

atIOLink

User Manual MTO-atIOLinkU1-V1.1-2411EN

Thank you for purchasing an Autonics product.

This user manual contains information about the product and its proper use,
and should be kept in a place where it will be easy to access.

Autonics

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Preface

Thank you for purchasing Autonics products.

Be sure to read and follow the **Safety Precautions** thoroughly before use.

This manual contains information about the product and how to use it properly, so keep it in a place where users can easily find it.

Manual Guide

- Use the product after fully reading the contents of the manual.
- The manual explains the product functions in detail and does not guarantee the contents other than the manual.
- Any or all of the manual may not be edited or copied without permission.
- The manual is not provided with the product.
- Download and use from our website (www.autonics.com).
- The contents of the manual are subject to change without prior notice according to the improvement of the product's performance, and upgrade notices are provided through our website.
- We put a lot of effort to make the contents of the manual a little easier and more accurate. Nevertheless, if you have any corrections or questions, please feel free to comment through our website.

Common Symbols in the Manual



Failure to follow instructions may result in serious injury or death.



Failure to follow instructions may result in injury or product damage.



Supplementary explanation of the function



Example of that function



Important information about the feature

1. atIOLink



Be sure to see the product manual of the ADIO Series (IO-Link Master type) and follow the precautions.

This user manual describes the information based on Autonics devices.

1.1. Overview

atIOLink, comprehensive management software for the IO-Link communication, is a dedicated Port and Device Configuration Tool (PDCT) for configuration, diagnosis, and maintenance of ADIO series (IO-Link Master). You can configure the connected IO-Link device by connecting to the PDCT port and a PC or laptop with atIOLink installed each other without a network master (e.g., PLC).

The atIOLink supports the following functions.

Port configuration of the IO-Link Master

Convenient and easy to configure the operation mode and functions of each I/O port, and figure out the connected IO-Link devices at a glance.

Access ISDU parameters of the IO-Link device

- Offline mode
Available to change the parameters of IO-Link device without importing the IODD file.
- Online mode
Available to change the automatically imported parameters of IO-Link device.

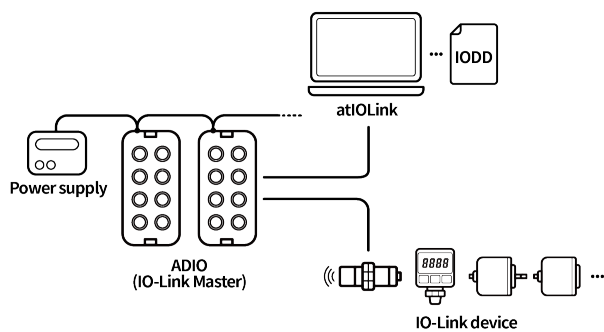
Real-time monitoring for the IO-Link device

The process data shows input and output data of the IO-Link device.

Maintenance and repair for the IO-Link device

- Data Storage
The upload and download of the parameter sets of the IO-Link device are available with the IO-Link Master. The data storage helps you to easily connect multiple IO-Link devices or apply the same configuration when replacing the IO-Link device.
- Event
The event notifies an error that occurred in the IO-Link device, helping you to have rapid troubleshooting.

1.2. Check Lists Before You Begin



1. PC for installing software

CPU	Intel i3, Ryzen 3 or above
OS	Windows 7 (X64) or higher [※]
RAM	6 GB or higher
Storages	At least 10 GB of available HDD space
Resolution	1280X800 or higher (1920X1080 recommended)
Other	RJ45 Ethernet port, GigE network interface card



If the Virtual COM Port Driver is not successfully installed in Windows XP or Windows 7, be sure to install the driver suitable for your OS at the atIOLink installation path:
C:\Program Files (x86)\AUTONICS\atIOLink\Driver\Virtual COM Port driver

2. IO-Link Master

- ADIO series (IO-Link Master type)
- Connector cables for the PDCT port and power supply port on the ADIO.

3. IO-Link devices

- Sensor and actuators that support the IO-Link communication
- IODD file of the IO-Link device

1.3. Install the Software

1. Download the setup file of atIOLink on Autonics website (www.autonics.com).
2. Launch the setup file to install.
3. Install the Microsoft Visual C++.
4. Install the IODD Checker.
5. Restart your PC.
6. A shortcut icon is created on the desktop. The atIOLink installation is completed.



2. Quick Start

This chapter describes the straightforward procedure of atIOLink for those who are familiar with the IO-Link. For detailed information for using the atIOLink, refer to the following chapters.

For detailed information for connecting the devices, refer to the product manual of the ADIO series (IO-Link Master type).

1. Connect the PDCT port on the ADIO and PC.
2. Connect the IO-Link device to the I/O port on the ADIO.
3. Connect the power to the power supply port on the ADIO.
4. Check the operating status via the indicator of the connected IO-Link device.
5. Download the IODD file of the connected IO-Link device.
6. Install the atIOLink.
7. Integrate the ADIO to atIOLink.
8. Integrate the IO-Link device to atIOLink.

3. Getting Started

3.1. Set up the Hardware

1. Connect the ADIO to a PC with atIOLink installed and a device for the power supply.
2. Connect the ADIO and IO-Link devices.
3. Be sure to check the operating status of the connected IO-Link device via its indicators, if the IO-Link devices support that service.



The power of the IO-Link device is supplied by the ADIO.

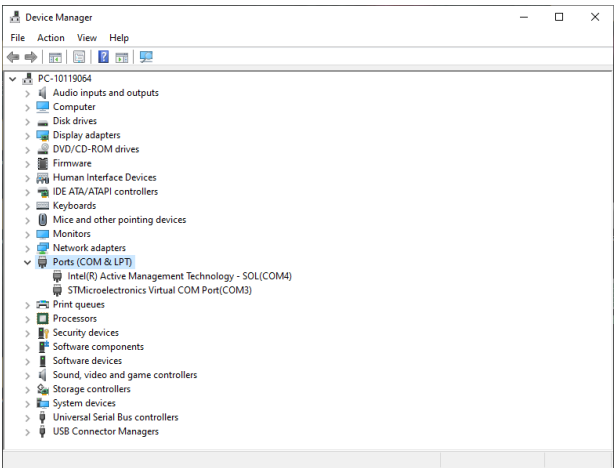
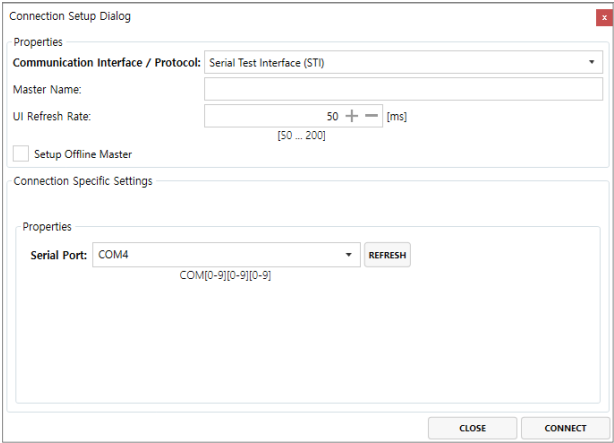
3.2. Change Your Language

It is recommended to select the display language first. Changing the language restarts the atIOLink and does not save the configuration of the ADIO.

1. Launch the atIOLink.
2. In **Tools » Options » Customize » Language**, select your language and click **APPLY**.
 - Supported languages: Korean and English
3. The atIOLink will restart.

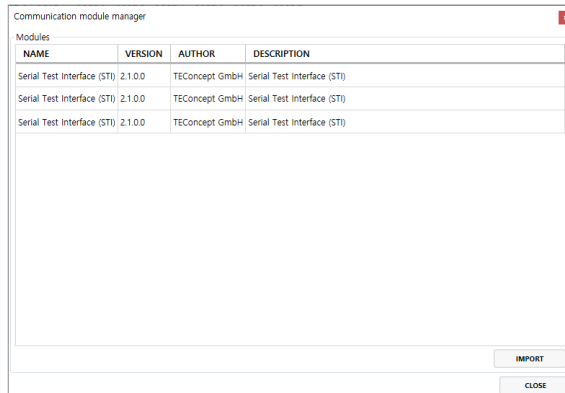
3.3. Integrate the ADIO (IO-Link Master type)

- 1. Select **+** in the TOPOLOGY.
- 2. In the Connection Setup Dialog, select the **Serial Port** connected to the PDCT port on the ADIO and select **CONNECT**. The serial port can be found in the **Device Manager** » **Ports** » **USB Serial Device**.



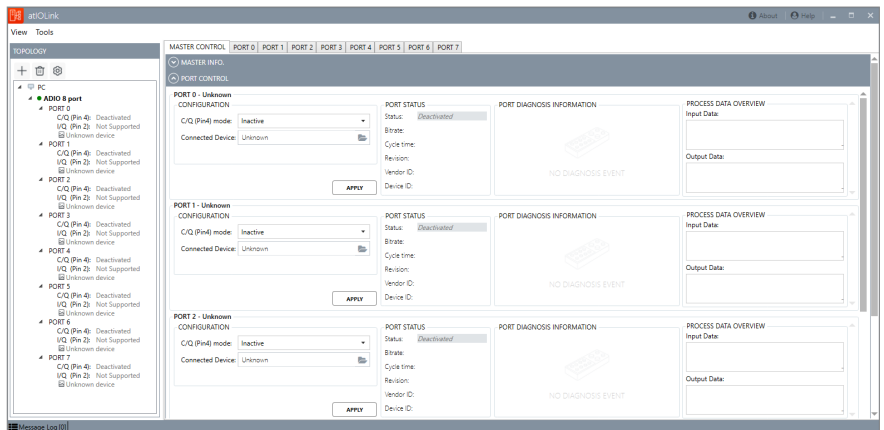
If you cannot find the Serial Test Interface (STI) in the field of **Communication Interface / Protocol** on the Connection Setup Dialog window,

