



# Operation Manual

PRODUCT NAME

Fieldbus system  
IO-Link Setting tool

MODEL / Series / Product Number

IO-Link Device Tool V5.1 PE

**SMC Corporation**

# Contents

1. Outline	<a href="#">2</a>
2. System Requirements and How to Obtain the Software	<a href="#">3</a>
3. Connection between an EX series and aPC	<a href="#">4</a>
4. Software Installation	<a href="#">5</a>
5. Starting the Software	<a href="#">8</a>
6. Importing an IOLM File	<a href="#">9</a>
7. Importing an IODD File	<a href="#">11</a>
8. How to Use the Software	<a href="#">13</a>
8.1. The IO-Link Module setting screen	<a href="#">13</a>
8.1.1. Search Master	<a href="#">13</a>
8.1.2. Individual selection	<a href="#">14</a>
8.2. IO-Link Module Setting Screen	<a href="#">15</a>
8.3. Common Screen	<a href="#">15</a>
8.4. Port Config Screen	<a href="#">16</a>
8.4.1. Reading the IO-Link Port Setting	<a href="#">16</a>
8.4.2. Changing the Setting of the IO-Link Ports (for EX600-SEN3-X80 only)	<a href="#">17</a>
8.4.3. Scanning IO-Link Devices	<a href="#">18</a>
8.4.4. IO-Link Device Checking / Data Storage Function Setting (for EX600-SEN3-X80 only)	<a href="#">19</a>
8.4.5. Port Config Details	<a href="#">20</a>
8.5. Setting Screen	<a href="#">21</a>
8.5.1. Reading IO-Link Module Parameters	<a href="#">21</a>
8.5.2. Setting the IO-Link Module Parameters (for EX600-SEN3-X80 only)	<a href="#">22</a>
8.6. Setting the IO-Link Devices	<a href="#">23</a>
8.6.1. Reading Information on IO-Link Devices	<a href="#">23</a>
8.6.2. IO-Link Device Process (Example using the ISE20B-L)	<a href="#">24</a>
8.6.3. IO-Link Device Identification (Example using the ISE20B-L)	<a href="#">24</a>
8.6.4. IO-Link Device Observation (Example using the ISE20B-L)	<a href="#">25</a>
8.6.5. IO-Link Device Parameter (Example using the ISE20B-L)	<a href="#">26</a>
8.6.6. IO-Link Device Diagnosis (Example using the ISE20B-L)	<a href="#">27</a>
8.6.7. IO-Link Device Scope (Example using the ISE20B-L)	<a href="#">27</a>
8.6.8. IO-Link Device Generic (Example using the ISE20B-L)	<a href="#">28</a>
8.6.9. IO-Link Device IODD (Example using the ISE20B-L)	<a href="#">29</a>

# 1.Outline

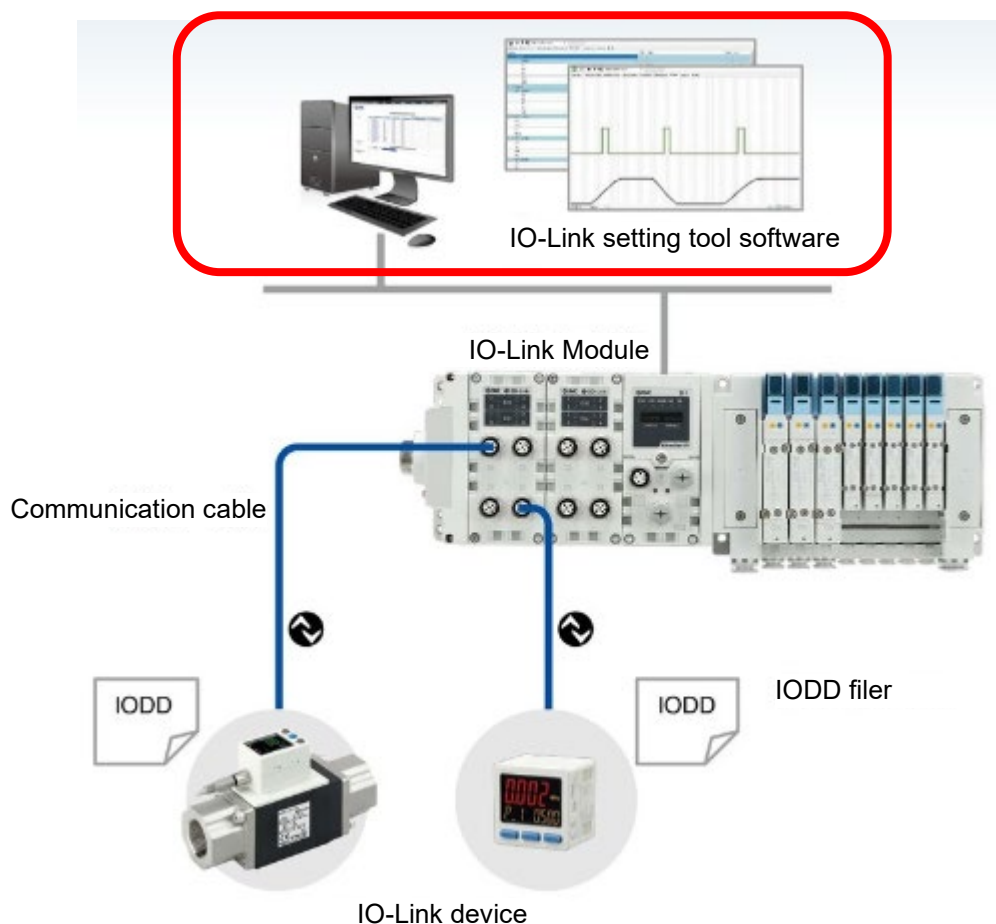
The IO-Link Device Tool is an application software for IO-Link developed by Technologie Management Gruppe (TMG hereafter) in Germany, that makes the following operations possible for the IO-Link Module in the EX600 and 245 series.

- Monitoring various parameters of IO-Link Module
- Monitoring and setting various parameters of IO-Link devices

Note: Applicable SI units and IO-Link Modules are as following.

SI unit	IO-Link Module
EX600-SPN3	EX600-LAB1、EX600-LBB1
EX600-SPN4	
EX600-SEN3-X80	
EX245-SPN1A	EX245-LA1、EX245-LB1
EX245-SPN2A	
EX245-SPN3A	

## IO-Link Device Tool



## 2. System Requirements and How to Obtain the Software

### ■ How to Obtain the Software

#### - IO-Link Device Tool

After click "Request for 30 days free version and quotation" at the website below and register user information, IO-Link Device Tool file can be downloaded.

- URL : <https://www.tmgte.de/en/products/io-link/io-link-device-tool-professional-edition.html>

#### - IOLM file

IOLM file can be downloaded from the website below.

- URL : <https://www.smcworld.com>

Documents/Download >> Instruction Manuals >> Fieldbus System Serial Transmission System >> IO-Link Module

### ■ License Key

- The IO-Link Device Tool can be used free of charge for 30 days after the first installation, but a license key is required after that period. A license key can be obtained in one of two ways:

- 1) Purchase one from TMG. Either CmActLicense (limited to a single PC) or a USB dongle (valid when connected to any PC)  
=> Contact TMG for details.

- 2) Purchase a USB dongle from SMC. Model No. EX9-ZSW-LDT1

### ■ Minimum System Requirements

Components	Requirements
Operating system	Windows10 (32-and 64-bit)
Memory	2GB
Free hard disk space	150MB
Processor	1GHz or higher, 32-bit(x86) or 64-bit(x64)
Screen resolution	800 × 600 pixels

### ■ Recommended System Requirements

Components	Requirements
Operating system	Windows10 (32-and 64-bit)
Memory	8GB
Free hard disk space	250MB
Processor	1GHz or higher, 64-bit(x64)
Screen resolution	1920 × 1080 pixels

### 3.Connection between an EX series and a PC

- Connect the EX series to a PC via a switching hub.

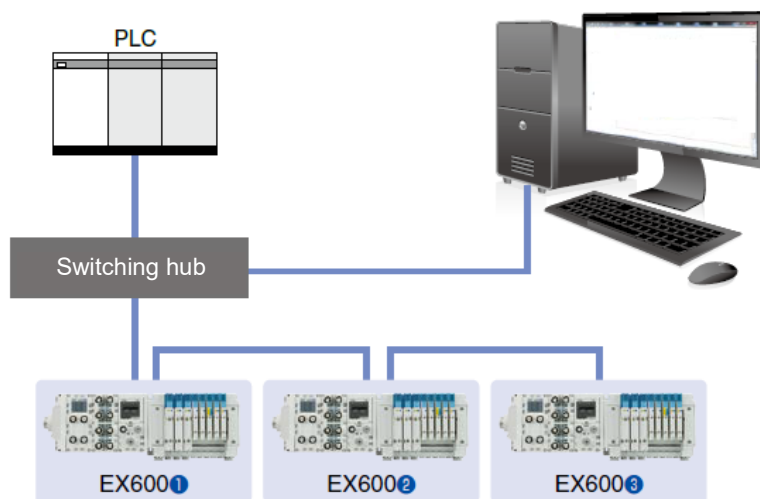


Fig. Example of a connection using a switching hub and EX600

- Using the EX9-AC\*\*\*EN-PSRJ cable, you can connect directly to either the BUS IN or the BUS OUT connector on the SI unit.

#### EX9-AC020EN -PSRJ

Cable length (L)	
010	1m
020	2m
030	3m
050	5m
100	10m

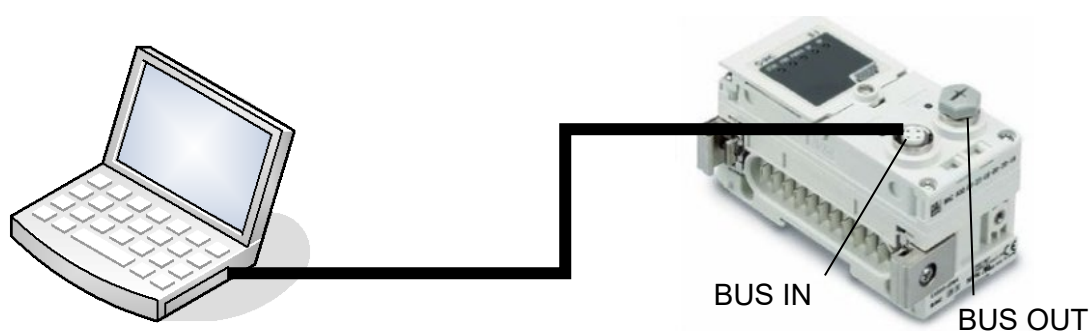
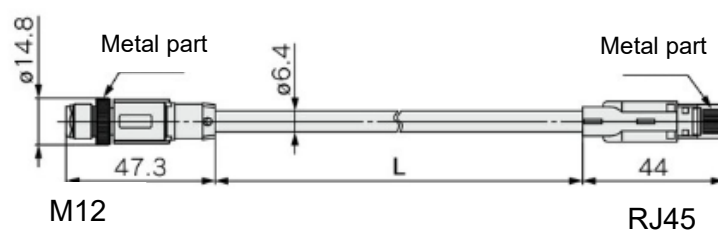
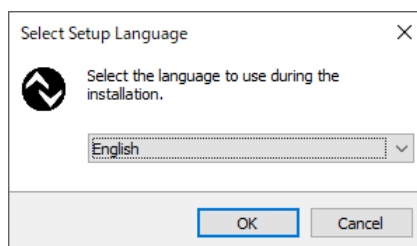


Fig. Example of a direct connection between a PC and SI unit(EX600)

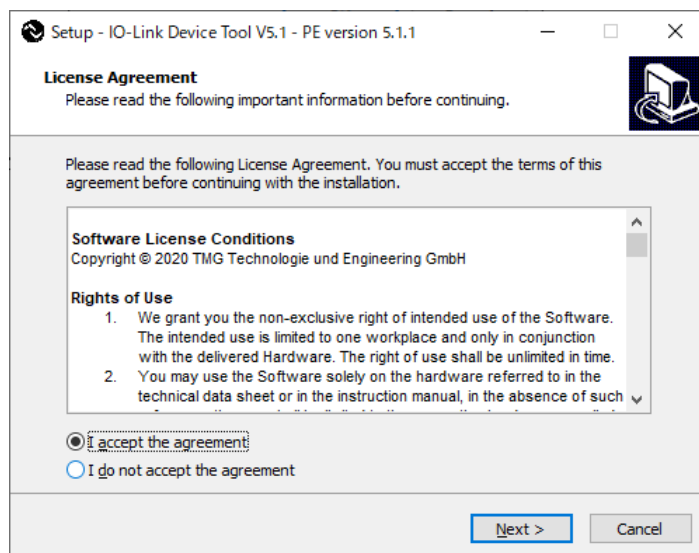
## 4. Software Installation

■ Install the software according to the following procedure:

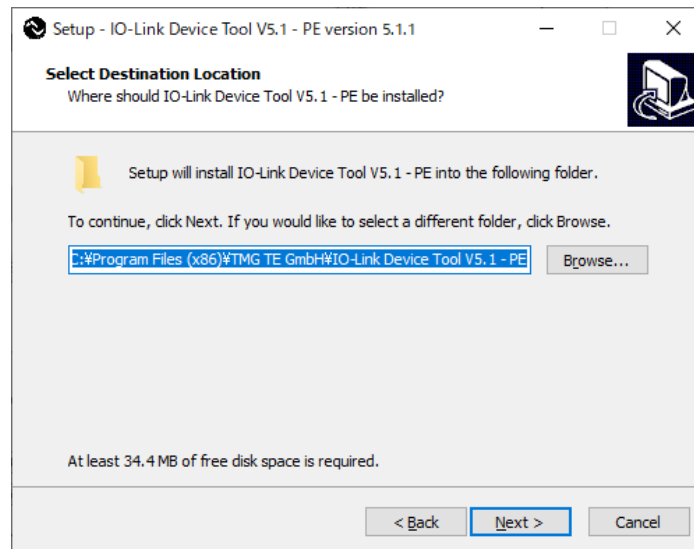
- If an old version of IO-Link Device Tool has been installed on the PC, be sure to uninstall it before installing the new version of IO-Link Device Tool.
- Double-click Setup.exe. The following screen will appear.



