**⌖SMC**

## Operation Manual

| PRODUCT NAME |
| --- |

## I/O Configurator (NFC version)

| Model / Series / Product Number |
| --- |

*EX600-WEN# (Wireless Base)*
*EX600-WPN# (Wireless Base)*
*EX600-WSV# (Wireless Remote)*

*EXW1-BMJA# (Compact Wireless Base)*
*EXW1-RDXNE4## (Compact Wireless Remote)*
*EXW1-RDYNE4## (Compact Wireless Remote)*
*EXW1-RDM#E3## (Compact Wireless Remote)*

**SMC Corporation**

# Contents

No.EX##-OMV0017-D

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No.EX##-OMV0017-D

# 1. Introduction

## 1.1   About the I/O Configurator (NFC version)

With the I/O Configurator (NFC version), the status of a wireless system can be checked and all parameters of a wireless unit can be set from a PC using an NFC reader / writer. The status can be checked without logging in (Monitor mode). Logging in is necessary before setting parameters (Administrator mode).

The following can be performed in Monitor mode.

- Checking the parameters of wireless units

- Checking the details and status of a wireless system

The following can be performed in Administrator mode.

- Setting the parameters of wireless units

- Changing the details of a wireless system

- Pairing Wireless Base / Remote units

There are two types of settable parameters which can be read or written when no power is supplied to the product, and parameters which can be read or written only when power is supplied to the product.

## 1.2　SMC wireless system (system configuration)

The following products support the I/O Configurator (NFC version).
EX600-WEN# Wireless Base (manifold type)
EX600-WPN# Wireless Base (manifold type)
EXW1-BMJA# Compact Wireless Base

EX600-WSV# Wireless Remote (manifold type)
EXW1-RDXNE4## Compact Wireless Remote
EXW1-RDYNE4## Compact Wireless Remote
EXW1-RDM#E3## Compact Wireless Remote



| | |
|---|---|
| I/O Configurator | PC |
| OS (Windows) | |
| PC/SC driver | |

Establish communication by adjusting the position so that the height from the center of the NFCR/W antenna to the "O" on the wireless unit is 1 cm or less.

NFC R/W — NFC reader / writer

NFC R/W — Wireless Base unit / Wireless Remote unit

Memory area where power supply is unnecessary.

Memory area where power supply is necessary.
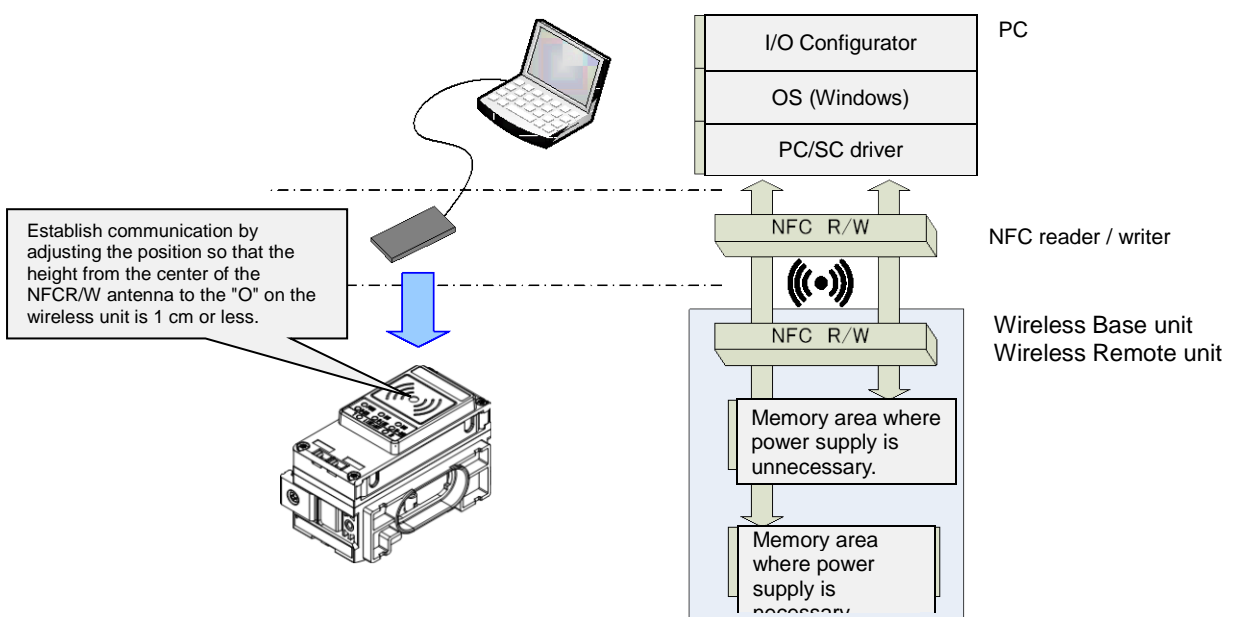
※One PC will recognize one NFC reader / writer per application setting.
Do not connect multiple NFC readers / writers to a PC.

Connection details using the I/O Configurator for NFC and wireless unit

To use a wireless system, it is necessary to "pair" a Wireless Base and Remote. Configure this using the I/O Configurator (NFC version).
The following sections of this document should be read before using the I/O Configurator (NFC version):
　2.4 Monitor mode and Administrator mode
　2.5 Basic operational flow for settings and monitoring
　3 Setting of the wireless unit system

* I/O Configurator (Web version)

  This operation manual explains the outline of the setting using the I/O Configurator (NFC version).

  The I/O Configurator (Web version) is used to set parameters for the "Wireless Base" and parameters for the "I/O devices".

  Refer to the operation manual for the I/O Configurator (Web version).

* The product is available in Japanese, English, and Chinese by setting the language in the Windows OS.
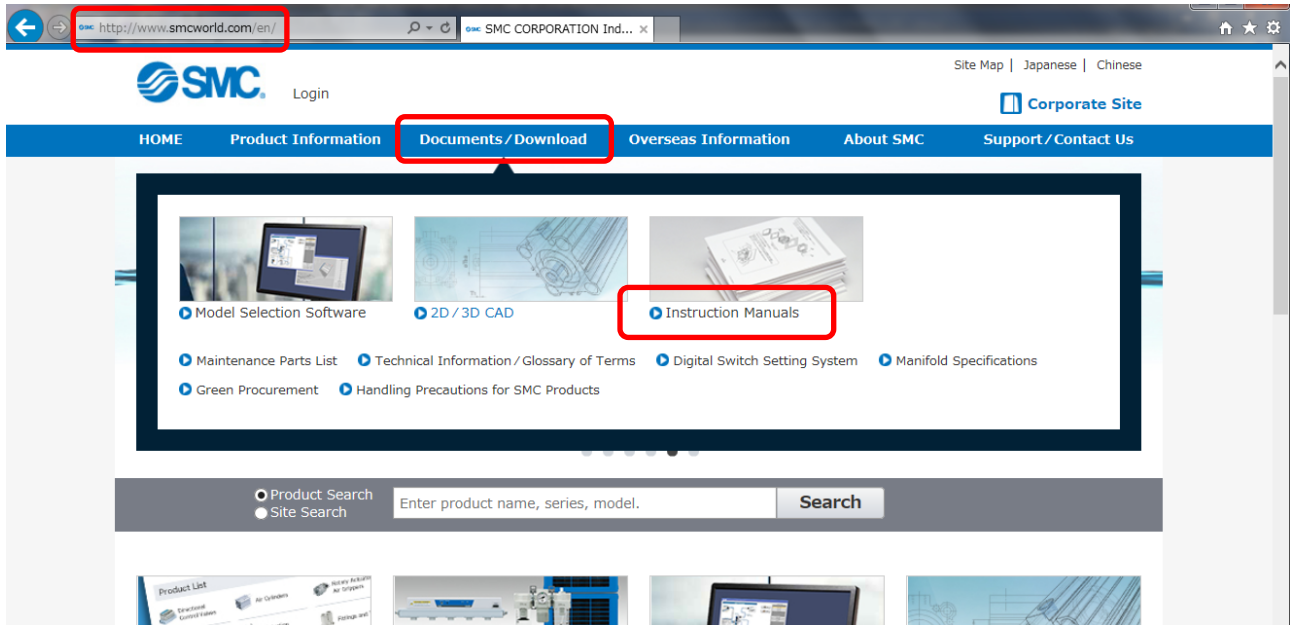
## 1.3   About this manual

This manual can be used with   the I/O Configurator (NFC version) ver. 2.9.0.

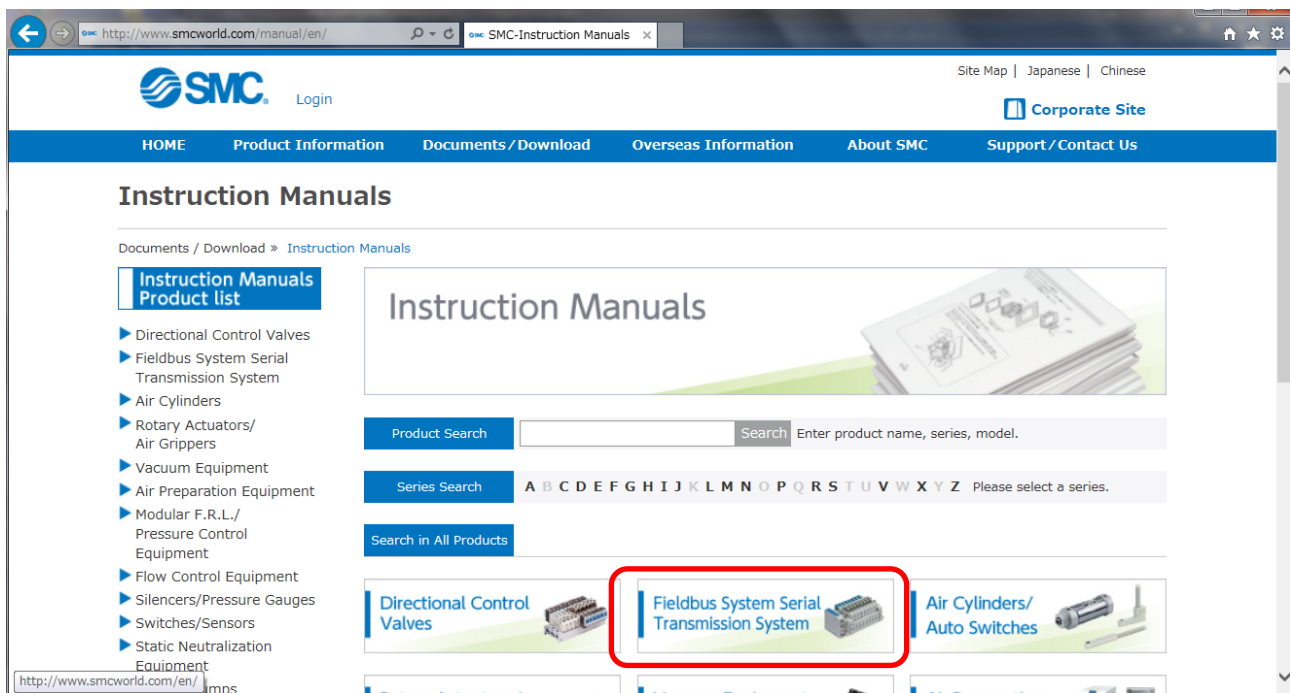## 2. Basic operations with the I/O Configurator (NFC version)

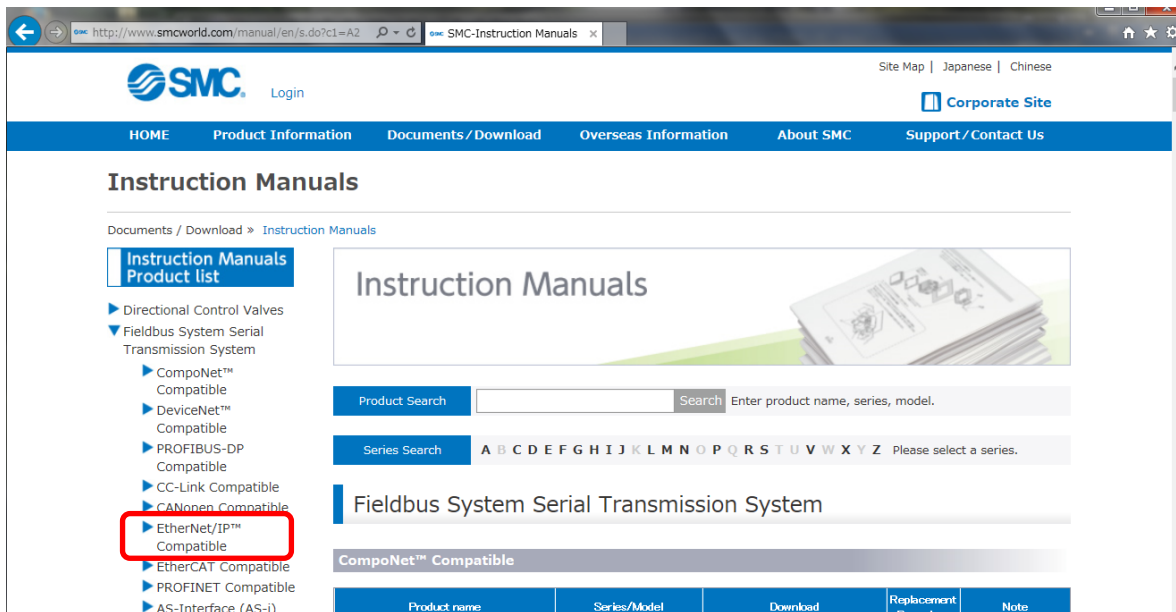2.1  Download the I/O Configurator (NFC version)

(1)  On the SMC website (http://www.smcworld.com), select [Documents/Download] and click [Instruction Manuals].



(2)  Select the Fieldbus System Serial Transmission System.

(3)   Select the protocol supported by the product (Example: EtherNet/IP™ compatible).



(4)   Scroll down the page of the Fieldbus Serial Transmission System and click the Configuration File for the I/O Configurator (NFC version). The download will begin.

| | | | | |
|---|---|---|---|---|
| I/O Configurator for NFC (SMC Wireless System EX600-W/EXW1) Ver. 2.9.0 | EX600-WEN EX600-WPN EX600-WSV EXW1-BMJ EXW1-RD# Initial setting application | Configuration File | | Japanese, English, Chines EXW1-NT1 compatible |
| I/O Configurator for NFC (SMC Wireless System EX600-WEN/PN/SV) Ver. 2.60 | EX600-WEN EX600-WPN EX600-WSV Initial setting application | English Configuration File | | Japanese, English, Chinese |
| I/O Configurator for NFC (SMC Wireless System EX600-WEN/PN/SV) Ver. 2.20 | EX600-WEN EX600-WPN EX600-WSV Initial setting application | English Configuration File | | Japanese, English, Chinese |
| I/O Configurator for NFC (SMC Wireless System EX600-WEN/SV) Ver. 2.00 | EX600-WEN EX600-WSV Initial setting application | English Configuration File | | Not for EX600-WPN Japanese, English, Chinese |

Older versions of the I/O Configurator (NFC version) can be downloaded as well as the latest version. Download the version which is suitable for your device. Downloading the latest version enables settings to be made for all models, including those supported with older versions of this software.

## 2.2 Start the I/O Configurator (NFC version)

(1) Unzip the downloaded zip file.
(2) Double-click "IOConfigurator.exe". The I/O Configurator (NFC version) will start up.

| Name | Date modified | Type | Size |
|------|---------------|------|------|
| ini0.wsc | 10/16/2017 2:03 PM | Windows Script C... | |
| ini1.wsc | 10/16/2017 2:03 PM | Windows Script C... | |
| IOConfigurator.exe | 10/16/2017 2:03 PM | Application | |
| Sna.NoWire.dll | 10/16/2017 2:03 PM | Application extens... | |
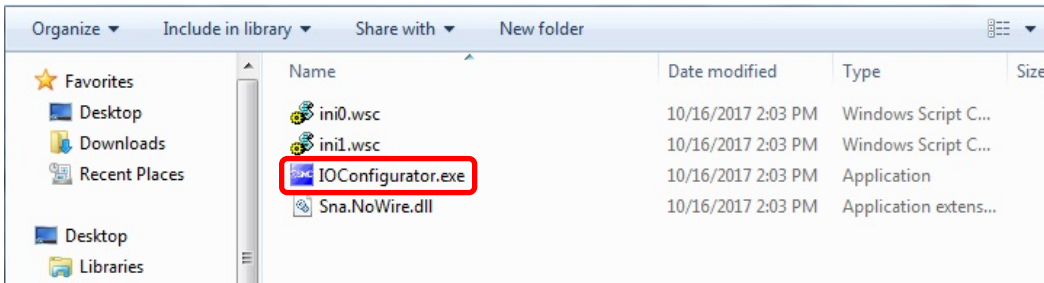
To move IOConfigurator.exe to the desktop or another location, move the folder of the I/O Configurator, or create a shortcut of IOConfigurator.exe and invoke and use the program through it.

## 2.3 Screen layout

The window below is displayed when the I/O Configurator (NFC version) starts.

No.EX##-OMV0017-D
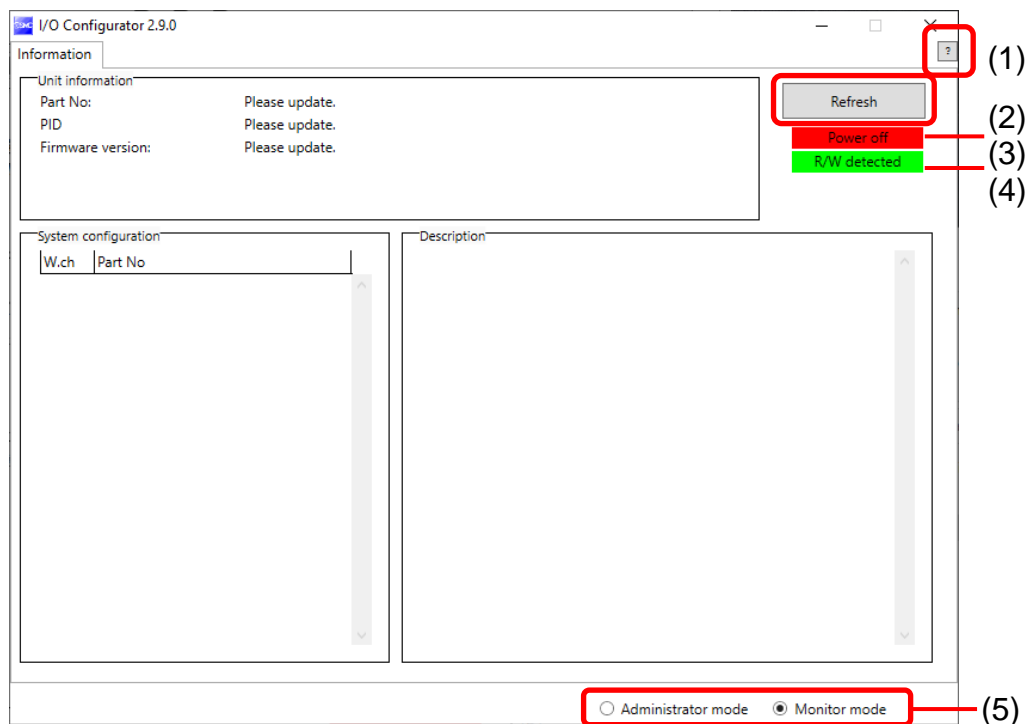
- Basic characteristics

| No. | Item | Explanation |
|---|---|---|
| 1 | Version information button | The I/O Configurator (NFC version) revision details will appear by clicking the [?] button.<br><br>Application information     ×<br><br>I/O Configurator<br><br>Version:2.9.0<br><br>Copyright © 2017-2020<br>SMC Corporation.<br>All Rights Reserved. |
| 2 | Refresh button | The Refresh button updates the Wireless Base / Remote module information displayed on the application window. The information on the window is not updated automatically. Always click the Refresh button when moving to a tab or after parameter settings.<br>The Refresh button is displayed on all screens. |
| 3 | Power status | The power status of the wireless unit is displayed. Power on is displayed when power for the Wireless Base / Remote is supplied. Power off is displayed when power is not supplied. |
| 4 | R/W connection status | Indicates the connection status of the PC－NFC reader / writer.<br><br>R/W undetected:     NFC reader / writer is not identified or USB is not connected.<br>R/W detected:       NFC communication with the wireless unit is available. |
| 5 | Operating mode switching button | These radio buttons switch the mode between Monitor mode and Administrator mode (buttons on the lower right of the I/O Configurator (NFC version) window). |

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## 2.4 Monitor mode and Administrator mode

The user can select from Monitor mode and Administrator mode using the I/O Configurator (NFC version) depending on the functions that are to be used.
- Monitor mode
  Wireless unit information or I/O map and parameter settings can be read. Parameters cannot be set.
  The Forced output function cannot be used.
- Administrator mode
  All functions can be used.

