.

**NOTE** The following ioLogik E1200 models can be used for ioLogik 2500 I/O arrays:




**NOTE** The location of each model is fixed. If you would like to change a device in an E1200 array, make sure that the order of the expansion modules is the same as in the Expansion Configuration list you just modified. An example is shown below:





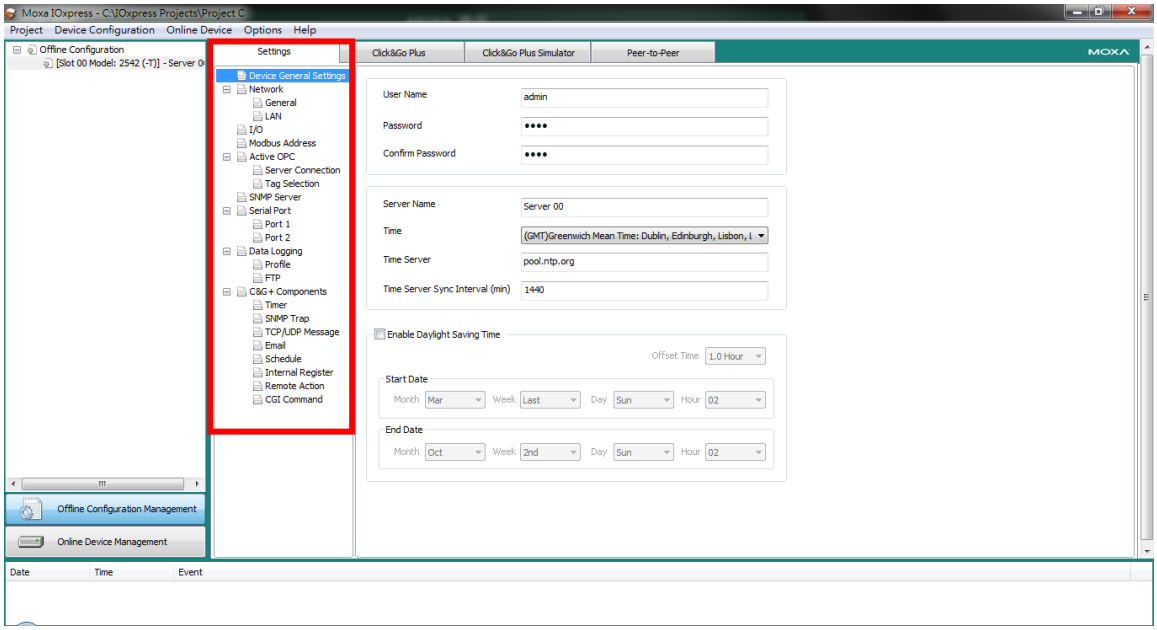
# Setting Up a Project

After you have created the project, you can start to configure each model in the project. The configuration window has four tabs:

- **Settings**
- **Click&Go Plus**
- **Click&Go Plus Simulator**
- **Peer-to-Peer**

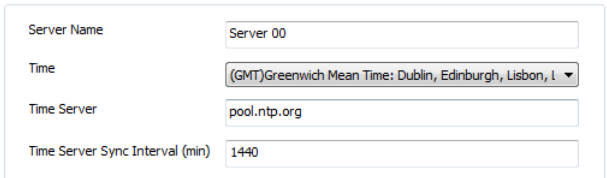
# Settings

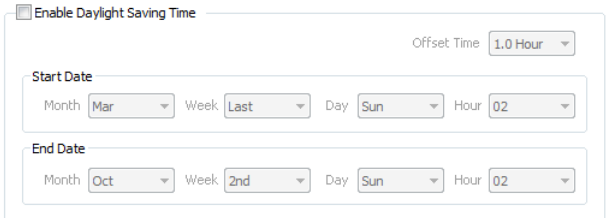
In the **Settings** section, you will find basic settings used to set up a selected device.




## General Device Settings

The **User Name**, **Password**, **Server Name**, **Time**, **Time Server**, and **Daylight Saving** functions can be accessed from under the **General Settings** tab.


**Server Name**

IOxpress supports long server names and a location description with up to 30 characters.

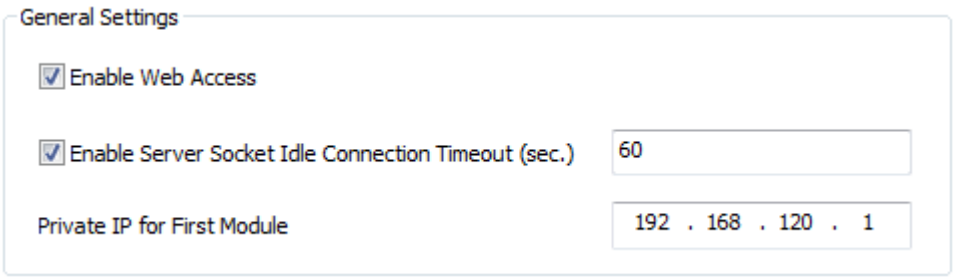
**Daylight Saving Time**

To set up the Daylight saving schedule, check the **Enable Daylight Saving Time** checkbox, and then configure **Offset Time**, **Start Date**, and **End Date**.

# Network

There are two sub-pages under the **Network item** tab: **General** and **LAN**.

## General Settings




### Enable Web Access

Use this checkbox to enable or disable the web console. When enabled, the ioLogik can be configured from a web browser. If not enabled, you will not be able to open the web console.

### Enable Server Socket Idle Connection Timeout

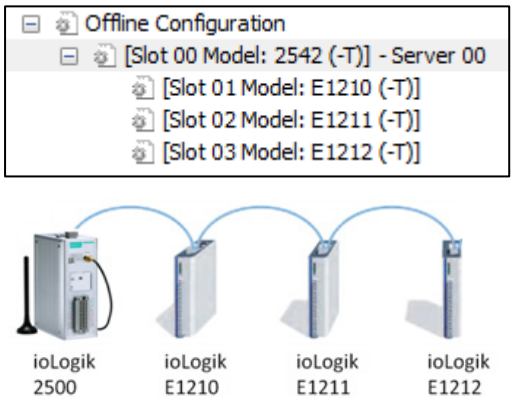
Server Socket Idle Connection Timeout is designed to avoid TCP connection failures when the network host is unable to respond due to a hardware failure or network problem.

If **Server Socket Idle Connection Timeout** is enabled: When the ioLogik's connection to the server exceeds the specified time period the device will automatically release its Modbus/TCP connection to the server to free up the port for the next connection.

If **Server Socket Idle Connection Timeout** is not enabled: If the network host is unable to respond due to a hardware failure or network problem, the ioLogik will continue to wait for a response from the host, causing the TCP port to be occupied indefinitely by the host.

### Private IP for First Slot of Slave Module

An array of up to 8 modules can be connected to the ioLogik 2500. The **Private IP for First Slot of Slave Module** assigns an IP to the first E1200 device. The IPs for subsequent devices in the chain will be automatically assigned consecutively. For example, if the IP of the first E1200 device is set to 192.168.120.1, the IP of the second E1200 will be 192.168.120.2, the third IP will be 192.168.120.3, and so on.

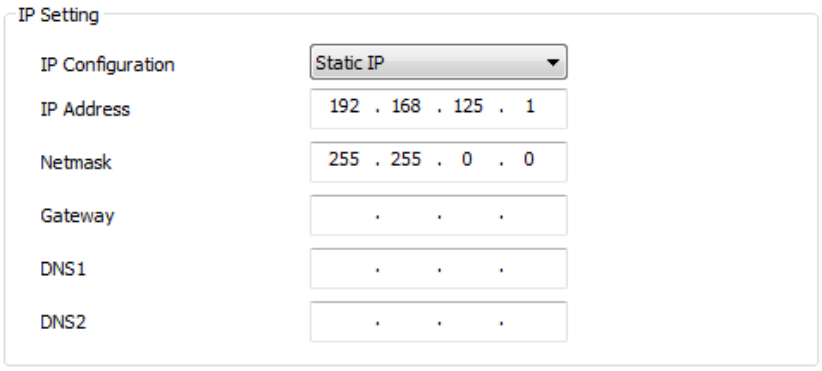


# LAN

**IP Settings**

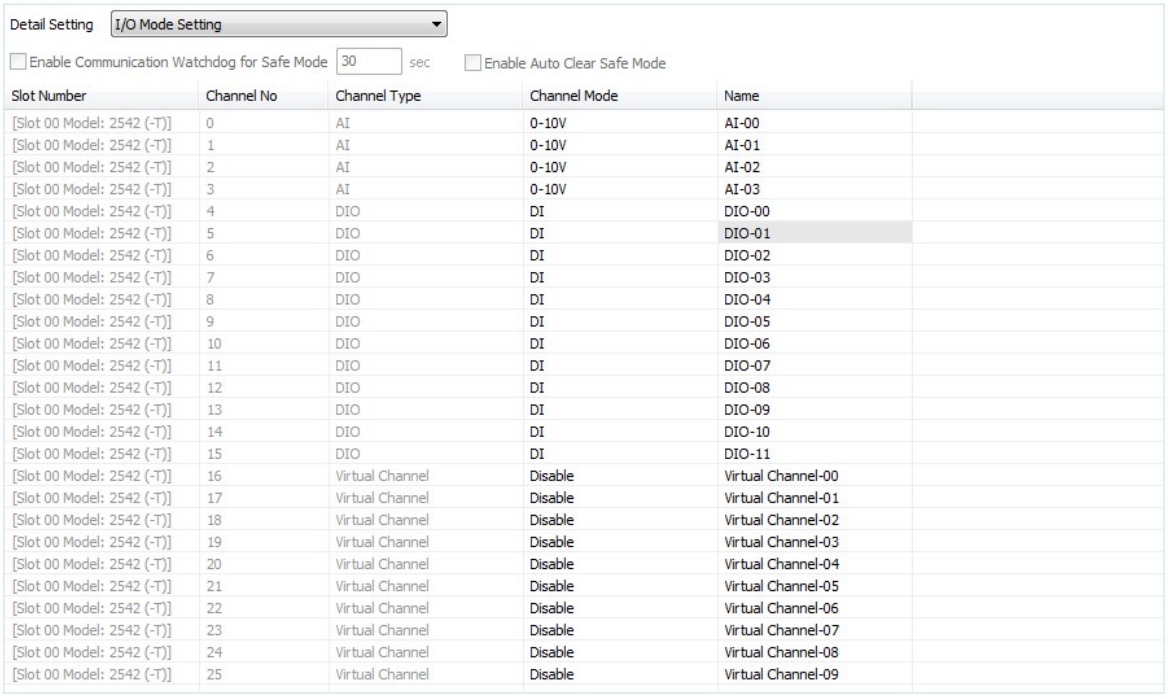
You can set up a static or dynamic IP address for the ioLogik, as well as the subnet mask and gateway address.

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 plus rules.