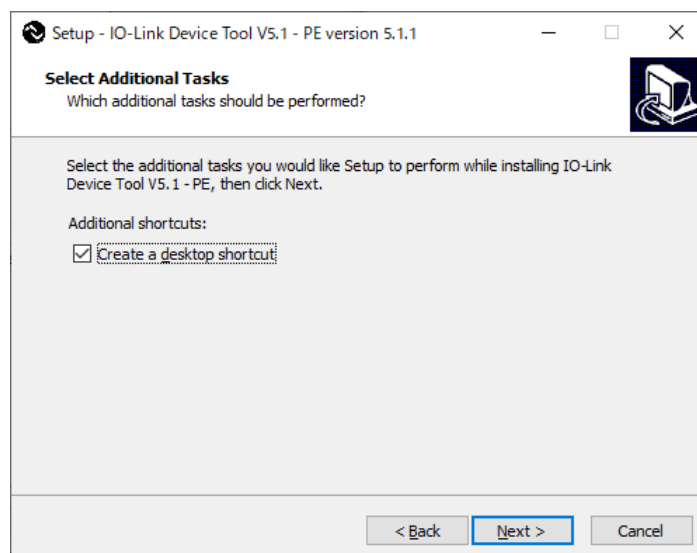
- Select a language and then press [OK].



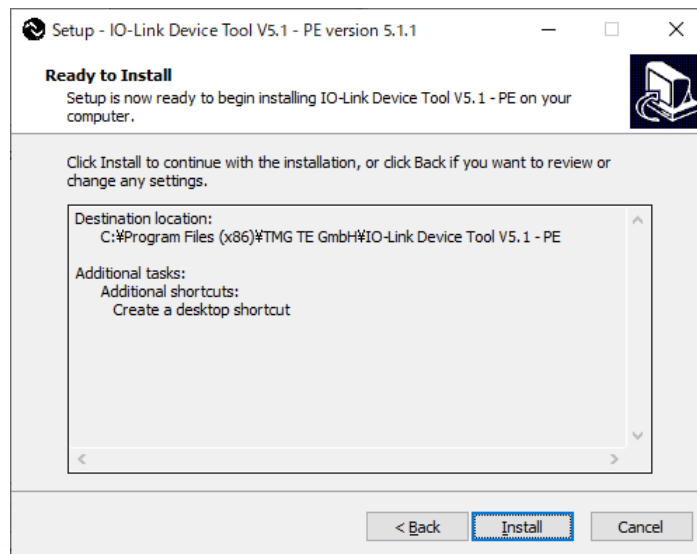
- Check the license terms, and if you agree, check "I accept the agreement" and then press [Next].



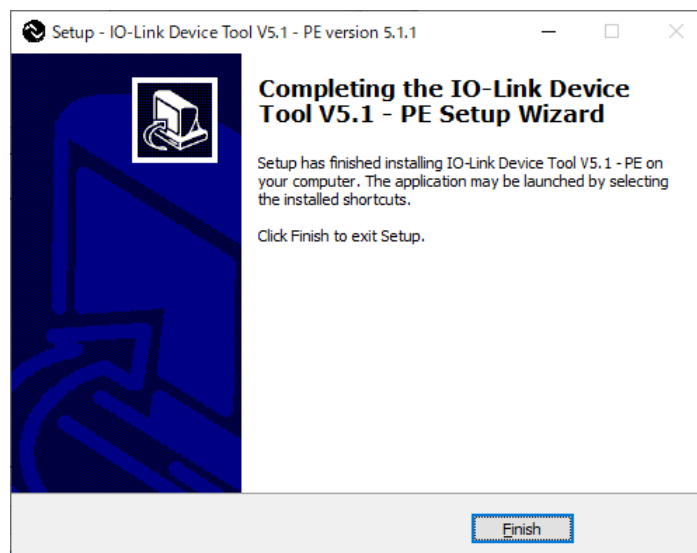
- Select a folder to save the software and then press [Next].



- If you want to add a shortcut, check "Create a desktop shortcut" and then press [Next].



- Check the installation conditions and if everything looks correct, press [Install].



- The above screen appears when the installation is successful. Then press [Finish].

The following description uses the manifold configuration example shown in Fig. 1.

	L#B	L#B	SPN#	
End plate	IO-Link Module	IO-Link Module	SI Unit	Valve
	Slot1	Slot2	Slot3	

EX600's IP address: 192.168.0.1



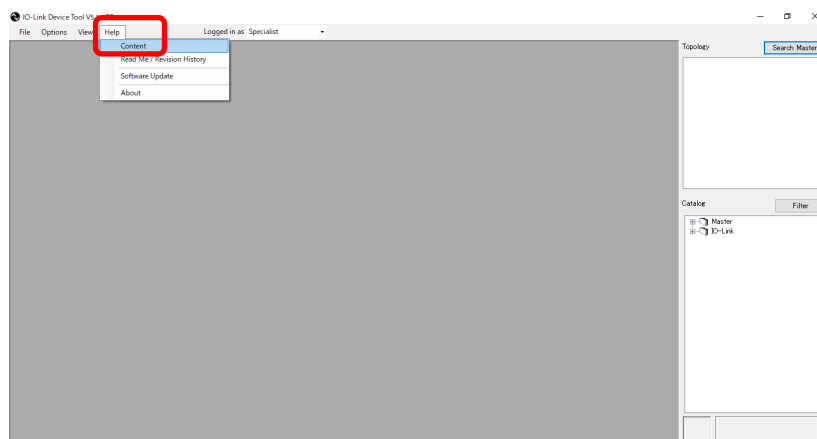
PC's IP address: 192.168.0.250

Fig. 1 EX600 manifold configuration example



## 5.Starting the Software

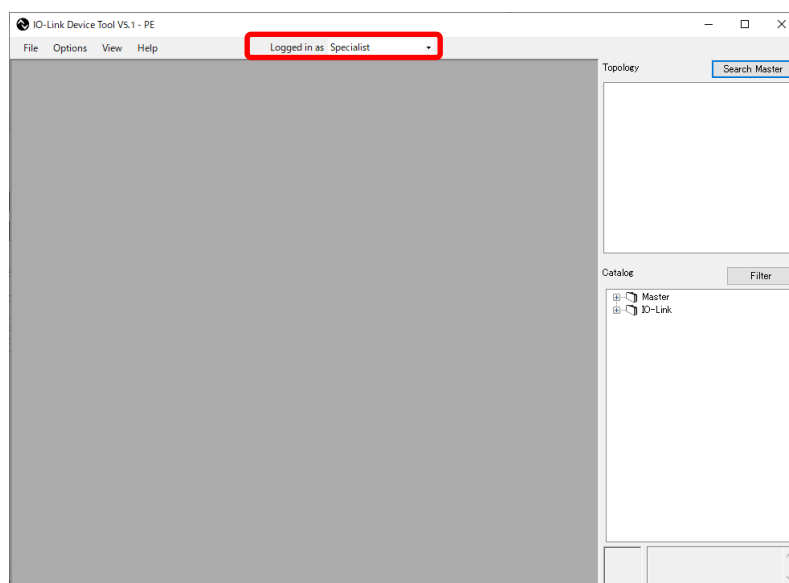
- When the IO-Link Device Tool V#. # is started, the following screen appears.
- Select the Help > Content, to refer to the User Manual prepared by TMG (read the manual for a detailed description of the operations).



- Select a user role depending on the user authorization.

User roles	Password setting	Initial password
Specialist	Allowed	special
Maintenance	Not allowed	maintain
Operator	Not allowed	None

\* For details of the user roles, refer to the User Manual.



## 6.Importing an IOLM File

- To use the IO-Link Module in the EX600 and EX245 series for IO-Link Device Tool, an IOLM file must be imported which is dedicated to this purpose.

For an EX600-SPN3/4 SI unit: SMC-EX600-SPN-LxB1-202\*\*\*\*-IOLM1.5zip

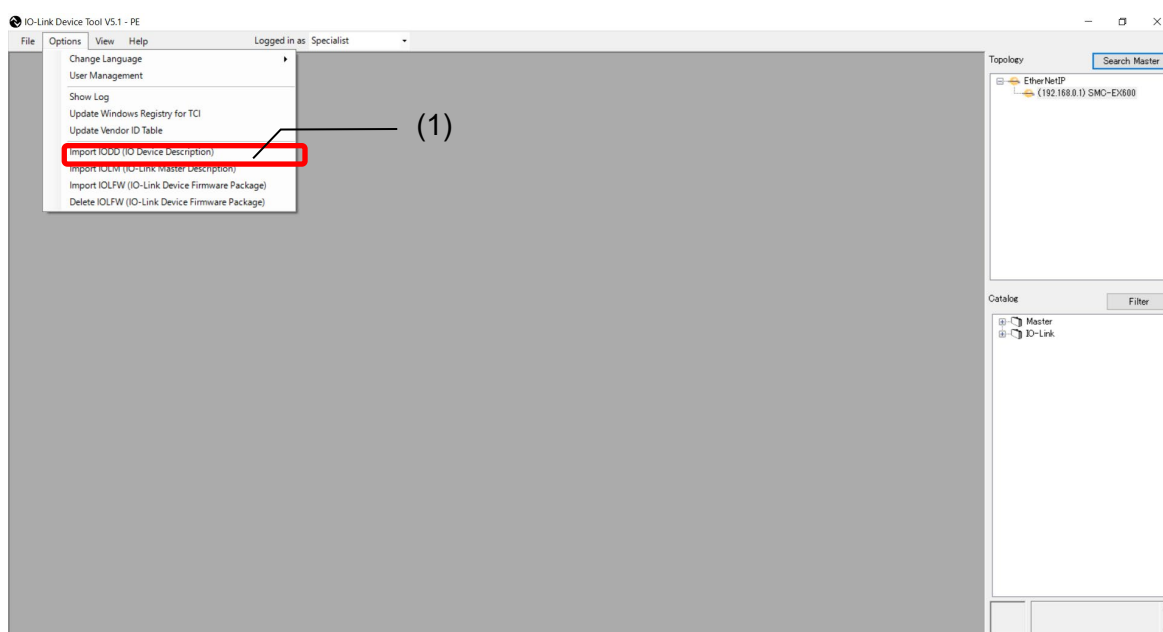
For an EX600-SEN3-X80 SI unit: SMC-EX600-LxB1-202\*\*\*\*-IOLM.zip