 Login to administrator mode
A password is necessary to log in to Administrator mode.
Any password can be set. To prevent unauthorized use, it is advisable to change the default password when the I/O Configurator is first used.

(1) Select the [Administrator mode] radio button.
(2) Type a password while holding the NFC reader / writer near the NFC antenna approach area of the wireless unit and click the [Confirm] button.

Password at the time of shipment: admin
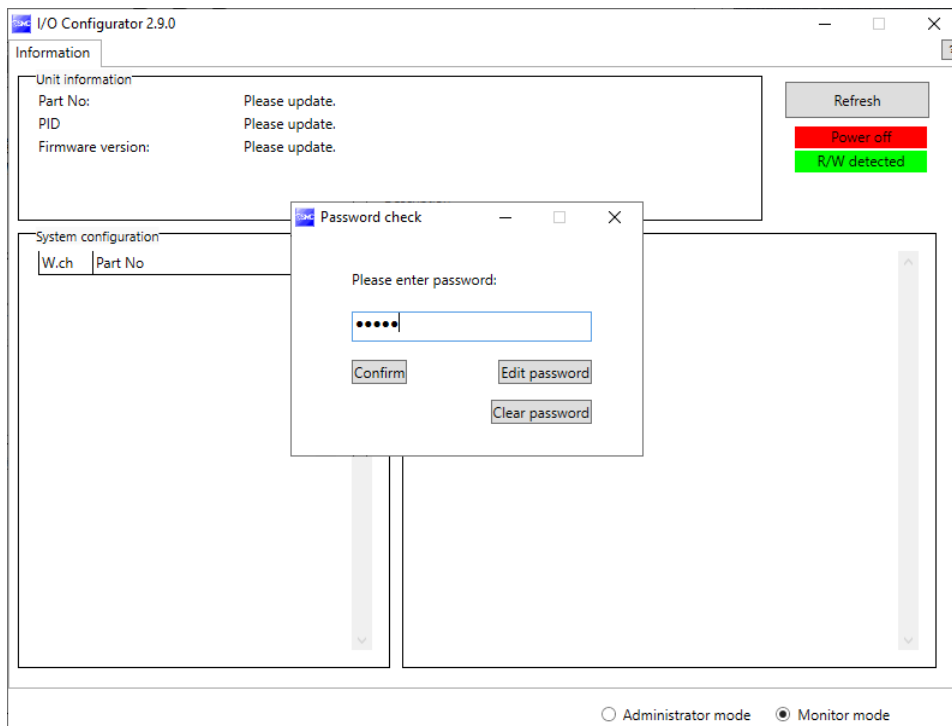


When [Edit password] is selected, a window for changing the password is displayed. Change to any suitable password.

When the NFC reader / writer is held over the wireless unit, an error message may appear, such as "Device driver software was not successfully installed" or "Smart card was not identified" depending on the version of Windows OS. The reader / writer can be continuously used.
Refer to the Microsoft website (https://support.microsoft.com/kb/976832/).

- Troubleshooting
    Read error: Confirm that the NFC reader / writer is connected to the PC.
    Confirm that the NFC reader / writer is held near the NFC antenna approach area.
    When frozen: Remove the NFC reader / writer from the PC and connect it again.
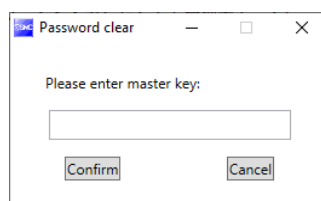
    After taking the above actions, click the [Refresh] button.


    If the password is forgotten, the previously set password can be deleted using [Clear password]. When the [Clear password] button is clicked, the password clear window will appear. The password is cleared (a password is no longer set) by entering the master key in the password box. Then it is possible to enter Administrator mode without entering a password.

Master key: ADMIN

## 2.5　Basic operational flow for settings and monitoring

To change settings, switch to Administrator mode to operate the I/O Configurator. In Administrator mode, a timeout occurs after 300 seconds of inactivity and the application returns to Monitor mode.

A timeout countdown is displayed to the right of the "Administrator mode" label.

⦿ Administrator mode : 300[sec]　　◯ Monitor mode

> ❗
> - The NFC communication is not accessed all the time. Therefore, always update the content displayed on the screen by clicking the "Refresh" button when reading the parameters.
> - The changed parameters are enabled after the product is powered on or by pressing the "Reset module" button. As the parameter setting requires time for settlement, do not turn off the power supply for 2 seconds.
> - The settings are different between the Wireless Base unit and the Wireless Remote unit. After changing the unit in which the parameters are to be set, always click the "Refresh" button to update the displayed parameters.

○ Operational flow during monitoring
A rough operational flow during monitoring is shown below (operations in Monitor mode).

| (1) Select the tab that you wish to check |
| --- |

↓

| (2) Display the setting item that you wish to check |
| --- |

↓

| (3) Click [Refresh] |
| --- |

↓

| (4) Check the present settings and values |
| --- |

○ Operational flow when changing settings
A rough operational flow during setting changing operations is shown below (operations performed in Administrator mode).

| (1) Select the tab that you wish to check |
|---|

↓

| (2) Display the setting item that you wish to check |
|---|

↓

| (3) Click [Refresh] |
|---|

↓

| (4) Check the present settings and values |
|---|

↓

| (5) Change the necessary item and value settings |
|---|

↓

| (6) Click [Save all] |
|---|

↓

| (7) Click [Reset module] (Settings are applied to the unit) |
|---|

↓

| (8) Click [Refresh] |
|---|

↓

| (9) Check that the updated settings and values are applied correctly |
|---|

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No.EX##-OMV0017-D
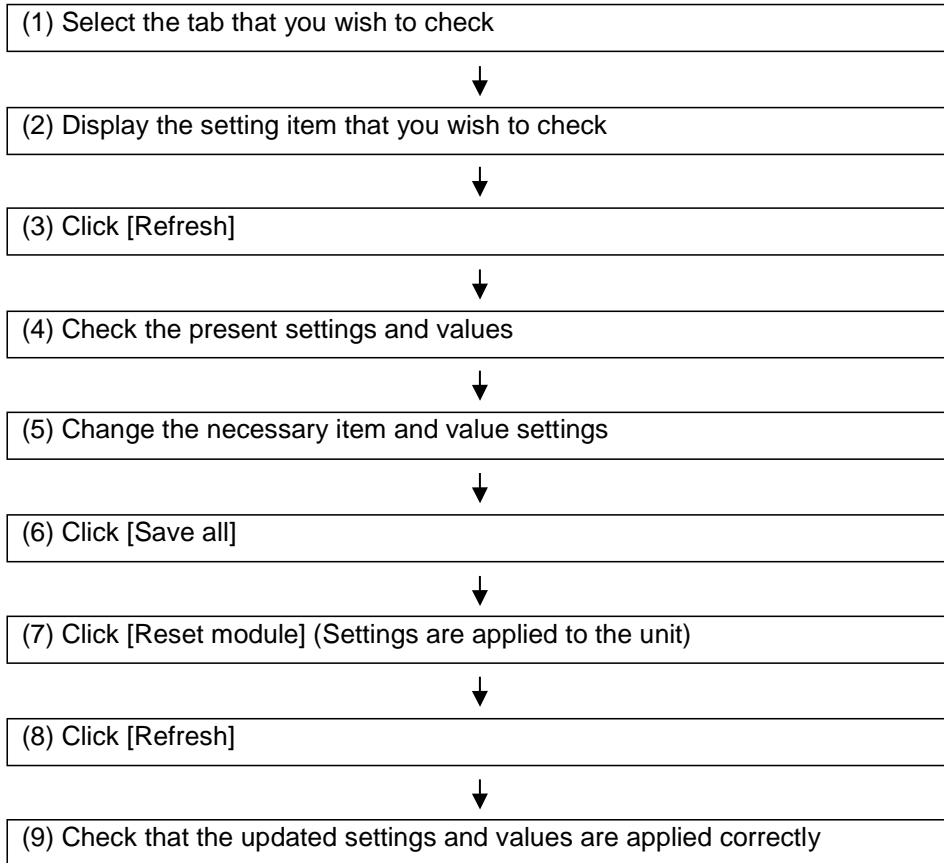
## 2.6 Explanation of screens

The tabs available on the I/O Configurator (NFC version) consist of the [Information], [I/O monitor], and [Properties] tabs.

SMC I/O Configurator 2.9.0

| Information | I/O monitor | Properties |
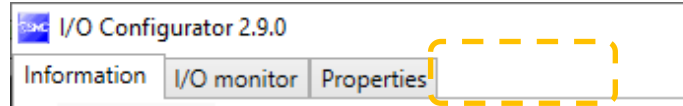
On an EXW1-series Base unit, [Event] and [Wireless] tabs are displayed to the right of the [Properties] tab.

SMC I/O Configurator 2.9.0

| Information | I/O monitor | Properties | Event | Wireless |
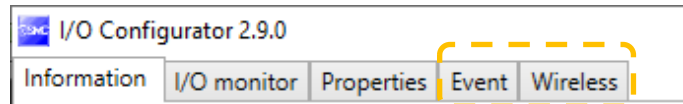
An outline of each tab is explained below. Refer to "5. Screen details of the I/O Configurator (NFC version)" for details.

● Information tab
Wireless unit information and system configuration can be checked on the Information tab.

SMC I/O Configurator 2.9.0                                                    —  □  ×

| Information | I/O monitor | Properties |                                          ?

Unit information
Part No:          EX600-WEN#       MAC address:    00:23:C6:26:0B:4F          Refresh
PID               0EE1401E         IP address:     0.0.0.0
Firmware version: 9.0.2            SUBNET MASK:    0.0.0.0                     Power on
                                                                              R/W detected
Module in/out size:   16 / 16 byte    System I/O size:   160 / 160 byte
Online/All Remotes:   0 / 5 Remotes

System configuration
| W.ch | Part No |
| -- | EX600-WEN# |
| 001 | ▶ EX600-WSV#Disconnect |
| 002 | ▶ EX600-WSVDY##-X41Disconnect |
| 003 | Dummy |
| 004 | Dummy |
| 005 | Dummy |

Description
Part No :        EX600-WEN#
PID :            0EE1401E
TAG :            EX600-WEN#
Unit status :    00 00 00 00 OK
HOLD/CLR/SET :   CLEAR
In/Out offset :  10 / 0
In/Out size :    16 / 16 byte
I/O using :      2 / 5 byte
I/O available :  14 / 11 byte
Input data :     00 00
Output data :    00 00 00 00 00
RSSI average :   -72 dBm

Edit TAG

◉ Administrator mode : 298[sec]    ○ Monitor mode

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● I/O monitor tab
The wireless unit I/O data can be monitored.
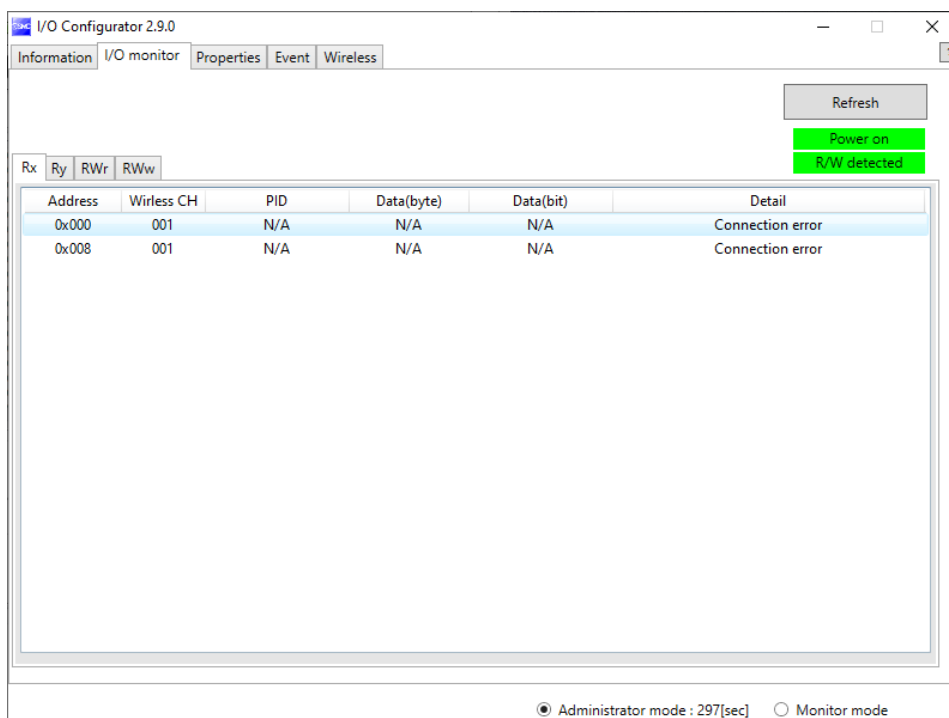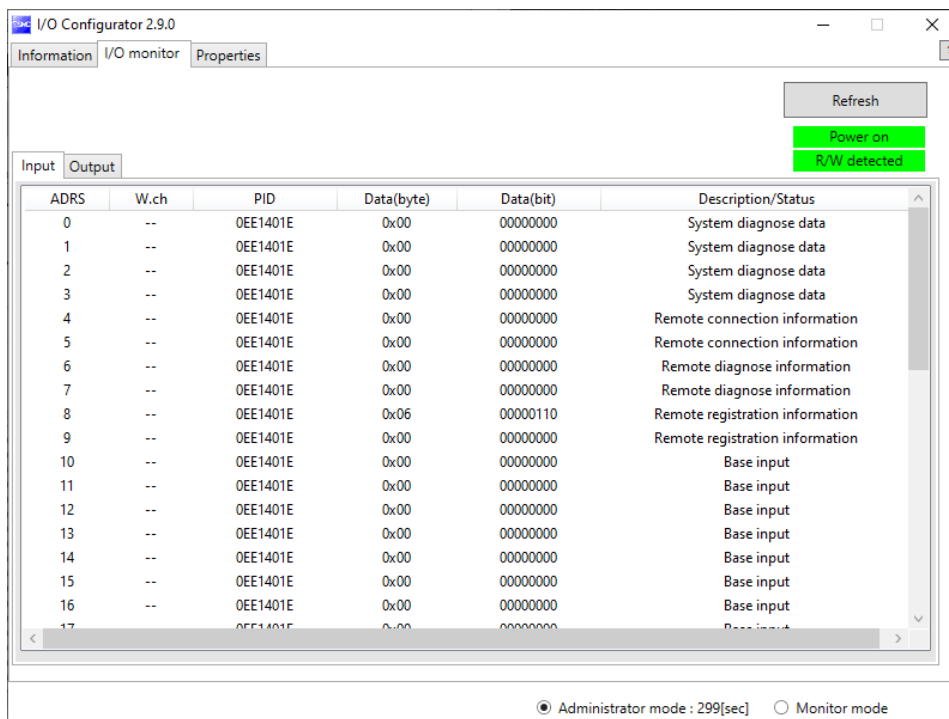The display can be switched between input and output displays by clicking the tabs at the top of the status display area. With a Base unit (EXW1-BMJA#) that supports CC-Link, the display can be switched between Bit area and Word area.
Diagnostic information or details of input / output can be checked by double-clicking any address line in the display.

| ADRS | W.ch | PID | Data(byte) | Data(bit) | Description/Status |
|---|---|---|---|---|---|
| 0 | -- | 0EE1401E | 0x00 | 00000000 | System diagnose data |
| 1 | -- | 0EE1401E | 0x00 | 00000000 | System diagnose data |
| 2 | -- | 0EE1401E | 0x00 | 00000000 | System diagnose data |
| 3 | -- | 0EE1401E | 0x00 | 00000000 | System diagnose data |
| 4 | -- | 0EE1401E | 0x00 | 00000000 | Remote connection information |
| 5 | -- | 0EE1401E | 0x00 | 00000000 | Remote connection information |
| 6 | -- | 0EE1401E | 0x00 | 00000000 | Remote diagnose information |
| 7 | -- | 0EE1401E | 0x00 | 00000000 | Remote diagnose information |
| 8 | -- | 0EE1401E | 0x06 | 00000110 | Remote registration information |
| 9 | -- | 0EE1401E | 0x00 | 00000000 | Remote registration information |
| 10 | -- | 0EE1401E | 0x00 | 00000000 | Base input |
| 11 | -- | 0EE1401E | 0x00 | 00000000 | Base input |
| 12 | -- | 0EE1401E | 0x00 | 00000000 | Base input |
| 13 | -- | 0EE1401E | 0x00 | 00000000 | Base input |
| 14 | -- | 0EE1401E | 0x00 | 00000000 | Base input |
| 15 | -- | 0EE1401E | 0x00 | 00000000 | Base input |
| 16 | -- | 0EE1401E | 0x00 | 00000000 | Base input |
| 17 | -- | 0EE1401E | 0x00 | 00000000 | Base input |

I/O Configurator 2.9.0
Information  I/O monitor  Properties
Refresh
Power on
R/W detected
Input  Output
● Administrator mode : 299[sec]  ○ Monitor mode

| Address | Wirless CH | PID | Data(byte) | Data(bit) | Detail |
|---|---|---|---|---|---|
| 0x000 | 001 | N/A | N/A | N/A | Connection error |
| 0x008 | 001 | N/A | N/A | N/A | Connection error |