# I/O

In the I/O section, you can configure I/O settings for ioLogik 2500 devices. Items that can be modified will be shown in **black**. Items that cannot be modified will be shown in **light gray**.




| Slot Number | Channel No | Channel Type | Channel Mode | Name |
|---|---|---|---|---|
| [Slot 00 Model: 2542 (-T)] | 0 | AI | 0-10V | AI-00 |
| [Slot 00 Model: 2542 (-T)] | 1 | AI | 0-10V | AI-01 |
| [Slot 00 Model: 2542 (-T)] | 2 | AI | 0-10V | AI-02 |
| [Slot 00 Model: 2542 (-T)] | 3 | AI | 0-10V | AI-03 |
| [Slot 00 Model: 2542 (-T)] | 4 | DIO | DI | DIO-00 |
| [Slot 00 Model: 2542 (-T)] | 5 | DIO | DI | DIO-01 |
| [Slot 00 Model: 2542 (-T)] | 6 | DIO | DI | DIO-02 |
| [Slot 00 Model: 2542 (-T)] | 7 | DIO | DI | DIO-03 |
| [Slot 00 Model: 2542 (-T)] | 8 | DIO | DI | DIO-04 |
| [Slot 00 Model: 2542 (-T)] | 9 | DIO | DI | DIO-05 |
| [Slot 00 Model: 2542 (-T)] | 10 | DIO | DI | DIO-06 |
| [Slot 00 Model: 2542 (-T)] | 11 | DIO | DI | DIO-07 |
| [Slot 00 Model: 2542 (-T)] | 12 | DIO | DI | DIO-08 |
| [Slot 00 Model: 2542 (-T)] | 13 | DIO | DI | DIO-09 |
| [Slot 00 Model: 2542 (-T)] | 14 | DIO | DI | DIO-10 |
| [Slot 00 Model: 2542 (-T)] | 15 | DIO | DI | DIO-11 |
| [Slot 00 Model: 2542 (-T)] | 16 | Virtual Channel | Disable | Virtual Channel-00 |
| [Slot 00 Model: 2542 (-T)] | 17 | Virtual Channel | Disable | Virtual Channel-01 |
| [Slot 00 Model: 2542 (-T)] | 18 | Virtual Channel | Disable | Virtual Channel-02 |
| [Slot 00 Model: 2542 (-T)] | 19 | Virtual Channel | Disable | Virtual Channel-03 |
| [Slot 00 Model: 2542 (-T)] | 20 | Virtual Channel | Disable | Virtual Channel-04 |
| [Slot 00 Model: 2542 (-T)] | 21 | Virtual Channel | Disable | Virtual Channel-05 |
| [Slot 00 Model: 2542 (-T)] | 22 | Virtual Channel | Disable | Virtual Channel-06 |
| [Slot 00 Model: 2542 (-T)] | 23 | Virtual Channel | Disable | Virtual Channel-07 |
| [Slot 00 Model: 2542 (-T)] | 24 | Virtual Channel | Disable | Virtual Channel-08 |
| [Slot 00 Model: 2542 (-T)] | 25 | Virtual Channel | Disable | Virtual Channel-09 |

| Setting | Functions |
|---|---|
| **IO Mode Setting** | Channel Mode<br>Name |
| **DI Setting** | Filter |
| **Counter Setting** | Filter<br>Initial Value<br>Active Mode<br>Power On Status<br>Scaling Enable<br>Scaling Offset<br>Scaling Interval |

| | |
|---|---|
| **DO Setting** | Enable Communication Watchdog for Safe Mode<br>Enable Auto Clear Safe Mode<br>Power On Status<br>Power On Delay<br>Safe Mode Status |
| **Pulse Setting** | On Width<br>Off Width<br>Count<br>Power On Status<br>Power On Delay<br>Safe Mode Status |
| **AI Setting** | Input Range<br>Burnout Value<br>Scaling Slope<br>Scaling Offset<br>Scaling Unit |
| **Virtual Channel Setting** | Enable<br>Slot No<br>Channel No<br>Function<br>Interval (min)<br>Sampling Time (min) |

**Select module**

Select the module that you would like to configure. You may select **All** modules, in which case information on all I/O channels in the project will be displayed.


**IO Mode Setting**

- **Channel Mode**

  DIO channels can be set to one of four modes: **DI**, **Event Counter**, **DO**, or **Pulse output**.
  AI channels can be set to one of five modes: **±10 V**, **0 to 10 V**, **0 to 20 mA**, **4 to 20 mA**, or **4 to 20 mA (Burnout)**.
  AO channels can be set to one of two modes: **0 to 10 V** and **4 to 20 mA**.

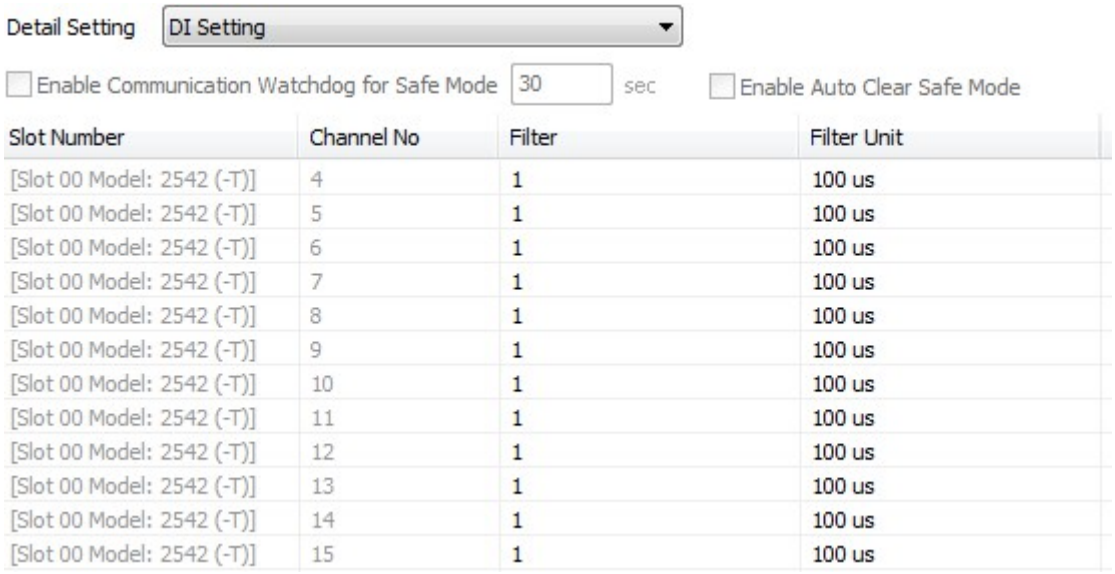
**NOTE** Since the ioLogik 2500 does not have AO channels, the AO setting will only show up when the project contains E1200 AO modules, such as the E1241.

- **Name**

  The name will be attached to the AOPC tag to help users identify channel information in AOPC.

**DI Setting**

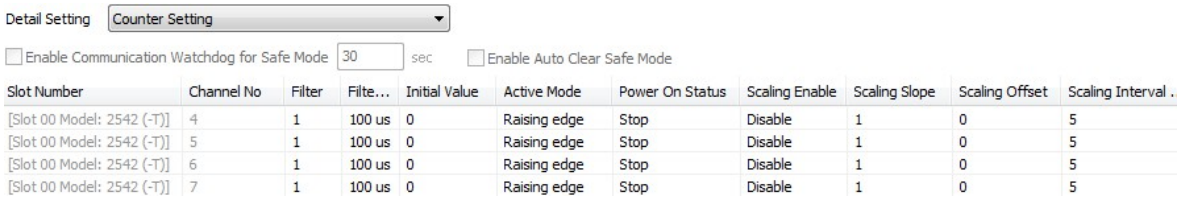
**Filter:** Software filtering is used to avoid switch bounces. The filter is configurable in multiples of 100 μs and accepts values between 1 and 65535.




| Slot Number | Channel No | Filter | Filter Unit |
|---|---|---|---|
| [Slot 00 Model: 2542 (-T)] | 4 | 1 | 100 us |
| [Slot 00 Model: 2542 (-T)] | 5 | 1 | 100 us |
| [Slot 00 Model: 2542 (-T)] | 6 | 1 | 100 us |
| [Slot 00 Model: 2542 (-T)] | 7 | 1 | 100 us |
| [Slot 00 Model: 2542 (-T)] | 8 | 1 | 100 us |
| [Slot 00 Model: 2542 (-T)] | 9 | 1 | 100 us |
| [Slot 00 Model: 2542 (-T)] | 10 | 1 | 100 us |
| [Slot 00 Model: 2542 (-T)] | 11 | 1 | 100 us |
| [Slot 00 Model: 2542 (-T)] | 12 | 1 | 100 us |
| [Slot 00 Model: 2542 (-T)] | 13 | 1 | 100 us |
| [Slot 00 Model: 2542 (-T)] | 14 | 1 | 100 us |
| [Slot 00 Model: 2542 (-T)] | 15 | 1 | 100 us |

**Counter Setting**

**Counter** refers here to an **Event Counter** channel. Counts are stored internally.




| Slot Number | Channel No | Filter | Filte... | Initial Value | Active Mode | Power On Status | Scaling Enable | Scaling Slope | Scaling Offset | Scaling Interval . |
|---|---|---|---|---|---|---|---|---|---|---|
| [Slot 00 Model: 2542 (-T)] | 4 | 1 | 100 us | 0 | Raising edge | Stop | Disable | 1 | 0 | 5 |
| [Slot 00 Model: 2542 (-T)] | 5 | 1 | 100 us | 0 | Raising edge | Stop | Disable | 1 | 0 | 5 |
| [Slot 00 Model: 2542 (-T)] | 6 | 1 | 100 us | 0 | Raising edge | Stop | Disable | 1 | 0 | 5 |
| [Slot 00 Model: 2542 (-T)] | 7 | 1 | 100 us | 0 | Raising edge | Stop | Disable | 1 | 0 | 5 |

- **Filter**

  Software filtering is used to avoid switch bounces. The filter is configurable in multiples of 100 µs and accepts values between 1 and 65535.

- **Initial Value**

  The initial value is the start value in counter mode.

- **Active Mode**

  In **Active mode**, the channel accepts limit or proximity switches and counts events according to the ON/OFF status. When **Raising edge** is selected, the counter value increases when the attached switch is pushed. When **Failing edge** is selected, the counter value increases when the switch is released. When **Both** is selected, the counter value increases when the attached switch is pushed or released.

- **Power On Status**

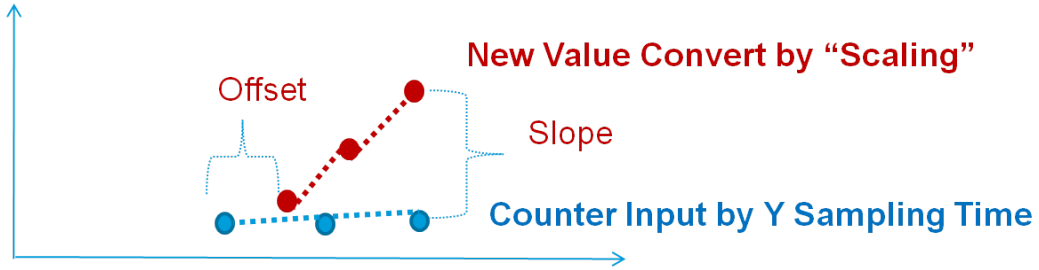
  To enable the counter to resume counting immediately upon powering up, enable the **Power On Status**.