1. Open **Tools » Communication module manager** in the top menu.
2. Select **IMPORT**.



3. Open TEConcept.STIWrapper.dll. in the installation path of atIOLink: C:\Program Files (x86) \AUTONICS\atIOLink.

3. Integrating the ADIO is completed.

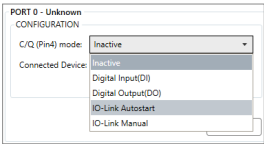


3.4. Integrate the IO-Link Device

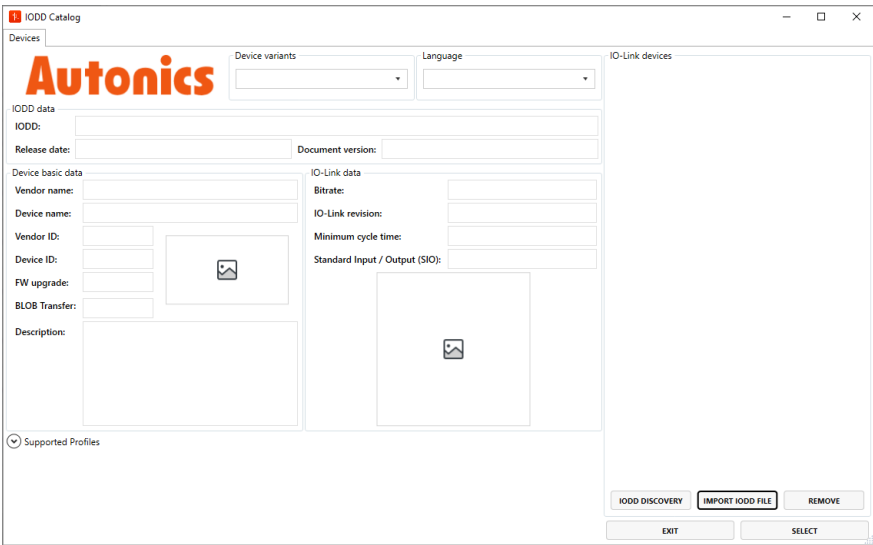
This chapter describes how to easily integrate an IO-Link device to the atIOLink.

The IO-Link device is connected to port 0 on the ADIO.

1. Select the IO-Link Autostart in the drop-down list of the **PORT CONTROL » PORT 0 » C/Q (Pin 4) mode**.



2. Select  in the field of the **PORT CONTROL » PORT 0 » Connected Device**.
3. The IODD Catalog window opens. Select **IMPORT IODD FILE**.



- Select the IODD file saved on your PC.
- Select the .xml file in the panel of IO-Link devices. The IODD information is displayed as shown below. Select **SELECT**.

The screenshot shows the 'IODD Catalog' application window. The 'Devices' tab is active, displaying the 'Autonics' logo and a list of device variants. The 'IO-Link data' section shows the selected device: 'AUTONICS-PRDW30-25D-IL2-20210906-IODD1.1.xml'. The 'Device basic data' section includes fields for Vendor name, Device name, Vendor ID, Device ID, FW upgrade, BLOB Transfer, and Description. The 'IO-Link data' section shows Bitrate, IO-Link revision, Minimum cycle time, and Standard Input / Output (SIO). A list of IO-Link devices is shown on the right, with the selected device highlighted. At the bottom right, there are buttons for 'IODD DISCOVERY', 'IMPORT IODD FILE', 'REMOVE', 'EXIT', and 'SELECT'.

- Select **APPLY** in the **PORT CONTROL » PORT 0**.
The IO-Link device has been successfully integrated since the PORT STATUS shows **Operate**.

The screenshot shows the 'PORT 0 - PRDW30-25D-IL2' configuration window. The 'CONFIGURATION' section includes a dropdown for 'C/Q (Pin4) mode' set to 'IO-Link Autostart' and a text field for 'Connected Device' set to 'PRDW30-25D-IL2'. The 'PORT STATUS' section displays the following information: Status: Operate, Bitrate: COM2, Cycle time: 2300 μs, Revision: V1.1, Vendor ID: 899, and Device ID: 65554. An 'APPLY' button is located at the bottom of the configuration section.

- You can now use the functions of the IO-Link device.

4. Options

The Options supports you to set the properties and functions of the atIOLink.

- Select the **Tools » Options** in the top menu.

The screenshot shows the 'Options' dialog box with the following sections:

- GENERAL**
 - ☒ Load IODD Automatically
 - Customize
 - Language: English
 - Theme: Light grey
 - Paths
 - Communication modules directory: C:\Users\10119064\AppData\Local\Autonics\atIOLink\Communication Modules
- STANDARD DOCUMENTS**
 - Standard Definitions V1.1: C:\ProgramData\Autonics\IO-Link\Standards\IODD-StandardDefinitions1.1.xml
 - Standard Definitions V1.0.1: C:\ProgramData\Autonics\IO-Link\Standards\IODD-StandardDefinitions1.0.1.xml
 - Standard Unit Definitions V1.1: C:\ProgramData\Autonics\IO-Link\Standards\IODD-StandardUnitDefinitions1.1.xml
 - Vendor ID table: C:\ProgramData\Autonics\IO-Link\Vendors\VendorTable.xml
- IODD CHECKER**
 - Checker v1.0.1: C:\Program Files (x86)\IO-Link Community\IODD V1.0.1 Checker\IODDChecker.exe
 - Checker v1.1: C:\Program Files (x86)\IO-Link Community\IODD V1.1 Checker\IODDChecker.exe
- IODD CATALOG**
 - IODD validation:
 - ☐ None
Validation will not be performed before importing
 - ☐ Valid
The imported IODD will be validated with the IODD Checker
 - ☒ Valid CRC
The CRC of the selected IODD will be validated

Buttons: CLOSE, APPLY

Load IODD Automatically

- Check the checkbox of this function when using the IO-Link Autostart.
- When connecting the same model of IO-Link device again, the corresponding IODD file is imported.

Language and Theme

- Language: Korean and English
- Theme: Light grey, Teal, and Blue

IODD validation

Select the validation method for the imported IODD file.

It is recommended to select the Valid CRC for the validation method.

- **None**

- **Valid**

The installed IODD Checker validates the IODD files.

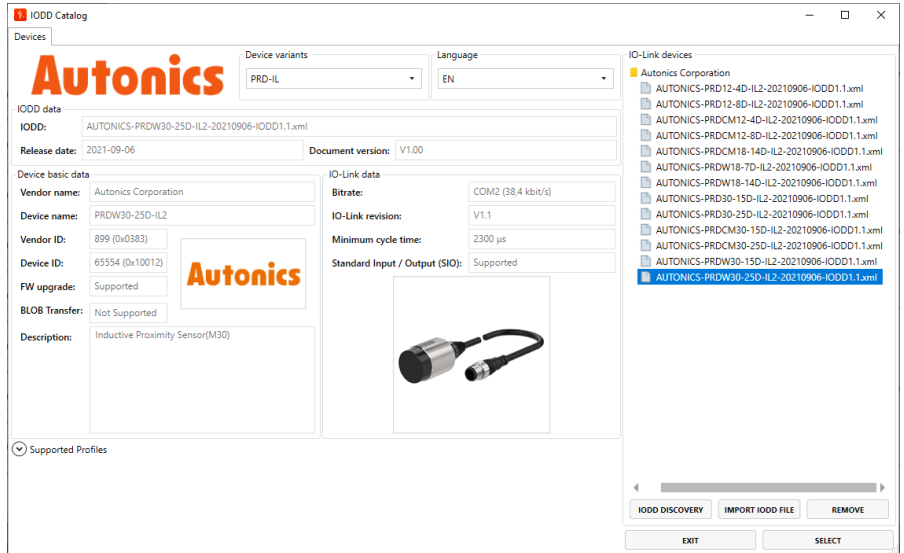
- **Valid CRC**

The value of Stamp CRC in the IODD file is checked.

5. IODD Catalog

You can find, import and manage the IODD files of the IO-Link devices.

- You can check the IODD information in the **IODD Catalog window » Devices tab**.



① The panel of IO-Link devices

It shows classified IODD files by the manufacturer to manage imported IODD files.

- **IODD DISCOVERY:** Searches for the download directory to import multiple IODD files.
- **IMPORT IODD FILE:** Imports one IODD file.
- **REMOVE:** Deletes the selected IODD file in the IODD Catalog.
- **SELECT:** Selects one IODD file and import it.
- **EXIT:** Closes the IODD Catalog window.

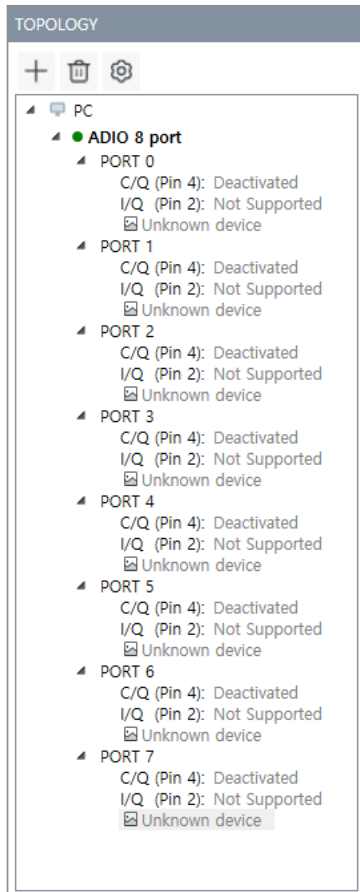
② The panel of IODD data

Display the detailed information of the selected IODD file.

6. Configure the IO-Link Master

atIOLink can communication with an IO-Link Master configured as the daisy chain, but only one IO-Link Master can be activated and used. This chapter describes how to configure the IO-Link Master.

6.1. Topology



① **Top menu buttons**

- : Adds the IO-Link Master
- : Deletes the selected IO-Link Master
- : Opens the Connection Setup Dialog window of the selected IO-Link Master

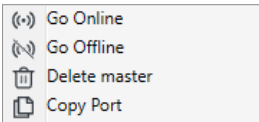
② **The panel of TOPOLOGY**

TOPOLOGY shows the configuration and status of the integrated IO-Link Master.