I/O Configurator 2.9.0
Information  I/O monitor  Properties  Event  Wireless
Refresh
Power on
R/W detected
Rx  Ry  RWr  RWw
● Administrator mode : 297[sec]  ○ Monitor mode
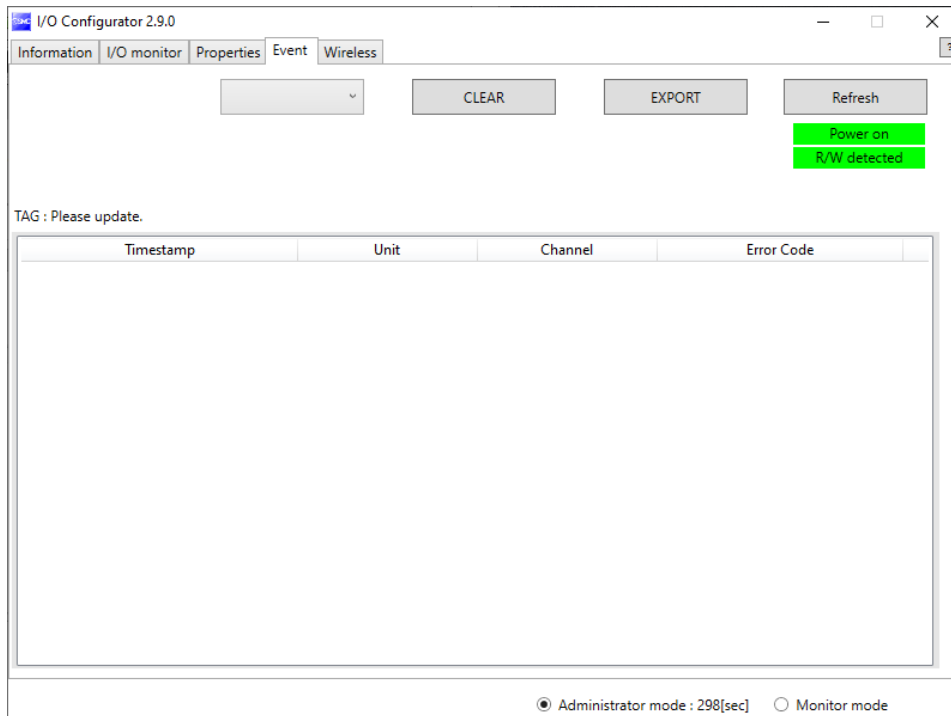
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● Properties tab
Settings of a connected wireless unit can be changed in the Properties tab.
The area displayed for making settings can be changed by selecting a radio button in the "Control panel".
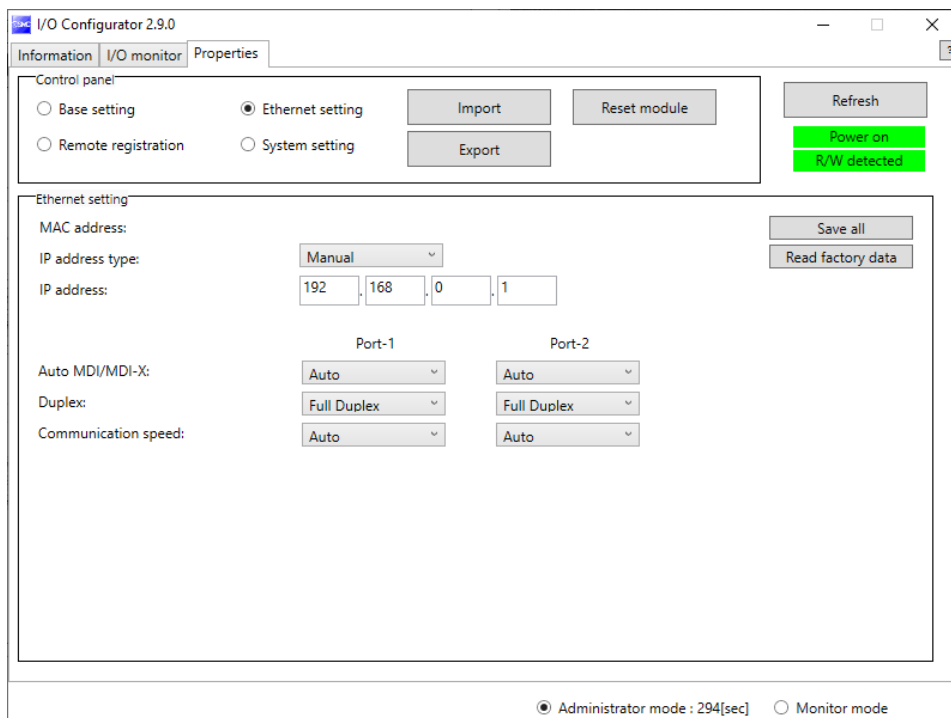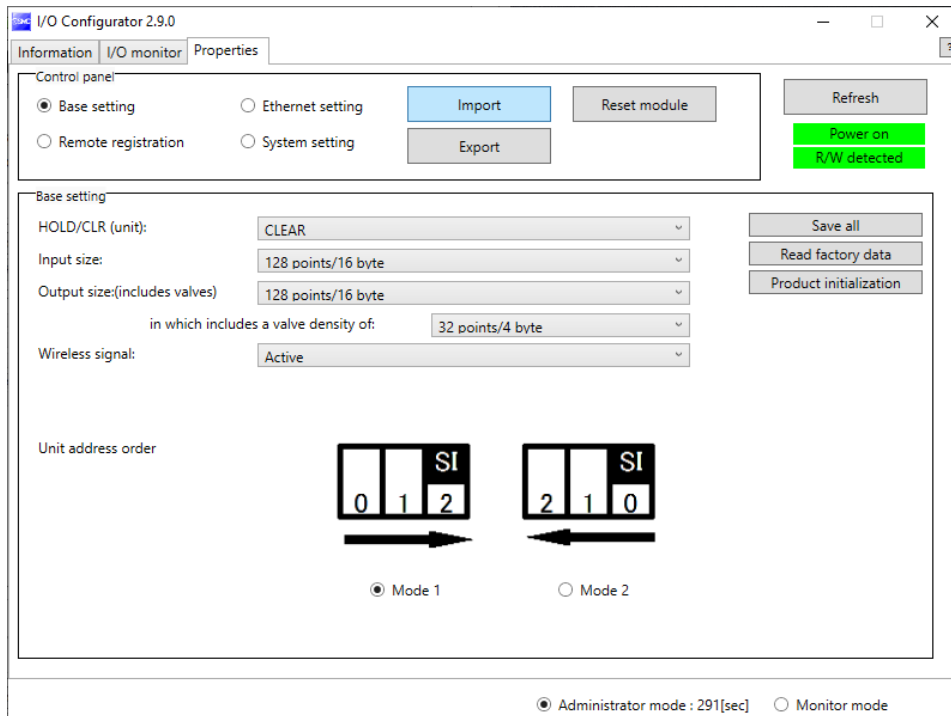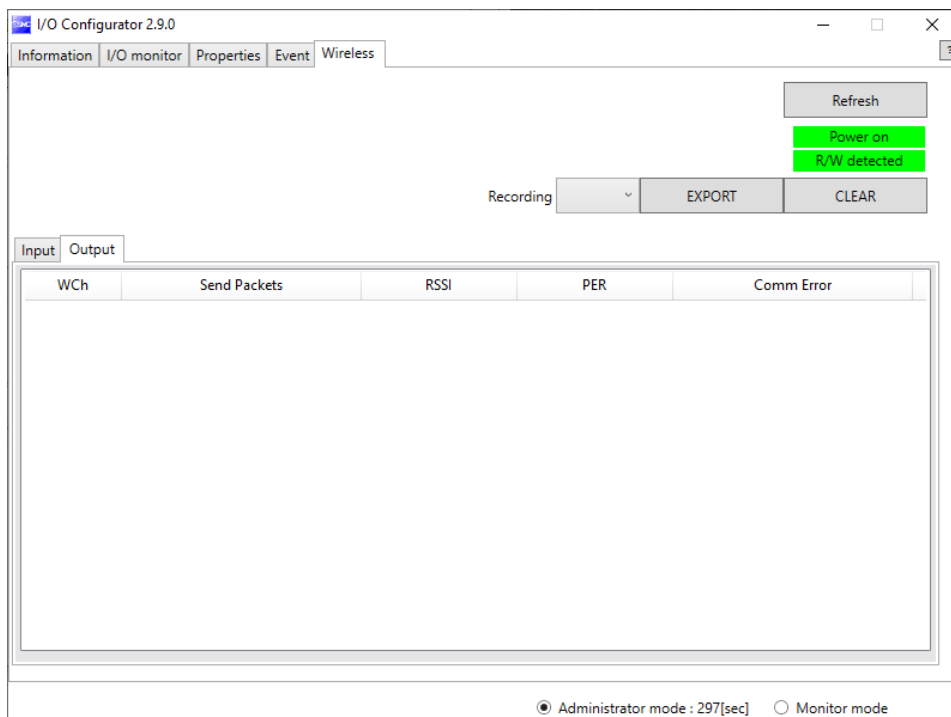
● Event tab
Displayed on an EXW1-series Base unit, this tab makes it possible to check the event information (errors, etc.) of the Wireless Base or Wireless Remotes.



● Wireless tab
Displayed on an EXW1-series Base unit, this tab makes it possible to check wireless log data.
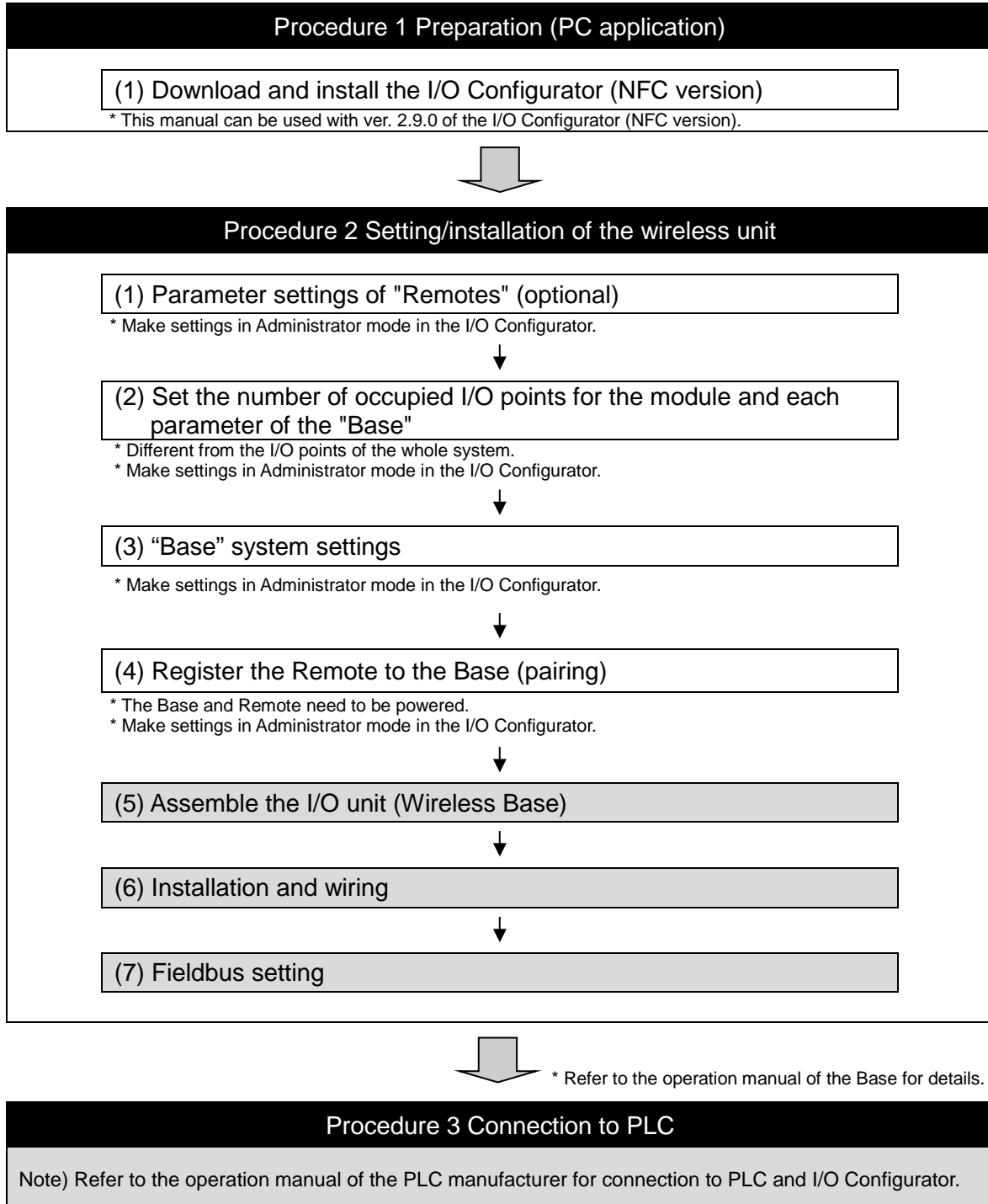
# 3. Setting of the wireless unit system

Installation of the SMC wireless system (Base and Remote) so that it can be controlled by an upper level controller is described here. Grayed out items do not use the I/O Configurator. Refer to the operation manual for each product.

## 3.1 Flow of setting operation

To use a wireless unit system, use the I/O Configurator (NFC version) and an NFC reader / writer to make settings on the wireless units (Base and Remotes).

Make the following settings in Administrator mode in the I/O Configurator (NFC version).

| Procedure 1 Preparation (PC application) |
| --- |
| (1) Download and install the I/O Configurator (NFC version) |

\* This manual can be used with ver. 2.9.0 of the I/O Configurator (NFC version).

| Procedure 2 Setting/installation of the wireless unit |
| --- |
| (1) Parameter settings of "Remotes" (optional) |

\* Make settings in Administrator mode in the I/O Configurator.

| (2) Set the number of occupied I/O points for the module and each parameter of the "Base" |
| --- |

\* Different from the I/O points of the whole system.
\* Make settings in Administrator mode in the I/O Configurator.

| (3) "Base" system settings |
| --- |

\* Make settings in Administrator mode in the I/O Configurator.

| (4) Register the Remote to the Base (pairing) |
| --- |

\* The Base and Remote need to be powered.
\* Make settings in Administrator mode in the I/O Configurator.

| (5) Assemble the I/O unit (Wireless Base) |
| --- |

| (6) Installation and wiring |
| --- |

| (7) Fieldbus setting |
| --- |

\* Refer to the operation manual of the Base for details.

| Procedure 3 Connection to PLC |
| --- |
| Note) Refer to the operation manual of the PLC manufacturer for connection to PLC and I/O Configurator. |

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## 3.2 Reading and obtaining device information

Start up the I/O Configurator and initiate NFC read-in with the Information tab to obtain information for each unit and the system. The displayed parameters depend on the unit.
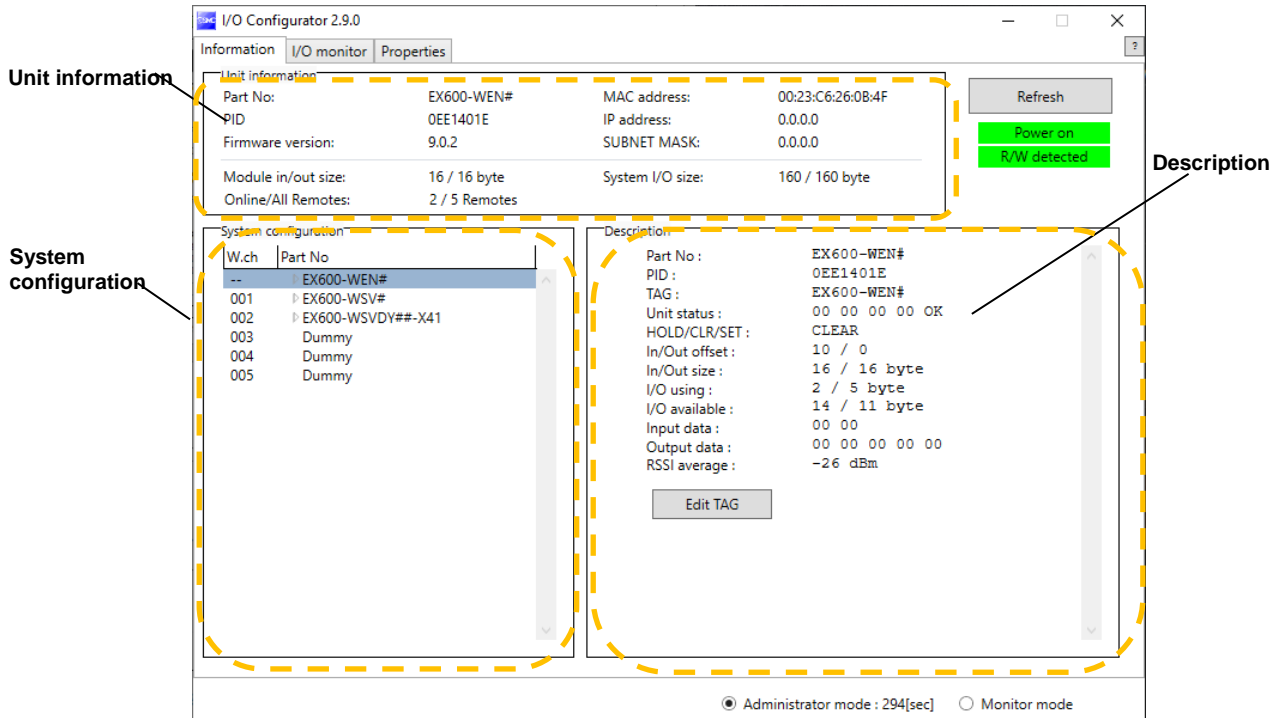


● Unit information area

The unit information area indicates the module information.

| Unit information | | | |
|---|---|---|---|
| Part No: | EX600-WEN# | MAC address: | 00:23:C6:26:0B:4F |
| PID | 0EE1401E | IP address: | 0.0.0.0 |
| Firmware version: | 9.0.2 | SUBNET MASK: | 0.0.0.0 |
| Module in/out size: | 16 / 16 byte | System I/O size: | 160 / 160 byte |
| Online/All Remotes: | 2 / 5 Remotes | | |

Depending on the displayed item, the status can still be checked even when power to the wireless unit is off.

● System configuration area

System configuration shows the configuration information of the Wireless Base / Remote modules. "Error" appears to the right of a unit name when an error occurs.

Connected I/O units can be checked by double-clicking on the name of a displayed wireless unit or clicking on the "□" to the left.
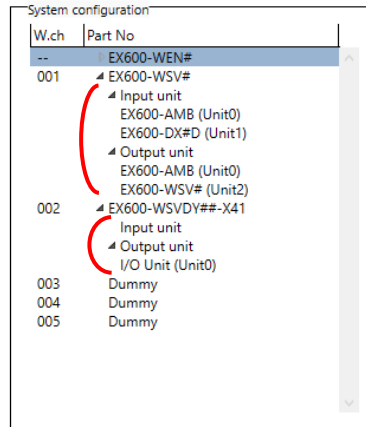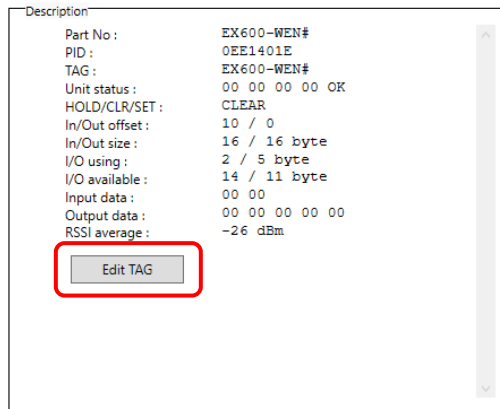


● Description area

Description of the unit selected in the system configuration area.
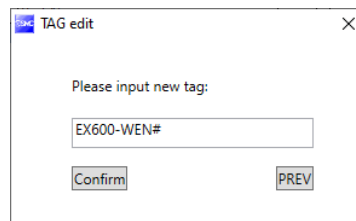
### 3.2.1    Entry of individual identification (Edit TAG)

Only the SI unit can be set using [Edit TAG]. Up to 15 alphanumeric characters can be entered.

(1)    Click the [Edit TAG] button at the bottom of the window.



(2)    Enter a new tag name and click the [Confirm] button.



The name can be returned to the previous status during editing by clicking [PREV].

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### 3.3　Remote setting

Set the parameters of a Remote unit as required.
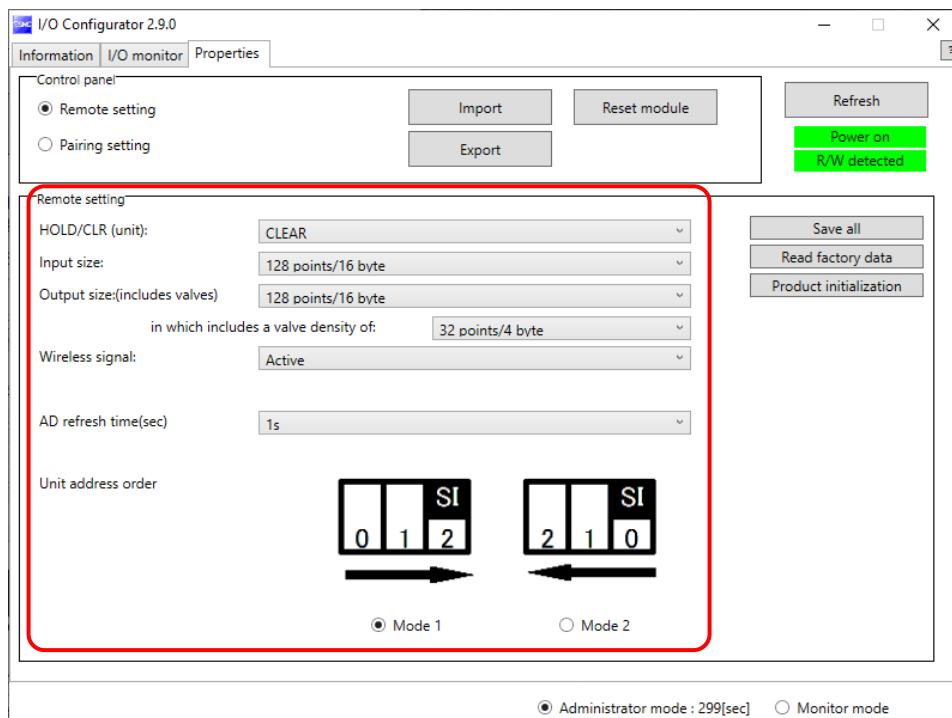- I/O points and parameter setting

> ❗
> - The setting will be applied when the Remote is turned on (or reset).