  **Stop:** The counter starts logging signals only after configured to do so by a Modbus or a Click&Go Plus command.

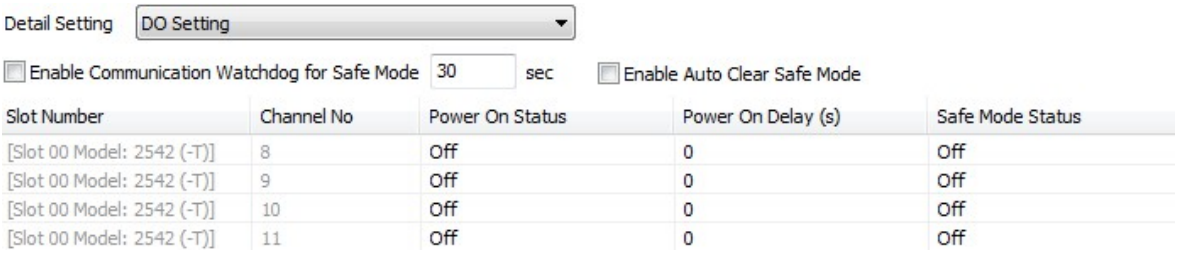
  **Start:** Counting begins automatically whenever the ioLogik is powered on.

- **Scaling Enable / Scaling Slope / Scaling Offset / Scaling Interval (sec)**

  Set the **Slope & Offset** to convert the Counter value to new units.




**DO Setting**




| Slot Number | Channel No | Power On Status | Power On Delay (s) | Safe Mode Status |
|---|---|---|---|---|
| [Slot 00 Model: 2542 (-T)] | 8 | Off | 0 | Off |
| [Slot 00 Model: 2542 (-T)] | 9 | Off | 0 | Off |
| [Slot 00 Model: 2542 (-T)] | 10 | Off | 0 | Off |
| [Slot 00 Model: 2542 (-T)] | 11 | Off | 0 | Off |

- **Enable Communication Watchdog for Safe Mode**

  When the watchdog is enabled, any disconnection from the network will activate a safe state. In the safe mode, DO channels can be configured to turn on, turn off, or commence pulse output during the safe state. If the watchdog is not enabled, then DO channel status will remain unchanged during a network disconnection.

- **Enable Auto Clear Safe Mode**

  When detecting the reconnection of Ethernet signals, the device will auto clear the safe mode status.

- **Power On Status**

  When the device is first powered on, the status of each DO channel is set to **OFF** by default. This behavior can be modified using the **Power On Status**.

- **Power On Delay**

  The time delay from tuning DO channels when the power is turned on.

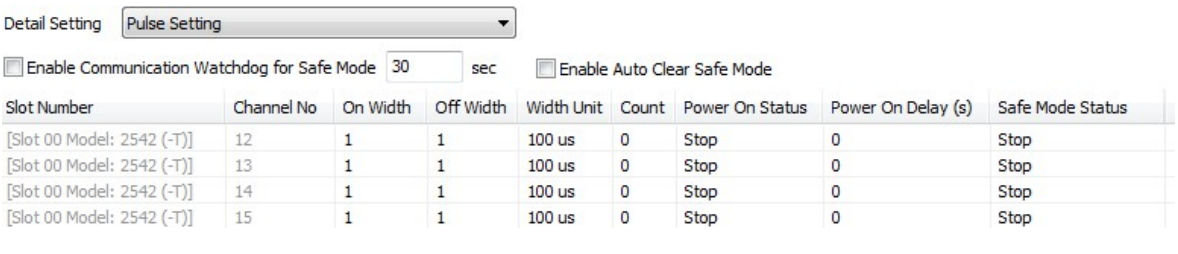
- **Safe Mode Status**

  **Enable Communication Watchdog for Safe Mode** allows you to control how DO and pulse output channels act when the network is disconnected.

  If the Communication Watchdog is enabled, a network disconnection will activate a safe state. The DO channel can be configured to turn on / turn off during the safe state.

  If the Communication Watchdog is not enabled, then the DO channel status will remain unchanged during a network disconnection.

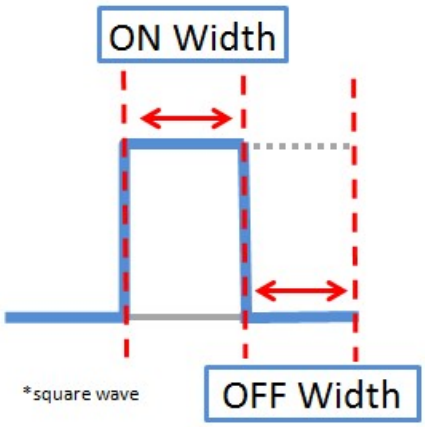
**Pulse Setting**




| Slot Number | Channel No | On Width | Off Width | Width Unit | Count | Power On Status | Power On Delay (s) | Safe Mode Status |
|---|---|---|---|---|---|---|---|---|
| [Slot 00 Model: 2542 (-T)] | 12 | 1 | 1 | 100 us | 0 | Stop | 0 | Stop |
| [Slot 00 Model: 2542 (-T)] | 13 | 1 | 1 | 100 us | 0 | Stop | 0 | Stop |
| [Slot 00 Model: 2542 (-T)] | 14 | 1 | 1 | 100 us | 0 | Stop | 0 | Stop |
| [Slot 00 Model: 2542 (-T)] | 15 | 1 | 1 | 100 us | 0 | Stop | 0 | Stop |

- **On Width / Off Width**

  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 100 µs for Digital Output, with a maximum setting of 65,535.




- **Count**

  You can specify between 1 and 4,294,967,295 pulses or enter "0" for continuous pulse output.

- **Power On Status**

  When the device is first powered on, the status of each pulse output channel is set to **OFF** by default. This behavior can be modified using the **Power On Status**.

  You can set a pulse output channel to turn **ON** when the ioLogik is powered on, or to commence pulse output.

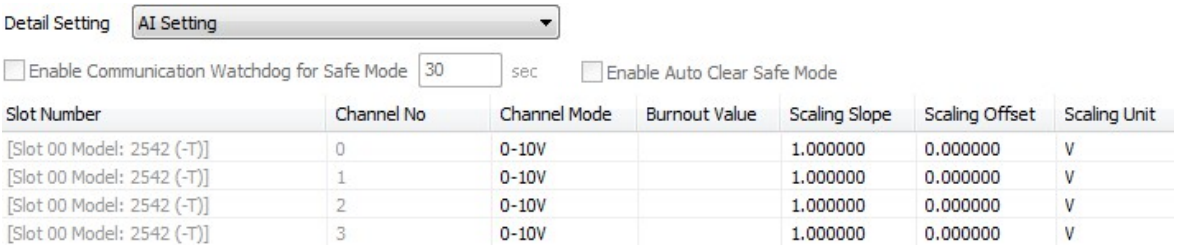
- **Power On Delay**

  The time delay from tuning DO channels when the power is turned on.

- **Safe Mode Status**

  If the Communication Watchdog is enabled, a network disconnection will activate a safe state. The pulse output channel can be configured to turn on / turn off during the safe state.

**AI Setting**



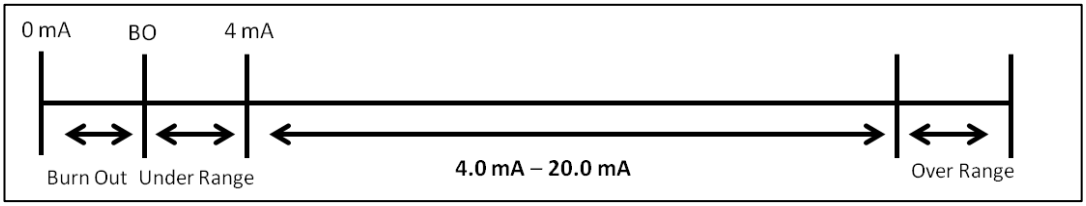

| Slot Number | Channel No | Channel Mode | Burnout Value | Scaling Slope | Scaling Offset | Scaling Unit |
|---|---|---|---|---|---|---|
| [Slot 00 Model: 2542 (-T)] | 0 | 0-10V | | 1.000000 | 0.000000 | V |
| [Slot 00 Model: 2542 (-T)] | 1 | 0-10V | | 1.000000 | 0.000000 | V |
| [Slot 00 Model: 2542 (-T)] | 2 | 0-10V | | 1.000000 | 0.000000 | V |
| [Slot 00 Model: 2542 (-T)] | 3 | 0-10V | | 1.000000 | 0.000000 | V |

- **Channel Mode**

  The input channels can be set individually to±10 V, 0 to 10 V, 0 to 20 mA, 4 to 20 mA, and 4 to 20 mA (Burnout).

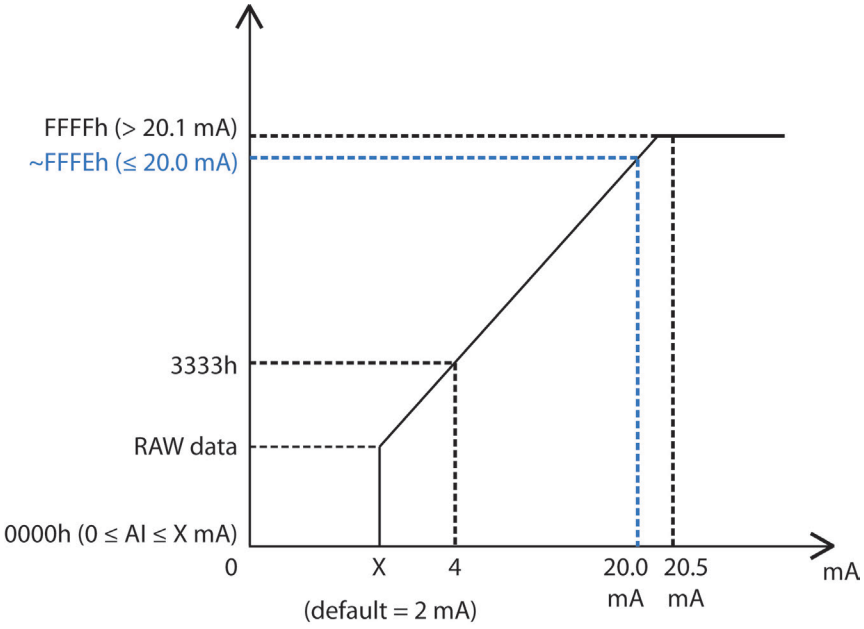
- **Burn-out Value**

  Burn Out mode indicates when the Current AI has burned out. For example, the 4–20 mA Burn-out mode is defined in the following diagram:



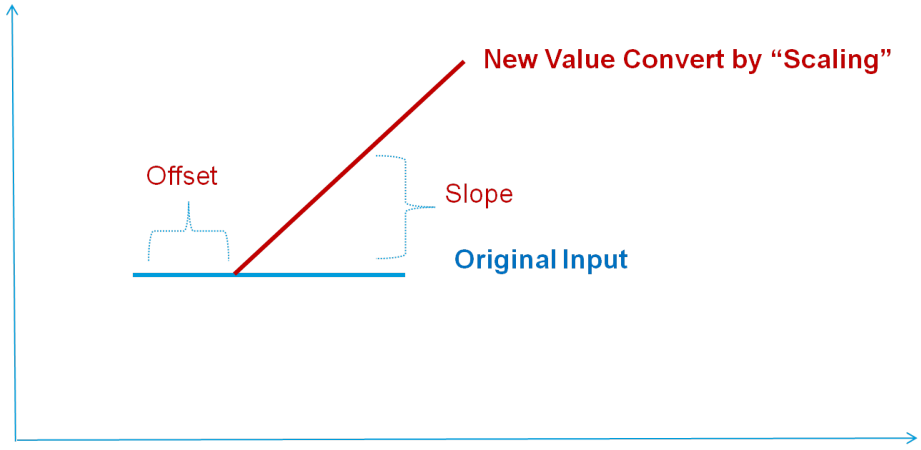
Users can define Burn-out (BO) values (default = 2 mA) for selected ranges. When input values are in the Burn Out range, raw data will register as 0000h to indicate that the analog input has burned out. The definition of raw data is as follows:

| | | |
|---|---|---|
| Burnout Value (BO) | 0.0 < BO < 4.0 | User defined (default 2 mA) |
| Burnout State | 0 ≤ AI < BO mA | S/W output 0000h |
| Under Range | BO ≤ AI < 4 mA | S/W output raw data |
| Normal Range | 4 ≤AI ≤ 20.00 mA | S/W output raw data until FFFEh |
| Over Range | XX > 20.00 mA | S/W output FFFFh |




- **Scaling Slope / Scaling Offset /Scaling Unit**

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




**AO Setting**

Detail Setting: AO Setting

Enable Communication Watchdog for Safe Mode: 30 sec  Enable Auto Clear Safe Mode

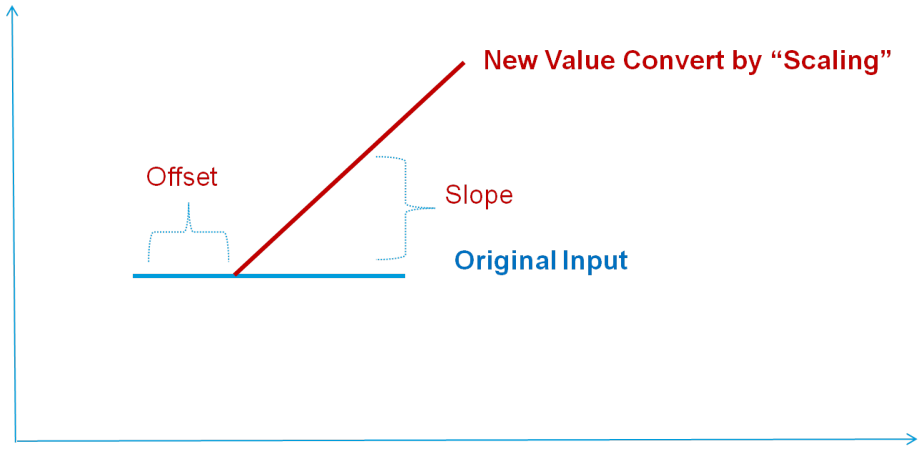
| Slot Number | Channel No | Channel Mode | Scaling Slope | Scaling Offset | Scaling Unit | Power On Status | Safe Mode Status |
|---|---|---|---|---|---|---|---|
| [Slot 02 Model: E1241 (-T)] | 0 | 4-20mA | 1.000000 | 0.000000 | mA | 4.000000 | 4.000000 |
| [Slot 02 Model: E1241 (-T)] | 1 | 4-20mA | 1.000000 | 0.000000 | mA | 4.000000 | 4.000000 |
| [Slot 02 Model: E1241 (-T)] | 2 | 4-20mA | 1.000000 | 0.000000 | mA | 4.000000 | 4.000000 |
| [Slot 02 Model: E1241 (-T)] | 3 | 4-20mA | 1.000000 | 0.000000 | mA | 4.000000 | 4.000000 |

- **Channel Mode**

  There are two modes for the AO channels: Voltage Mode (V) and Current Mode (mA).

- **Scaling Slope / Scaling Offset / Scaling Unit**

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




- **Power On Status**

  When the device is first powered on, the status of each AO channel can be modified using the **Power On Status**.

- **Safe Mode Status**

  **Enable Communication Watchdog for Safe Mode** allows you to control how an AO channel acts when the network is disconnected.

  If the Communication Watchdog is enabled, a network disconnection will activate a safe state. The AO channel can be configured to a defined value during the safe state.

**NOTE** Since the ioLogik 2500 does not have AO channels, the AO setting will only show up when the project contains E1200 AO modules (such as the E1241).

**Virtual Channel Setting**

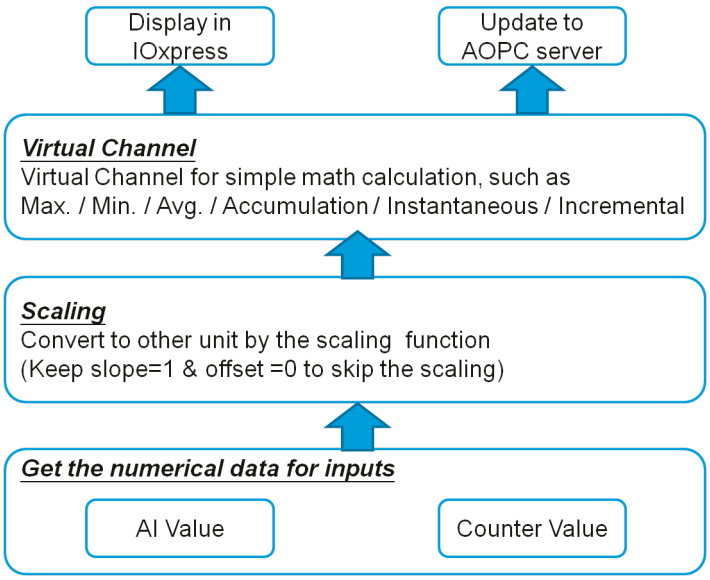
Detail Setting: Virtual Channel Setting

Enable Communication Watchdog for Safe Mode 30 sec Enable Auto Clear Safe Mode

| Slot Number | Channel No | Enable | Slot No | Channel No | Function | Interval (min.) | Sampling Time (min.) |
|---|---|---|---|---|---|---|---|
| [Slot 00 Model: 2542 (-T)] | 16 | Disable | 2542 (-T) | None | Maximum | 1 | |
| [Slot 00 Model: 2542 (-T)] | 17 | Disable | 2542 (-T) | None | Maximum | 1 | |
| [Slot 00 Model: 2542 (-T)] | 18 | Disable | 2542 (-T) | None | Maximum | 1 | |
| [Slot 00 Model: 2542 (-T)] | 19 | Disable | 2542 (-T) | None | Maximum | 1 | |
| [Slot 00 Model: 2542 (-T)] | 20 | Disable | 2542 (-T) | None | Maximum | 1 | |
| [Slot 00 Model: 2542 (-T)] | 21 | Disable | 2542 (-T) | None | Maximum | 1 | |
| [Slot 00 Model: 2542 (-T)] | 22 | Disable | 2542 (-T) | None | Maximum | 1 | |
| [Slot 00 Model: 2542 (-T)] | 23 | Disable | 2542 (-T) | None | Maximum | 1 | |
| [Slot 00 Model: 2542 (-T)] | 24 | Disable | 2542 (-T) | None | Maximum | 1 | |
| [Slot 00 Model: 2542 (-T)] | 25 | Disable | 2542 (-T) | None | Maximum | 1 | |

The ioLogik 2500 has 10 internal virtual channels to support front-end statistics functions.

The data source is the real I/O channel, such as AI and DI counters, some of which need to be converted to the appropriate time unit.-The operation is illustrated below.



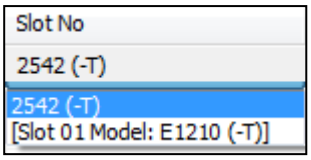

For example, if you want to monitor the daily flow at a point in a pipeline, you can use a pulse output flow meter, where 1 pulse indicates 5 ml. You can set the virtual channel's **scaling function** so that 1 tick of counter input equals 5 ml. Next, set the **Accumulation** flag, and configure the **Time Interval** to 24 hours. This will set up the virtual channel to log the total water flow volume over a period of 24 hours.

- **Status**

  Enable/Disable virtual channels.

- **Slot No.**

  If you have connected E1200 expansion modules, select the device you would like to configure here.




- **Channel No.**

  Virtual channels are required to configure AI or counter channels.

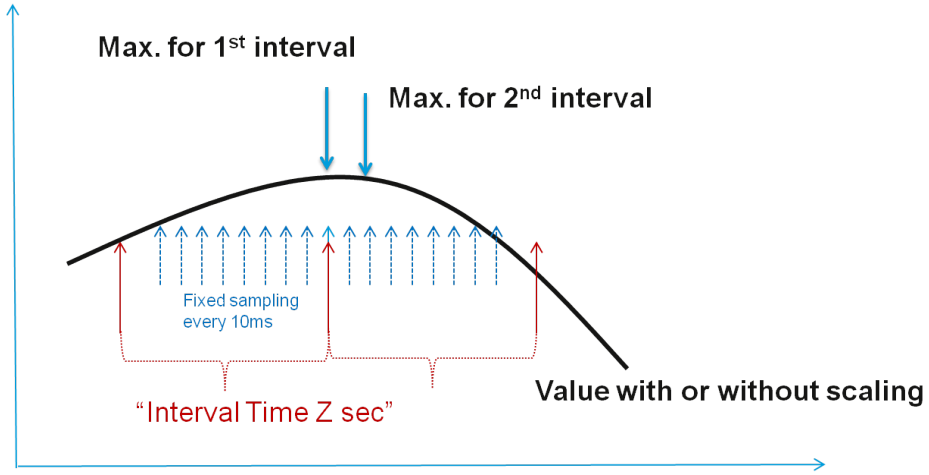
  For counter channels, configure the Counter Scaling on the I/O Configuration panel before setting other operations in the virtual channels.

- **Function**

  There are six functions: Max, Min, Average, Accumulation, Instantaneous, and Incremental.