- Activated IO-Link Master: The Master device displayed in bold
- Connection status of the IO-Link Master
 - : Online
 - : Offline
 - : Disconnected
- PORT no.: Number of port on the IO-Link Master
- C/Q (Pin 4): Status of Pin 4 (C/Q)
- Device image: Shows connected IO-Link device (when the IODD file is imported)

③ **Shortcut**

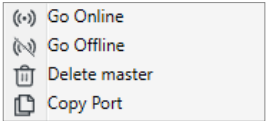
Right-click on the name of the IO-Link Master.



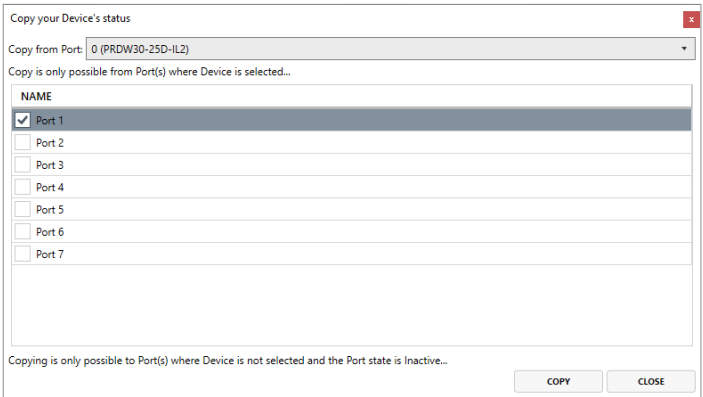
6.1.1. Copy the Configuration of I/O Port

You can copy the configuration of the port to the different I/O port(s).

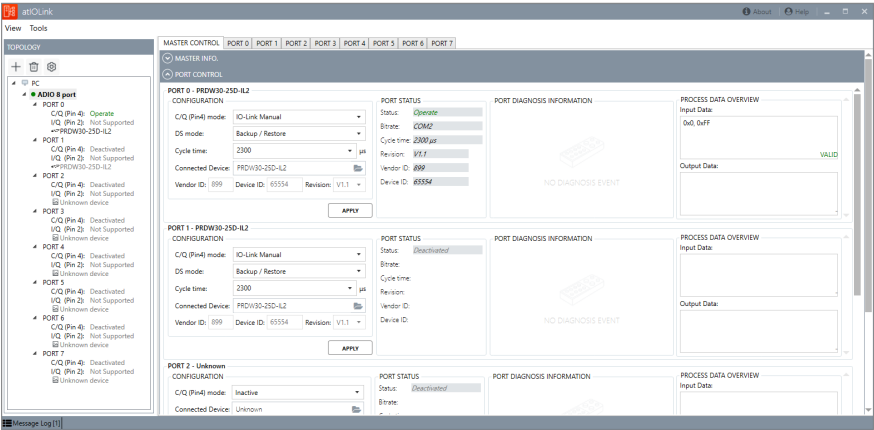
1. Select the **TOPOLOGY** » **Right-click the name of IO-Link Master** » **Copy Port**.



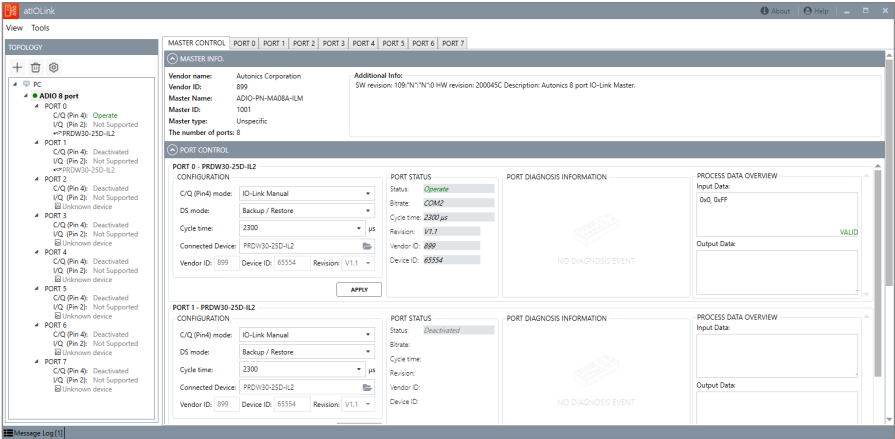
2. The Copy your Device's status window opens.
3. Check the checkbox of a different port to be copied the configuration and select **COPY**.
For instance, the configuration of port 0 is copied to port 1 in the figure below.



4. Copying the port is completed.



6.2. Master Control Tab



① MASTER INFO.

It shows the information about the connected IO-Link Master: Vendor ID, the number of ports, and more.

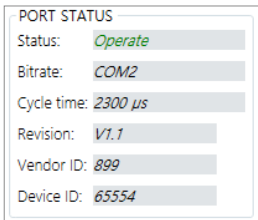
② PORT CONTROL

• CONFIGURATION

You can configure the operation mode and functions of each I/O port on the IO-Link Master. For detailed information, refer to 6.2.1, “Configure the IO-Link Port”.

• PORT STATUS

It shows the current port status and the information of the connected IO-Link device.



• **PORT DIAGNOSIS INFORMATION**

It shows diagnostic information about the port in the IO-Link mode.

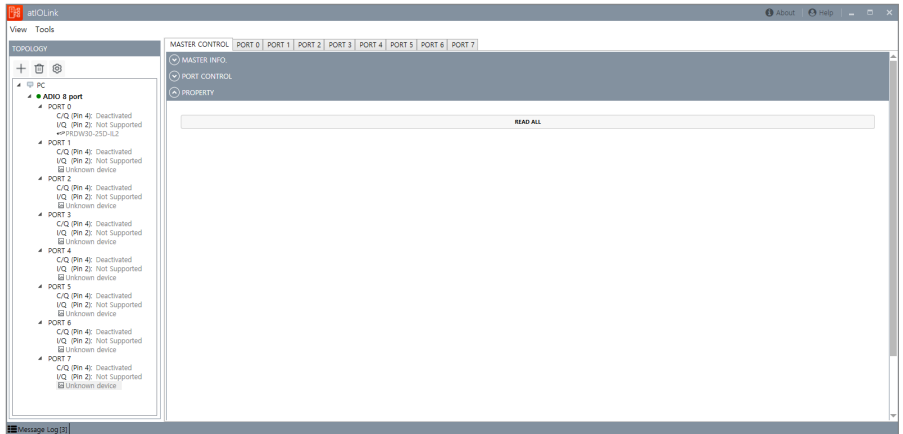
PORT STATUS	PORT DIAGNOSIS INFORMATION	
Status: <i>Port Diagnosis</i>	 Incorrect VendorID – Inspection Level mismatch	Mode: <i>SingleShot</i> Code: <i>6146</i> Instance: <i>Application</i> Source: <i>Master</i>
Bitrate:	 Incorrect DeviceID – Inspection Level mismatch	Mode: <i>SingleShot</i> Code: <i>6147</i> Instance: <i>Application</i> Source: <i>Master</i>
Cycle time:		
Revision:		
Vendor ID:		
Device ID:		

• **PROCESS DATA OVERVIEW**

When the status of port is **Operate**, it shows input and output process data depending on the port configuration. The validity of the process data is displayed in the lower right corner.

PROCESS DATA OVERVIEW
Input Data:
0x0, 0x0, 0x0, 0xE, 0x0, 0x0, 0x0, 0x0
VALID
Output Data:
0x0, 0x0
INVALID

③ PROPERTY



When connecting the ADIO-EI (Ethernet/IP) and ADIO-PN (PROFINET) models to the atIOLink, the functions below can be used in the PROPERTY tab.

For detailed information, refer to 6.3, “Property Tab”.

- Configure the communication address
- Check the number of rotary switches on the ADIO model
- Restore the ADIO to the factory settings
- Restart the ADIO

6.2.1. Configure the IO-Link Port



- The configuration of I/Q (Pin 2) is not supported.
- Be sure to select **Apply** to transmit the configuration to the IO-Link Master.
- The port configuration is not permanently saved. When launching the atIOLink again, the configuration will be initialized.

C/Q (Pin 4) mode

PORT 0 - Unknown
CONFIGURATION

C/Q (Pin4) mode: Inactive

Connected Device: Inactive

- Digital Input(DI)
- Digital Output(DO)
- IO-Link Autostart
- IO-Link Manual

- **Inactive**
Unused port
- **Digital Input(DI)**
Configure the operation mode of each I/O port to the standard input.
- **Digital Output(DO)**
Configure the operation mode of each I/O port to the standard output.
- **IO-Link Autostart**
Configure the operation mode of each I/O port to the IO-Link without the validation.
It is recommended to set the **Options » Load IODD Automatically**.
- **IO-Link Manual**
Configure the operation mode of each I/O port to the IO-Link with the validation.
For detailed information, refer to 6.2.2, “IO-Link Manual Mode”.

Connected device

- Select  to import the IODD file from the IODD Catalog window.
- It shows the connected IO-Link device.

6.2.2. IO-Link Manual Mode

The IO-Link Manual mode supports the following functions: selecting Data Storage mode and Cycle time, and checking Vendor ID, Device ID, and Revision of the connected IO-Link device.

PORT 0 - PRDW30-25D-IL2

CONFIGURATION

C/Q (Pin4) mode:

IO-Link Manual

▼

DS mode:

Backup / Restore

▼

Cycle time:

2300

▼

µs

Connected Device:

PRDW30-25D-IL2

📄

Vendor ID:

899

Device ID:

65554

Revision:

V1.1

▼

APPLY

DS mode

Select the data storage mode. It supports the IO-Link version 1.1 or higher. For detailed information on the data storage, refer to 7.4, “Data Storage”.

- Disabled
- Restore
- Backup / Restore

Cycle time

You can set the cycle time within the range supported by the IO-Link device.

- **Setting range**
400 to 132800 µs
- **0 (as fast as possible)**
Set to the minimum cycle time of the connected IO-Link device.

6.3. Property Tab



- Selecting **READ ALL** in the PROPERTY makes the IO-Link Master goes to the Offline state. Change the status of the IO-Link Master to the Online in the TOPOLOGY after completing the parameter settings.
- For detailed information on the rotary switches, refer to the product manual of the ADIO series (IO-Link Master type).