● I/O points and parameter setting
Set the occupied I/O points and parameters for the module in [Remote setting]. Settable parameters depend on the unit being set (refer to "5.3 Properties tab" for details).

Remote unit setting screen (example using EX600-WSV)

No.EX##-OMV0017-D

Remote unit setting items (example using compact wireless unit EXW1-RDXNE4## / EXW1-RDYNE4## / EXW1-RDM#E3##)

| Parameter name | Set value | Initial value |
|---|---|---|
| Input size* | 16 points (16 bits) | 16 points (16 bits) |
| Output size (includes valves)* | 16 points (16 bits) | 16 points (16 bits) |
| Wireless signal | Active / Idle | Active |
| Power Supply Voltage Monitor (Control/Input) | Enable / Disable | Enable |
| Power Supply Voltage Monitor (Output) | Enable / Disable | Disable |
| Output action when upper communication is disconnected. | Clear / Hold | Clear |
| Output action when wireless communication is disconnected. | Clear / Hold | EXW1-RDYNE4#: Clear EXW1-RDM#E3#: Hold |

* Although the number of occupied inputs / outputs of the EXW1-RDM# is fixed at 16 (16 bits), only the lower 8 bits are available.

Remote unit setting items (example using manifold-type wireless unit EX600-WSV#)

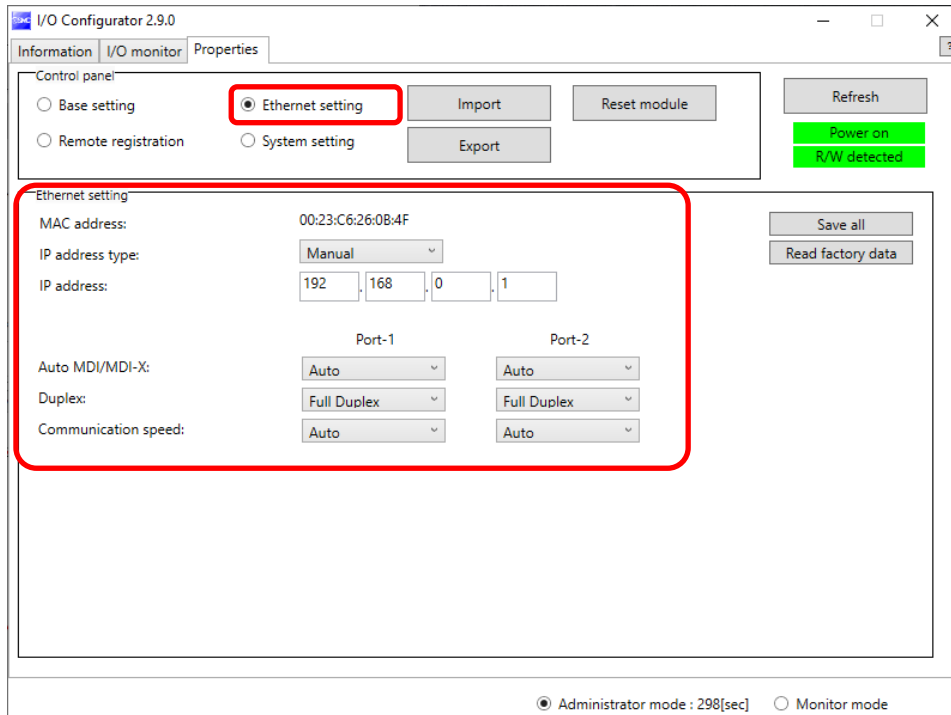| Parameter name | Set value | Initial value |
|---|---|---|
| HOLD/CLR (unit) | Clear / Hold / Software Control | Clear |
| Input size | 0 to 128 points (0 to 16 bytes) | 128 points/16 byte |
| Output size (includes valves) | 0 to 128 points (0 to 16 bytes) | 128 points/16 byte |
| in which includes a valve density of | 0 to 32 points (0 to 4 bytes) | 32 points/4 byte |
| Wireless signal | Active / Idle | Active |
| AD refresh time (sec) | 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 30 / 60 s | 1 s |
| Unit address order | Mode 1 / Mode 2 | Mode 1 |

## 3.4 Base setting

Make the Base unit settings. Set the communication environment using the PLC, make unit settings, etc.
- Communication environment with PLC ([Ethernet setting], [CC-Link Setting])
- I/O points and parameter setting
- System setting

● Ethernet setting
Make the EtherNet settings when using a Base unit that supports EtherNet/IP.



The parameters below can be set (refer to "5.3 Properties tab").

Ethernet setting items (example using manifold-type wireless unit EX600-WEN)

| Parameter name | Set value | Initial value |
|---|---|---|
| MAC address | – | – |
| IP address type | Manual / DHCP / Remote Control | Manual |
| IP address | Enter value | 192.168.0.1 |
| Auto MDI/MDI-X | Auto / MDI / MDIX | Auto |
| Duplex | Full Duplex / Half Duplex | Full Duplex |
| Speed | Auto / 100 Mbps / 10 Mbps | Auto |

❗
- "Ethernet setting" is only displayed for a Base unit that supports EtherNet/IP.

SMC

No.EX##-OMV0017-D

● CC-Link setting
Make the CC-Link settings when using a Base unit that supports CC-Link.
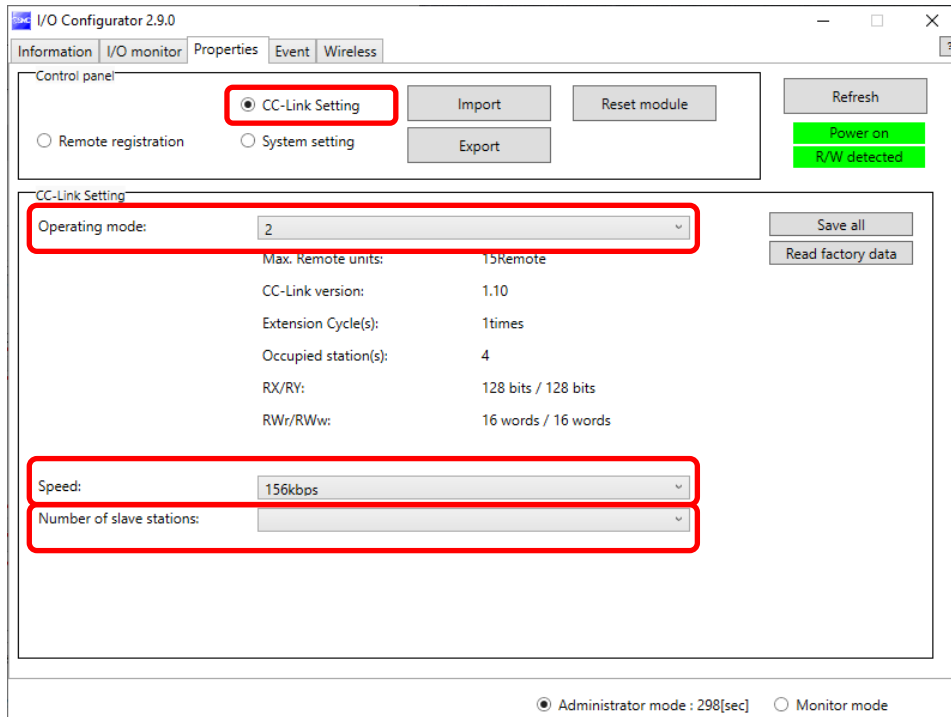


The parameters below can be set (refer to "5.3 Properties tab").

CC-Link setting items (example using compact wireless unit EXW1-BMJA#)

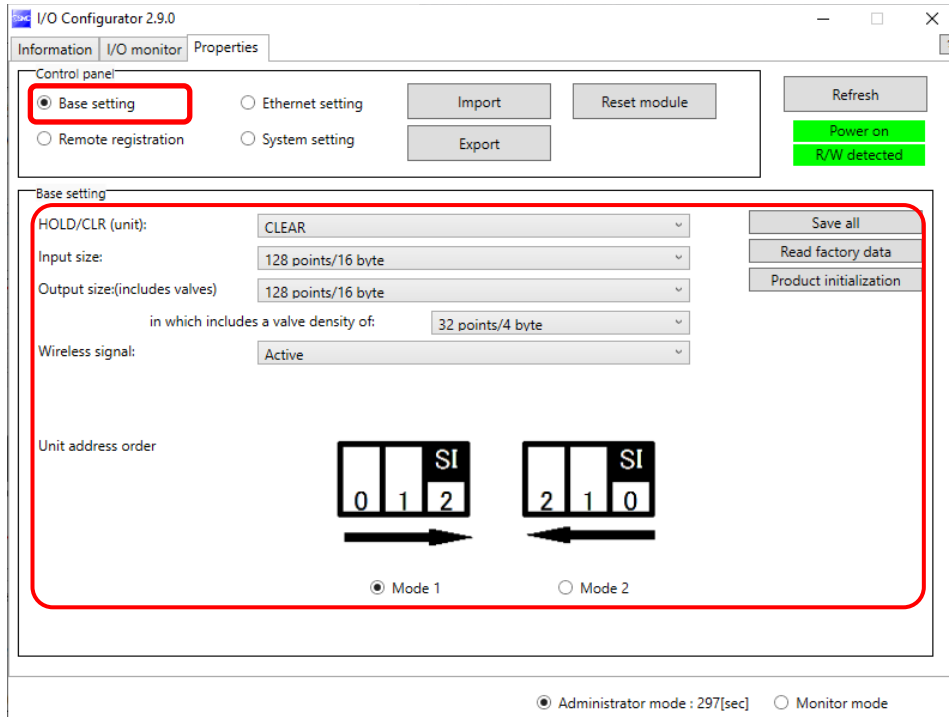| Parameter name | Set value | Initial value |
|---|---|---|
| Operating mode | 1 to 8 | 2 |
| Speed | 156 kbps / 625 kbps / 2.5 Mbps / 5 Mbps / 10 Mbps | 156 kbps |
| Number of slave stations | 1 to 64 stations | No value |

❗
- "CC-Link Setting" is only displayed for a Base unit that supports CC-Link.

SMC

● I/O points and parameter setting

Set the occupied I/O points and parameters for the module using [Base setting].

Base unit setting screen (example using EX600-WEN)



The parameters below can be set (refer to "5.3 Properties tab").

Base unit setting items (example using manifold-type wireless unit EX600-WEN# / EX600-WPN#)

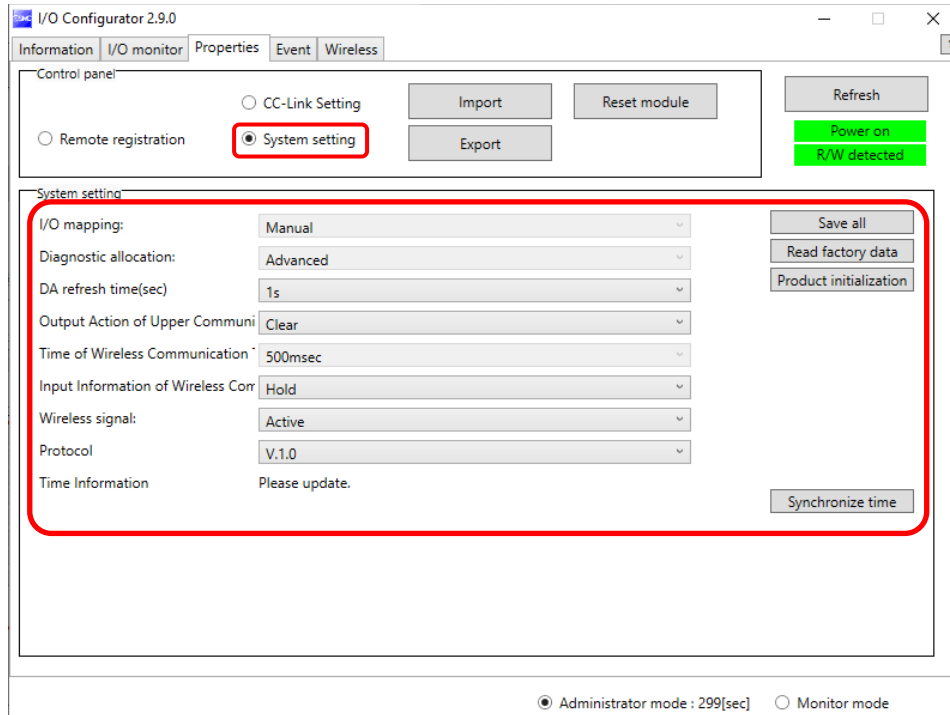| Parameter name | Set value | Initial value |
|---|---|---|
| HOLD/CLR (unit) | CLEAR / HOLD / Software Control | CLEAR |
| Input size | 0 to 128 points (0 to 16 bytes) | 128 points/16 byte |
| Output size (includes valves) | 0 to 128 points (0 to 16 bytes) | 128 points/16 byte |
| in which includes a valve density of | 0 to 32 points (0 to 4 bytes) | 32 points/4 byte |
| Wireless signal | Active / Idle | Active |
| Unit address order | Mode 1 / Mode 2 | Mode 1 |

**❗**
- [Base setting] is not displayed for a Base unit that supports CC-Link (EXW1-BMJA#)

**SMC**

No.EX##-OMV0017-D

● System setting

Change the parameter settings as required.

System setting screen (example using EXW1-BMJA#)



The parameters below can be set. Settable parameters depend on the unit being set (refer to "5.3 Properties tab" for details).

System setting items (example using compact Wireless Base EXW1-BMJA#)

| Parameter | Set value | Initial value |
|---|---|---|
| I/O mapping | Manual | Manual |
| Diagnostic allocation | Advanced | Advanced |
| DA refresh time (sec) *1 | 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 30 / 60 s | 1 s |
| Output Action of Upper Communication | Clear / Hold / Individual | Clear |
| Time of Wireless Communication | 20 / 40 / 100/ 200 / 500 / 1,000 / 2,000 / 5,000 msec | 500 msec |
| Input Information of Wireless Communication | Clear / Hold | Hold |
| Wireless signal | Active / Idle | Active |
| Protocol | V.1.0 / V.2.0 | V.1.0 |
| Time Information *2 | - | Unsynchronized |

*1 It is necessary to set the data update time for each analog input unit connected to the Wireless Remote.
*2 Click [Synchronize time] to synchronize with the system time on the PC being used to make settings. Counting starts from that time.

🛑
- The protocol version is set to V.1.0 by default; to use the 1 Mbps wireless communication speed and the frequency channel selecting function (F.C.S.) in a wireless system consisting solely of EXW1 series devices, change the protocol version to V.2.0 before pairing them.

SMC

System setting items (example using manifold-type Wireless Base EX600-WEN# / EX600-WPN#)

| Parameter | Set value | Initial value |
|---|---|---|
| I/O mapping | Manual / Auto | Manual (EX600-WEN#) <br> Auto (EX600-WPN#, fixed) |
| System input size | 16, 128 to 1280 points (2 bytes to 160 bytes) in 128-point (16-byte) units | 1280 points/160 byte |
| System output size | 16, 128 to 1280 points (2 bytes to 160 bytes) in 128-point (16-byte) units | 1280 points/160 byte |
| Diagnostic allocation | None / Simple / Advanced | Advanced |
| Max. Remote units | 0 / 15 / 31 / 63 / 127 Remotes (EX600-WEN#) <br> 0 / 15 / 31 units (EX600-WPN#) | 15 Remotes |
| DA refresh time(sec)*1 | 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 30 / 60 s | 1 s |

*1 The analog input update time is set for every Wireless Remote unit. Refer to "3.3 Remote setting".


● Wireless communication setting

With a Wireless Base unit that supports CC-Link (EXW1-BMJA#), the frequency channel can be selected.
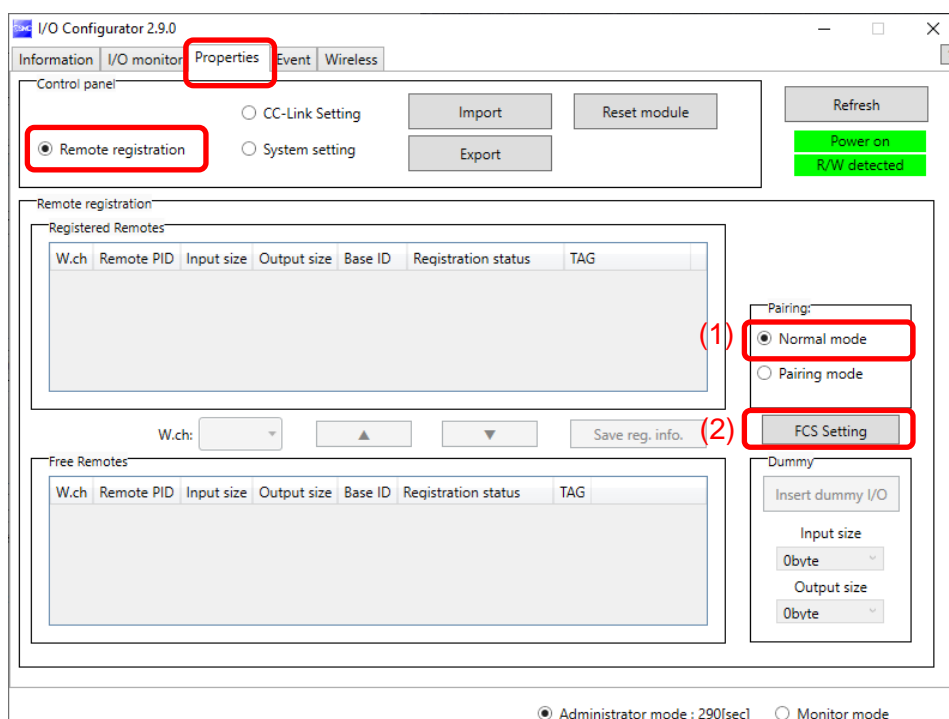Frequency channel selecting function (F.C.S.)
Only protocol V.2.0 is supported. Specify protocol V.2.0 in [System setting].
* The number of selectable frequency channels varies depending on the country in use. For more details, check the product number.
    ●Countries other than USA, Canada, and South Korea: ch 5-79 ●USA, Canada, and South Korea: ch 15-79
* If no channel is selected, communication is established on ch 79 by default.


    Make settings from [Remote registration] on the [Properties] tab.



(1)    Set [Pairing] to [Normal mode].
        Refer to "3.5 Pairing" for details on pairing.

(2)    Click [FCS Setting].

Set using the [Frequency Channel Select Window].



(1) W-LAN Channel indicators

The W-LAN indicators make it possible to select frequencies corresponding to W-LAN channels at one time.

\* In the example above, W-LAN Channel: CH.10 is selected.

(2) W-CH indicators

The W-CH indicators make it possible to select frequencies for each channel.

\* In the example above, frequencies 2419, 2426 to 2428, and 2446 to 2468 [MHz] are unused channels.
  Note that frequencies 2446 to 2468 [MHz] correspond to (1) W-LAN Channel: CH.10 above.