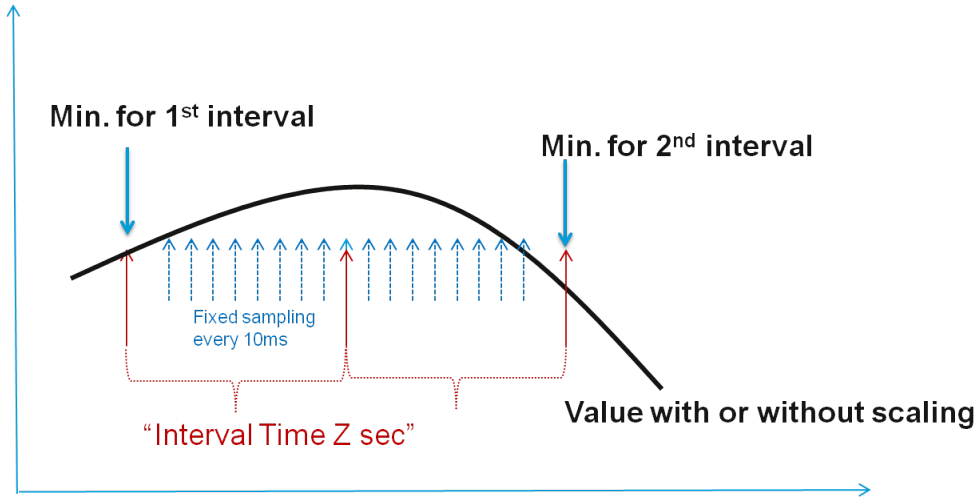
  **Maximum:**

  The maximum value within Z sec, with sampling done every 10 ms.



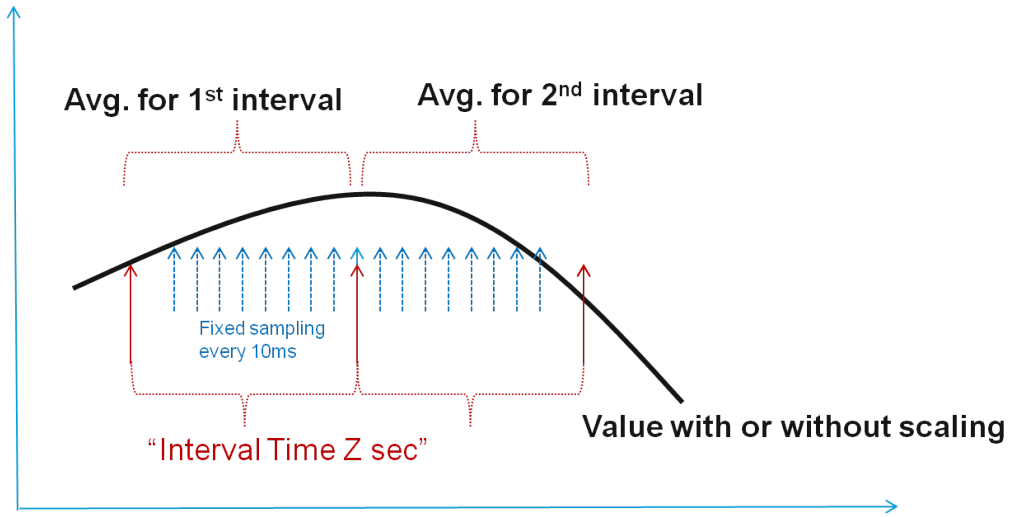
**Minimum:**

The minimum value within Z sec, with sampling done every 10 ms.



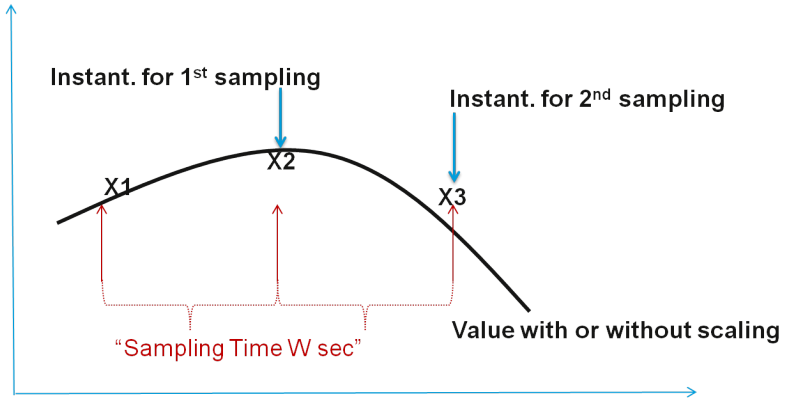

**Average:**

The average value within Z sec, with sampling done every 10 ms.



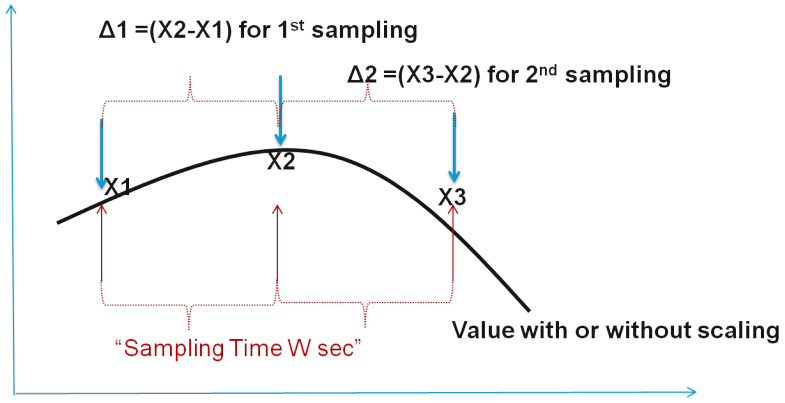

**Instantaneous:**

The instantaneous value when a sample is taken.



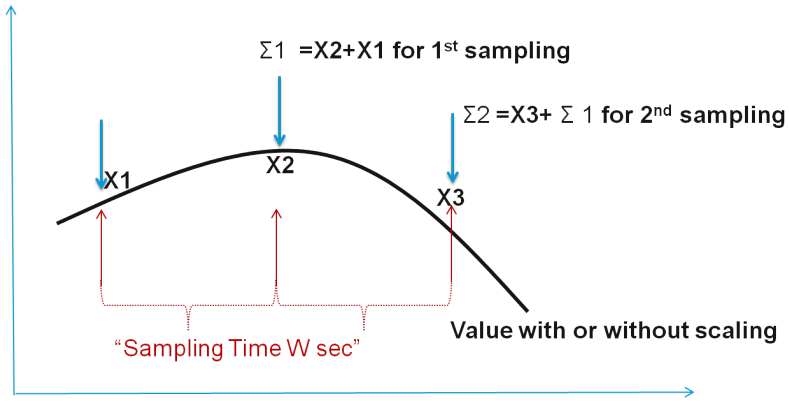
**Incremental:**

The difference (Δ) between two samples.




**Accumulation:**

The sum (Σ) of all sampling values.




- **Interval (min.)**

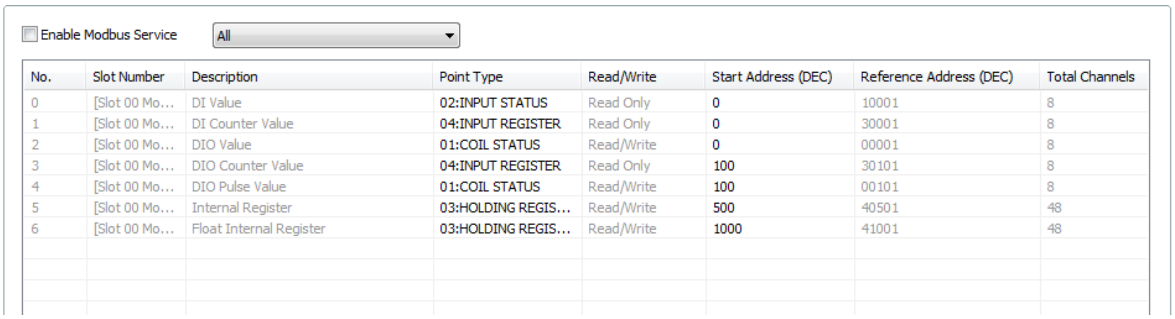
  Set the interval time for Maximum, Minimum, and Average functions.

- **Sampling Time (min.)**

  Set the sampling time for Instantaneous and Incremental functions.

## Modbus Address (Dynamic Address/ User Defined)

In this section, I/O addresses can be configured for different formats. Check the **Enable Modbus Service** box, select the Modbus function, and then configure the start address of each item.


Enable Modbus Service All

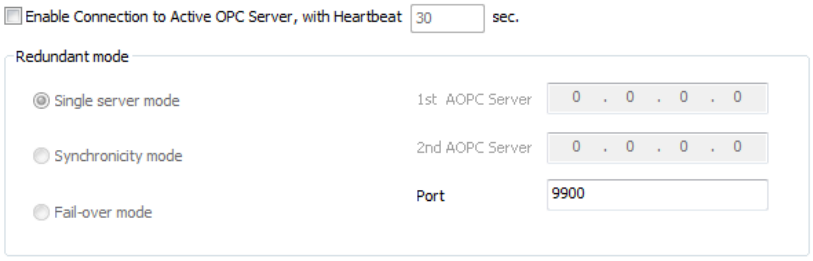
| No. | Slot Number | Description | Point Type | Read/Write | Start Address (DEC) | Reference Address (DEC) | Total Channels |
|---|---|---|---|---|---|---|---|
| 0 | [Slot 00 Mo... | DI Value | 02:INPUT STATUS | Read Only | 0 | 10001 | 8 |
| 1 | [Slot 00 Mo... | DI Counter Value | 04:INPUT REGISTER | Read Only | 0 | 30001 | 8 |
| 2 | [Slot 00 Mo... | DIO Value | 01:COIL STATUS | Read/Write | 0 | 00001 | 8 |
| 3 | [Slot 00 Mo... | DIO Counter Value | 04:INPUT REGISTER | Read Only | 100 | 30101 | 8 |
| 4 | [Slot 00 Mo... | DIO Pulse Value | 01:COIL STATUS | Read/Write | 100 | 00101 | 8 |
| 5 | [Slot 00 Mo... | Internal Register | 03:HOLDING REGIS... | Read/Write | 500 | 40501 | 48 |
| 6 | [Slot 00 Mo... | Float Internal Register | 03:HOLDING REGIS... | Read/Write | 1000 | 41001 | 48 |

## Active OPC Server

Moxa Active OPC Server 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.

**Server Connection**

Fill in the fixed IP address on the panel to configure the Active OPC Address and Port settings. The default port number is 9900. The port number should be the same as the setting in Active OPC Server.




- **Heartbeat Interval**

  The **Heartbeat Interval** can be used to determine the connection status between the ioLogik 2500 and Active OPC Server, and to ensure that the ioLogik 2500 is connected and alive. If the heartbeat interval is set and the network between the ioLogik 2500 and Active OPC Server is down, Active OPC Server will detect the stopped heartbeat and the Quality column in the Active OPC will display BAD to indicate the loss of connectivity.

- **Single server mode:**

  No redundancy: connects to a single Active OPC.

- **Synchronicity mode:**

  Synchronize with 2 Active OPC servers at the same time.

- **Fail-over mode:**

  The ioLogik 2500 will try to connect with the first Active OPC Server IP. If it cannot connect, it will automatically connect with the second IP, and when the connection to the second IP fails, it will switch back to the first IP.