6.3.1. Configure the IP Address for ADIO-EI (EtherNet/IP) Model

When connecting the ADIO-EI to the atIOLink, the IP address can be configured in the **MASTER CONTROL » PROPERTY**. The address configured on the atIOLink is stored in the ADIO-EI’s EEPROM.

1. Select the **MASTER CONTROL » PROPERTY**.
2. Select **READ ALL**. The values stored in EEPROM are displayed.

MASTER INFO

PORT CONTROL

PROPERTY

READ ALL

NAME	DESCRIPTION	VALUE	INPUT	HEXADECIMA	RANGE
IO-Link Master Model	Product model name	ADIO-EI-MAGBAP-ILM		DATA	
FW Revision	FW revision of ADIO series	1.1.473		DATA	
Rotary Switches' Setting	3 rotary switch values	5		DATA	0-255
Default MAC Address	Product unique MAC ID (fixed at the factory)	58.E8.08.2F.90.58		DATA	
IP Address	The default IP address of the product	192.168.2.3		DATA	
Port Number	The default port number of the product	2222		DATA	1-65535
Subnet Mask	The default subnet mask address of the product	255.255.255.0		DATA	
Gateway Address	The default gateway address of the product	192.168.2.1		DATA	
User MAC Address	MAC ID of the product directly entered by the user	58.E8.08.2F.90.58		DATA	
DNS 1	The default domain name service address 1 of the product	0.0.0.0		DATA	
DNS 2	The default domain name service address 2 of the product	0.0.0.0		DATA	
Administrator Mode	Activate the setting window for technical support to obtain product produc			WRITE	0-0
Restore to Factory Settings	Restore product settings to factory defaults			WRITE	0-1
Device Restart	Reset the product by SW			WRITE	0-1

3. Enter the desired address and select **WRITE**.

Name	Factory settings	Access
IP address	192.168.2.3	RW
(TCP/IP) port number	2222	RW
Subnet mask	255.255.255.0	RW
Gateway address	192.168.2.1	RW
User MAC address	58.E8.08.00.8C.CA	RW
DNS 1,2	0.0.0.0	RW

6.3.2. Set the Device Name for ADIO-PN (PROFINET) Model

When connecting the ADIO-PN to the atIOLink, the PROFINET device name can be set in the **MASTER CONTROL » PROPERTY**. The device name set on the atIOLink is stored in the ADIO-PN's EEPROM.

1. Select the **MASTER CONTROL » PROPERTY**.
2. Select **READ ALL**. The values stored in EEPROM are displayed.

MASTER INFO PORT CONTROL PROPERTY						
READ ALL						
NAME	DESCRIPTION	VALUE	INPUT		HEXADECIMAL	RANGE
ID-Link Master Model	Product model name	ADIO-PN-MA08AP-ILM			DATA	
PW Revision	PW revision of ADIO series	1.00.444			DATA	
Rotary Switches' Setting	3 rotary switch values	0			DATA	0-999
Default MAC Address	Product unique MAC ID (fixed at the factory)	00:0E:C7:09:B2:19			DATA	
PROFINET Device Name	PROFINET device name	adio-pn-ma08a-ilm			WRITE	
Administrator Mode	Activate the setting window for technical support to obtain product produc				WRITE	
Restore to Factory Settings	Restore product settings to factory defaults				WRITE	0-1
Device Restart	Reset the product by SW				WRITE	0-1

3. Enter the PROFINET device name and select **WRITE**.

Name	Factory settings	Access
PROFINET device name	ADIO-PN-MA08□-ILM	RW



To designate a PROFINET device name should follow the rules below.

- Lowercase letters (a to z), number, hyphens (-), periods (.)
- Do not enter the hyphens and periods at the first and last places of the PROFINET device name.

6.3.3. Common Functions

Name	Description	Access
IO-Link Master model	The model name of the connected IO-Link Master.	RO
Firmware revision	The firmware revision of the connected IO-Link Master.	RO
Rotary switches' setting	The current number of rotary switches on the ADIO.	RO
Default MAC address	The MAC ID of the connected IO-Link Master.	RO
Restore to factory settings	To restore the parameter values to the factory settings, enter 1 and select WRITE .	WO
Device restart	To restart the ADIO, enter 1 and select WRITE .	WO

6.4. Firmware Update for the IO-Link Master

6.4.1. Check the Firmware Version

Check the SW revision in the **MASTER CONTROL » MASTER INFO. » Additional info.**

MASTER INFO.	
Vendor name:	Autonics Corporation
Vendor ID:	899
Master Name:	ADIO-EI-MA08A-ILM
Master ID:	1001
Master type:	Unspecific
The number of ports:	8
Additional Info:	
SW revision: 110."N"."N":0 HW revision: 200045C Description: Autonics 8 port IO-Link Master.	

6.4.2. Firmware Update

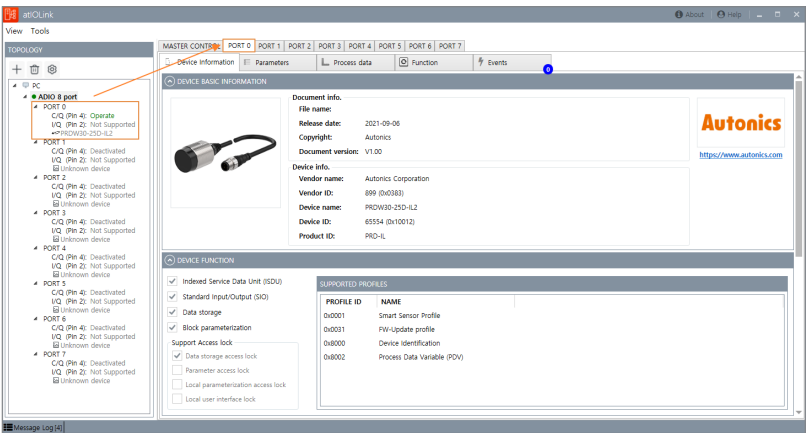
Please contact the Autonics to update the firmware of ADIO (IO-Link master type).

7. Functions for the IO-Link Device



The screens in this document may differ depending on the imported IODD file.

The IO-Link device is connected to the PC via the IO-Link Master. In the upper right corner of the screen, select the port number that the IO-Link device is connected to use the tabs below.



- **Device Information**
- **Parameters**
- **Process data**
- **Function**
- **Events**

7.1. Check the IO-Link Device Information

- **DEVICE BASIC INFORMATION**

The information about the IODD file including the distribution date, version, Device ID, Vendor ID, and more.



Document info.

File name:

Release date: 2021-09-06

Copyright: Autonics

Document version: V1.00

Device info.

Vendor name: Autonics Corporation

Vendor ID: 899 (0x0383)

Device name: PRDW30-25D-IL2

Device ID: 65554 (0x10012)

Product ID: PRD-IL


<https://www.autonics.com>

- **DEVICE FUNCTION**

The supported functions and profiles of the IO-Link device.

☑ Indexed Service Data Unit (ISDU)

☑ Standard Input/Output (SIO)

☑ Data storage

☑ Block parameterization

Support Access lock

☑ Data storage access lock

☐ Parameter access lock

☐ Local parameterization access lock

☐ Local user interface lock

SUPPORTED PROFILES

PROFILE ID	NAME
0x0001	Smart Sensor Profile
0x0031	FW-Update profile
0x8000	Device Identification
0x8002	Process Data Variable (PDV)

• **COMMUNICATION NETWORK**

The information about the version, transmission speed, data length, connector, and wirings of the IO-Link device.

COMMUNICATION NETWORK

IO-Link revision:

V1.1

Bitrate:

COM2 (38,4 kbit/s)

Minimum cycle time:

2300 µs

Compatible with (v1.0) :

No

Input length of process data:

2 byte

Output length of process data:

0 byte

The data length of Operate On-Reques

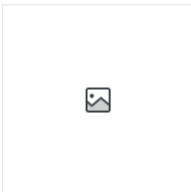
1 byte (TYPE2_2)

Data length of Preoperative On-Reque

8 byte (TYPE1_V)

CONNECTION

Connection type: M12-4 Connection



Wirings

TYPE	COLOR	FUNCTIONS	NAME
Wire 1		L+	
Wire 2		Other	
Wire 3		L-	
Wire 4		C/Q	

• **SUPPORTED EVENTS**

The list of defined events on the IO-Link device.

CODE	TYPE	NAME	DESCRIPTION
36350	Error	Test Event A	
36351	Error	Test Event B	
6145	Warning	Coil Disconnection	
6146	Warning	Short Circuit	
6147	Warning	Over Temperature	
6148	Warning	Supply Under Voltage	
6149	Warning	Operation Time Alarm	

• **SUPPORTED ERRORS**

The list of defined errors on the IO-Link device.

CODE	ADDITION/	NAME	DESCRIPTION
128	0	Device application error - no details	Service has been refused by the device application and no c
128	17	Index not available	Access occurs to a not existing index
128	18	Subindex not available	Access occurs to a not existing subindex
128	32	Service temporarily not available	Parameter is not accessible due to the current state of the c
128	33	Service temporarily not available - local cor	Parameter is not accessible due to an ongoing local operati
128	34	Service temporarily not available - device o	Parameter is not accessible due to a remote triggered state
128	35	Access denied	Write access on a read-only parameter

7.1. Check the IO-Link Device Information 43

7.2. Access the ISDU Parameters

You can change the parameter value of the IO-Link device in the parameters tab. It supports the offline and online mode.