For an EX245-SPN1A SI unit: SMC-EX245-SPN\_FX-Lx1-202\*\*\*\*-IOLM1.5zip

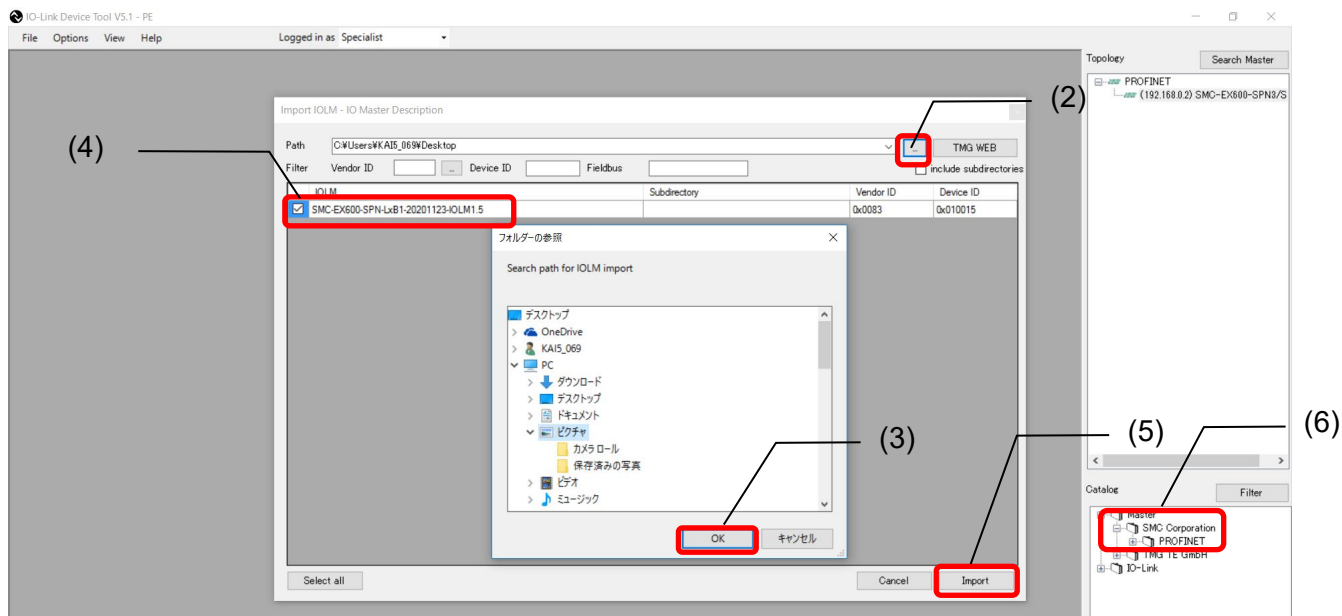
For an EX245-SPN2A/3A SI unit: SMC-EX245-SPN\_Cu-Lx1-202\*\*\*\*-IOLM1.5zip

- The following shows how to import an IOLM file.

(1) Select Options > Import IOLM (IO-Link Module Description).



- (2) Select a folder where the IOLM file in zip format is saved.
- (3) Press [OK].
- (4) Check the IOLM file to be imported.
- (5) Press [Import].
- (6) SMC-EX600 is added to the Module folder in the Catalog.



## 7.Importing an IODD File

- To set an IO-Link Device by using IO-Link Device Tool, an IODD file must be imported which is dedicated to this purpose.

- For how to obtain an IODD file, contact the manufacturer of your device.

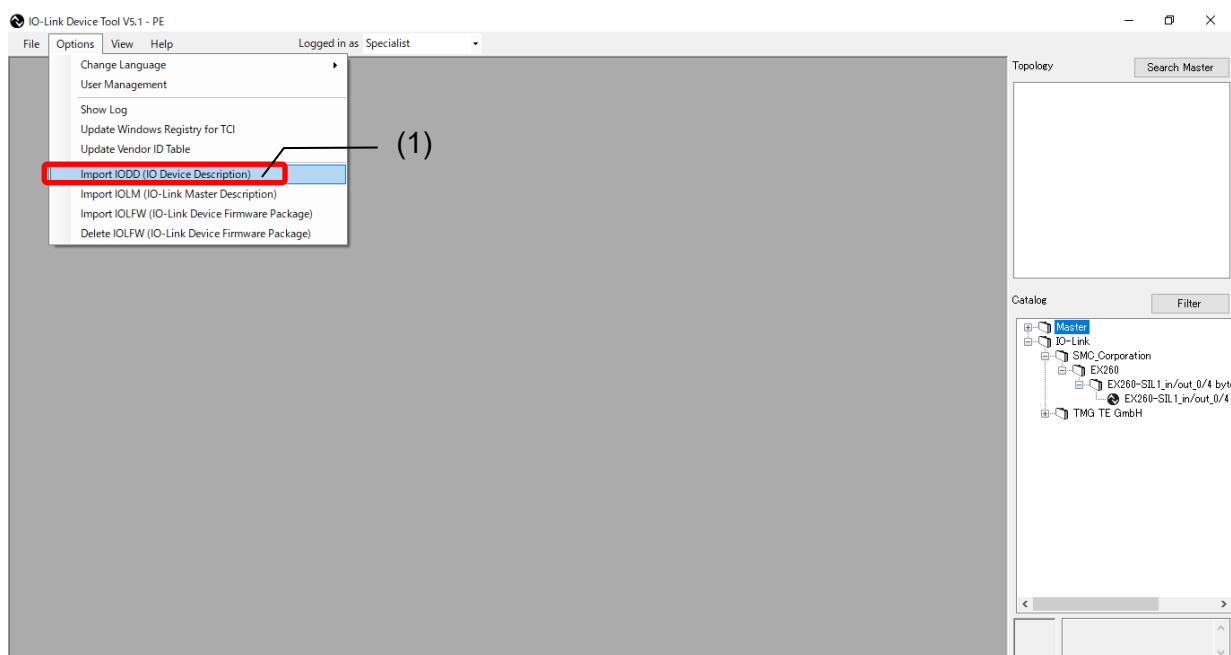
- How to import the IODD file of the SMC EX260-SIL1 is shown below.

The IODD file can be downloaded from the URL below.

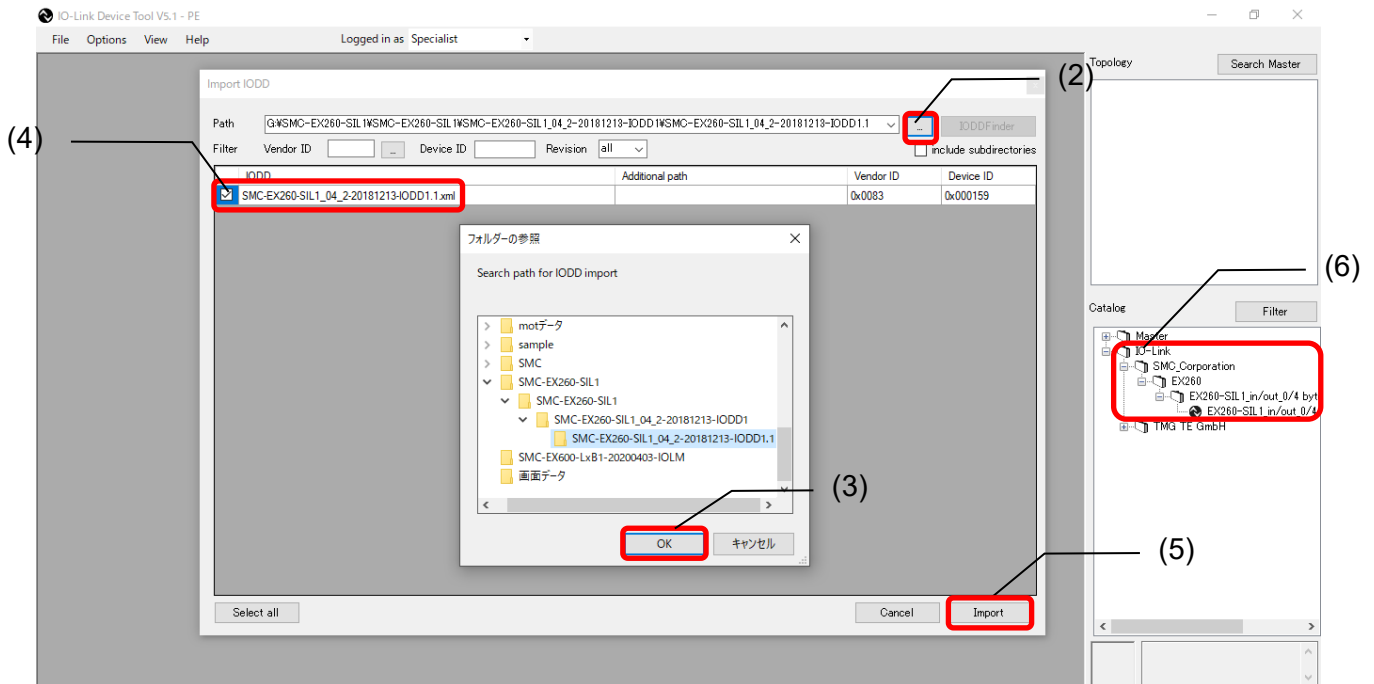
- URL: <https://www.smcworld.com>

Documents/Download >> Instruction Manuals >> Fieldbus System Serial Transmission System >> IO-Link Device>> EX260-SIL1 >> Configuration File

(1) Select the Option > Import IODD (IO Device Description).



- (2) Select the folder where the IODD file is saved.
- (3) Press [OK].
- (4) Check the IODD file to be imported.
- (5) Press [Import].
- (6) EX260-SIL is added to the IO-Link folder in the Catalog.



## 8. How to Use the Software

### 8.1. The IO-Link Module setting screen

#### 8.1.1. Search Master

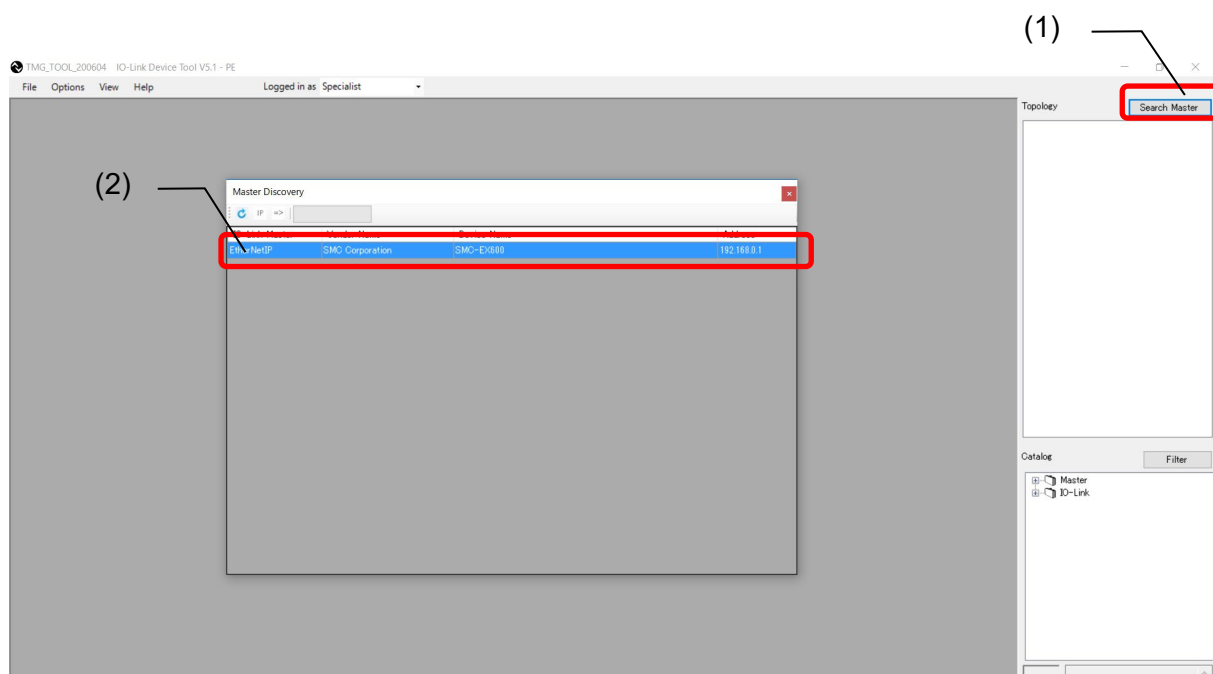
- After connecting the SI unit to a PC, supply power to the EX600 and conduct the operation as follows.

**Note: EX245 does not support the function of Search Master.**

- (1) Press [Search Master].
- (2) When the scanned EX600 is shown on the Master Discovery screen, double-click it with the left mouse button. The IO-Link Module setting screen will appear.

\* If the EX600 does not appear, perform the following.