**Tag Selection**

The I/O status of a channel can be updated to the Active OPC Server once it is changed, or updated periodically.

- **On Change / Percentage**

  The **On Change / Percentage** setting forces an update when there is a signal change for that channel (percentage change is available for analog channels).

- **Interval / Interval Time**

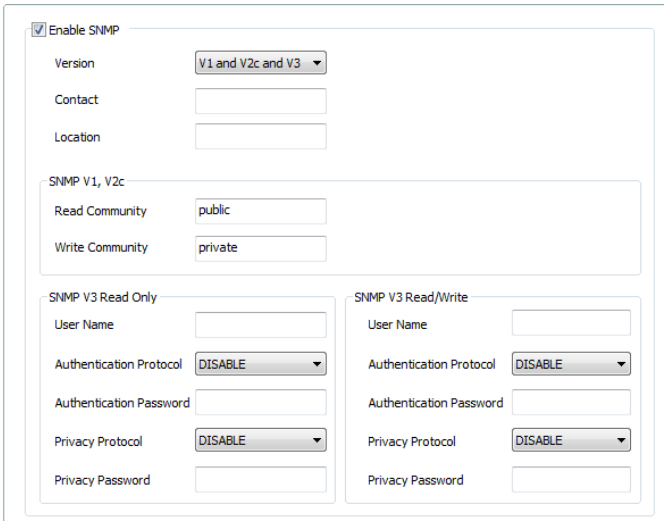
  To periodically update the status of the Active OPC Server, enable the **Interval** and specify a time interval in the **Interval Time** column.

**NOTE** If AI is configured to update on change, the percentage settings represent the percentage of the full analog range. For example, if the AI is configured to 0 to 10 V, "On Change 1%" means the ioLogik will update the Active OPC Server every time there is 0.1 V change.

**NOTE** The ioLogik 2500 supports Moxa's MX-AOPC UA server.

## SNMP Server

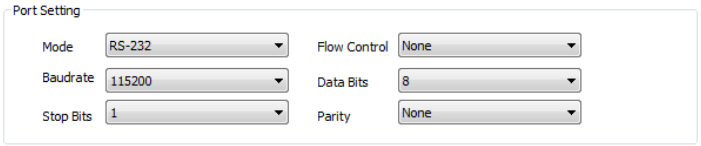
The ioLogik supports SNMP (Simple Network Management Protocol) V1, V2c, and V3 to monitor network and I/O devices with SNMP Network Management software. It is useful in building automation and telecom applications. Use these fields to enable SNMP and set the read and write community strings for SNMP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



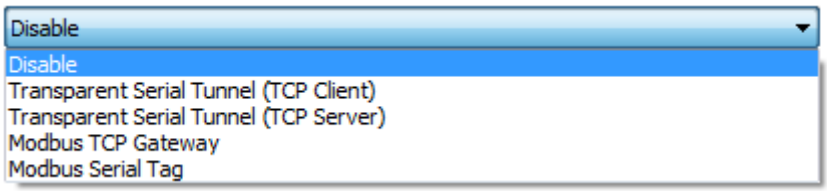

## Serial Port

The ioLogik 2500 has a built-in 3-in-1 serial port that supports attaching field serial Modbus/RTU meters (either RS-232, RS-422, or RS-485), and allows the integration of this serial data so that it can be uploaded to the SCADA system.

**Step 1:** Set the serial port parameters: RS-232, RS-422, RS-485, Baudrate, Stop Bits, etc.




**Step 2:** Choose the operation mode. There are four modes to choose from:




## Data Logging

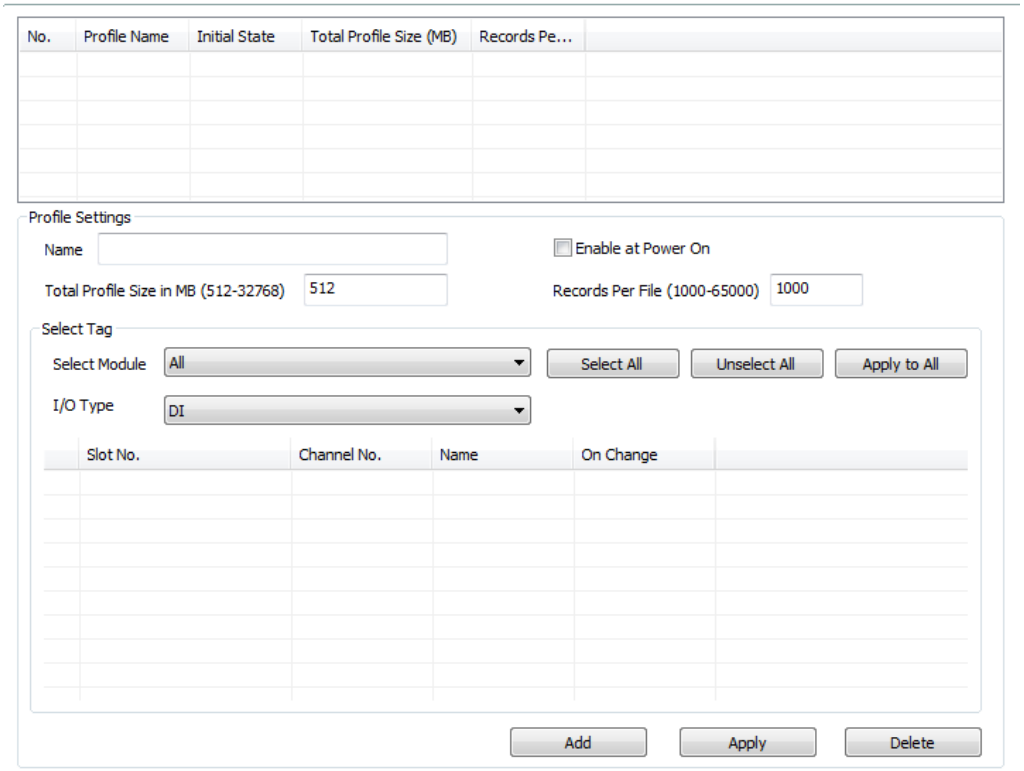
### Profile

The Profile List defines how to log the I/O data into the Micro SD card.
A total of 10 profiles can be created, and multiple/duplicate channels can be included in different profiles.

**Step1:** Define how to log the data by specifying the Logging Type. Users can choose to log from different I/O channels.

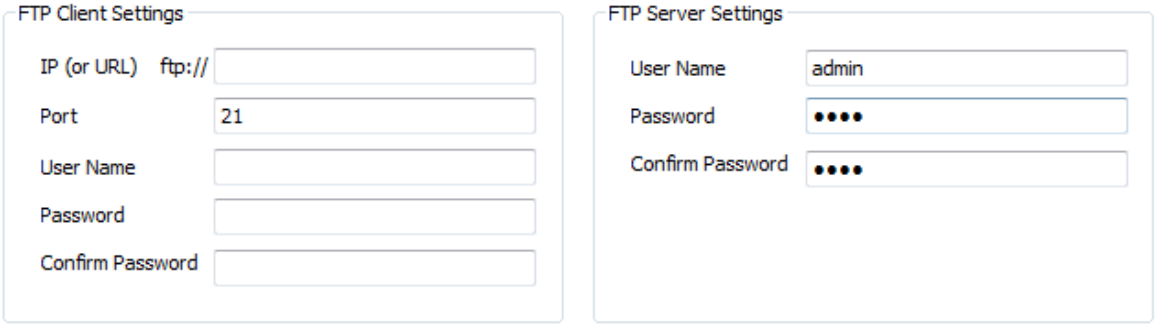
**Step2:** Check mark I/O channels that you would like to add in the profile, and click **Add** to create a profile.

**Step3:** Click **Apply** to save the profile settings.




**FTP**

The FTP tab defines how to log I/O data into an FTP server. The FTP Service function provides upload service for data log files stored on the Micro SD card.




**NOTE** default user name: admin
default password: moxa

**Click & Go Component**

Click&Go components are designed for Click&Go Plus rules. When a set of rules (known as a rule-set) is defined using Click&Go Plus, the ioLogik can perform local and remote I/O control, report I/O status, and actively send out messages, e-mails, or SNMP traps to a host as soon as the user-defined I/O conditions have been met.

For a detailed introduction on how to use this function, refer to Chapter 2 of the *Click&Go Plus User's Manual*.

# Click&Go Plus

Click&Go Plus logic provides an easy way to program your ioLogik 2500 product for smarter I/O functionality over an Ethernet network. For a detailed introduction on how to use Click&Go Plus, refer to Chapter 3 of the *Click&Go Plus User's Manual*.

# Click&Go Plus Simulator

When you finish defining your Click&Go rules, you can use the Click & Go plus Simulation tool to test the rules.

For a detailed introduction of how to use this function, refer to Chapter 4 of the *Click & Go Plus User's Manual*.

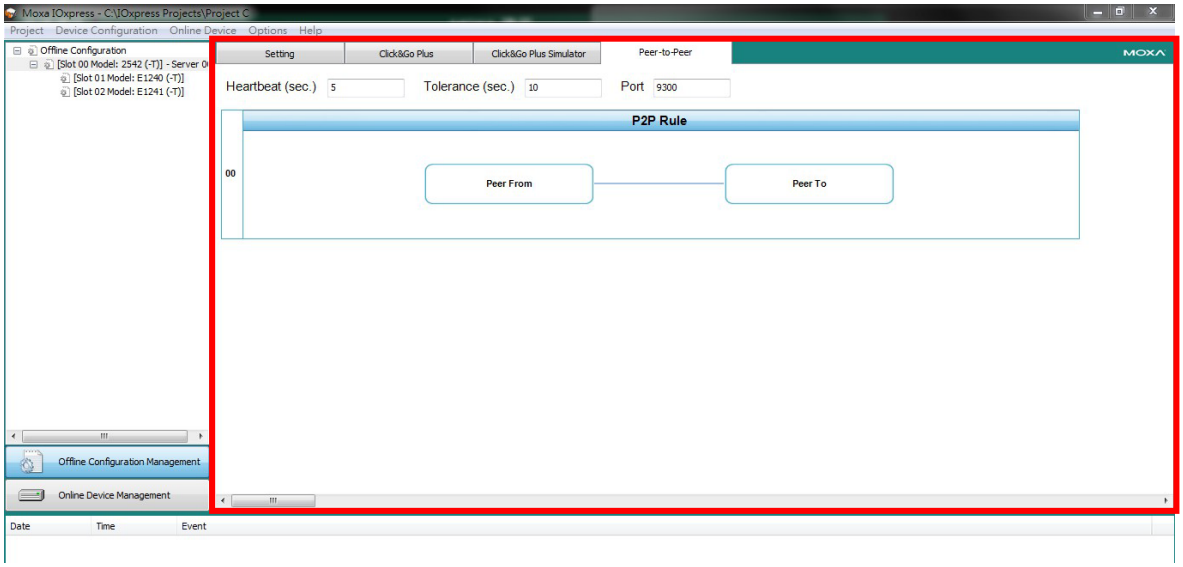
# Peer-to-Peer

In some remote automation implementations, the control room and field sensors may be located far apart from each other, often with only a single remote I/O module to collect data from all the sensors.