Offline mode

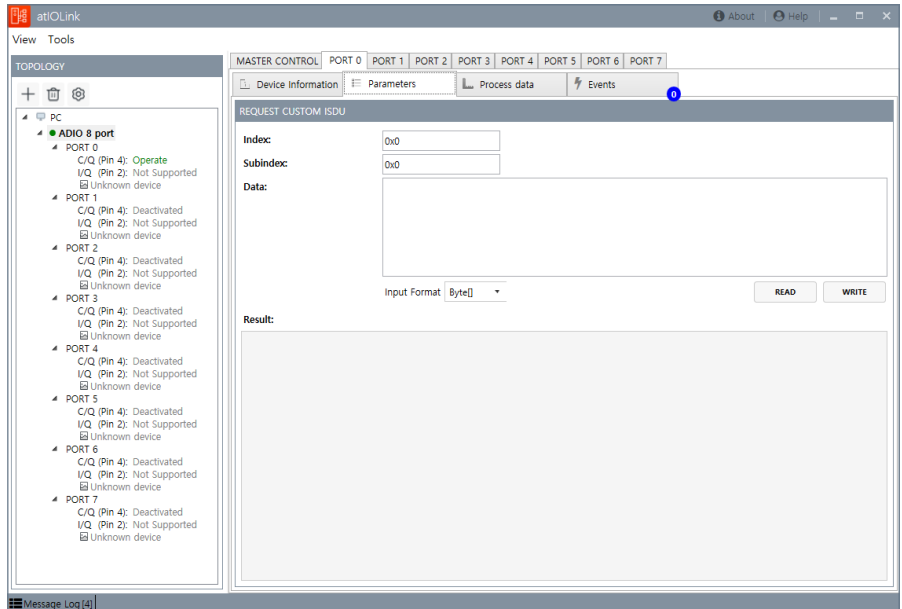
- Port status: Operate
- C/Q (Pin 4) mode: IO-Link Autostart
- IODD files: None

Online mode

- Port status: Operate
- C/Q (Pin 4) mode: IO-Link Autostart, IO-Link Manual
- IODD file: Imported

7.2.1. Offline Mode

You can change the parameter values using the index and subindex defined on the IO-Link device. In general, you can find the related information on the instructions manual of the IO-Link device.



- **Index**

Range: 0 to 65535

Format: Decimal and hexadecimal

- **Subindex**

Range: 0 to 255

Format: Decimal and hexadecimal

- **Data**

Enter the data to be written.

Format: Byte[] and UTF-8

- **Result**

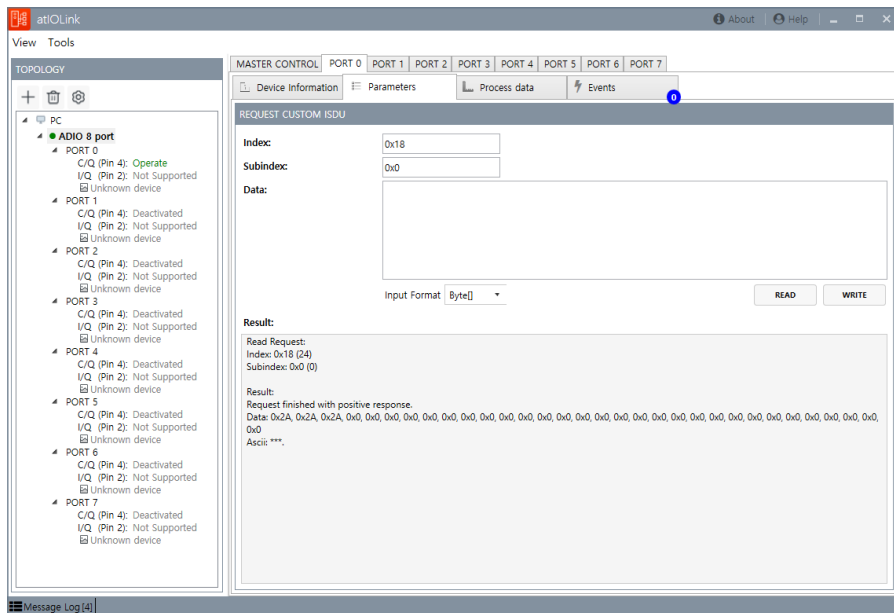
It shows the result of read and write.

Format: ASCII text

7.2.1.1. Read the Parameter



- Suggested index: 24 (0x18, Application specific tag)
- The decimal format is automatically converted to the hexadecimal.

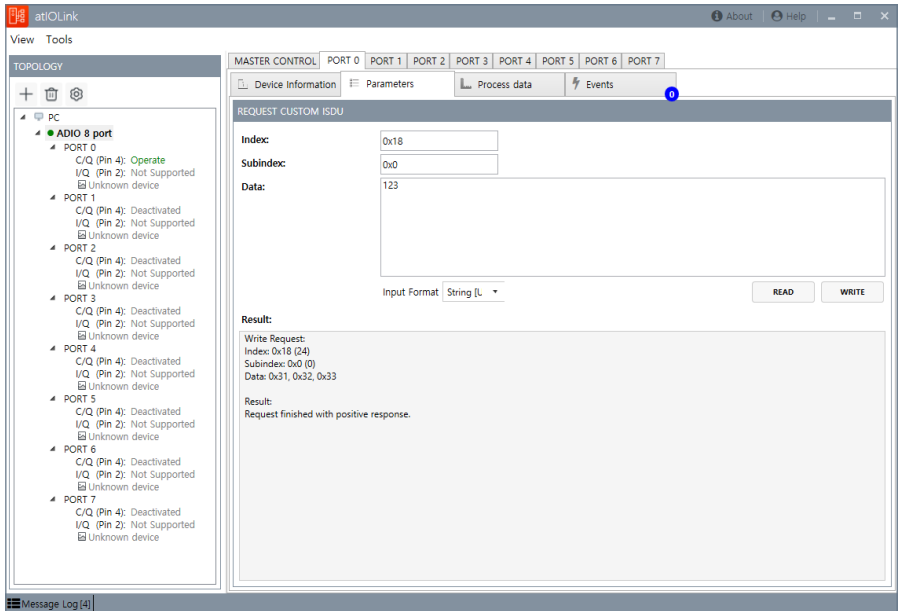


1. **Index** : Enter the parameter index of the IO-Link device.
2. Select **READ**.
3. Check the result.

7.2.1.2. Write the Parameter

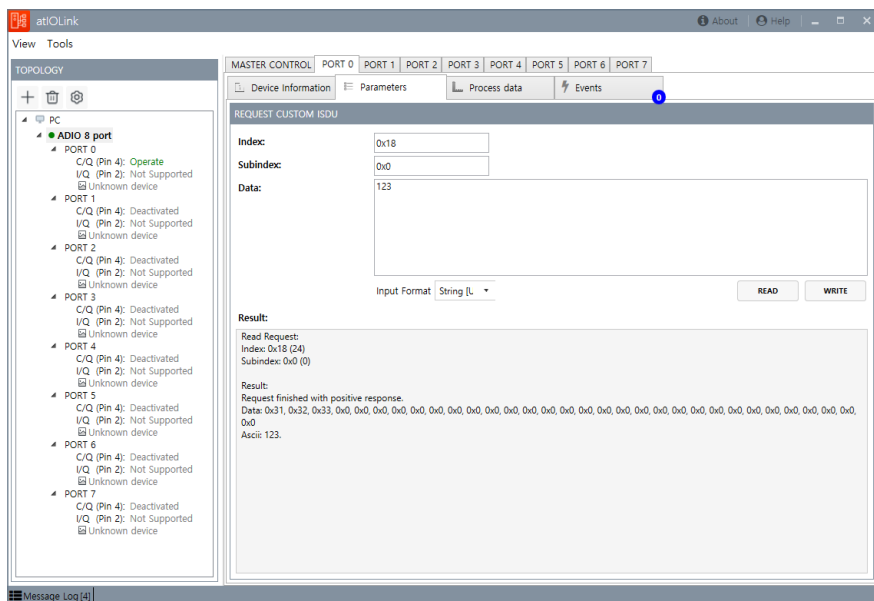


- Suggested index: 24 (0x18, Application specific tag)
- Data to be written: 123
- The decimal format is automatically converted to the hexadecimal.



1. **Index** : Enter the parameter index of the IO-Link device.
Data: Select the input format and enter the data to be written.
2. Select **WRITE**.
3. Check the result.

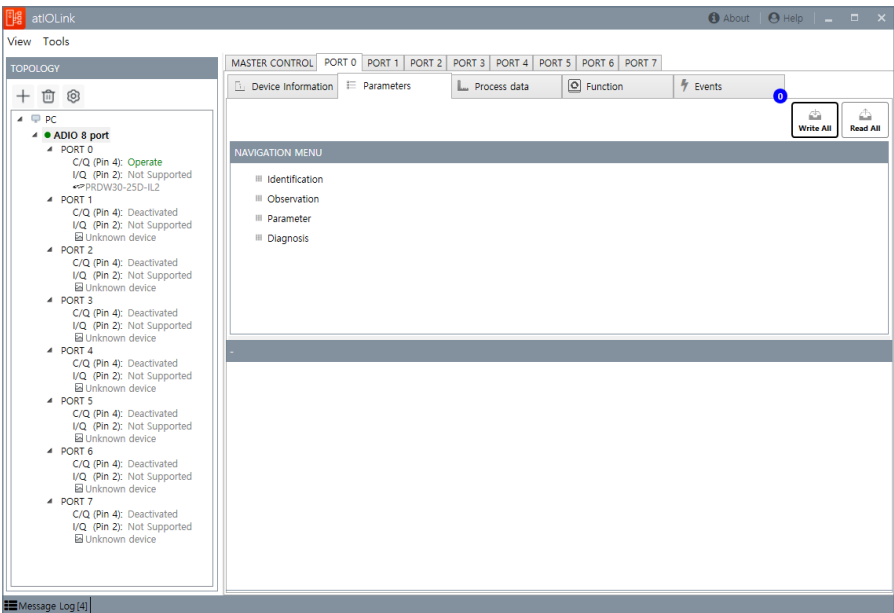
4. Read-out again to check whether the write is successfully applied.



7.2.2. Online Mode

The parameters tab shows the parameter menu defined in the IODD file. You can check the list of parameters in the right of the screen by selecting the each menu.

Select **Write All** / **Read All** to read and write all corresponding parameters.