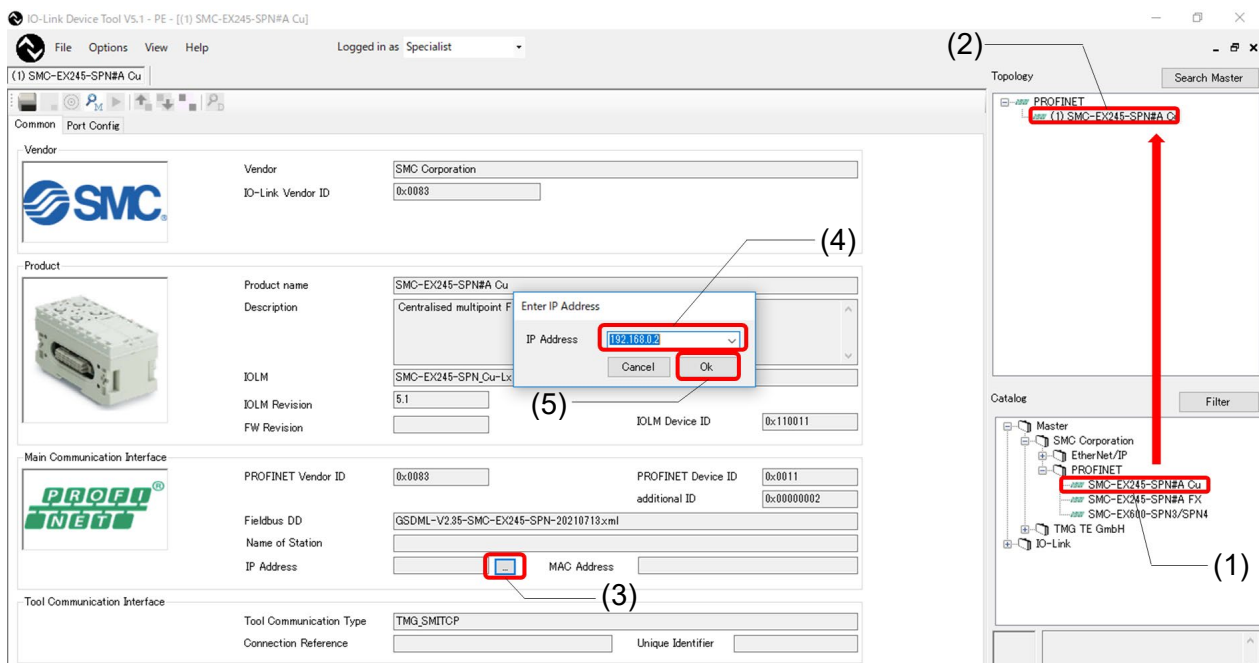
- Make sure an IP address has been set for the SI unit.
- Turn off the EX600 and then turn it on again.
- Restart the IO-Link Device Tool.



### 8.1.2. Individual selection

- After connecting the SI unit to a PC, supply power to the EX600 or EX245 and conduct the operation as follows.

- (1) Select the IOLM file that matches the SI unit to be used.
- (2) Drag and move to Topology. The IO-Link Module setting screen will appear.
- (3) Press [Enter IP address] to display the input screen.
- (4) Input the IP address of the using SI unit.
- (5) Press [OK].



## 8.2. IO-Link Module Setting Screen

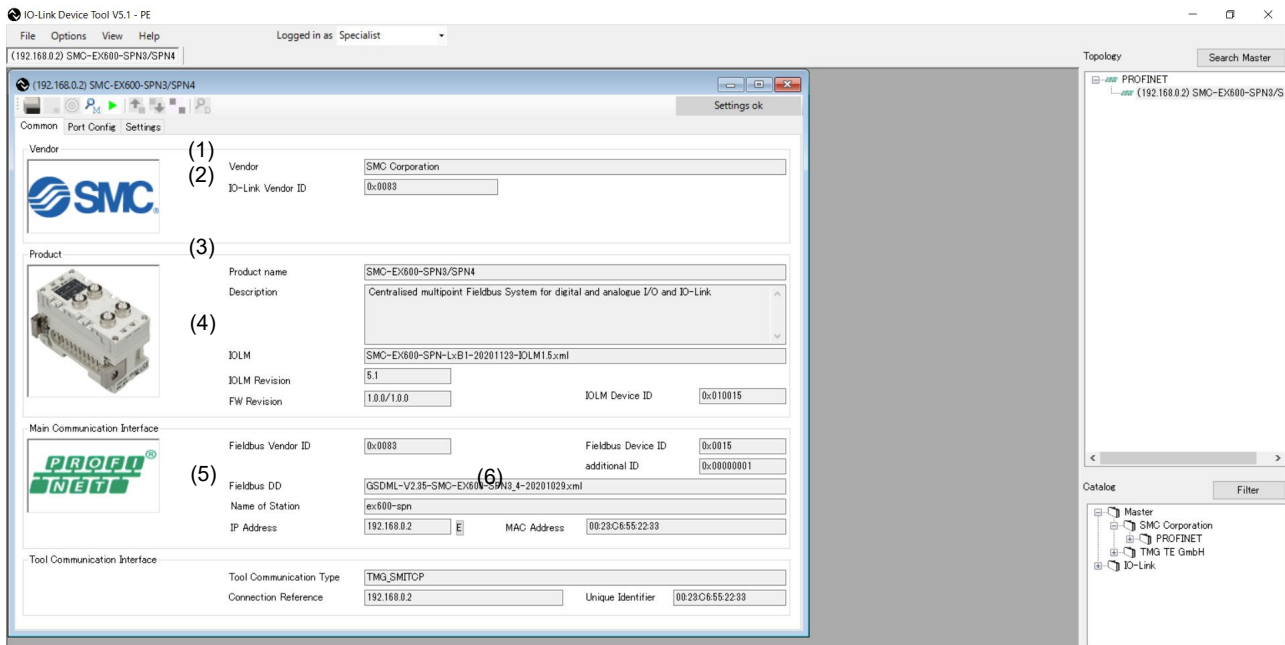
- The IO-Link Module Setting Screen has the three tabs shown below. Selecting a tab changes the screen.

No	Tab name	Outline
1	Common	Shows information such as the vendor ID of the EX600/245 which cannot change.
2	Port Config	Shows information on devices connected to the ports of the EX600-L*B1 or EX245-L*1.
3	Settings	Shows parameter setting information for the EX600-L*B1.

**Note: EX245 does not support the Settings tab.**

## 8.3. Common Screen

- The Common Screen of the SMC-EX600/245 shows data that does not change such as the Vendor ID.  
(The image is an example of EX600.)



No	Item	Outline
1	Vendor	SMC Corporation, fixed value
2	IO-Link Vendor ID	0x0083, fixed value
3	Product name	SMC-EX600-SPN3/SPN4, fixed value
4	IOLM	Shows the name of the IOLM file being used.
5	IP Address	Shows the IP address of the EX600-SPN3/4 being monitored.
6	MAC Address	Shows the MAC address of the EX600-SPN3/4 being monitored.

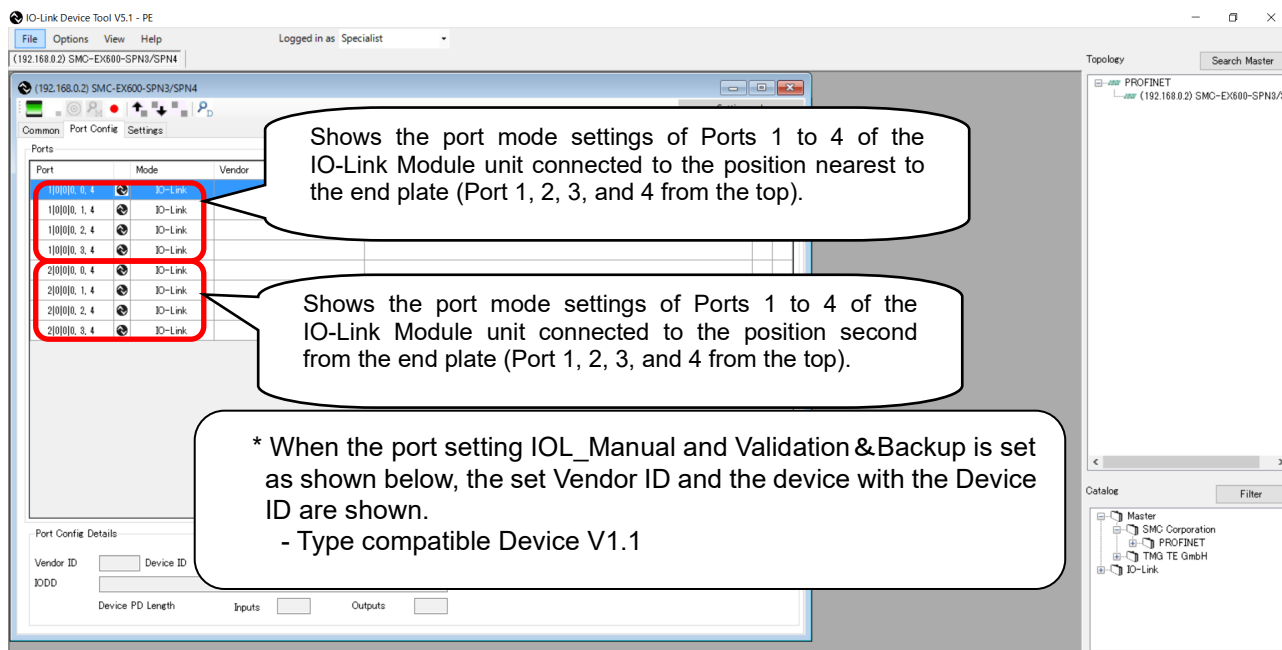
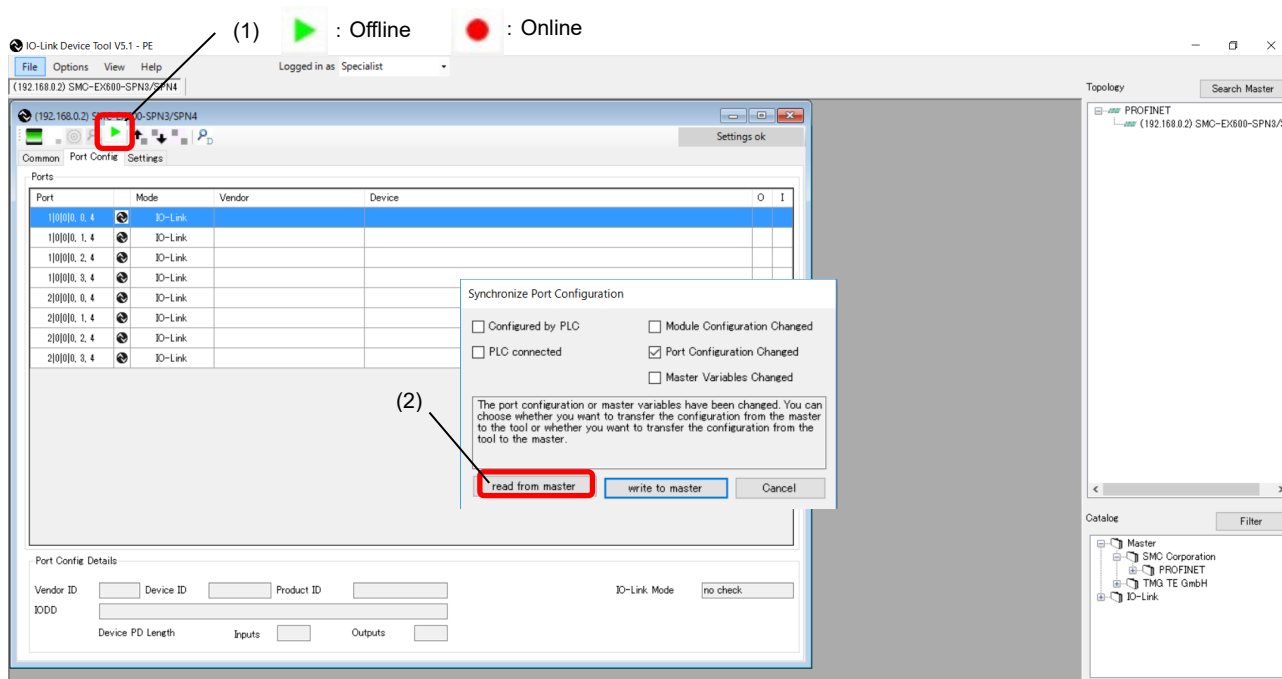


## 8.4. Port Config Screen

### 8.4.1. Reading the IO-Link Port Settings

- The following shows how to read the port settings of the EX600-L\*B1 and EX245-L\*1.

- (1) Set the status to [Go Online].
- (2) Press [read from master] to read the port settings of the EX600-L\*B1 or EX245-L\*1.