**Peer-to-peer communication** has little or no limitation since it replaces cable by integrating multiple I/O signals over a single network cable to transmit input-to-output controls without the aid of PLCs or controllers.

With peer-to-peer communication and support for channel-to-channel mapping, the ioLogik 2500 allows simultaneous multiple target transmissions. In addition, the ioLogik 2500 supports up to 16 channels for transmission over Ethernet (based on an emitter and receiver I/O pair).

Click on **Peer to Peer** in the menu bar to configure basic device settings.




# General Settings

## Heartbeat (Sec)

Heartbeat is used to determine the connection status between P2P devices and to ensure that the ioLogik 2500 is connected and alive.

**NOTE** If the heartbeat interval is set and the network between the P2P devices is down, the ioLogik 2500 will detect lack of heartbeat, and then disconnect the P2P connection.

### Tolerance (Sec)

Tolerance allows you to define an additional timeout interval to wait for a heartbeat signal from P2P devices.

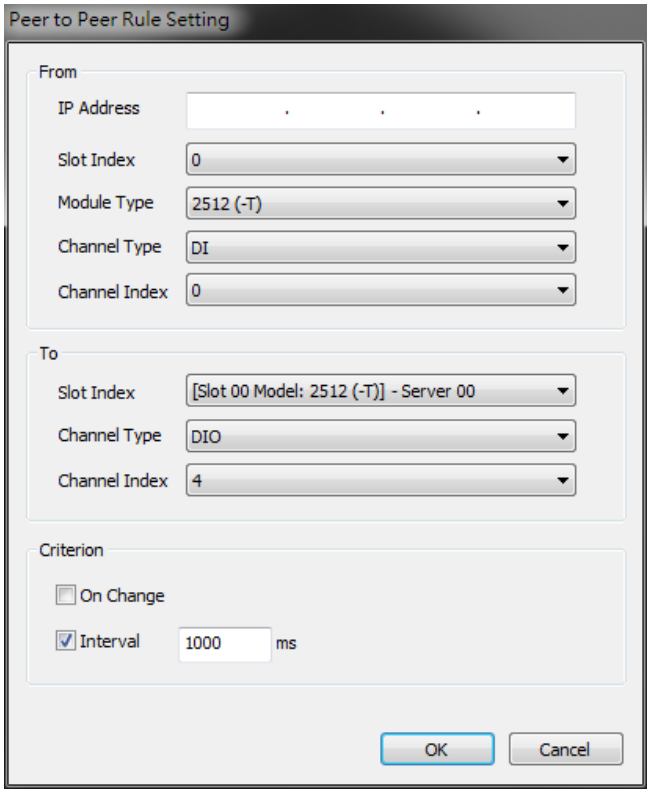
### Port

The default local listen port number is 9300; this value can be set from 1 to 65535.

## P2P Rule Settings

With peer-to-peer communication and supports for channel-to-channel mapping, the ioLogik 2500 allows simultaneous multiple target transmissions.

In a P2P rule, the ioLogik 2500 can be configured to receive a signal from a remote site and output the signal at the local site, allowing you to configure the remote site information by configuring the IP address, slot index (for expanded E1200 units), and module type.




### IP Address

The IP address of the device that collects and sends signals.

### Slot Index

An integer used to represent the ioLogik 2500 and its E1200 expansion units.

- 0: represents the ioLogik 2500 head unit
- 1 to 8: represents an E1200 expansion unit

### Module Type

The module type of the source ioLogik 2500.

### Channel Type

The DI or DIO channel of the selected unit.

### Slot Index

The channel index of the unit.

### On change/Interval

You can set the Interval Time and On change percentage on the local ioLogik 2500 to trigger the transmission of a mapping signal to the remote ioLogik 2500.

**NOTE** Up to 16 P2P rules can be set (a set of ioLogik2500 + up to 8 x E1200).

**NOTE** As you configure a DI or AI channel in the Local Channel field, you also need to configure the DO or AO channel on the remote ioLogik devices.

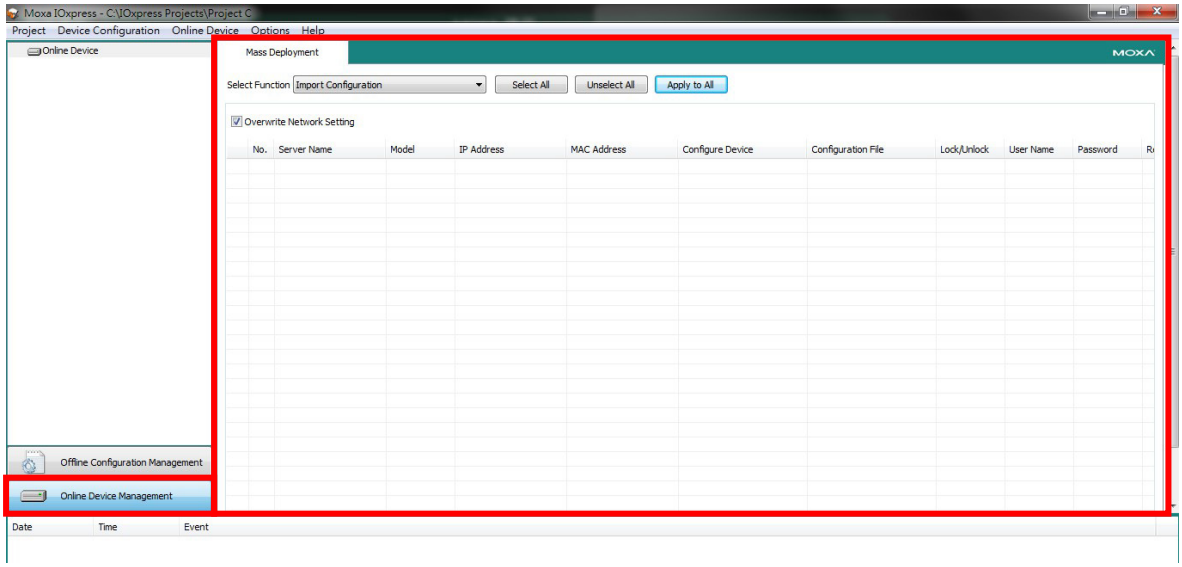
**NOTE** The peer to peer channel at the remote field site will be mapped automatically. Peer-to-peer settings only need to be configured in the local ioLogik 2500 devices.

# Online Configuration

## Introduction

Online configuration provides two main functions:

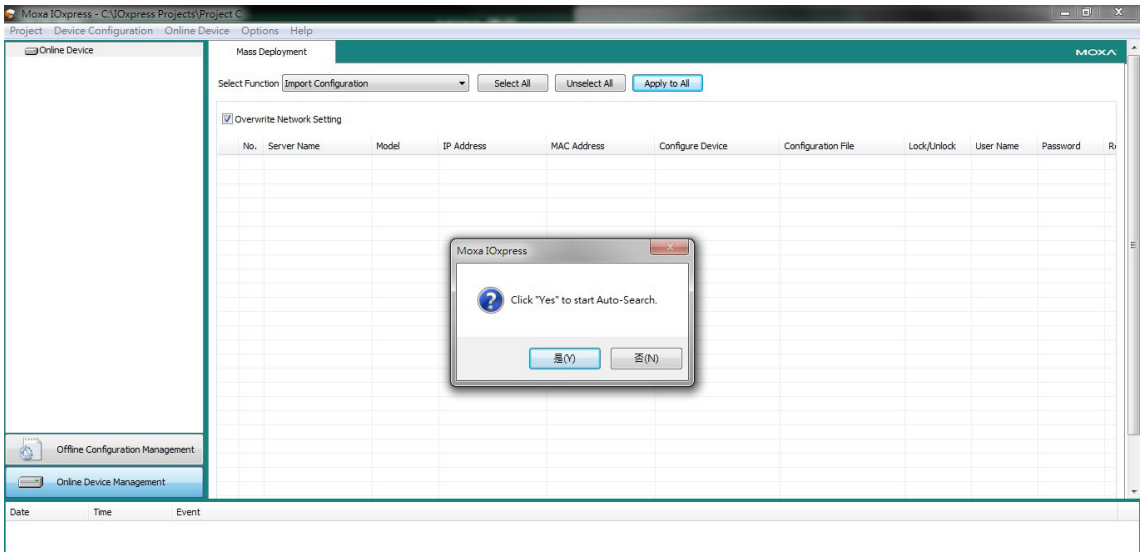
- Importing offline configurations to online devices.
- Monitoring all online devices, such as I/O status, upgrade firmware, import configuration, export configuration, and device reset.



# Searching for Online Devices

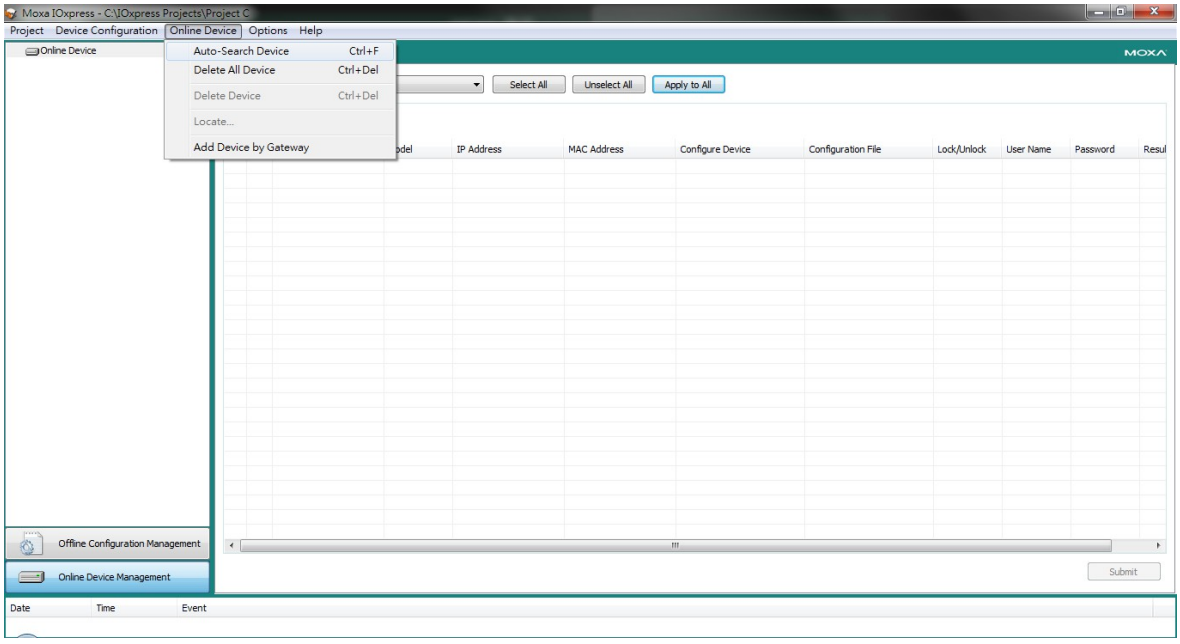
## First Time Searching for Devices

- When you click **Online Device Management**, IOxpress will automatically display an auto-search information popup window.
- Click **Yes** to start searching for devices.
- The search information will be displayed in the Log.