7.2.2.1. Read and Write the Parameters

The status of parameter

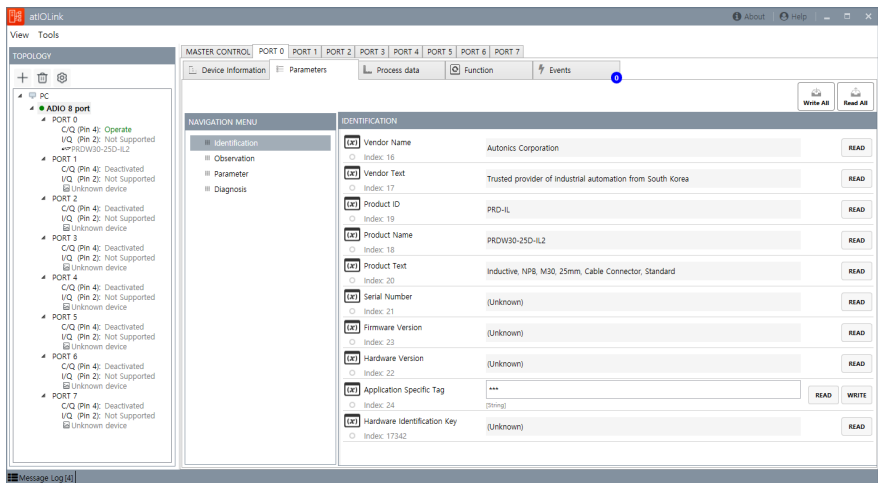
: Unknown values. Read the parameters.

: The parameter value is changed but you need to write the value to the IO-Link device.

: The read/write of the parameters completed.

: The read/write of the parameters failed.

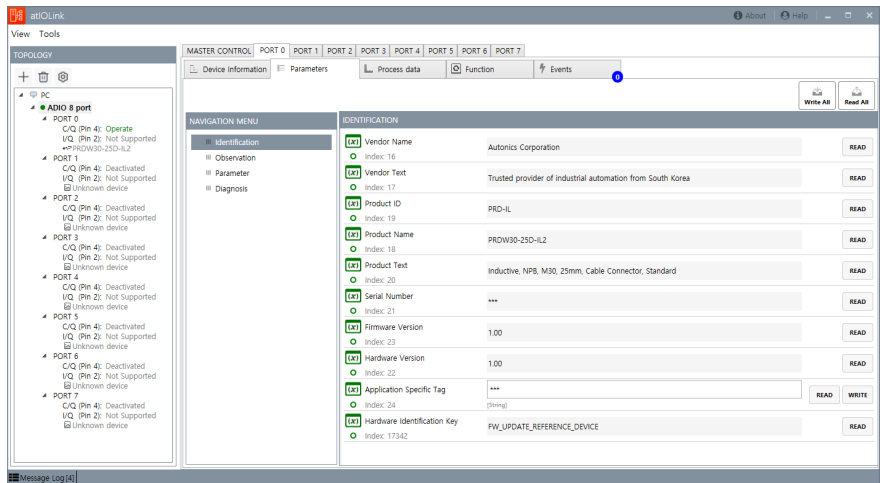
1. Select the Parameters tab to check the parameter list of the IO-Link device.



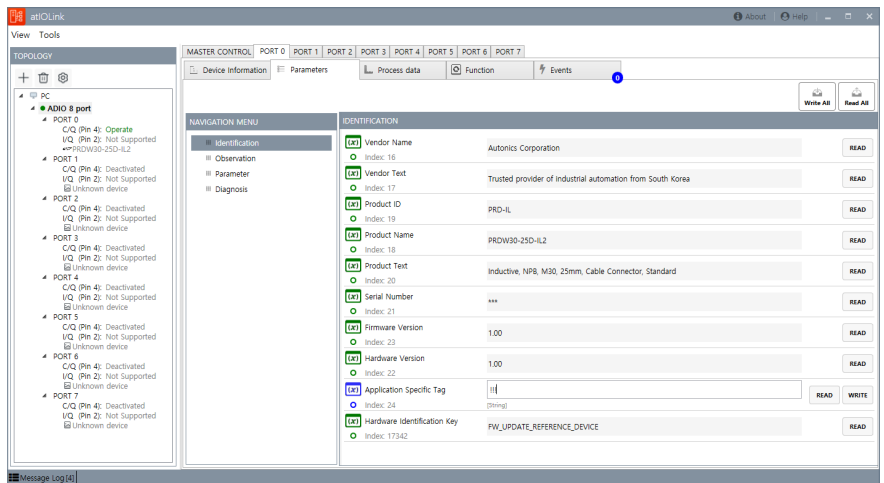
The screenshot shows the atIOLink software interface. On the left is a 'TOPOLOGY' tree with a tree icon, a minus icon, and a plus icon. It lists 'PC' and 'ADIO 8 port'. Under 'ADIO 8 port', there are seven ports (PORT 0 to PORT 7). Each port has a status: 'C/Q (Pin 4): Operate', 'I/Q (Pin 2): Not Supported', and 'PRD-W30-25D-IL2'. PORT 0 is selected. The main area is divided into two panes. The left pane is 'NAVIGATION MENU' with 'Identification', 'Observation', 'Parameter', and 'Diagnosis'. The right pane is 'IDENTIFICATION' and shows a list of parameters for PORT 0. Each parameter has a status icon (Unknown, Changed, or Completed), a value, and a 'READ' or 'WRITE' button. The parameters are: Vendor Name (Autonics Corporation), Vendor Text (Trusted provider of industrial automation from South Korea), Product ID (PRD-IL), Product Name (PRDW30-25D-IL2), Product Text (Inductive, NPB, M30, 25mm, Cable Connector, Standard), Serial Number ([Unknown]), Firmware Version ([Unknown]), Hardware Version ([Unknown]), Application Specific Tag (***), and Hardware Identification Key ([Unknown]).

Parameter	Status	Value	Action
Vendor Name	Unknown	Autonics Corporation	READ
Vendor Text	Unknown	Trusted provider of industrial automation from South Korea	READ
Product ID	Unknown	PRD-IL	READ
Product Name	Unknown	PRDW30-25D-IL2	READ
Product Text	Unknown	Inductive, NPB, M30, 25mm, Cable Connector, Standard	READ
Serial Number	Unknown	[Unknown]	READ
Firmware Version	Unknown	[Unknown]	READ
Hardware Version	Unknown	[Unknown]	READ
Application Specific Tag	Unknown	***	READ WRITE
Hardware Identification Key	Unknown	[Unknown]	READ

2. Select **Read All** on the right of the screen.
When the read is complete, the status icon of parameter is displayed in green.



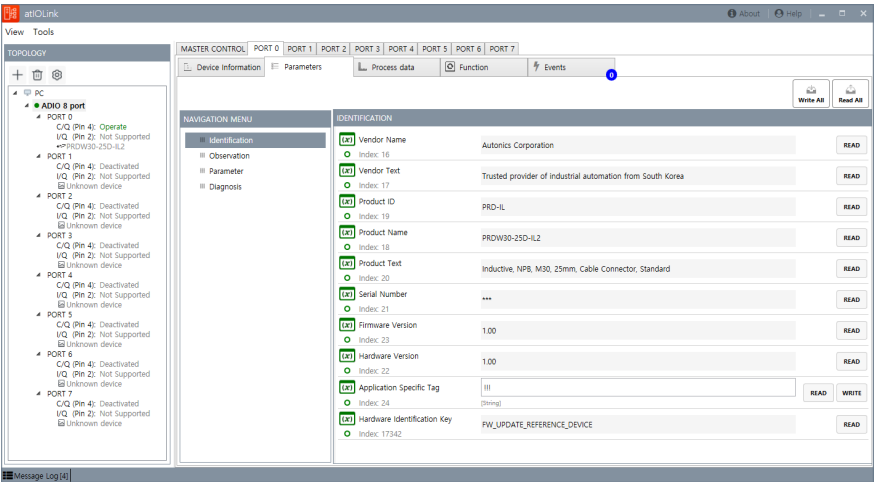
3. Let's change the value of the Application specific tag to "!!!".
The status icon of parameter is displayed in blue during the modification.



4. Select **WRITE** to apply the data to the IO-Link device.

When the write is complete, the status icon of parameter is displayed in green.

Select **READ** to check the written data.



7.3. Monitor the C/Q SIO / Process Data

The process data tab shows the input and output process data depending on the C/Q (Pin 4) mode. In case of the output process data, you can set the output value.

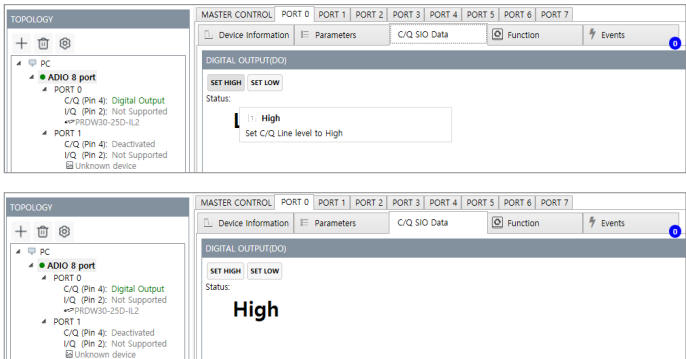
DIGITAL INPUT (DI)

- It displays the status High and Low.



DIGITAL OUTPUT (DO)

- You can change the output value by selecting **SET HIGH** or **SET LOW**.



IO-Link mode (IO-Link Autostart, IO-Link Manual)

- You can check the input data and change the output data of the IO-Link device.

TOPOLOGY

PC

ADIO 8 port

PORT 0

C/Q (Pin 4): Digital Output

VQ (Pin 2): Not Supported

PROW30-25D-6.2

PORT 1

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

Unknown device

PORT 2

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

Unknown device

PORT 3

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

Unknown device

PORT 4

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

Unknown device

PORT 5

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

Unknown device

PORT 6

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

Unknown device

PORT 7

C/Q (Pin 4): Operate

VQ (Pin 2): Not Supported

BNL IOL-302-S0...