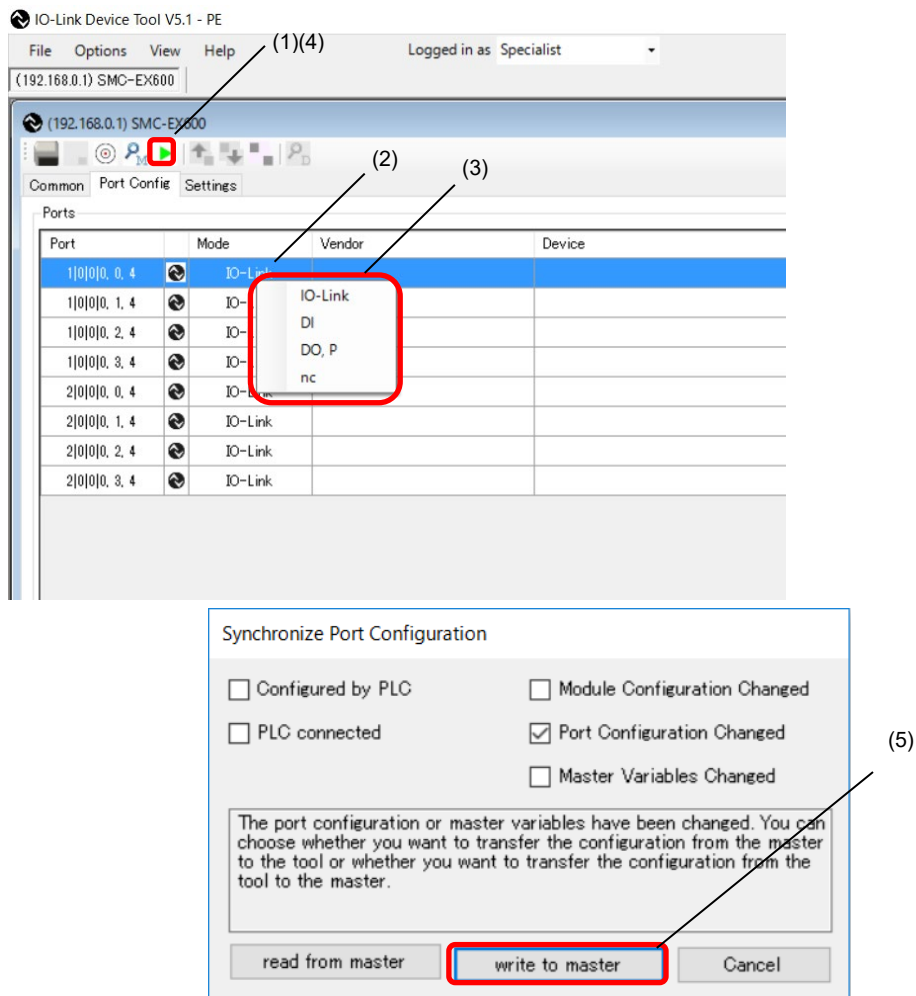


**Note:** In the case of EX245, show from the IO-Link Module unit connected to the position nearest to the SI unit.

### 8.4.2. Changing the Settings of the IO-Link Ports (for EX600-SEN3-X80 only)

- The following shows how to change the port settings of the EX600-LAB1 and EX600-LBB1.

- (1) Set the status to [Go Offline].
- (2) Place the cursor on [Mode] of the Port whose setting you want to change and right-click the mouse.  
The settings for the port will be shown.
- (3) Place the cursor on the desired Port setting and left-click the mouse. [Mode] will be set to that setting.
- (4) When you press [Go Online], the "Synchronize Port Configuration" screen will appear.
- (5) Press [write to master] to apply the setting to the EX600-LAB1 or EX600-LBB1.

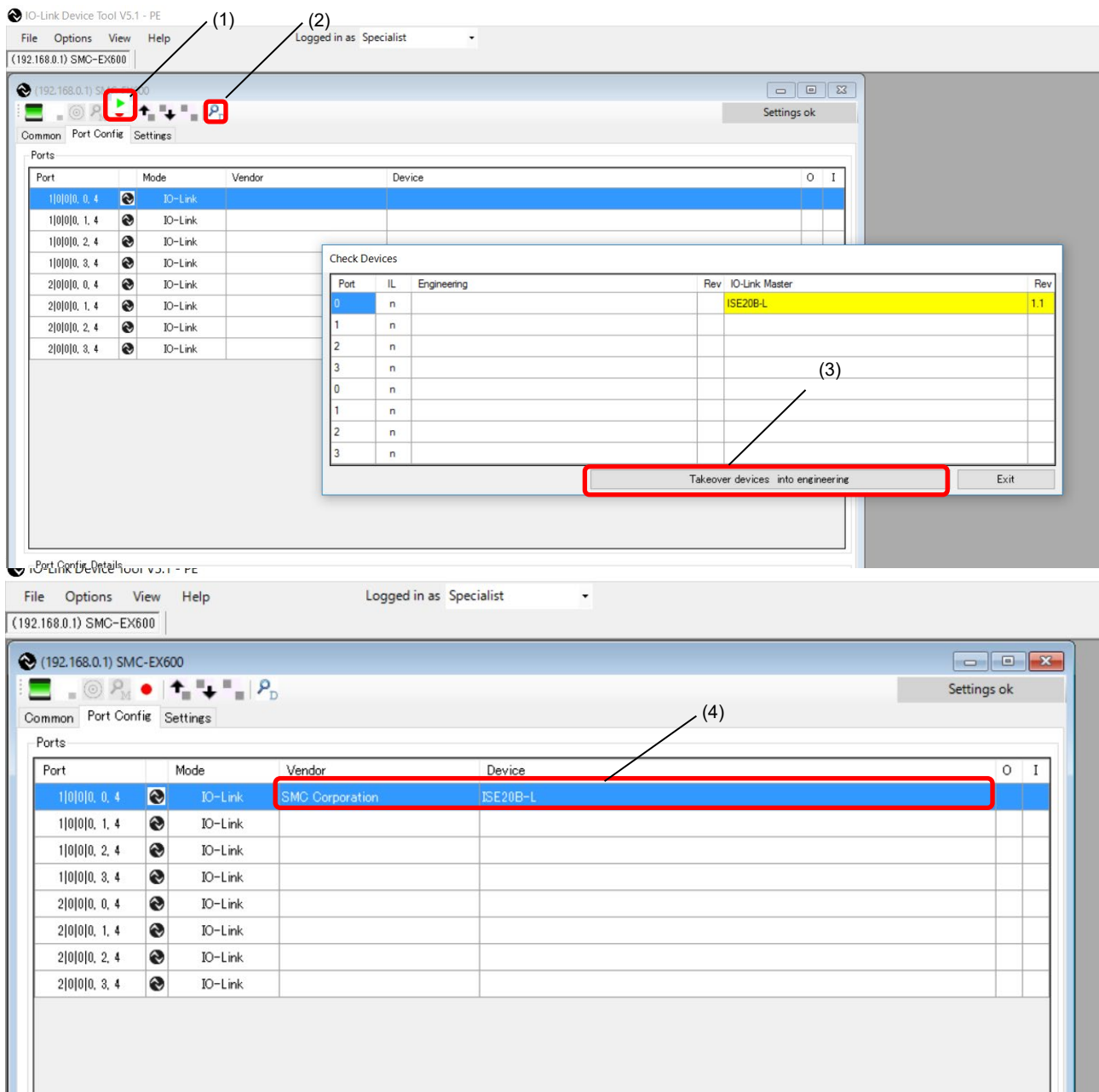


\* When the SI unit is EX600-SPN\* or EX245-SPN\*A, use the configuration software of the PLC to change the parameters of EX600-L\*B1 and EX245-L\*1.

### 8.4.3. Scanning IO-Link Devices

- The following shows the procedures for scanning IO-Link devices when communication with IO-Link devices connected to an EX600-L\*B1 or EX245-L\*1 is established.

- (1) Set the status to [Go Online].
- (2) Press [Check Devices]. The connected IO-Link devices will be shown.
- (3) Press [Takeover devices into engineering].
- (4) Models, etc. of the connected IO-Link devices are shown.



#### 8.4.4. IO-Link Device Checking / Data Storage Function Setting (for EX600-SEN3-X80 only)

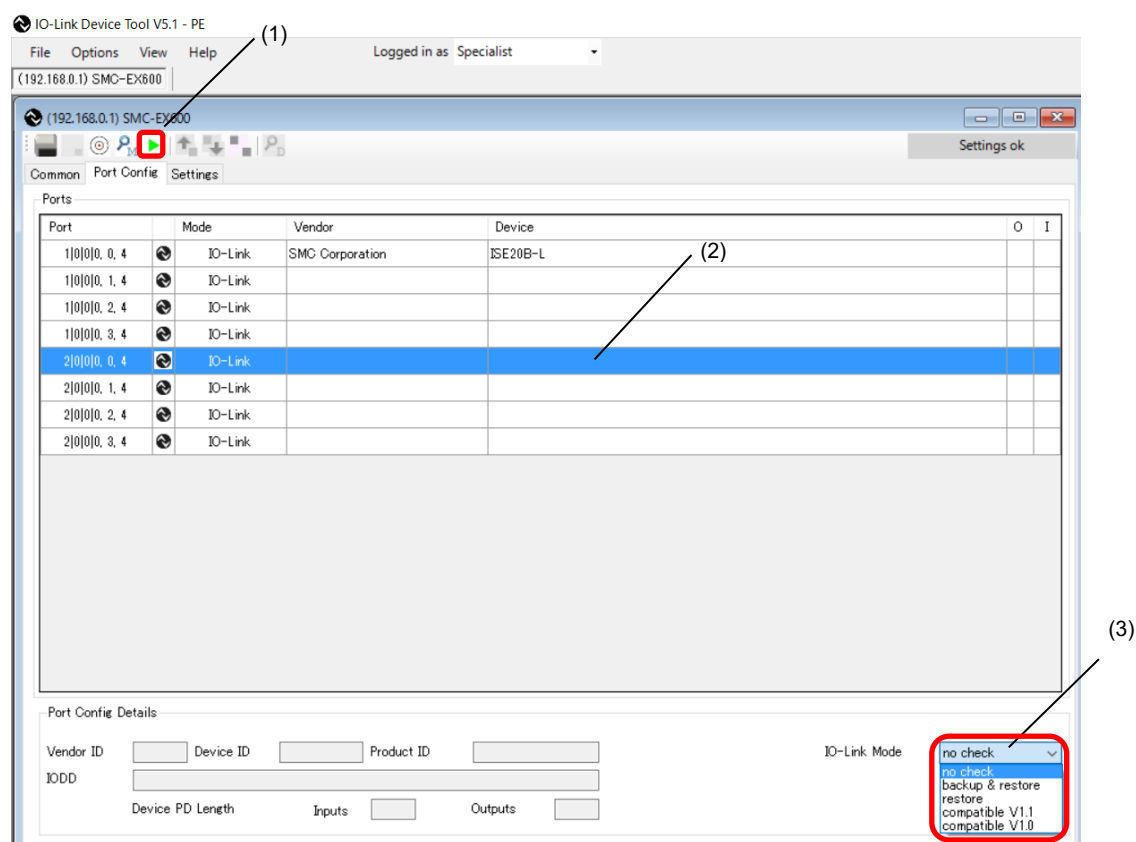
- In the "Port Config Details" on the Port Config Screen of the SMC-EX600, the settings for the IO-Link device checking / Data storage function can be set for each port.

- (1) Set the status to [Go Offline].
- (2) Place the cursor on a port whose [Mode] is set to IO-Link.
- (3) In the device checking / data storage function setting in [IO-Link Mode], place the cursor on the desired setting, and left-click the mouse.

\* For details on each setting, refer to the Operation Manual of the EX600-SEN3-X80.

- (4) When the status is set to [Go Online], the Synchronize Port Configuration screen appears.  
Press the [write to master] button, to apply the setting to the EX600-LAB1 or EX600-LBB1.

\* See page 18.