- Indicator colors

| Color | Description | Remarks |
|-------|-------------|---------|
| Green | Selected W-LAN channel (W-LAN Channel area) Active frequency channel (W-CH area) | |
| Yellow | Advertise channel | Cannot be set for inactive frequency channels |
| Grey | Inactive frequency channel | |

❗
- If advertise channels are included in the CH at the time of selecting a W-LAN Channel, they cannot be selected. To select them, initialize the product or remove all the registered Remotes and then configure F.C.S. before performing pairing.
- To use 5-7 frequency channels, neighbouring frequencies need to be separated by 3 MHz.
- To use 8-14 frequency channels, neighbouring frequencies need to be separated by 2 MHz.
- To use 15 frequency channels or more, neighbouring frequencies can be selected.
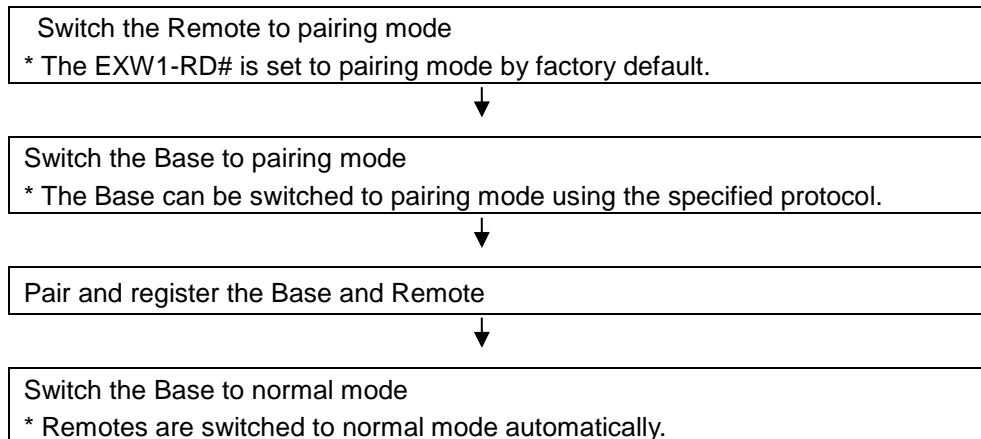
## 3.5 Pairing

Pairing is required for communication between a Base and Remote.

A Base is paired with a Remote after they are switched to pairing mode.

Pairing and registration between a Base and Remote enables wireless communication.

○ Operational flow during pairing

```
Switch the Remote to pairing mode
* The EXW1-RD# is set to pairing mode by factory default.
```
↓
```
Switch the Base to pairing mode
* The Base can be switched to pairing mode using the specified protocol.
```
↓
```
Pair and register the Base and Remote
```
↓
```
Switch the Base to normal mode
* Remotes are switched to normal mode automatically.
```

> ❗
> - After changing the operating mode for pairing, the mode is changed by clicking the [Reset] button or re-supplying power so that the mode will be changed to the Remote registration or listing for connection.

### 3.5.1　Pairing procedure

(1)　Switch the Remote to pairing mode

Connect to the Remote using NFC, select the (a) [Properties] tab and then click (b) [Refresh].

Select (d) [Pairing mode] from (c) [Pairing setting] on the (a) [Properties] tab and then click (e) [Reset module].

Once in pairing mode, the MS LED on the unit flashes alternately in red and green.

No.EX##-OMV0017-D
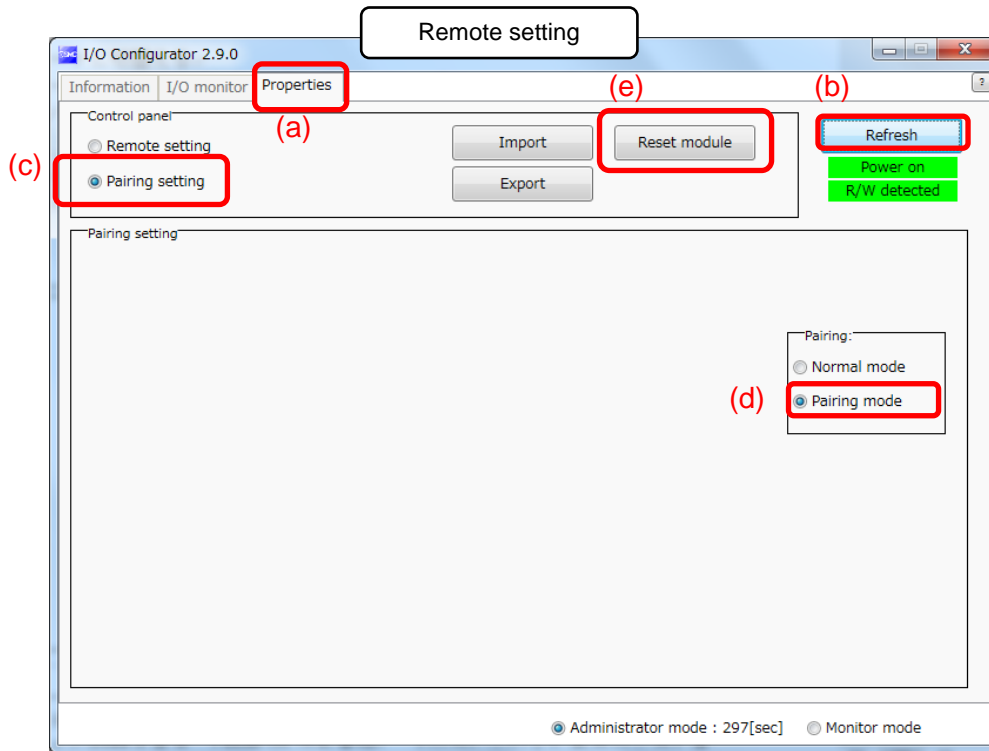
(2) Switch the Base to pairing mode

Connect to the Base using NFC, select the (a) [Properties] tab and then click (b) [Refresh].
Select (d) [Pairing mode] from (c) [Remote registration] on the (a) [Properties] tab and then click (e) [Reset module].



Base setting screen
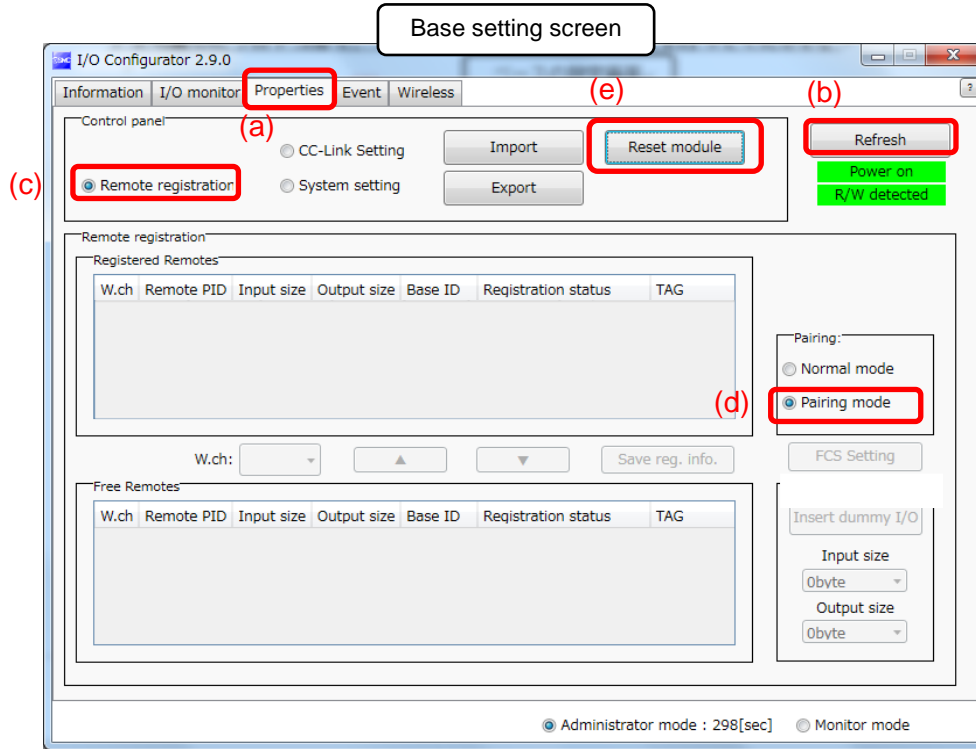
⚠
- A Base unit that supports CC-Link (EXW1-BMJA#) will change to pairing mode using the protocol set in "System setting". First set the protocol according to the Remote to be paired before switching to pairing mode.

No.EX##-OMV0017-D

(3) Pair and register the Base and Remote
Clicking (a) [Refresh] causes Remotes in pairing mode to be listed in the Free Remotes area. (b) Select the Remote that is to be registered, (c) specify a wireless channel and then (d) click ▲.



Base setting screen
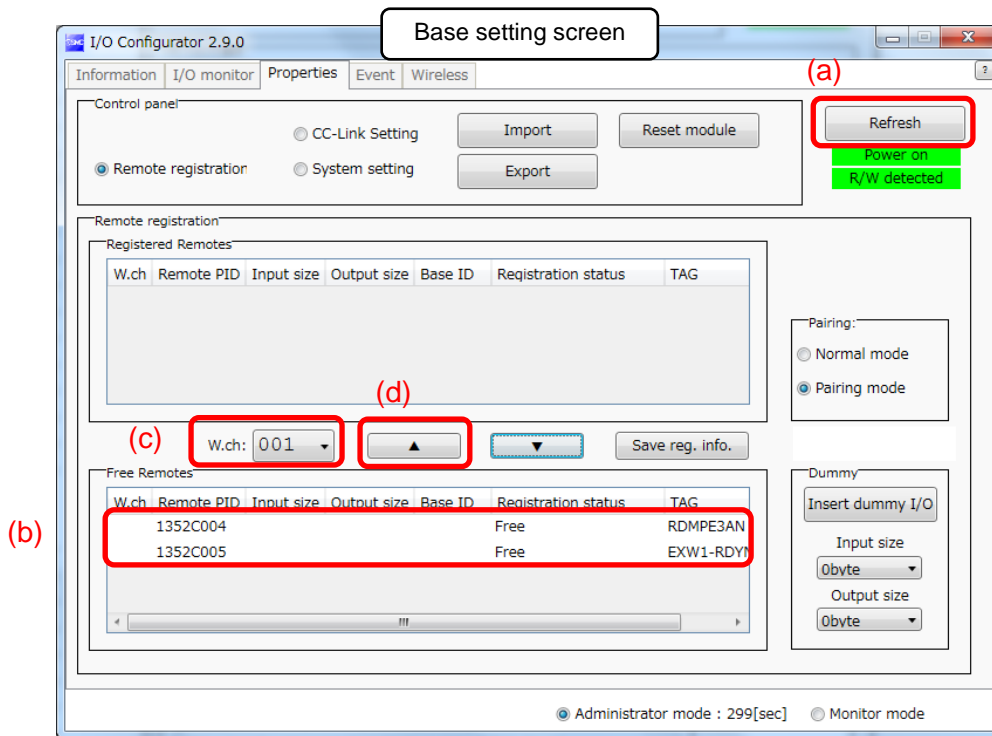
- If the Remote that you wish to pair with does not appear, click (a) [Refresh] again.
  If it still does not appear, check the following:
  **1. The Remote is not switched to pairing mode**
  **2. The Remote is not turned on**
  **3. The Remote is registered or waiting to be registered to another Base**

The Remote that is to be registered on the specified wireless channel moves to the Registered Remotes area. Make sure that the registration status is Registered Wait, and click [Save reg. info.].



Base setting screen

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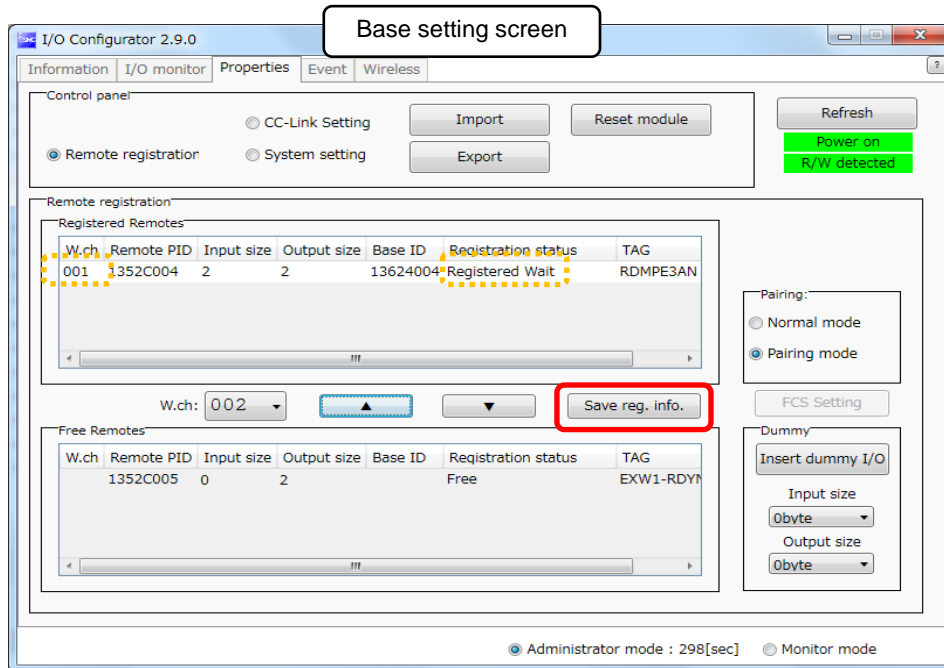
Click (a) [Reset module] and (b) [Refresh] and check that the registration status changes to Registered.

(a)    (b)



Base setting screen
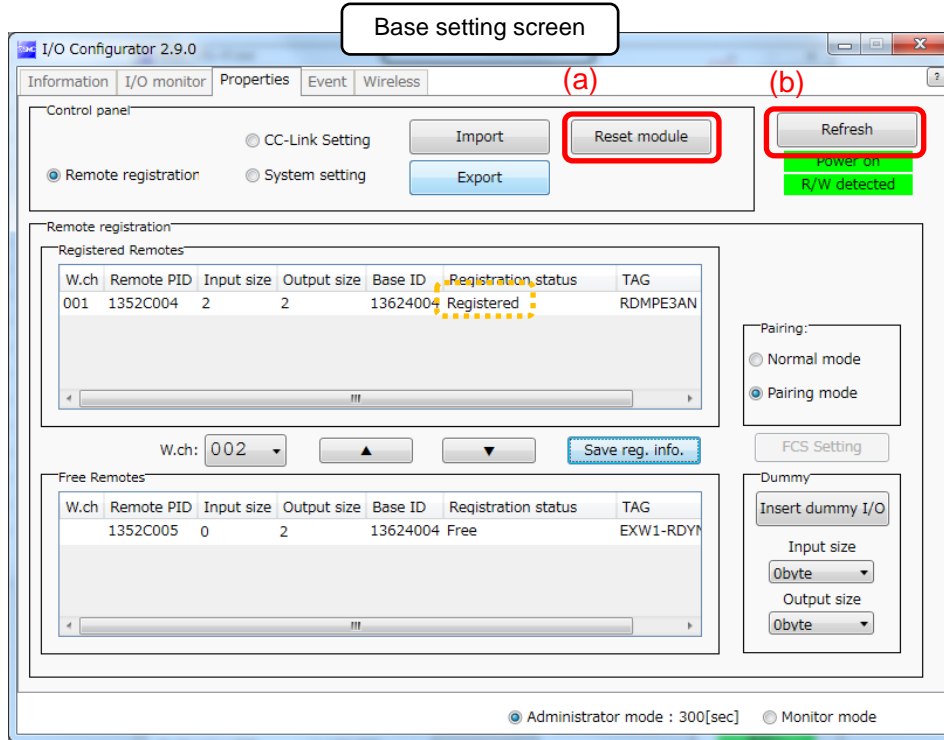
* The example below shows two Remote modules registered on channel 1 and channel 2.



Base setting screen
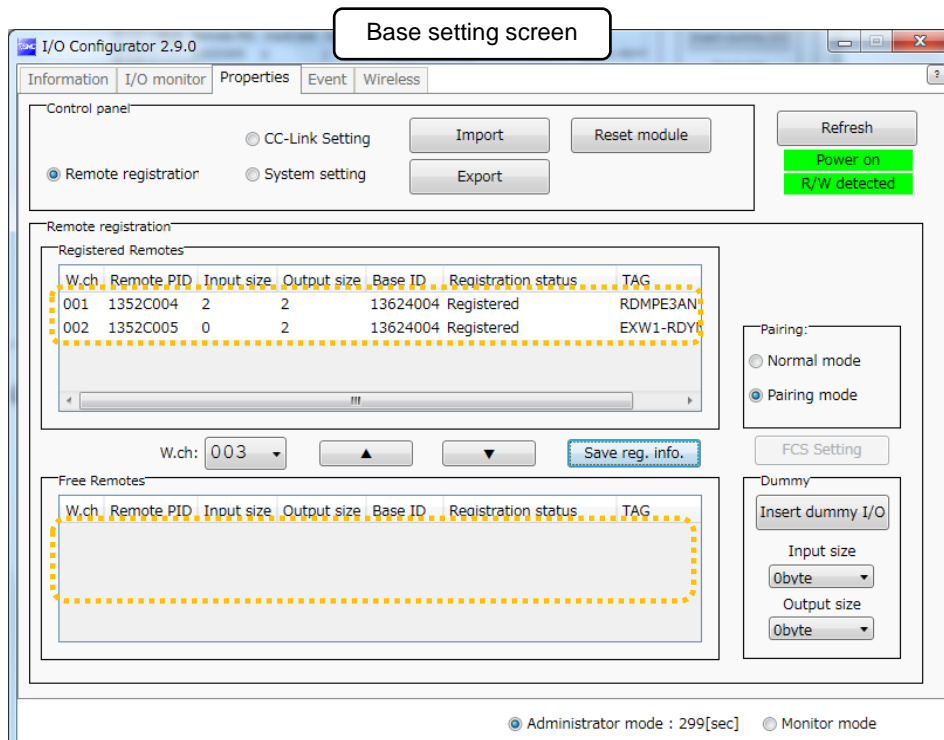
Configure the registration of dummy Remotes as necessary.

(4)    Disable the pairing mode of the Base (normal mode)
        Set the Base to pairing mode and click [Reset module].

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### 3.6 Dummy Remote

Set dummy Remotes to secure reserved area in memory and enable Remotes to be added and registered later, without changes to mapping, even after the system has been configured. Register dummy Remotes using the Base.
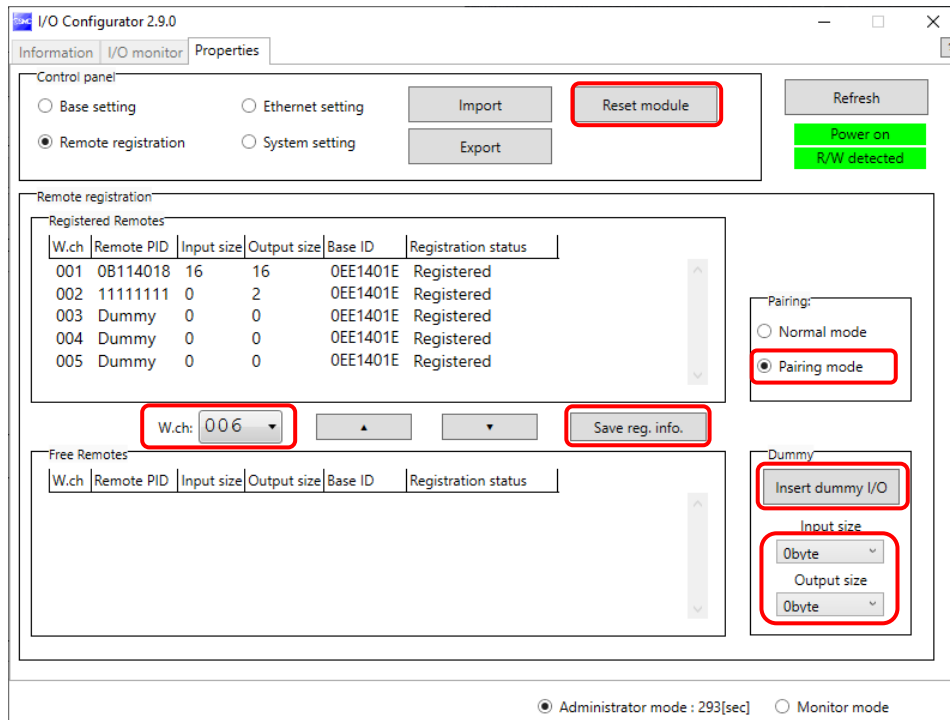


(1) **Change the operating mode** of the Wireless Base unit
    (1)-1 Set Remote registration on the Wireless Base unit to "Pairing mode".
    (1)-2 Reflect the change by clicking "Reset module" or by re-supplying power.
    (1)-3 Click the "Refresh" button to update the display.