MASTER CONTROL | PORT 0 | PORT 1 | PORT 2 | PORT 3 | PORT 4 | PORT 5 | PORT 6 | PORT 7

Device Information

Parameters

Process data

Function

Events

PROCESS DATA INPUT (V_P0T)

VALIDITY: VALID | LENGTH: 8 byte

RAW DATA

0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0, 0x0

NAME	VALUE	UNIT
Switchstate Port 0 - Pin 4	false (false)	
Switchstate Port 1 - Pin 4	false (false)	
Switchstate Port 2 - Pin 4	false (false)	
Switchstate Port 3 - Pin 4	false (false)	
Switchstate Port 4 - Pin 4	false (false)	
Switchstate Port 5 - Pin 4	false (false)	

PROCESS DATA OUTPUT (V_P0T)

LENGTH: 2 byte | SET

RAW DATA

0x0, 0x0

NAME	VALUE	UNIT
Switchstate Port 0 - Pin 4	false (false)	
Switchstate Port 1 - Pin 4	false (false)	
Switchstate Port 2 - Pin 4	true (true)	
Switchstate Port 3 - Pin 4	false (false)	
Switchstate Port 4 - Pin 4	false (false)	

7.4. Data Storage

The data storage can be used under the following conditions.

- IO-Link version: 1.1 or higher
- C/Q (Pin 4) mode: IO-Link Manual

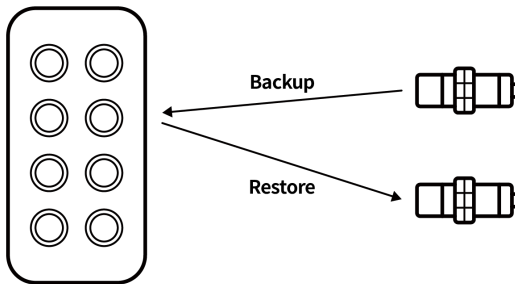
DS mode

1. Restore

Apply/download the last updated parameters stored in the IO-Link Master to the compatible IO-Link device.

2. Backup / Restore

The whole parameters of IO-Link device are stored/uploaded in the IO-Link Master and apply/download it to the connected IO-Link device.



7.4.1. Configure the Data Storage



- DS port: port 0
- Suggested parameter of the IO-Link device: Target too Close
- Parameter index of Target too Close: 65 (0x41)

1. Configure the port as shown below to use the data storage.

PORT 0 - PRDW30-25D-IL2

CONFIGURATION

C/Q (Pin4) mode:

DS mode:

Cycle time:

Connected Device:

Vendor ID: Device ID: Revision:

APPLY

2. Check that the button of Read DS is activated in the **PORT 0 » Function tab » DATA STORAGE**.

atiOLink

View Tools

TOPOLOGY

- PC
 - ADIO 8 port
 - PORT 0
 - C/Q (Pin 4): Operate
 - I/Q (Pin 2): Not Supported
 - PRDW30-25D-IL2
 - PORT 1
 - C/Q (Pin 4): Deactivated
 - I/Q (Pin 2): Not Supported
 - Unknown device
 - PORT 2
 - C/Q (Pin 4): Deactivated
 - I/Q (Pin 2): Not Supported
 - Unknown device
 - PORT 3
 - C/Q (Pin 4): Deactivated
 - I/Q (Pin 2): Not Supported
 - Unknown device
 - PORT 4
 - C/Q (Pin 4): Deactivated
 - I/Q (Pin 2): Not Supported
 - Unknown device
 - PORT 5
 - C/Q (Pin 4): Deactivated
 - I/Q (Pin 2): Not Supported
 - Unknown device
 - PORT 6
 - C/Q (Pin 4): Deactivated
 - I/Q (Pin 2): Not Supported
 - Unknown device
 - PORT 7
 - C/Q (Pin 4): Deactivated
 - I/Q (Pin 2): Not Supported
 - Unknown device

MASTER CONTROL PORT 0 PORT 1 PORT 2 PORT 3 PORT 4 PORT 5 PORT 6 PORT 7

Device Information Parameters Process data Function Events

DATA STORAGE

DATA STORAGE

Read DS

PARAMETERS STORED IN THE DATA STORAGE

Data Storage Header

Vendor ID:

Device ID:

Function ID:

Parameter Checksum:

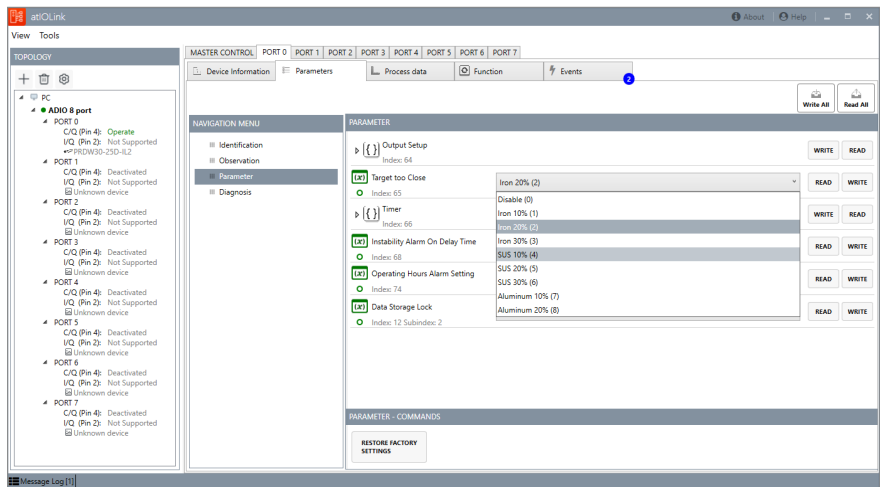
INDEX	SUBINDEX	LENGTH	DATA
-------	----------	--------	------

Message Log [0]

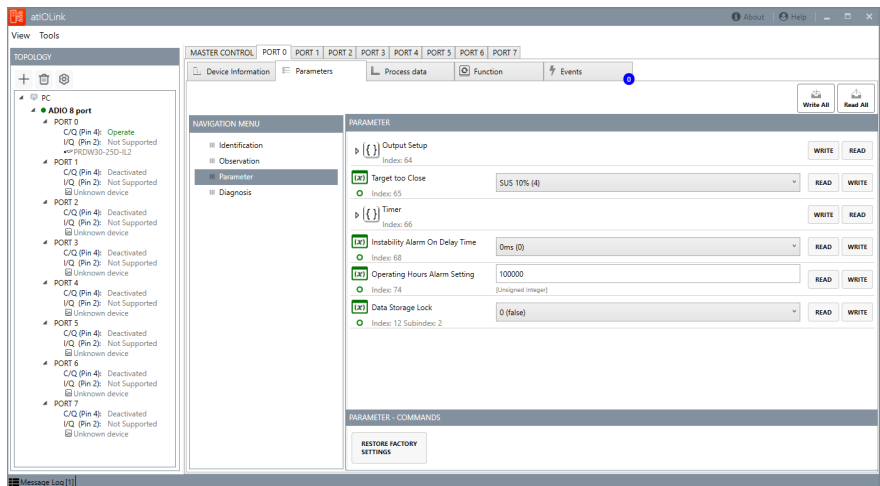
- You can find the index of Target too Close in the INDEX.



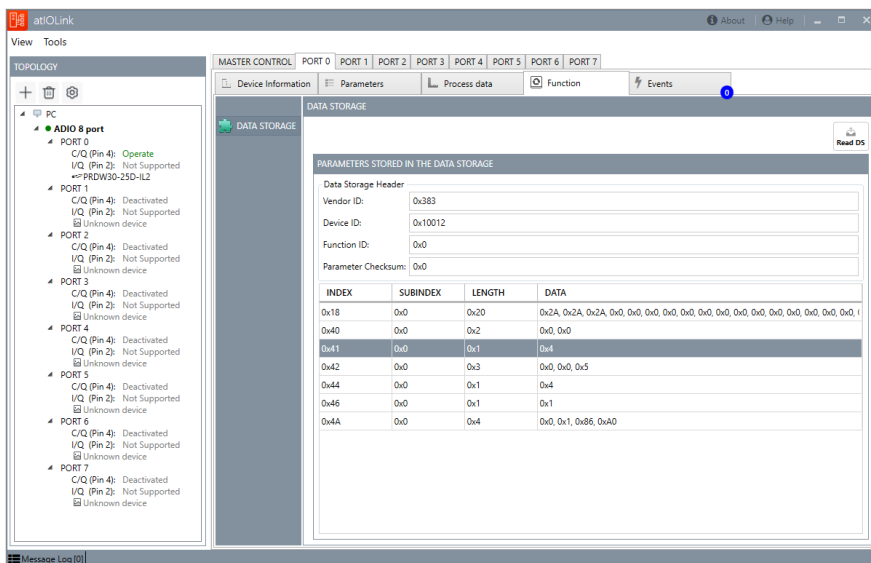
5. The current value of Target too Close is 2. In the figure below, the value has been changed to 4.



6. Select **WRITE** to apply the parameter value.



You can figure out the data of index 0x41 (Target too Close) has been changed to 0x4 (4) as shown in the figure below.



The changed parameter value is applied to port 0 on the IO-Link Master and the IO-Link device.

7.4.2. Usage Examples of the Data Storage



1. When the same IO-Link device is connected to a different port

Connect the IO-Link device on the port 0 to port 1 and check the Restore.