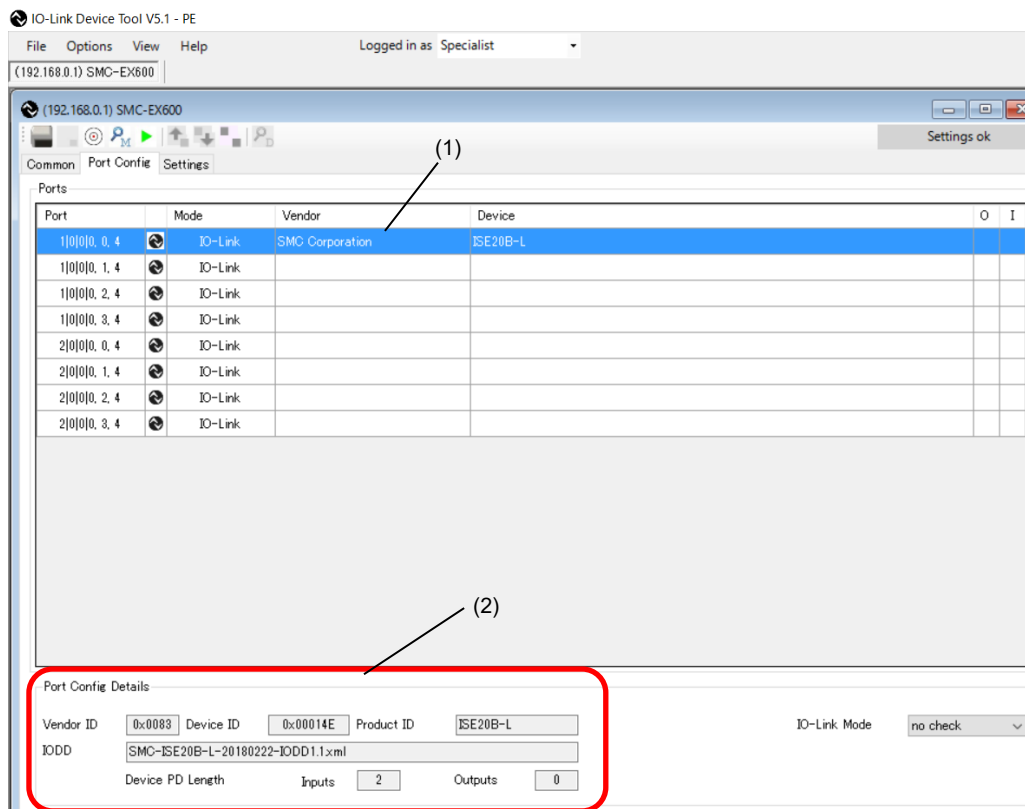
\* When the SI unit is EX600-SPN\* or EX245-SPN\*A, use the configuration software of the PLC to change the parameters of EX600-L\*B1 and EX245-L\*1.

### 8.4.5. Port Config Details

- In "Port Config Details" on the Port Config screen of the SMC-EX600/245, information on connected IO-Link devices is shown.

- (1) Place the cursor on a port to which an IO-Link device is connected.
- (2) The information on the selected IO-Link device is shown in "Port Config Details" as shown below.

No	Item	Outline
1	Vendor ID	Vendor ID
2	Device ID	Device ID
3	Product ID	Product ID
4	IODD	IODD file name
5	Device PD Length Inputs	Input size of the process data
6	Device PD Length Outputs	Output size of the process data



## 8.5. Settings Screen

### 8.5.1. Reading IO-Link Module Parameters

- Reading the parameters of the EX600-LAB1 and EX600-LBB1 can be performed using the following procedure.
- For details of the parameters, refer to the Operation Manual of the EX600-SPN3/4 or EX600-SEN3-X80.

- (1) Set the status to [Go Online].
- (2) Select the Settings tab. The parameters of the unit selected in "List of Masters" will be shown.
- (3) The units can be selected in the List of Masters area.
- (4) "Maximum" of "Total Input/Output Size" shows the maximum acceptable configuration size that can be occupied, and "Configured" shows the actually occupied configuration size (for the EX600-SEN3-X80 only).

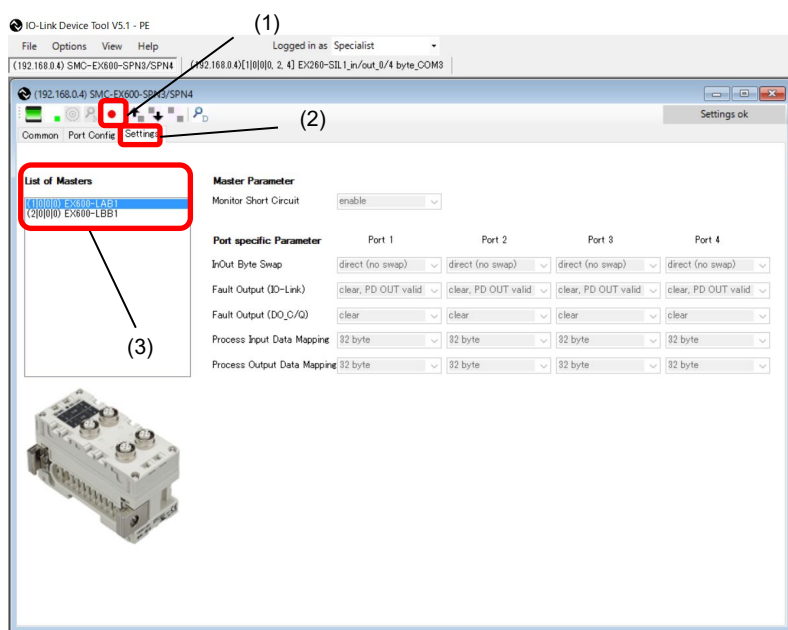


Fig. Screen for the EX600-SPN3/4

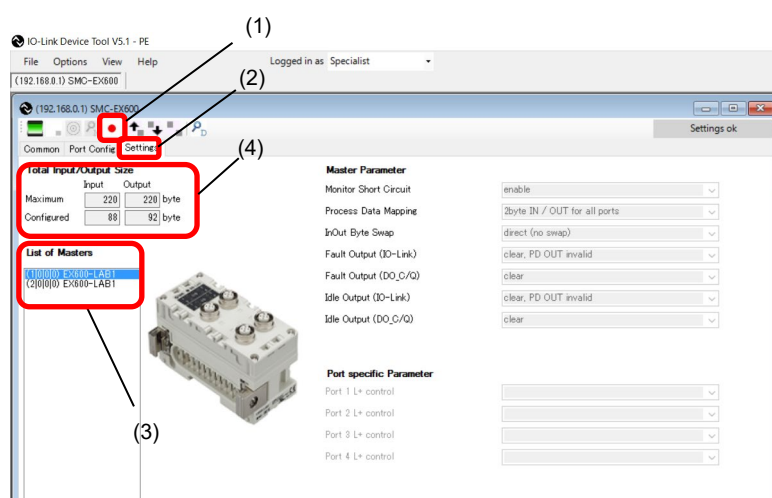
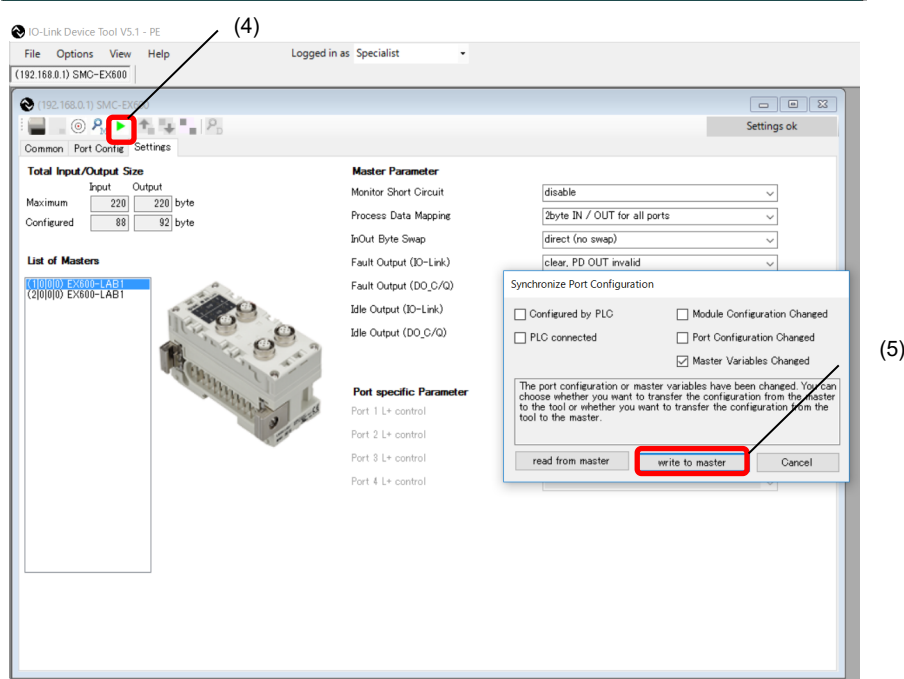
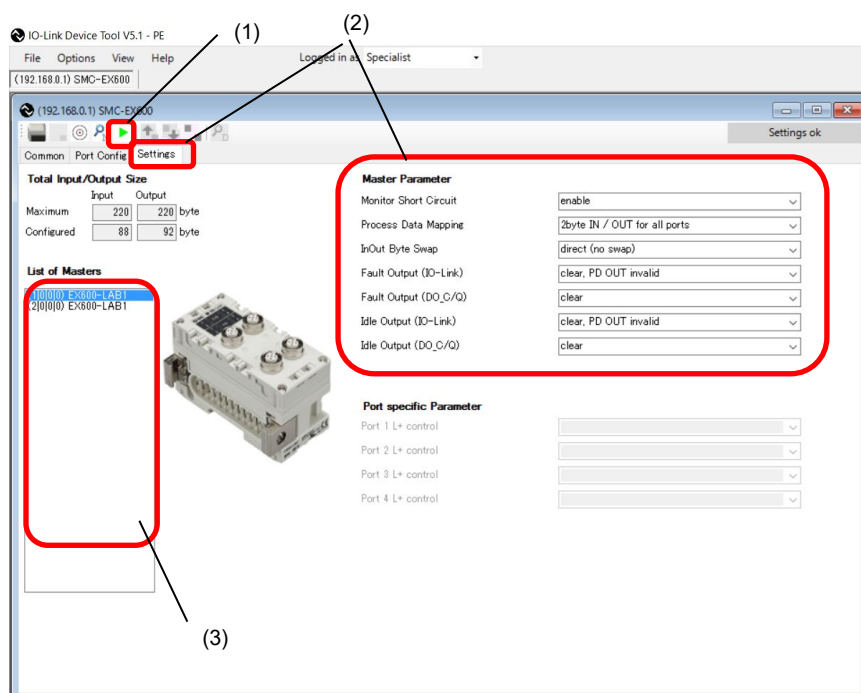


Fig. Screen for the EX600-SEN3-X80

### 8.5.2. Setting the IO-Link Module Parameters (for the EX600-SEN3-X80 only)

- Setting the parameters of the EX600-LAB1 and EX600-LBB1 can be performed with the following procedure.
- For details of the parameters, refer to the Operation Manual of the EX600-SEN3-X80.
- (1) Set the status to [Go Offline].
- (2) Select the Settings tab. The parameters of the unit selected in "List of Masters" will be shown.
- (3) The units can be selected in the List of Masters area.
- (4) When the status is set to [Go Online] after changing the "Module Parameter," the "Synchronize Port Configuration" screen appears.
- (5) Press [write to master] to apply the parameters to the unit.