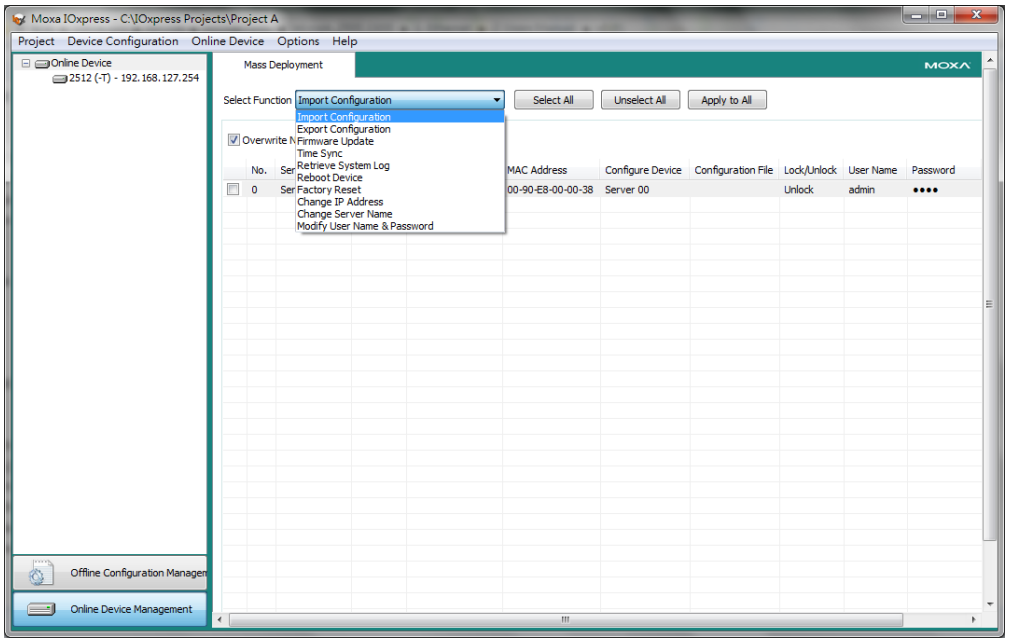

## Conducting Another Search for Online Devices

If you would like to conduct another search for online devices, click **Auto-search Device** in the **Online Device** menu.



# Mass Deployment

Mass deployment allows you to deploy multiple devices at the same time. To execute a mass deployment, first click **Online Device** in the left panel, and then click **Import Configuration** to open the dropdown box. Ten different functions can be used for mass deployment, including Firmware Update, Reboot Device, Change IP Address, etc., as shown in the figure at the right.



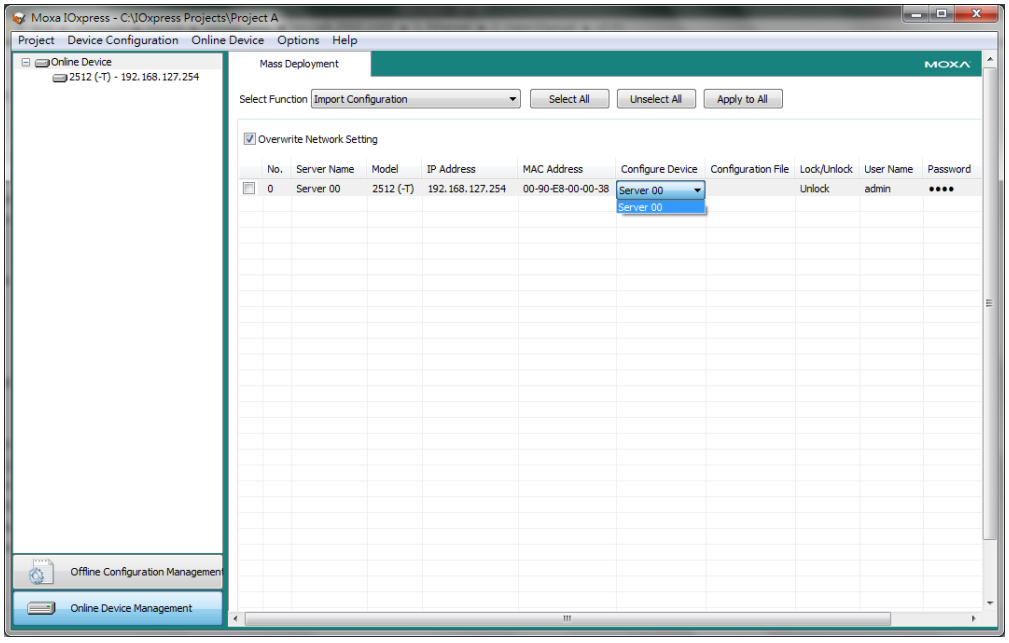

## Import Configuration

The ioLogik's system configuration, including the current Click&Go Plus rule-set, can be imported and exported to the ioLogik 2500 device. You will need to know the user name and password to use this functionality.

### There are two ways to import a configuration:

**With the Configure Device function:**

To import from a preset offline configuration, click the "Configure Device" column and select the configuration you created.



**With the Configuration File function:**

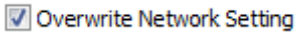
Import from configuration files saved on your computer.

**NOTE** If the device is Locked, you must log in as administrator to gain access to the ioLogik's configuration options. If you have not updated the username and password, use the default:

Default User Name: admin

Default password: moxa

**NOTE** If you do not want to change a device's network settings, uncheck the **Overwrite Network Setting** checkbox.




## Export Configuration

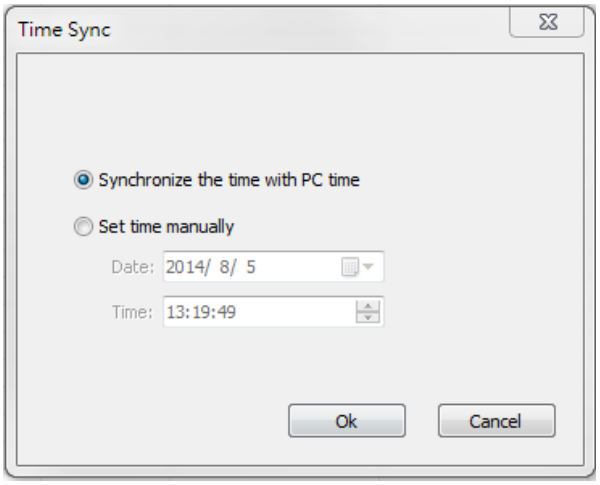
After you make changes to a rule-set, you can export the system configuration to save the updated rule-set.

## Firmware Update

The **Firmware Update** tab is available after you log in as 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 entire process, including restarting the ioLogik.

## Time Sync

The ioLogik 2500 can be set to be synchronized with PC time, or the time can be set manually.




## Retrieve System Log

You can retrieve the system logs from selected devices and save the logs as notepad files on your computer. System logs contain system operations information, like firmware upgrades, restarts, and configuration imports.

### Reboot Device

Select this command to restart a selected ioLogik 2500.

### Factory Reset

Select this command to reset all settings on the selected ioLogik, including the password and all configuration settings, to factory default values.

### Change IP Address

Use this function to change the IP address.

### Change Server Name

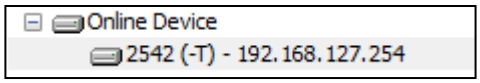
Use this function to change the server name.

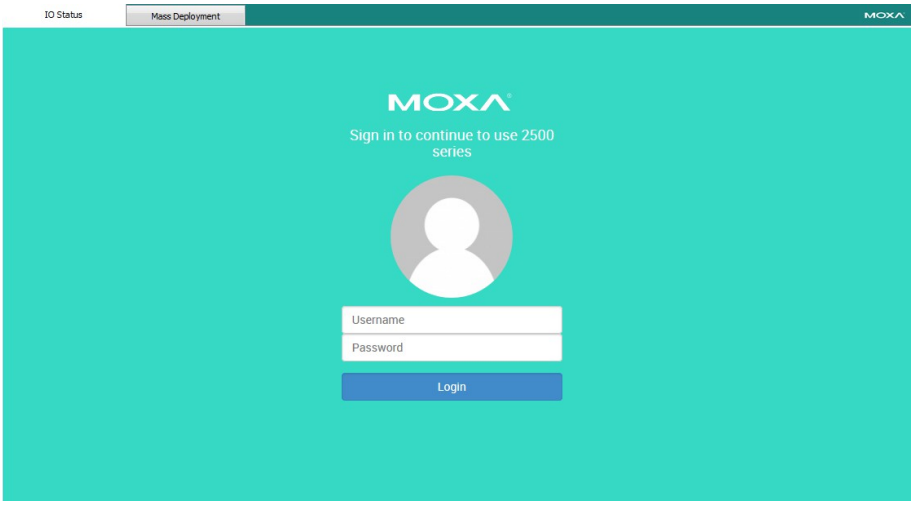
### Modify User Name & Password

Use this function to change the User Name & Password.

## Deploying Individual Devices

To check device information for individual devices, click the device listed in the **Online Device** column and then log in to the device.




**NOTE**
- Default user name: admin
- Default password: moxa

The user name and password are case-sensitive.

# IO Status

The IO status tab allows you to execute the following information

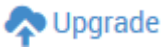
**I/O information**

The following information will appear at the top of the page.


**I/O status**


Check the complete I/O status.

**Upgrade**




Click this icon to upgrade the firmware.

**Import**


Click this icon to import a device configuration.

**Export**


Click this icon to export a device configuration.

**Reset**


Click this icon to reset the device.

# A

# Network Port Usage

The ioLogik 2500 uses the following network ports:

| Usage | Type | Port | User-Defined |
|---|---|---|---|
| Serial Tunnel Client | TCP | 1 | ✓ |
| FTP Client | TCP | 21 | ✓ |
| FTP Server | TCP | 21 | ✓ |
| Web Console | TCP | 80 | |
| SNMP Server | TCP | 161 | |
| SNMP Client | TCP | 162 | |
| Modbus Communication | TCP | 502 | |
| SMTP | TCP | 587 | ✓ |
| Serial Tunnel Server | TCP | 4001 | ✓ |
| Auto Search Function | UDP | 4800 | |
| TCP/UDP Message | TCP | 9000 | ✓ |
| | UDP | 9000 | ✓ |
| Remote Action Function | TCP | 9010 | |
| Peer-to-peer Function | TCP | 9300 | ✓ |
| IOxpress | TCP | 10124 | |
| AOPC Protocol* | TCP | 9200 | |
| | TCP | 9300 | |
| | TCP | 9500 | |
| | TCP | 9900 | ✓ |

*The ioLogik 2500 series only supports MX-AOPC UA server.

**NOTE**
- **Client** refers to when the ioLogik 2500 is acting as a client to connect other services.
- **Server** refers to when the ioLogik 2500 is acting as a server to provide services to other devices.