1. Disconnect the IO-Link device and connect it to port 1. The port configuration of port 1 is IO-Link Autostart.

PORT 1 - PRDW30-25D-IL2

CONFIGURATION

C/Q (Pin4) mode:

IO-Link Autostart

Connected Device:

PRDW30-25D-IL2

APPLY

2. Check Target too Close in the **PORT 1 » Parameters tab » NAVIGATION MENU » Parameter**.
The maintained value of Target too Close is 4.

atiLink

View Tools

TOPLOGY

PC

ADIO 8 port

PORT 0

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

PRDW30-25D-IL2

PORT 1

C/Q (Pin 4): Operate

VQ (Pin 2): Not Supported

PRDW30-25D-IL2

PORT 2

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

Unknown device

PORT 3

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

Unknown device

PORT 4

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

Unknown device

PORT 5

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

Unknown device

PORT 6

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

Unknown device

PORT 7

C/Q (Pin 4): Deactivated

VQ (Pin 2): Not Supported

Unknown device

MASTER CONTROL | PORT 0 | PORT 1 | PORT 2 | PORT 3 | PORT 4 | PORT 5 | PORT 6 | PORT 7

Device Information | Parameters | Process data | Function | Events

NAVIGATION MENU

Identification

Observation

Parameter

Diagnosis

PARAMETER

Output Setup

Index: 64

WRITE

READ

Target too Close

SUS 10% (4)

Index: 65

WRITE

READ

Timer

Index: 66

WRITE

READ

Instability Alarm On Delay Time

300ms (4)

Index: 68

WRITE

READ

Operating Hours Alarm Setting

100000

Index: 74

WRITE

READ

Data Storage Lock

0 (false)

Index: 12 Subindex: 2

WRITE

READ

PARAMETER - COMMANDS

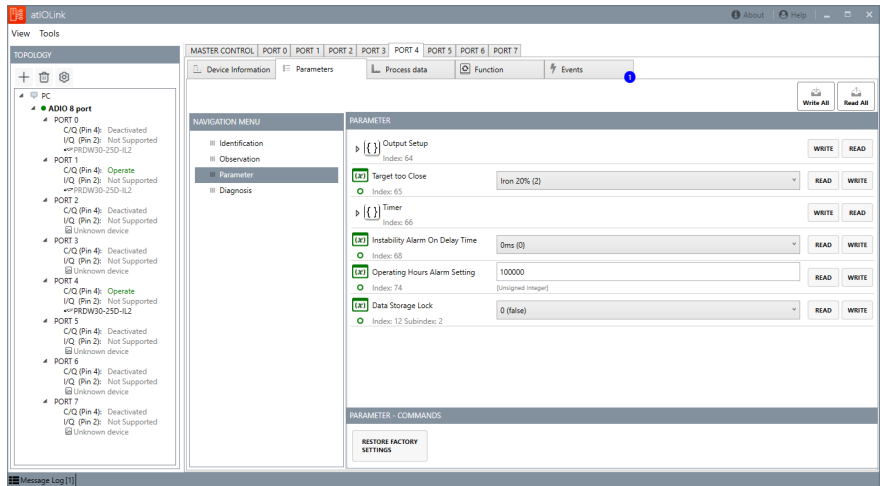
RESTORE FACTORY SETTINGS



2. When connecting a new IO-Link device to the DS port

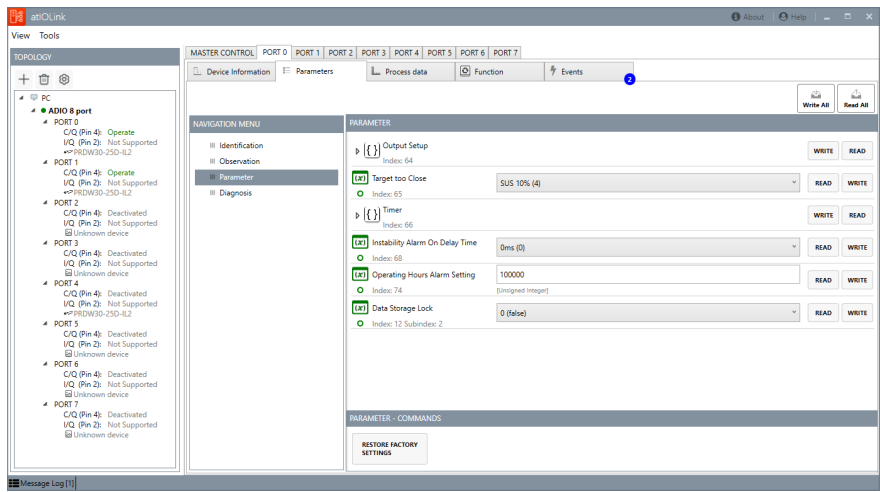
Connect a new IO-Link device (same model) to port 0 for the data storage and check Backup / Restore.

1. Check Target too Close in the **PORT 4 » Parameters tab » NAVIGATION MENU » Parameter**.
The value of Target too Close in port 4 is 2.



2. Connect the new IO-Link device to port 0 for the DS.

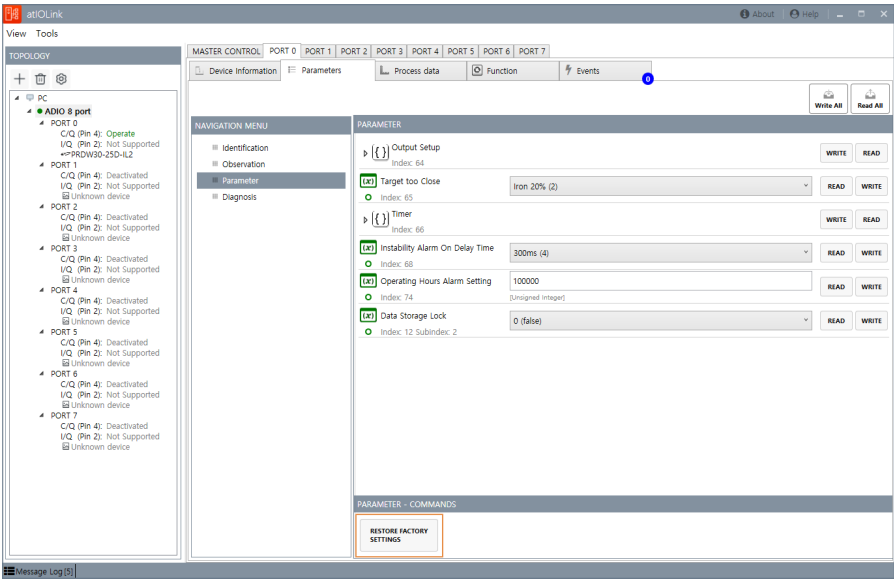
3. Check Target too Close in the **PORT 0 » Parameters tab » NAVIGATION MENU » Parameter**.
Changed value of Target too Close is 4.



7.5. Restore to Factory Settings

You can reset the IO-Link device to the factory settings if the connected IO-Link device supports it.

- Select **RESTORE FACTORY SETTINGS** in the Parameters tab.



7.6. Check the Errors

The Events tab shows error lists occurred in the IO-Link Master and IO-Link devices. The events for IO-Link device are defined in the IODD file.

Event indicator

- Blue: Notification type
- Orange: Warning type
- Red: Error type

7.7. Replace the IO-Link Device



1. Prepare a new IO-Link device with the factory settings.
2. A new IO-Link device supports the IO-Link version 1.1 or higher.

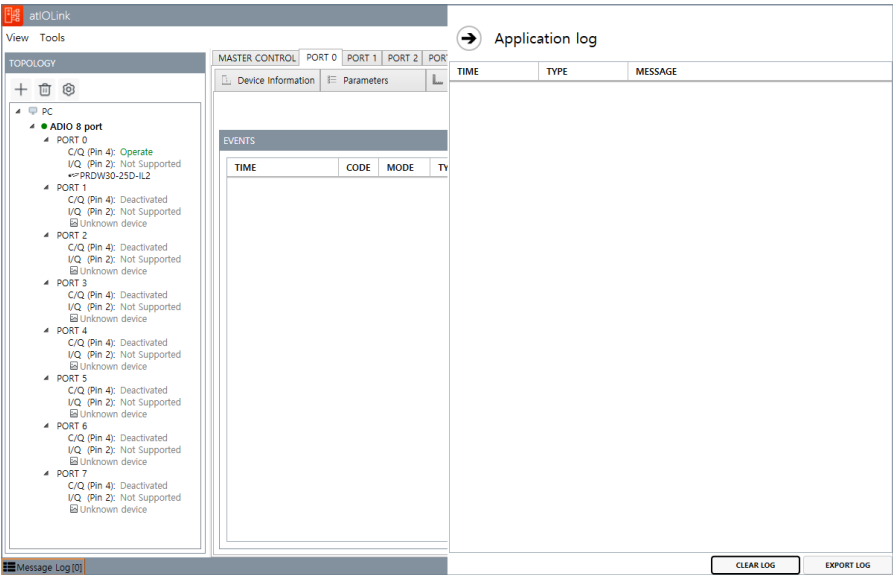
1. Disconnect the old or damaged IO-Link device on the IO-Link Master.
2. Connect the new IO-Link device to the same port.
3. Apply/download the parameter sets stored in the IO-Link Master to the connected IO-Link device.
Refer to 7.4.1, “Configure the Data Storage”.

8. Message Log

It shows errors occurred in the software application.

Select **EXPORT LOG** to save the error list with a text file.

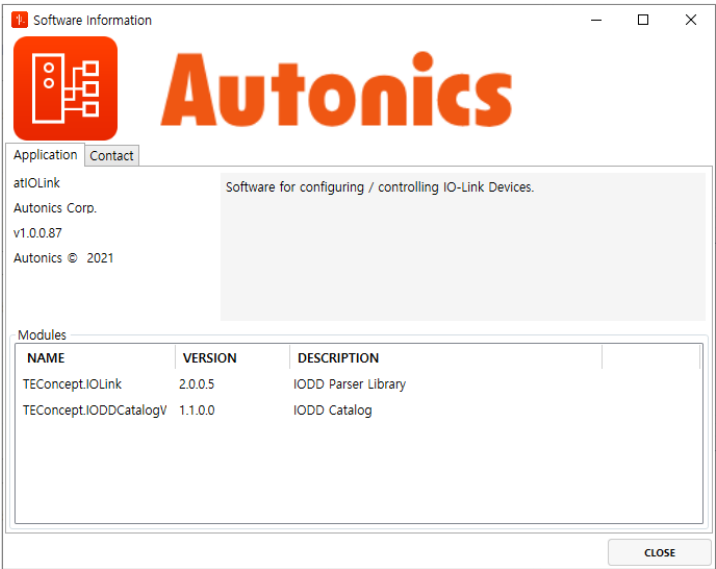
- Select the Message Log at the bottom left of the screen.



9. Software Information

You can check the version of atIOLink.

- Select **About** at the upper right corner of the screen.



Autonics

Dimensions or specifications on this manual are subject to change and some models may be discontinued without notice.

www.autonics.com