(2) **Set inputs / outputs** of the dummy Remote
    Set the number of inputs and outputs of the dummy Remote.

(3) **Allocate** the dummy Remote to the required **wireless channel**
    Select the required wireless channel and click the "Insert dummy I/O" so that the set dummy Remote is displayed in the "Registered Remotes" area.
    (Dummy Remote registration is not complete at this point. The status is "Registered Wait".)

(4) **Finalize** dummy Remote **registration information**
    Click the "Save reg. info." button to reflect the registered information.
    (When registration has been completed successfully, the status of the dummy Remote will change to "Registered".)

> ❗ - To register a dummy Remote, it is necessary to set the number of inputs / outputs beforehand. If a Remote with inputs / outputs which are different from the set numbers is registered, the I/O map must be changed. Care should be taken.

## 3.7 Software Control

"HOLD/CLR setting (unit): Software control" of "Base / Remote setting", the output operation for when the Ethernet communication is disconnected, can be selected for valve output or output unit independently, in 1-point units, using "CLEAR", "HOLD", or "SET". The values for the Hold / Clear for each valve output or output unit are stored in the unit with outputs.

| Set value | Description |
|---|---|
| HOLD | Maintain the value before Hold / Clear. |
| CLEAR | 0 for Hold / Clear |
| SET | 1 for Hold / Clear |

* Editing is possible from the "Description" on the Information tab when "HOLD/CLR (unit)" is set to "Software Control".
    In order to set "HOLD/CLR (unit)" to "Software Control", change the setting using "Base setting" or "Remote setting" in the "Properties" tab.
* The output operation when wireless communication is disconnected is "HOLD" regardless of the setting of Software Control.

◆ Hold / Clear setting procedure
(1) Display the description of the output unit.
    (For how to display the description, refer to "5.1.2 System configuration area".)
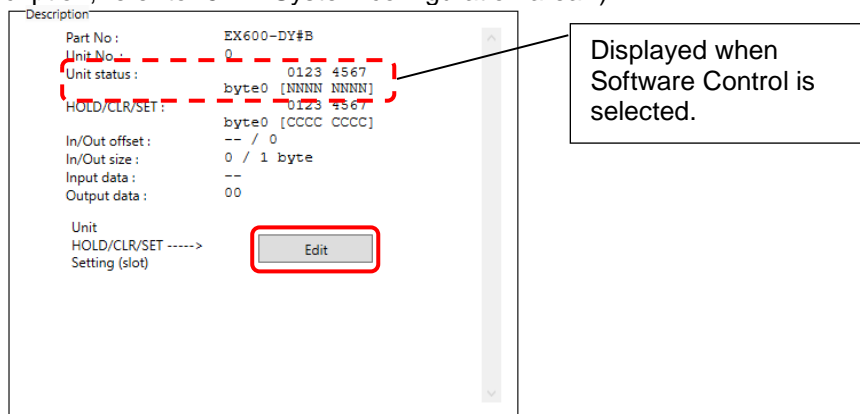


(2) The window for Unit HOLD/CLR/SET setting appears by clicking the [Edit] button.



-36-
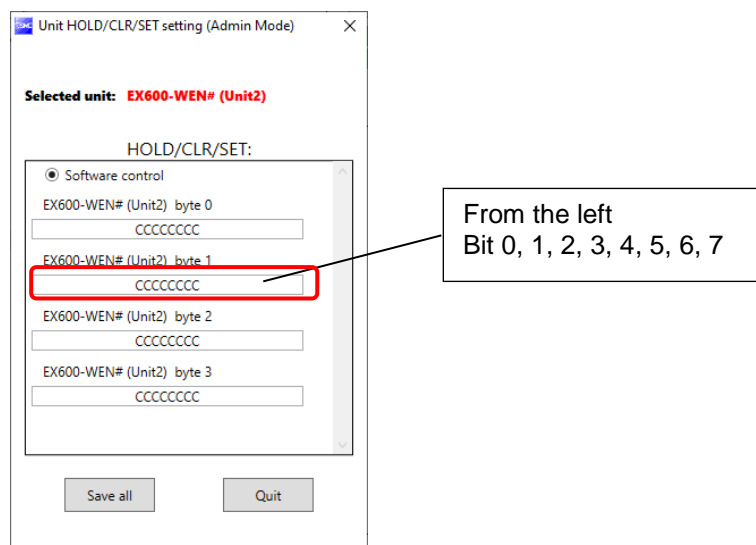
(3) Upper case letters are used to express the current status of Clear / Hold.
The settable values are C (CLEAR), H (HOLD) or S (SET). Enter 8 characters. When the required values have been entered, click the "Save all" to store the data.
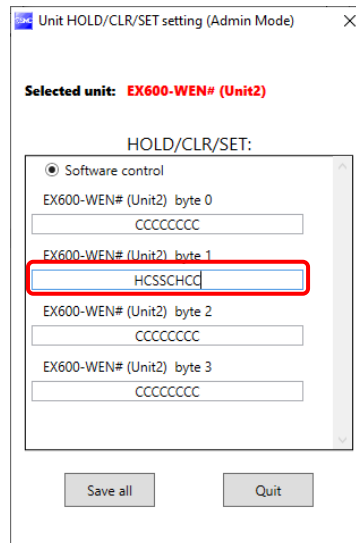


* When CLEAR or HOLD is set for HOLD/CLR/SET, the window below will be displayed.
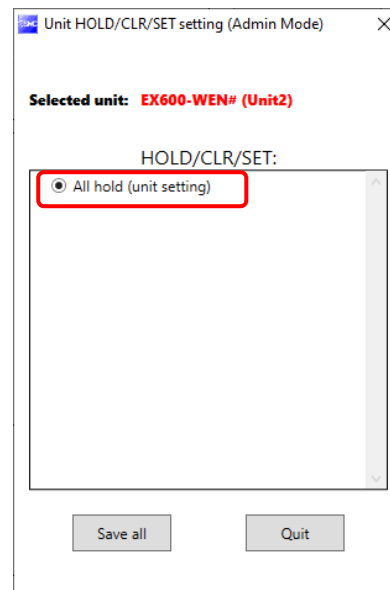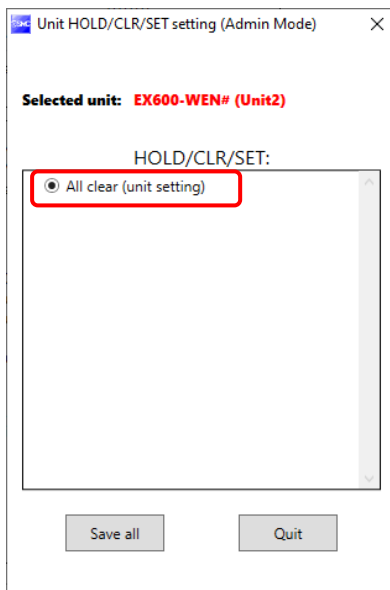


Hold / Clear / Set: CLEAR    Hold / Clear / Set: HOLD

## 3.8　Using a setting file

The [Export] button in the Properties tab enables the setting of the connected unit using the current NFC reader / writer to be saved to a PC in the format of ".smc". Importing as explained in the next item enables the unit setting to be reflected in other units.

◆ Procedure for exporting the settings
(1)　Click [Export]
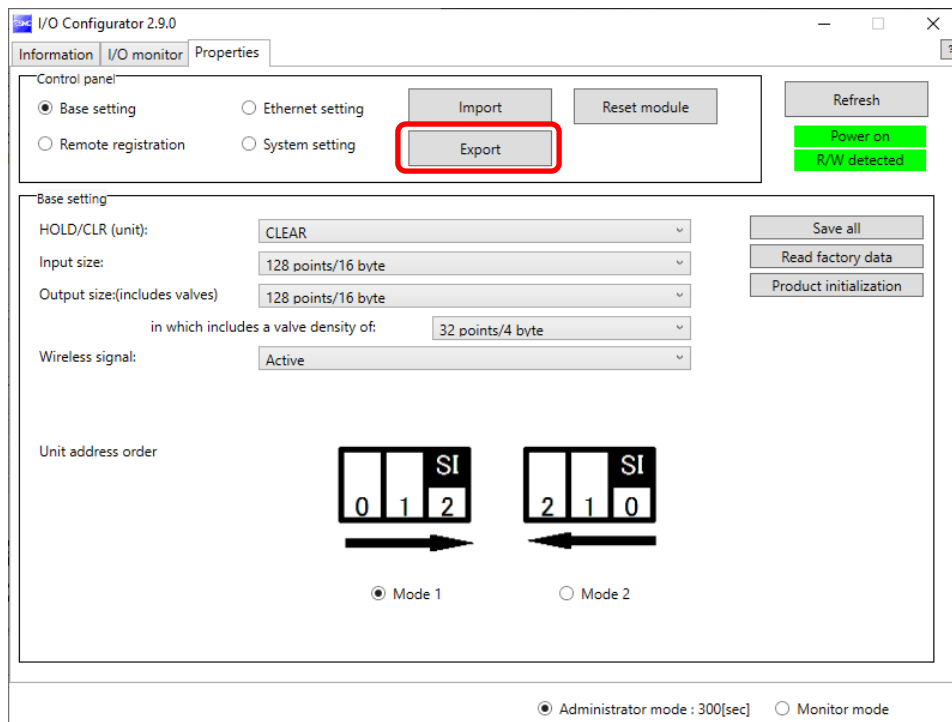


(2)　Input the file name and store the file.

No.EX##-OMV0017-D
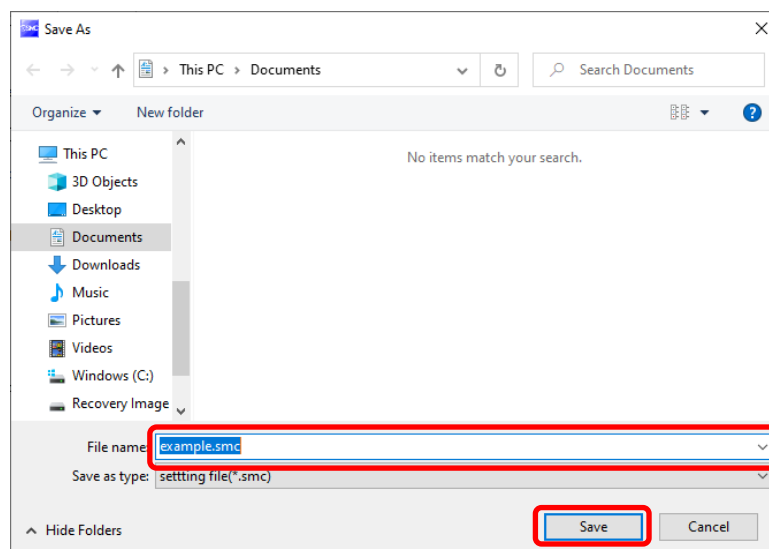
◆ Procedure for importing the settings
(1) Click the "Import" button.



(2) Select the required file and click [Open]. Select "Yes" to execute the import of settings.

- Export/import settings (EX600 series)

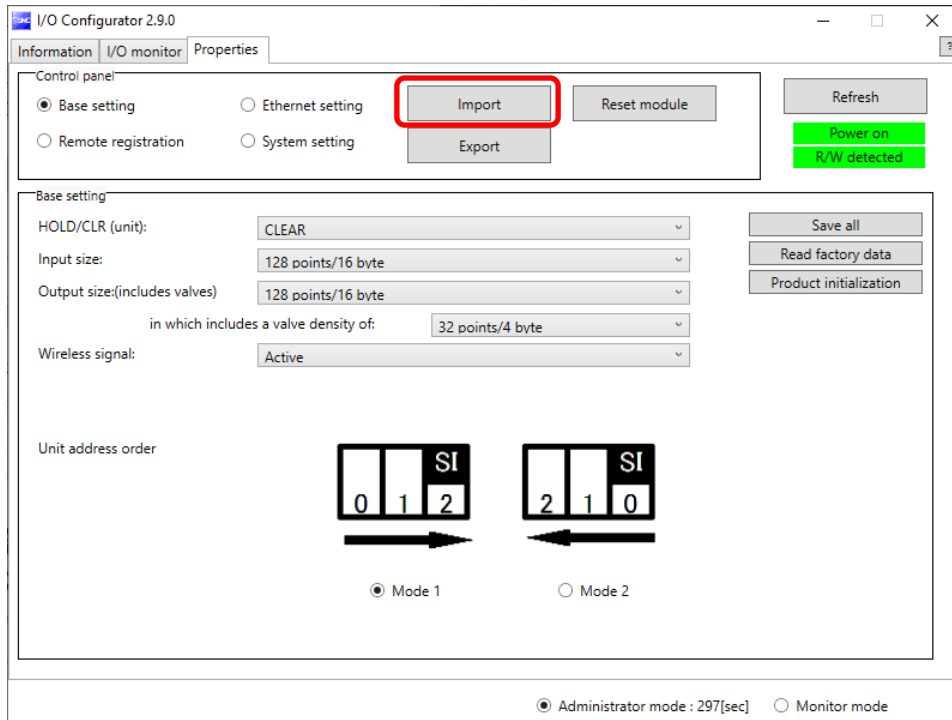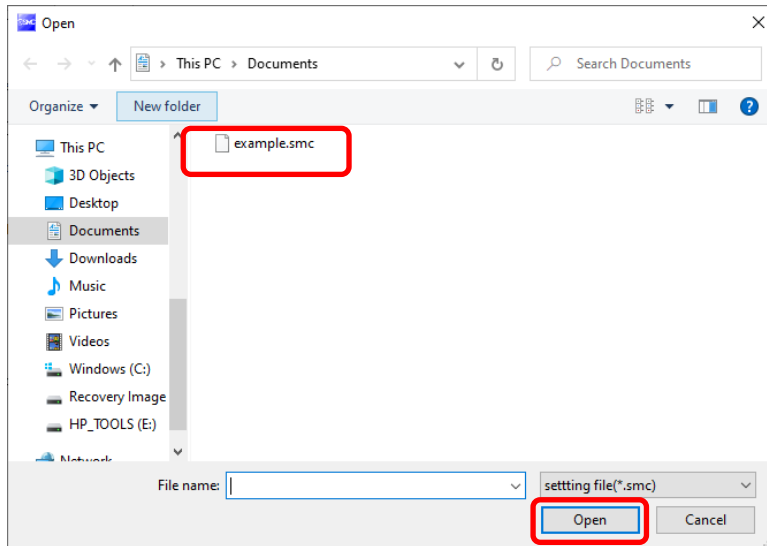| Item | | Base | | Remote |
|---|---|---|---|---|
| | | EX600-WEN# | EX600-WPN# | EX600-WSV# |
| Base settings/Remote settings | HOLD/CLR (unit) | OK | OK | OK |
| | Input size | OK | OK | OK |
| | Output size (includes valves) | OK | OK | OK |
| | in which includes a valve density of | OK | OK | OK |
| | Wireless signal | OK | OK | OK |
| | AD refresh time (sec) | - | - | OK |
| | Unit address order | OK | OK | OK |
| | Power Supply Voltage Monitor (Control/Input) | - | - | - |
| | Power Supply Voltage Monitor (Output) | - | - | - |
| Remote registration / pairing setting | Normal / pairing modes | - | - | - |
| Ethernet setting | IP address type | OK | - | - |
| | IP address | OK | - | - |
| | Auto MDI / MDI-X | OK | - | - |
| | Duplex | OK | - | - |
| | Speed | OK | - | - |
| System setting | I/O mapping | OK | - | - |
| | System input size | OK | - | - |
| | System output size | OK | - | - |
| | Diagnostic allocation | OK | OK | - |
| | Max. Remote units | OK | OK | - |
| | DA refresh time (sec) | OK | OK | - |

- Import / Export settings (EXW1 series)

| Item | | Base | Remote | | |
|---|---|---|---|---|---|
| | | EXW1-BMJA# | EXW1-RDXNE4# | EXW1-RDYNE4# | EXW1-RDM#E3## |
| Remote setting | HOLD/CLR (unit) | - | - | - | - |
| | Input size | - | OK | OK | OK |
| | Output size (includes valves) | - | OK | OK | OK |
| | in which includes a valve density of | - | - | - | - |
| | Wireless signal | - | OK | OK | OK |
| | Power Supply Voltage Monitor (Control/Input) | - | OK | OK | OK |
| | Power Supply Voltage Monitor (Output) | - | - | OK | OK |
| | Output Action of Upper Communication | - | - | OK | OK |
| | Output action when wireless community to cut off. | - | - | OK | OK |
| Remote registration / pairing setting | Normal / pairing modes | - | - | - | - |
| | FCS Setting | OK | - | - | - |
| CC-Link setting | Operating mode | OK | - | - | - |
| | Speed | OK | - | - | - |
| | Number of slave stations | OK | - | - | - |
| System setting | I/O mapping | OK | - | - | - |
| | Diagnostic allocation | OK | - | - | - |
| | DA refresh time (sec) | OK | - | - | - |
| | Output Action of Upper Communication | OK | - | - | - |
| | Time of Wireless Communication | OK | - | - | - |
| | Input Information of Wireless Communication | OK | - | - | - |
| | Wireless signal | OK | - | - | - |
| | Protocol | OK | - | - | - |
| | Time Information | | - | - | - |
| Information tab | TAG | OK | OK | OK | OK |

## 3.9    Reading of factory data

Click the [Read factory data] button to initialize or check the parameters in the <u>window currently opened</u> in the [Properties] tab (excluding Remote unit registration and pairing setting).