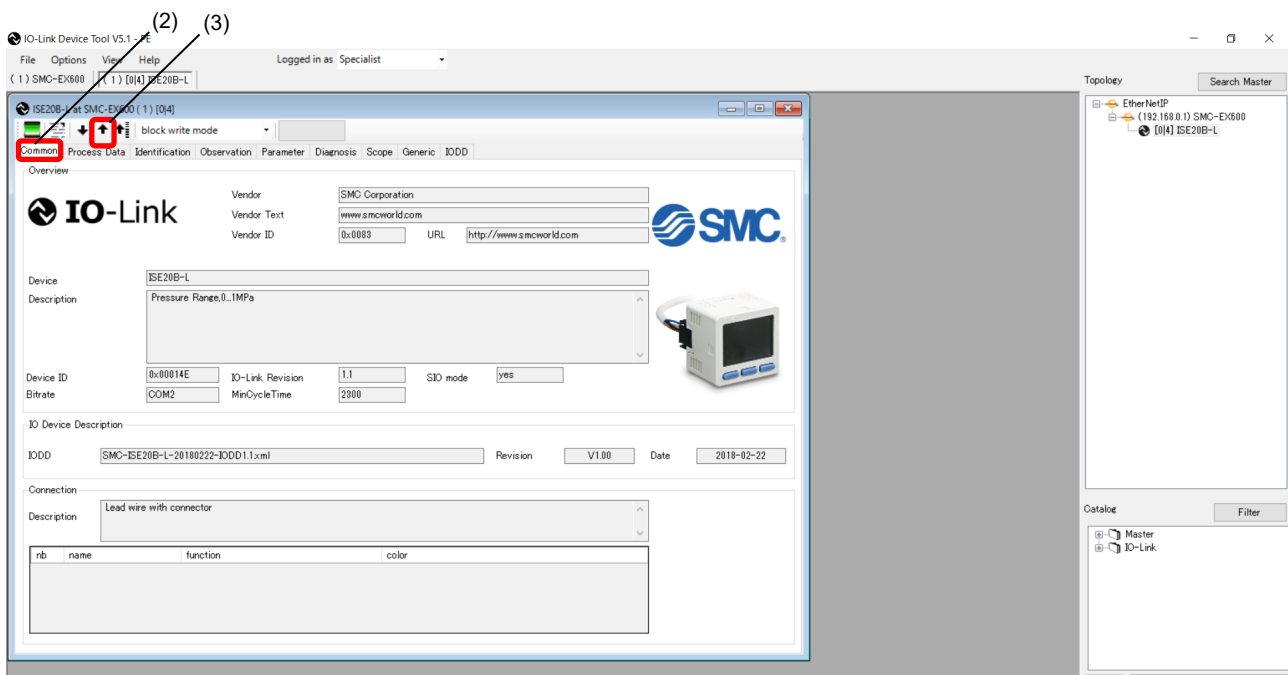
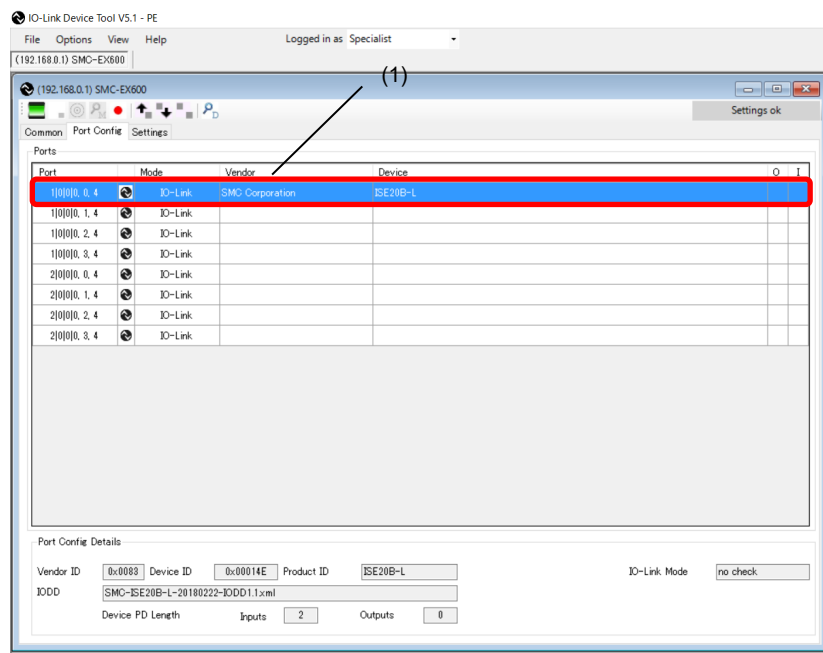
\* When the SI unit is EX600-SPN\* or EX245-SPN\*A, use the configuration software of the PLC to change the parameters of EX600-L\*B1 and EX245-L\*1.

## 8.6. Setting the IO-Link Devices

### 8.6.1. Reading Information on IO-Link Devices

- Reading information on an IO-Link device can be performed using the following procedure.
- The SMC ISE20B-L is used for the screen examples below (a special IODD file has been installed).
- \* Screens differ depending on the IO-Link device.

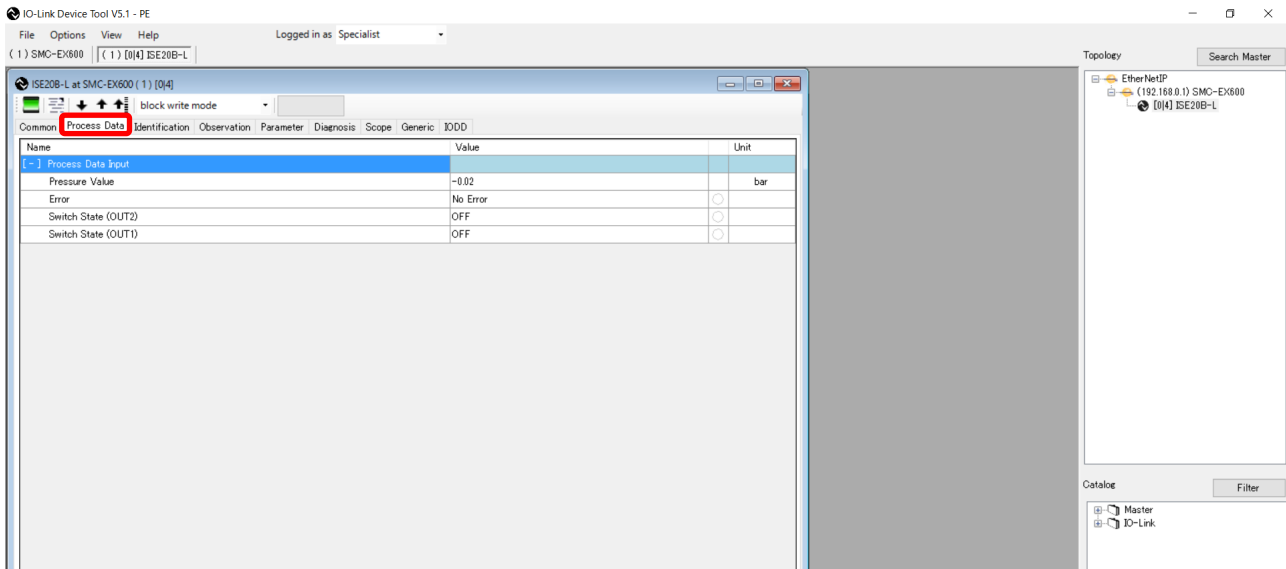
- (1) Select an IO-Link device to read information, after setting the status to [Go Online], and double-click the mouse.
- (2) The Common tab screen for the IO-Link device appears.
- (3) When the [Upload from device] button is pressed, the information on the connected device will be read.





### 8.6.2. IO-Link Device Process Data (Example using the ISE20B-L)

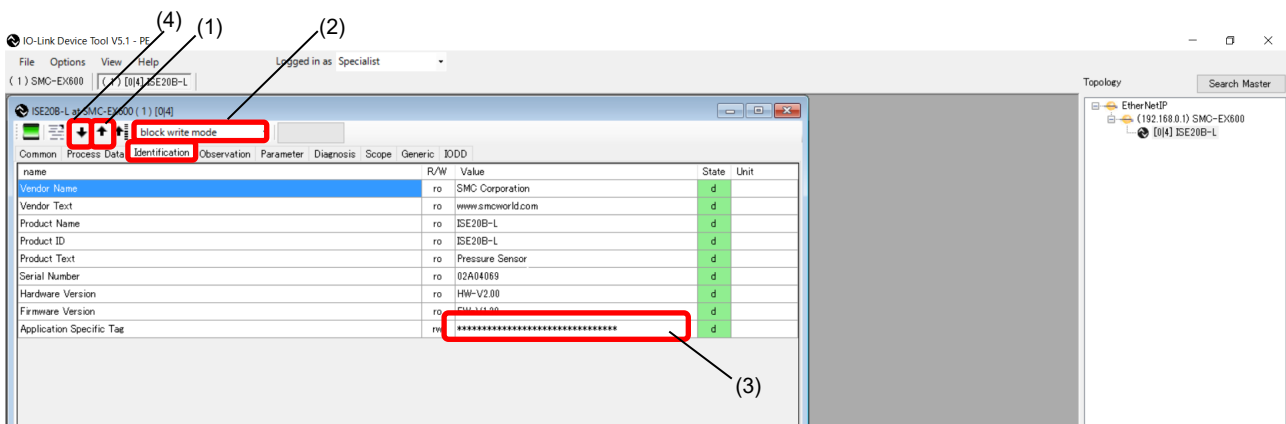
- When the "Process Data" tab of the ISE20B-L is selected, the following screen appears.
- Pressure information, diagnostic information, and switch output status are shown.



### 8.6.3. IO-Link Device Identification (Example using the ISE20B-L)

- When the "Identification" tab of the ISE20B-L is selected, the following screen appears.
- Only the "Application-Specific Tag" allows writing.

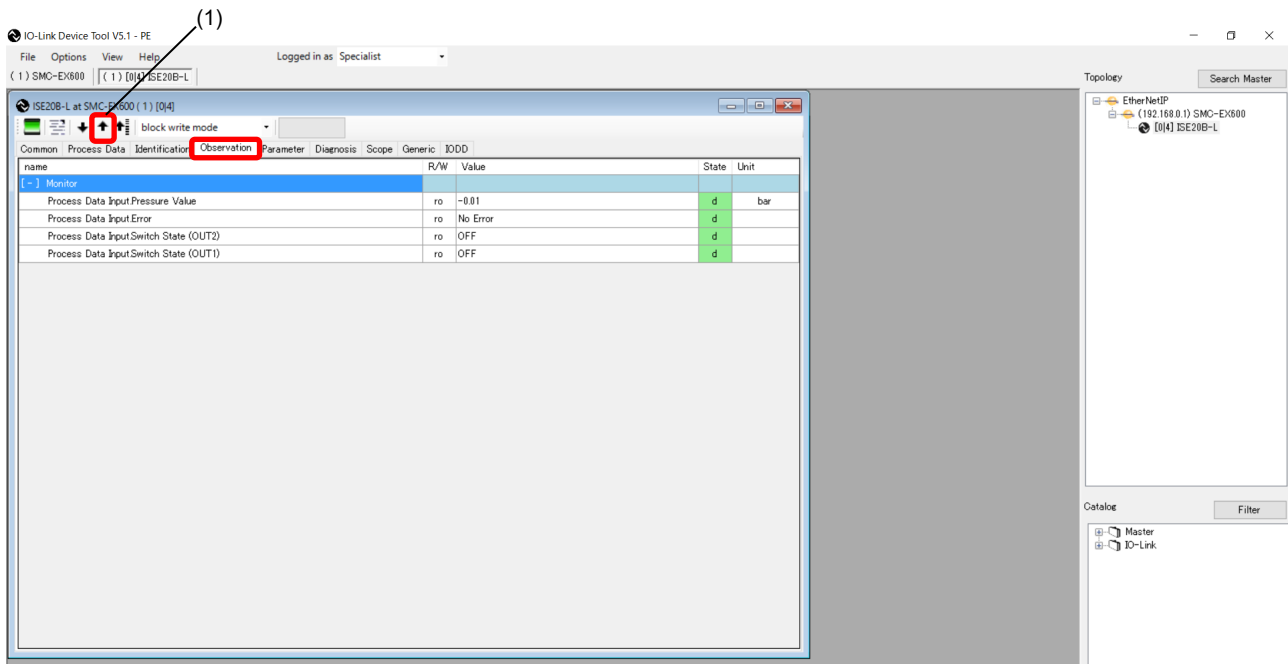
- (1) When the [Upload from device] button is pressed, the information on the connected device will be read.
- (2) Select either the "block write mode" or "direct write mode" for the device writing mode.  
\* For details of the difference between the writing modes, see the User Manual.
- (3) Any value within 32 characters can be set for the value of "Application-Specific Tag."  
To change this value, press the [Enter] button after directly entering the characters.
- (4) When the [Download to device] button is pressed, the device is written to.



#### 8.6.4. IO-Link Device Observation (Example using the ISE20B-L)

- When the Observation tab of the ISE20B-L is selected, the following screen appears.
- Pressure information, diagnostic information, and switch output status are shown.

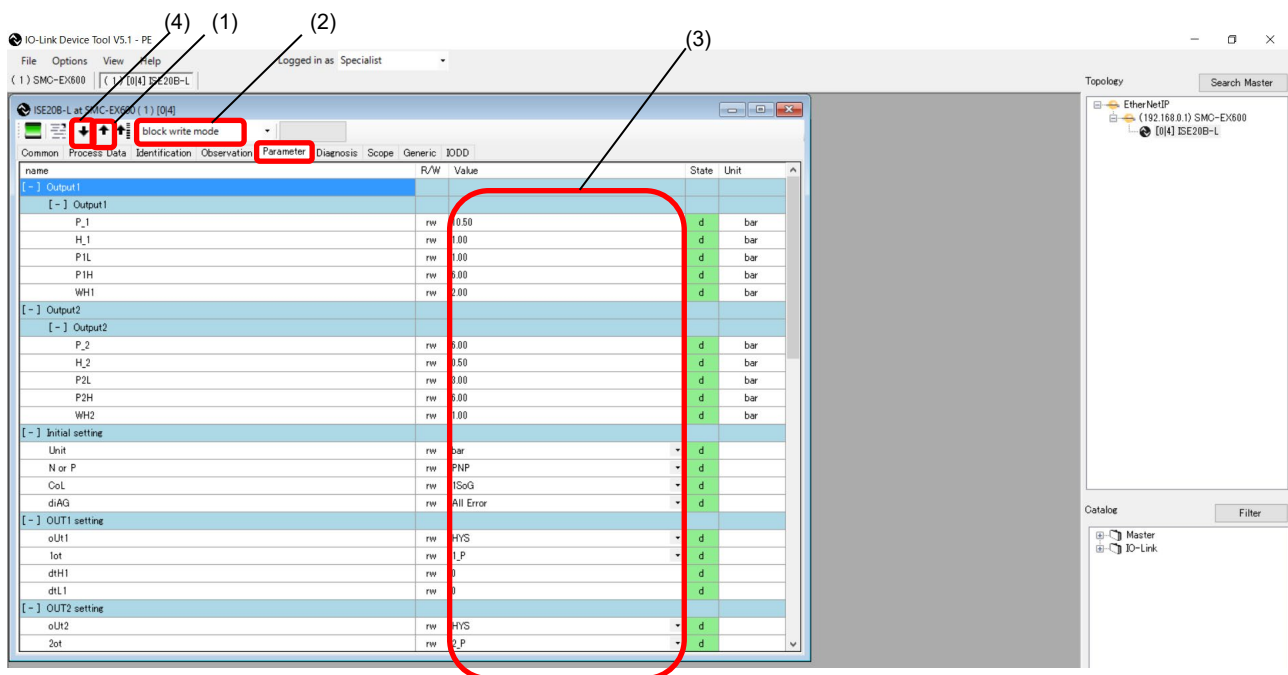
(1) When the [Upload from device] button is pressed, the information on the connected device will be read.