In order to reflect the setting, turn off the power and on again or click [Reset module] when the power <u>is on</u>. Turn on the power supply if the power <u>is off</u>.
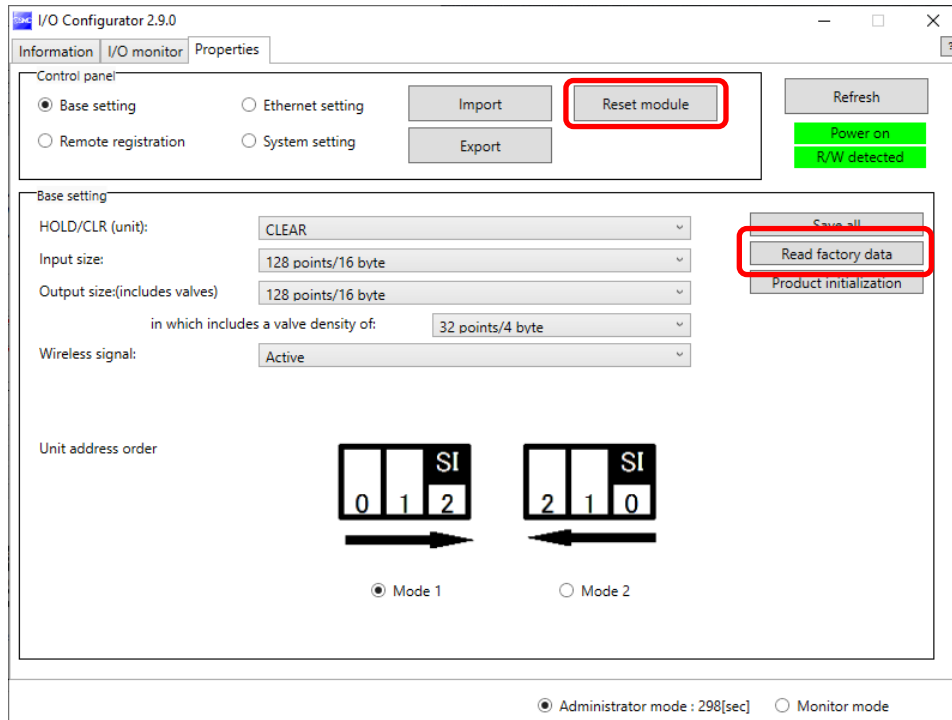


◆ Factory data settings which can be read:
- Wireless Base: Base setting, Ethernet setting, CC-Link setting, System setting
- Wireless Remote: Remote setting

## 3.10  Initialization of the product

To initialize the product, in the [Properties] tab, click [Product initialization] in [Base setting] or [Remote setting].
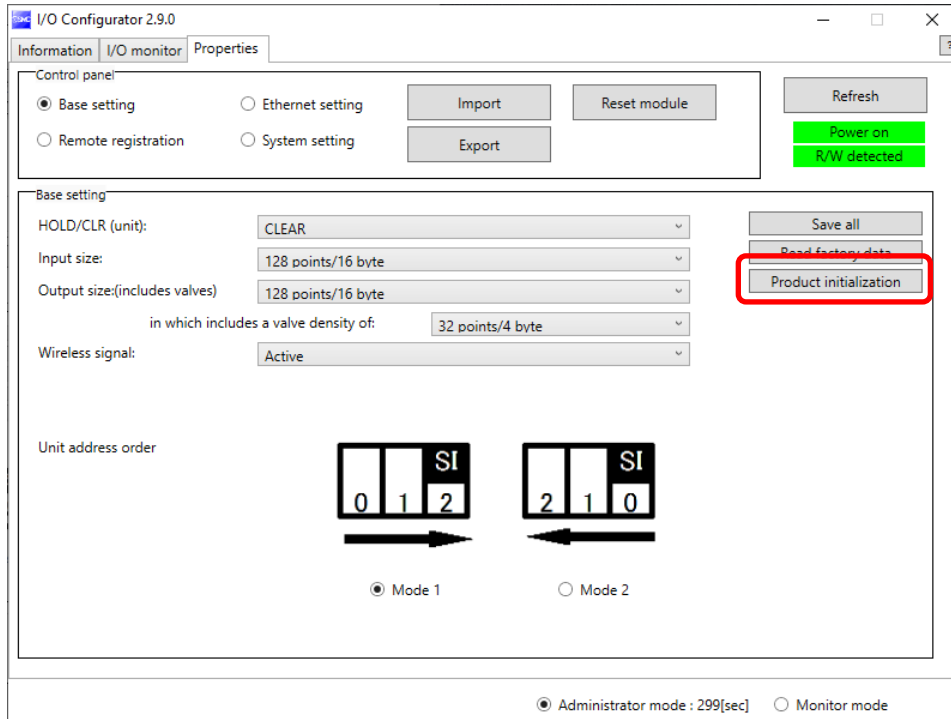


!❗
- After executing initialization, this function saves and reflects the setting, and updates the information in the window. The operation is not reversible. Care should be taken.
- With an EXW1-RD#, initializing the product results in switching to pairing mode.

Some values settable by the IO Configurator (Web version) are included in the initialization items.
Refer to the table below for the set items to be initialized.

Initialization items (I/O Configurator (NFC version) (EX600 series))

| Initialized items | | | Base | | Remote |
|---|---|---|---|---|---|
| | | | EX600-WEN# | EX600-WPN# | EX600-WSV# |
| Properties tab | Base / Remote settings | HOLD / CLR (unit) | OK | OK | OK |
| | | Input size | OK | OK | OK |
| | | Output size | OK | OK | OK |
| | | in which includes a valve density of | OK | OK | OK |
| | | Wireless signal | OK | OK | OK |
| | | AD refresh time (sec) | - | - | OK |
| | | Unit address order | OK | OK | OK |
| | | Power Supply Voltage Monitor (Control/Input) | - | - | - |
| | | Power Supply Voltage Monitor (Output) | - | - | - |
| | Remote registration | Pairing mode | OK | OK | OK |
| | | Info. registered in Base | - | - | OK |
| | Pairing setting | Pairing mode | OK | OK | OK |
| | | Info. registered in Remote | OK | OK | - |
| | Ethernet setting | IP address type | OK | - | - |
| | | IP address | OK | - | - |
| | | Auto MDI / MDI-X | OK | - | - |
| | | Duplex | OK | - | - |
| | | Speed | OK | - | - |
| | System setting | I/O mapping | OK | - | - |
| | | System input size | OK | - | - |
| | | System output size | OK | - | - |
| | | Diagnostic allocation | OK | OK | - |
| | | Max. Remote units | OK | OK | - |
| | | DA refresh time (sec) | OK | OK | - |
| Information tab | Description | TAG | OK | OK | OK |

# 4. I/O monitoring

In the [I/O monitor] tab, the I/O mapping data can be monitored.

## 4.1    Input

Shows the input mapping information of the wireless unit.
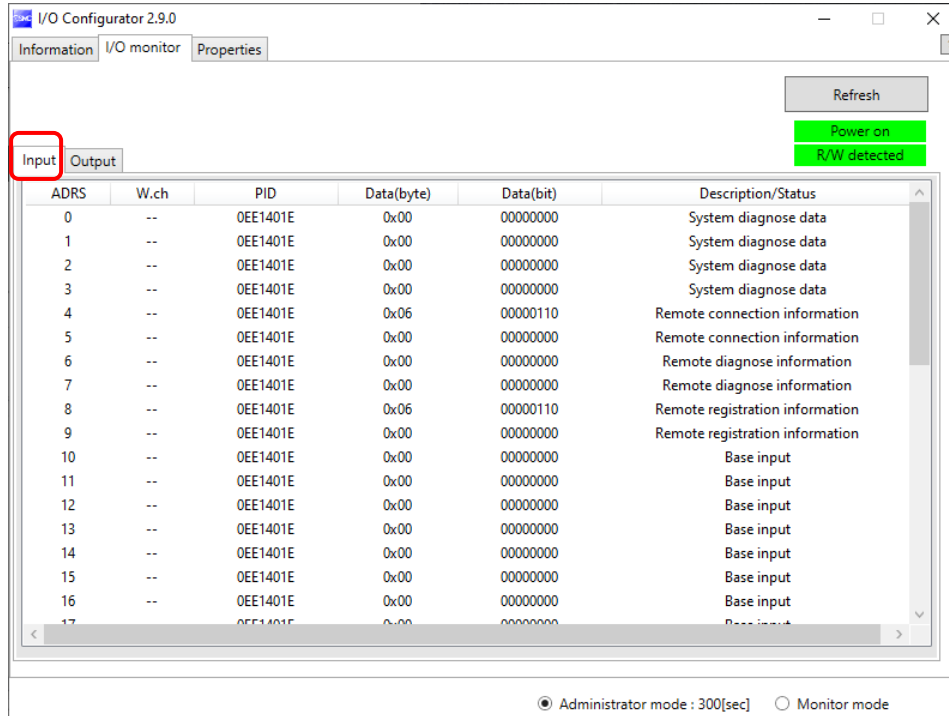


- Input display

| Display | Description |
|---|---|
| ADRS | Displays the input map address. |
| W.ch | Wireless unit channel. <br> (Wireless channel of the Base is displayed as [- -]. |
| PID | Wireless unit PID. |
| Data (byte) | Input data is displayed in bytes. |
| Data (bit) | Input data is displayed in bits. |
| Description/Status | Details of input data. |

## 4.2 Output

Shows the output mapping information of the wireless unit.
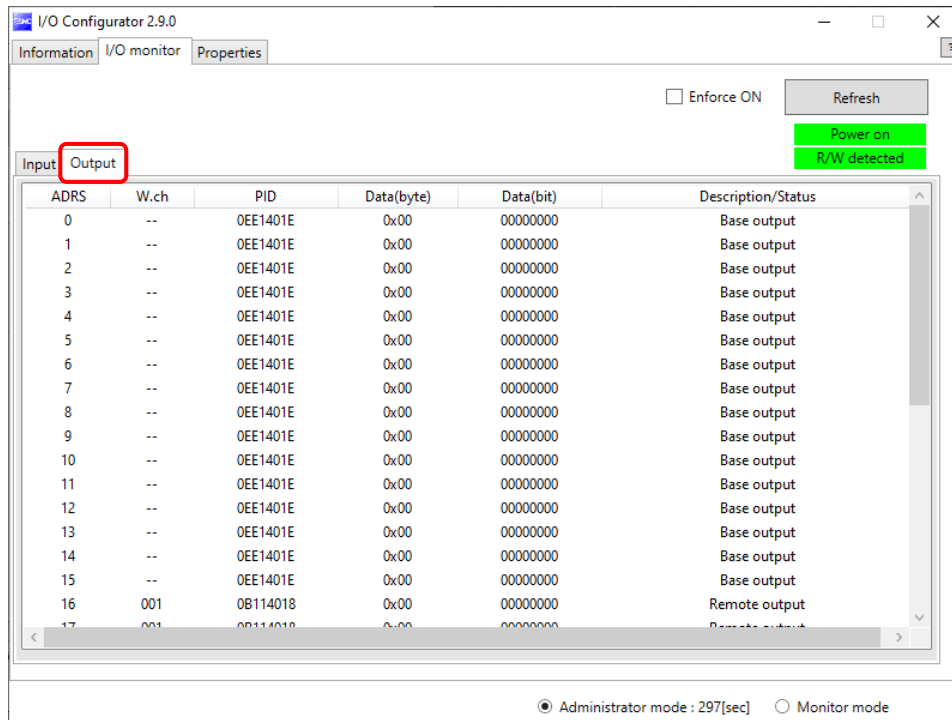


- Output display

| Display | Description |
|---|---|
| Enforce ON | Forced output mode can be selected by clicking [Enforce ON].<br>* Refer to "4.4 Forced output" for details on operation. |
| ADRS | Displays the output map address. |
| W.ch | Wireless unit channel.<br>(Wireless channel of the Base is displayed as [- -]. |
| PID | Wireless unit PID. |
| Data (byte) | Output data is displayed in bytes. |
| Data (bit) | Output data is displayed in bits. |
| Description/Status | Details of output data. |

## 4.3 Detailed Input / output information

The IO Detail window will open by double-clicking the line of an address of the I/O unit which is connected to the wireless unit.
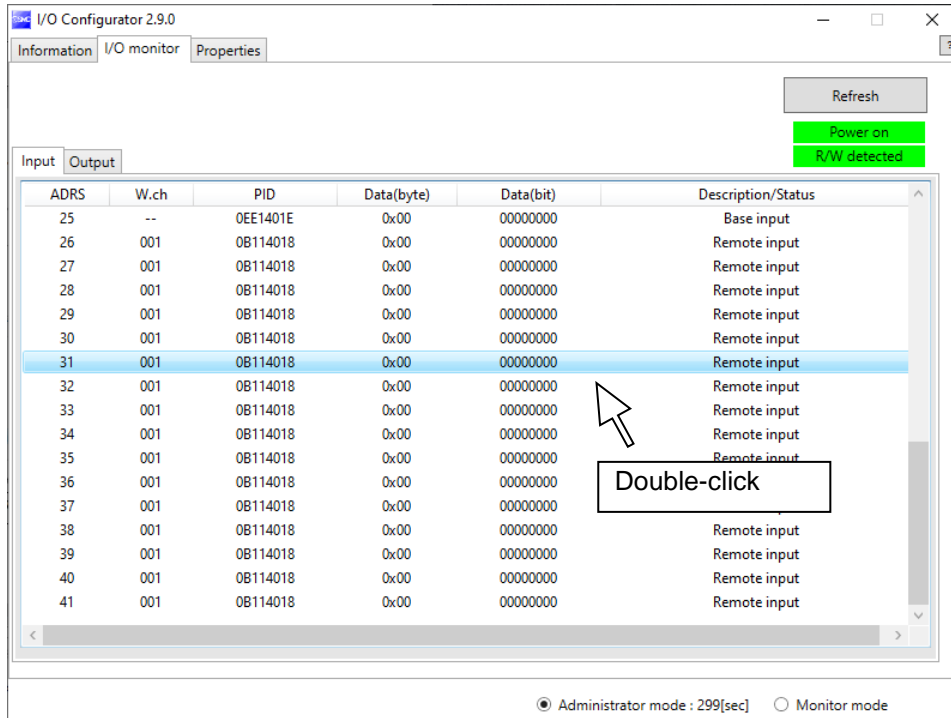


The diagnostic error type is represented by different background colours. The meaning of a background colour can be checked by clicking [>>].
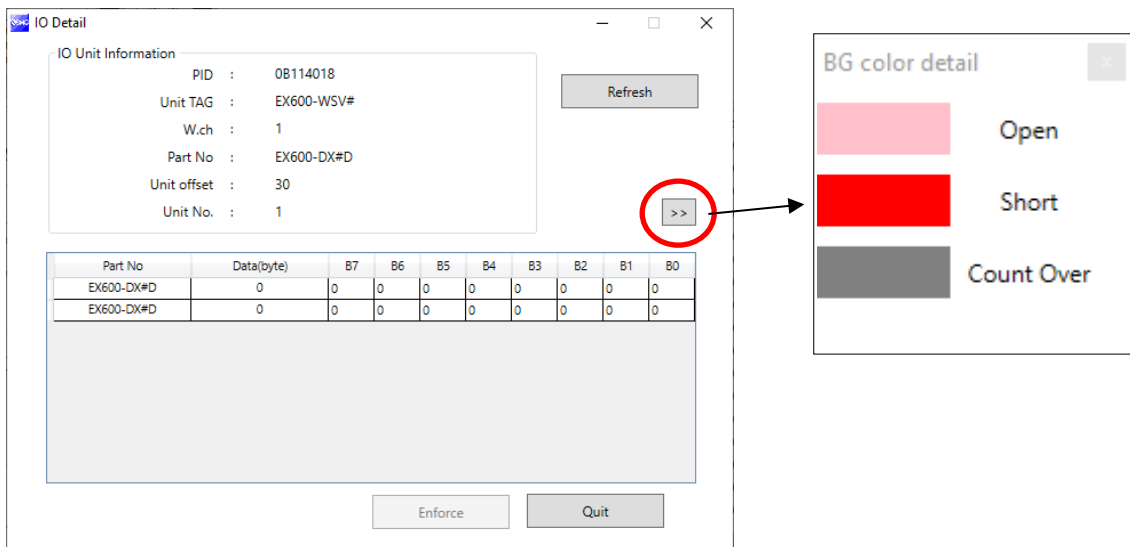


I/O details vary depending on the unit.    Refer to "5.2.3 IO details" for further details.

No.EX##-OMV0017-D

## 4.4　Forced output

### 4.4.1　Forced output conditions

The I/O Configurator (NFC version) can directly command the Wireless Base / Remote.
Operating conditions for forced output.

| | [Forced output from the Wireless Base] | [Forced output from the Wireless Remote] |
|---|---|---|
| Forced output conditions | Login to Administrator mode.<br>Not connected with the PLC by Ethernet. | Login to Administrator mode.<br>Not wirelessly connected with Wireless Base. |
| Applicable item for forced output | Wireless Base / Remote | Wireless Remote |

Forced output procedure (digital unit)
Forced output is performed in forced output mode. Data can be output in either bit or byte units.

[Forced output in bit units]
Click the [I/O monitor] tab, and switch to the [Output] tab. Check mark the "Enforce ON" box at the upper right of the window. In the dialog box select [Yes] to confirm enabling forced output.
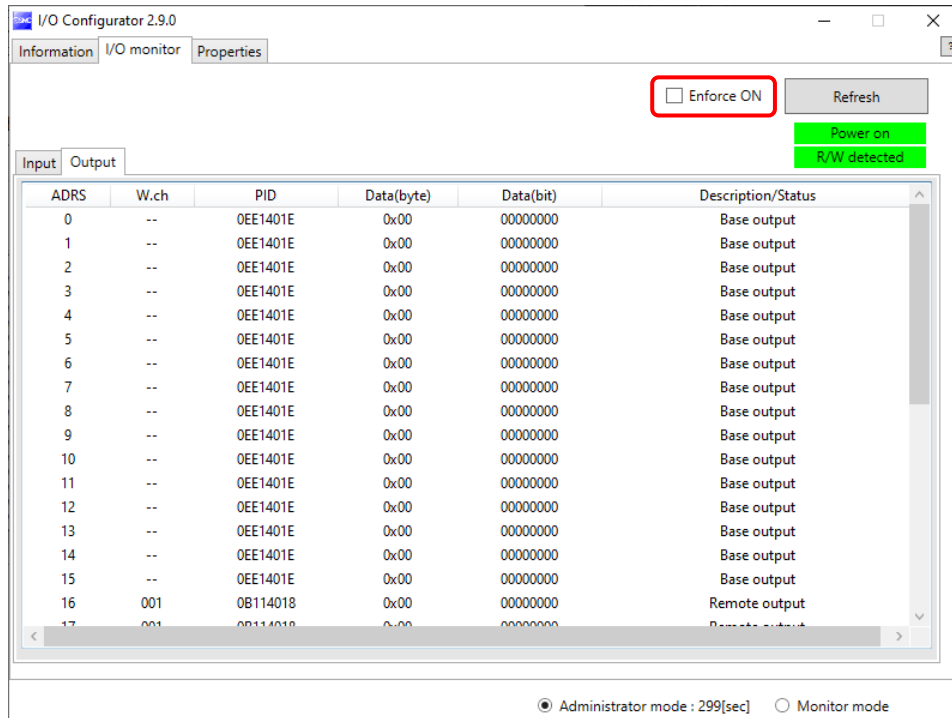
The window below appears when the mode is changed to forced output mode. Select the output unit to change to forced output and double-click it.