### 8.6.5. IO-Link Device Parameter (Example using the ISE20B-L)

- When the Parameter tab of the ISE20B-L is selected, the following screen appears.
- The set parameters can be checked.
- For details of the parameters, refer to the Operation Manual of the relevant IO-Link device.

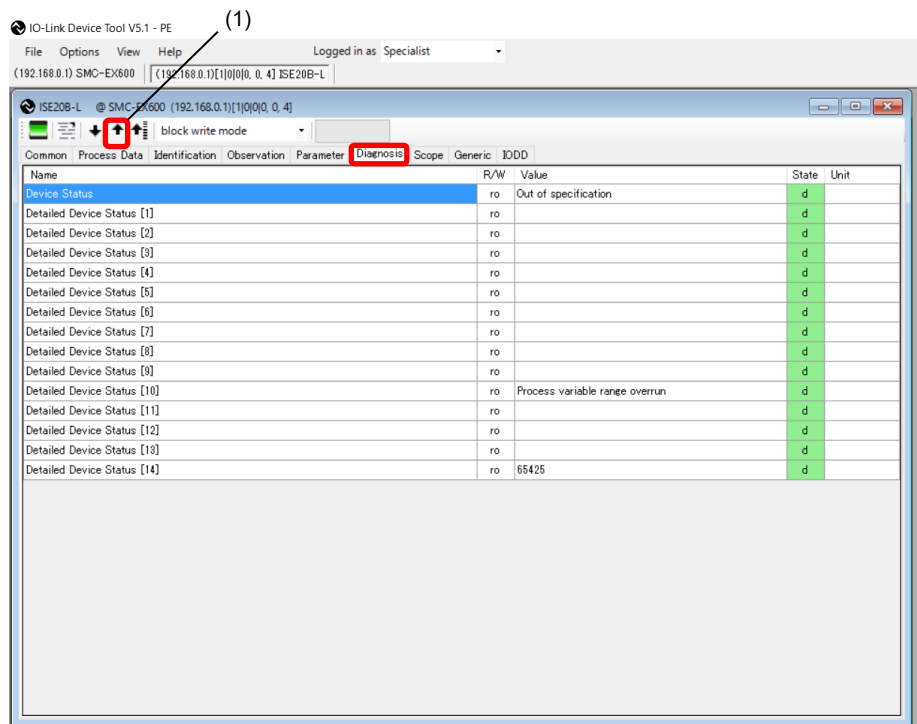
- (1) When the [Upload from device] button is pressed, the information on the connected device will be read.
- (2) Select either the "block write mode" or "direct write mode" for the device writing mode.  
\* For details of the difference between the writing modes, refer to the User Manual.
- (3) Change "Value." ("State" will change to "c.")
- (4) When the [Download to device] button is pressed, the device is written to.



### 8.6.6. IO-Link Device Diagnosis (Example using the ISE20B-L)

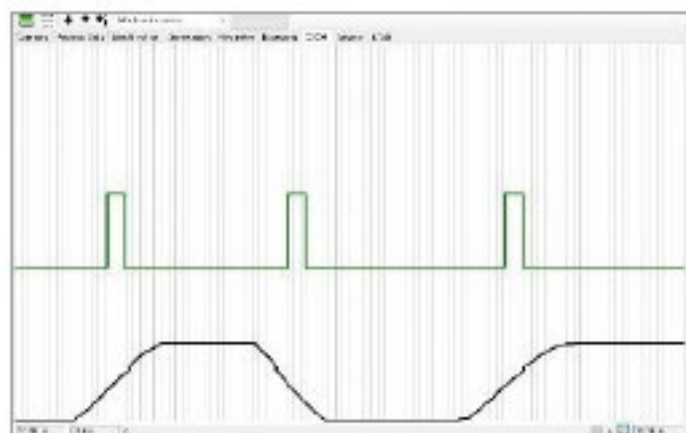
- When the Diagnosis tab of the ISE20B-L is selected, the following screen appears.
- For details of the Diagnosis data, refer to the Operation Manual of the relevant IO-Link device.

(1) When the [Upload from device] button is pressed, the information on the connected device will be read.



### 8.6.7. IO-Link Device Scope (Example using the ISE20B-L)

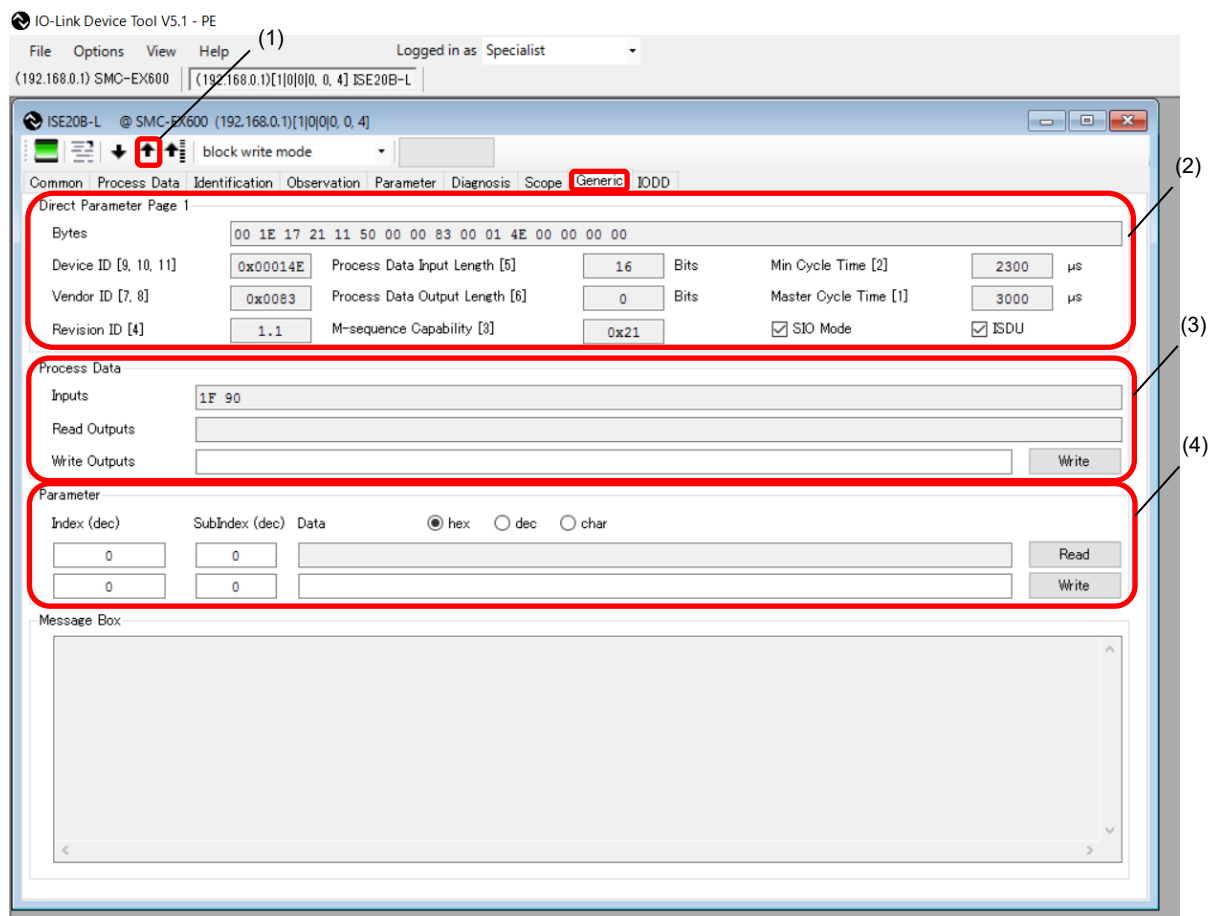
- Process data of devices that support the Scope function can be shown in a chart format.  
(the scope of the ISE20B-L does not support this Scope function).
- For details on Scope, refer to the User Manual.



Chart

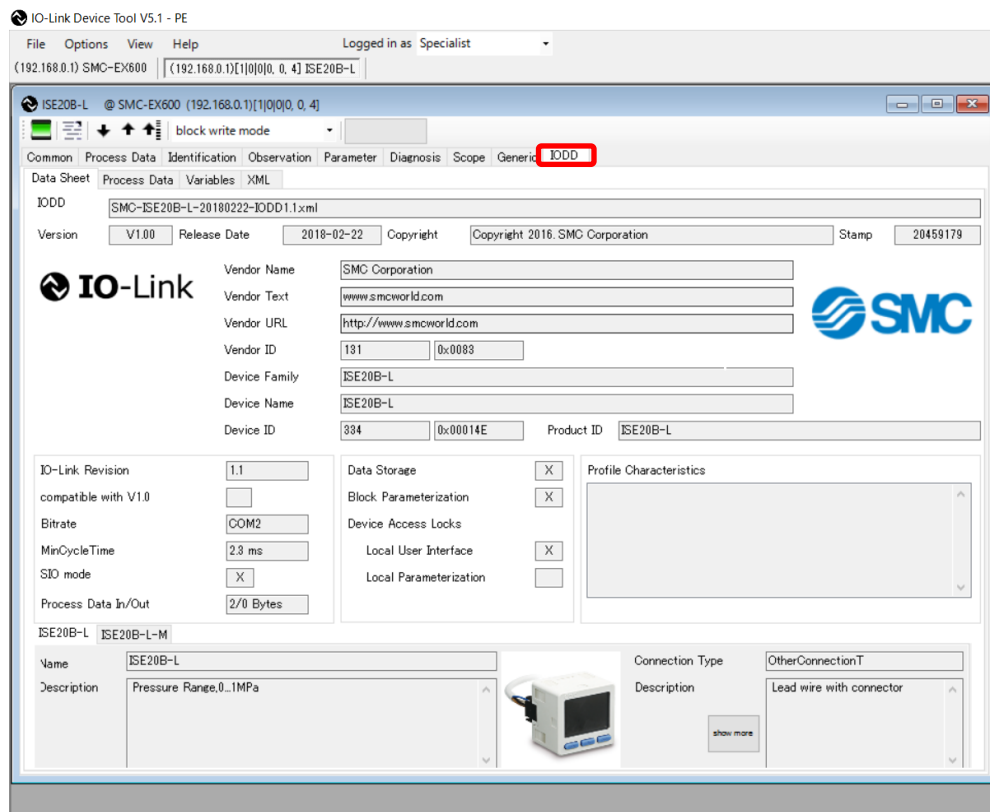
### 8.6.8. IO-Link Device Generic (Example using the ISE20B-L)

- When the Generic tab of the ISE20B-L is selected, the following screen appears.
  - For details of the Generic data, refer to the Operation Manual of the relevant IO-Link device.
- (1) When the [Upload from device] button is pressed, the information on the connected device will be read.
  - (2) The information on Direct Parameter Page 1 is shown.
  - (3) It allows users to view Process Data Inputs and to Read/Write Process Data Outputs.
  - (4) It allows users to Read/Write parameters of IO-Link devices by specifying Index and SubIndex.



### 8.6.9. IO-Link Device IODD (Example using the ISE20B-L)

- When the IODD tab of the ISE20B-L is selected, the following screen appears.
- Detailed information on the IODD file is shown.



Revision history
A : Addition of IO-Link modules EX245-L*1. [April 2022]

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