No.EX##-OMV0017-D
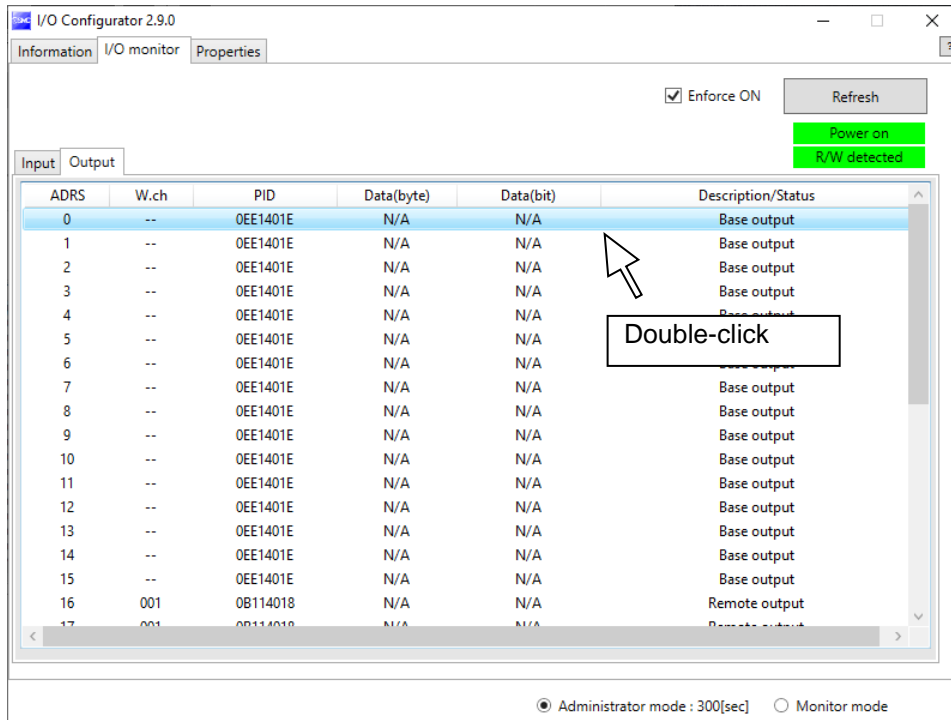
In the [IO Detail] window, select the bit (B0 to B7) to change to forced output and set to "1". The set value is output by clicking the [Enforce] button at the bottom of the window.
The power supply for the output unit is necessary to activate the output equipment for forced output mode.
Refer to the Operation Manual for the SMC Wireless System for details of the power supply for output.

| IO Detail | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|

IO Unit Information
PID : 0EE1401E
Unit TAG : EX600-WEN#
W.ch : Base
Part No : EX600-DY#B
Unit offset : 0
Unit No. : 0

Refresh

\>\>

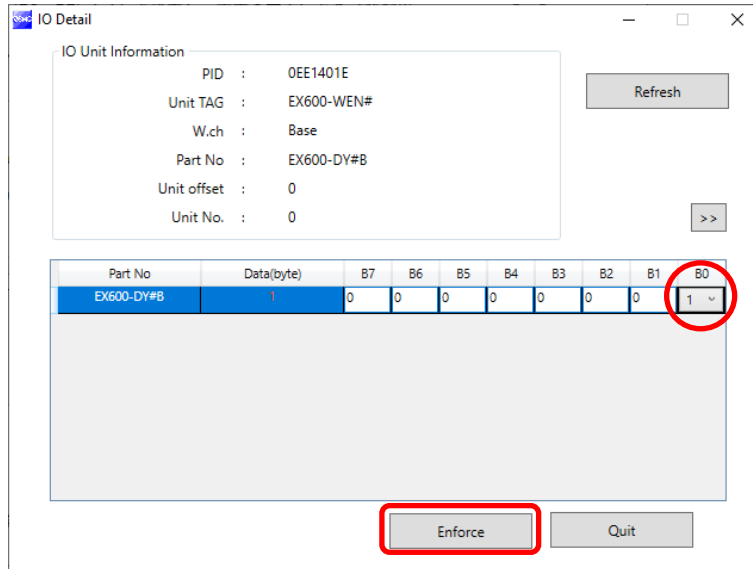| Part No | Data(byte) | B7 | B6 | B5 | B4 | B3 | B2 | B1 | B0 |
|---|---|---|---|---|---|---|---|---|---|
| EX600-DY#B | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

Enforce     Quit

[Forced output in byte units]
Enter the value between 0x00 and 0xFF in "Data(byte)". The value in bytes is output by clicking the [Enforce] button.

| IO Detail | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|

IO Unit Information
PID : 0EE1401E
Unit TAG : EX600-WEN#
W.ch : Base
Part No : EX600-DY#B
Unit offset : 0
Unit No. : 0

Refresh

\>\>

| Part No | Data(byte) | B7 | B6 | B5 | B4 | B3 | B2 | B1 | B0 |
|---|---|---|---|---|---|---|---|---|---|
| EX600-DY#B | 55 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |

Enforce     Quit

SMC

No.EX##-OMV0017-D
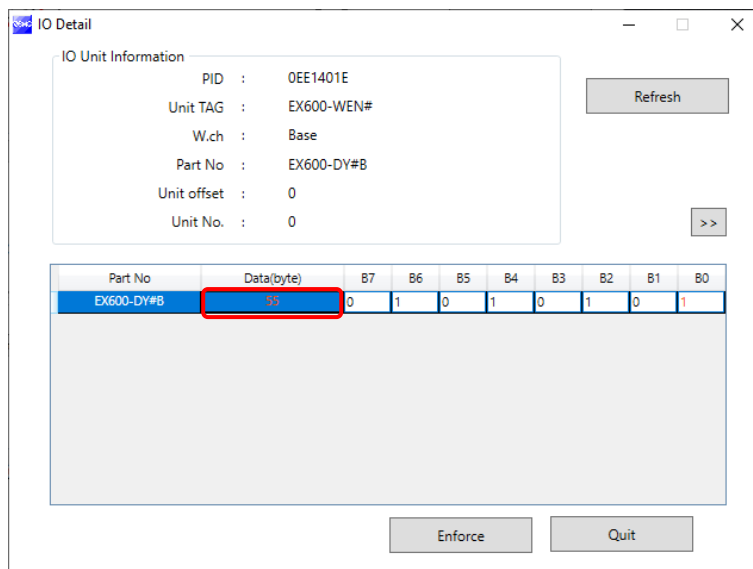
Forced output (analog unit)

For forced output for an analog unit, enter the values according to the analog range. The analog range can be selected by the I/O Configurator (Web version). Enter the values. The analog value will be output by clicking the [Enforce] button.

The power supply for the output unit is necessary to activate the output equipment for forced output mode. Refer to the Operation Manual for the SMC Wireless System for details of the power supply for output.
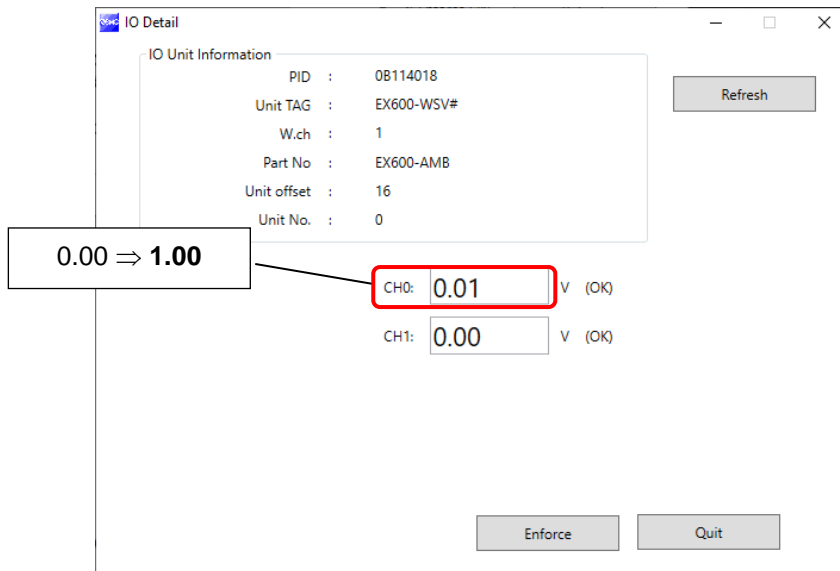


If the entered value is outside the settable range, the dialog box below will be displayed. Enter a value again.

**SMC**

No.EX##-OMV0017-D
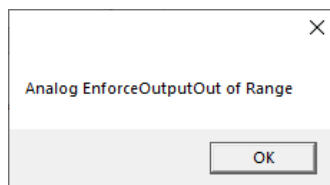
Exiting forced output mode

Remove the check mark in the "Enforce ON" box to exit forced output mode. In the dialog box, to confirm exiting forced output mode, select [Yes]. Continue by clicking [Yes] on the following window. Forced output mode is exited. Click the [Refresh] button to update the information in the window. Forced output mode also can be exited by turning off the power supply.
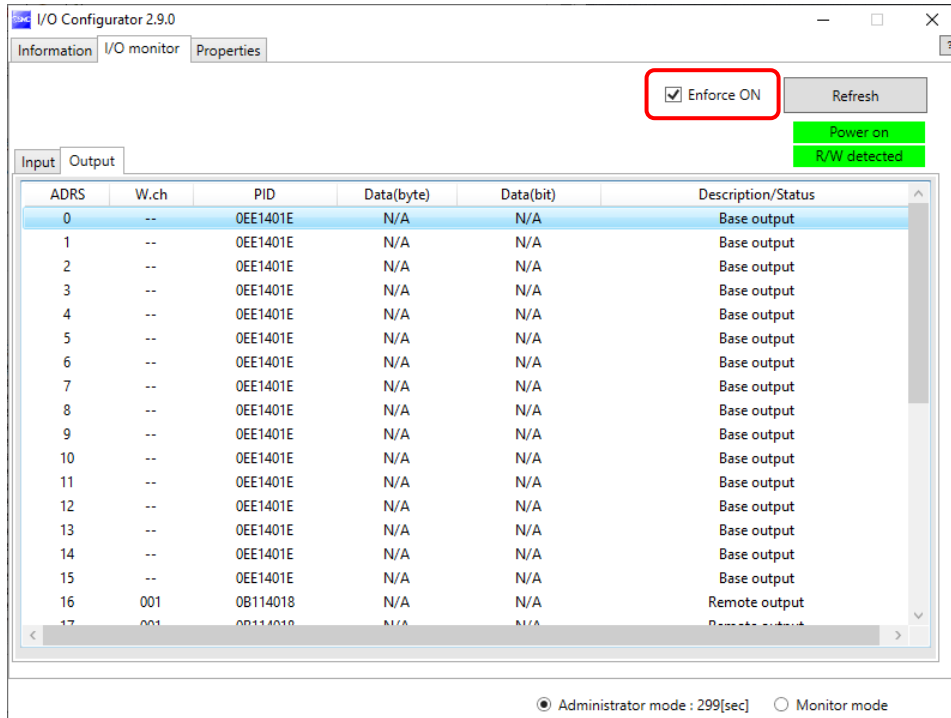
| ADRS | W.ch | PID | Data(byte) | Data(bit) | Description/Status |
|---|---|---|---|---|---|
| 0 | -- | 0EE1401E | N/A | N/A | Base output |
| 1 | -- | 0EE1401E | N/A | N/A | Base output |
| 2 | -- | 0EE1401E | N/A | N/A | Base output |
| 3 | -- | 0EE1401E | N/A | N/A | Base output |
| 4 | -- | 0EE1401E | N/A | N/A | Base output |
| 5 | -- | 0EE1401E | N/A | N/A | Base output |
| 6 | -- | 0EE1401E | N/A | N/A | Base output |
| 7 | -- | 0EE1401E | N/A | N/A | Base output |
| 8 | -- | 0EE1401E | N/A | N/A | Base output |
| 9 | -- | 0EE1401E | N/A | N/A | Base output |
| 10 | -- | 0EE1401E | N/A | N/A | Base output |
| 11 | -- | 0EE1401E | N/A | N/A | Base output |
| 12 | -- | 0EE1401E | N/A | N/A | Base output |
| 13 | -- | 0EE1401E | N/A | N/A | Base output |
| 14 | -- | 0EE1401E | N/A | N/A | Base output |
| 15 | -- | 0EE1401E | N/A | N/A | Base output |
| 16 | 001 | 0B114018 | N/A | N/A | Remote output |
| 17 | 001 | 0B114018 | N/A | N/A | Remote output |

I/O Configurator 2.9.0

Information  I/O monitor  Properties

☑ Enforce ON    Refresh

Power on
R/W detected

Input  Output

⦿ Administrator mode : 299[sec]    ◯ Monitor mode

❗
- The operation after exiting forced output is different for Wireless Base and Remote.
   Wireless Base: Values set while in forced output mode are retained after exiting.
   Wireless Remote: Values set while in forced output mode are not retained.

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# 5. Screen details of the I/O Configurator (NFC version)

## 5.1 Information tab

The Information tab consists of "Unit information", "System configuration" and "Description".



### 5.1.1 Unit information area

The unit information area indicates the module information.



- Unit information display

| Display | Description | NFC access | |
| --- | --- | --- | --- |
| | | Power on | Power off |
| Part No | Unit product number. | Yes | Yes |
| PID | Unit PID. | Yes | Yes |
| Firmware version | Displays software version of the unit. | Yes | Yes |
| MAC address | Unit MAC address. | Yes | Yes |
| IP address | Unit IP address. | Yes | No |
| SUBNET MASK | Subnet mask of unit. | Yes | No |
| Module in / out size | Control input and output size of the unit. | Yes | No |
| Online / All Remotes | Indicates the number of online Remotes / registered Remotes. | Yes | No |
| System I/O size | Number of input and output points in the wireless system. | Yes | No |

### 5.1.2 System configuration area

The system configuration area shows the configuration information of the Wireless Base / Remote module.
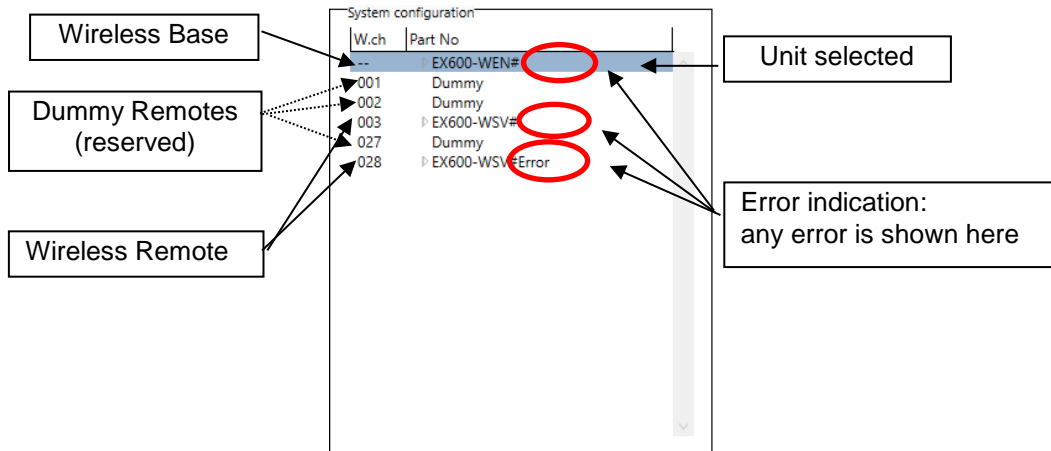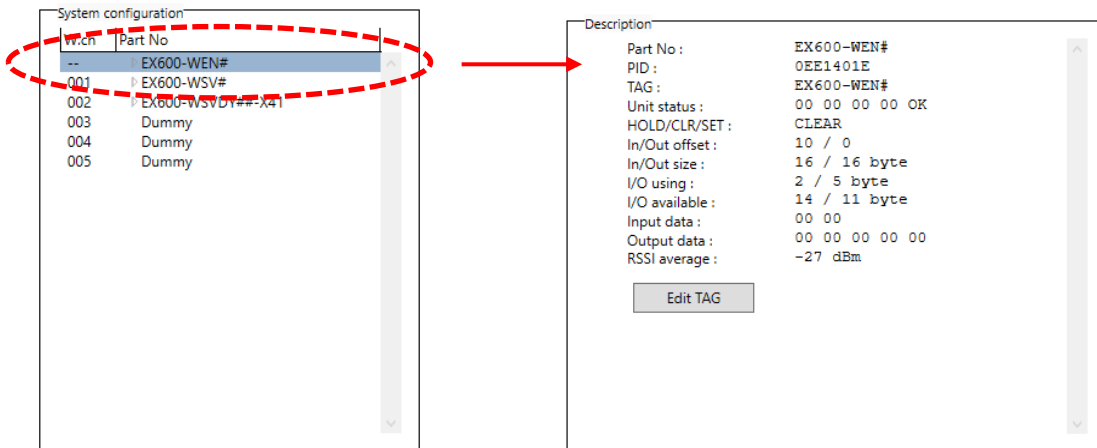


Connected I/O units can be checked by double-clicking on a wireless unit displayed in the system configuration area or clicking on the "►" to the left.
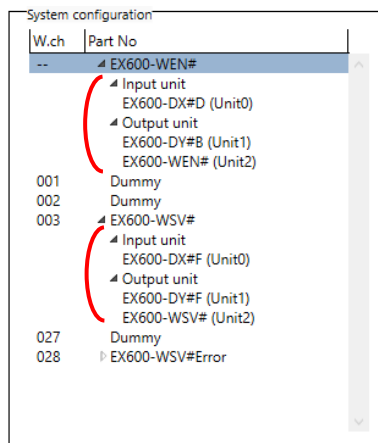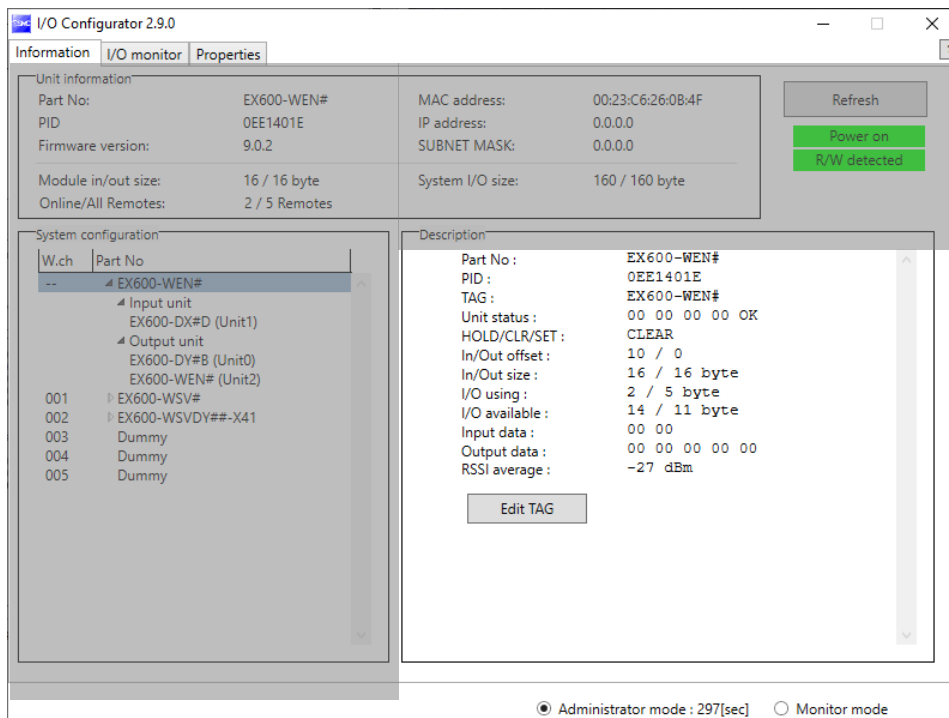
### 5.1.3 Description area

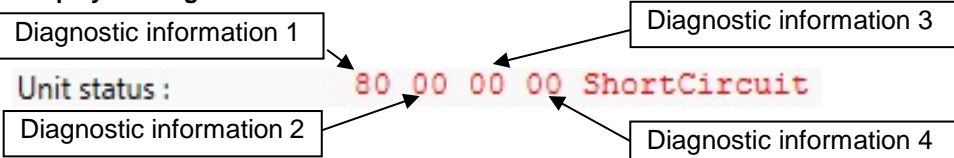Description of the unit selected in the system configuration area.



### 5.1.4 Information tab, description
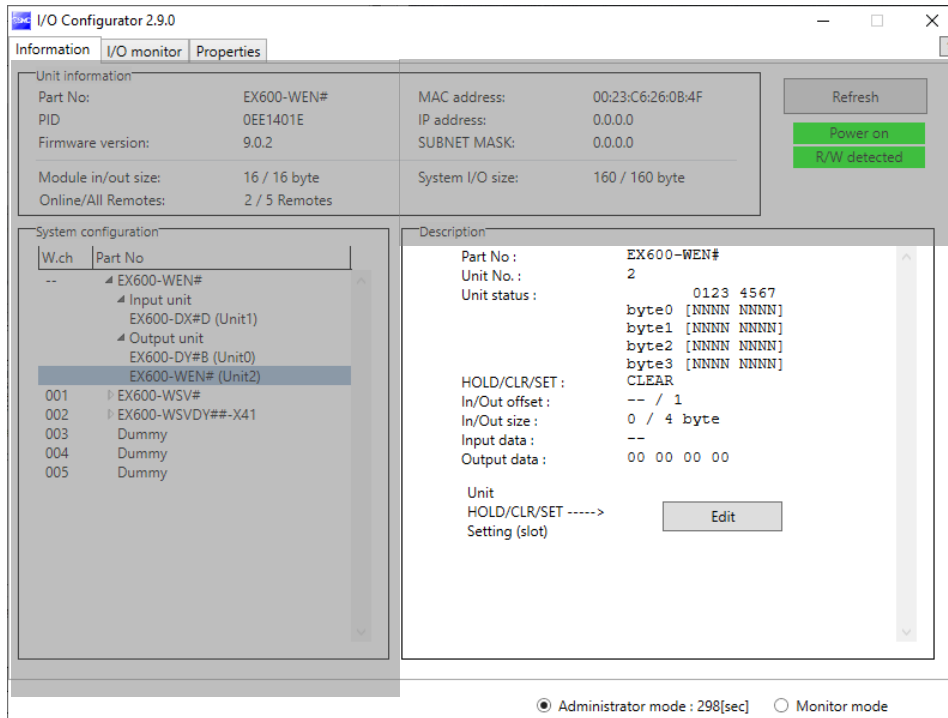
### 5.1.4.1 Wireless unit (manifold type)

1) Communication unit

- Description display (communication unit)

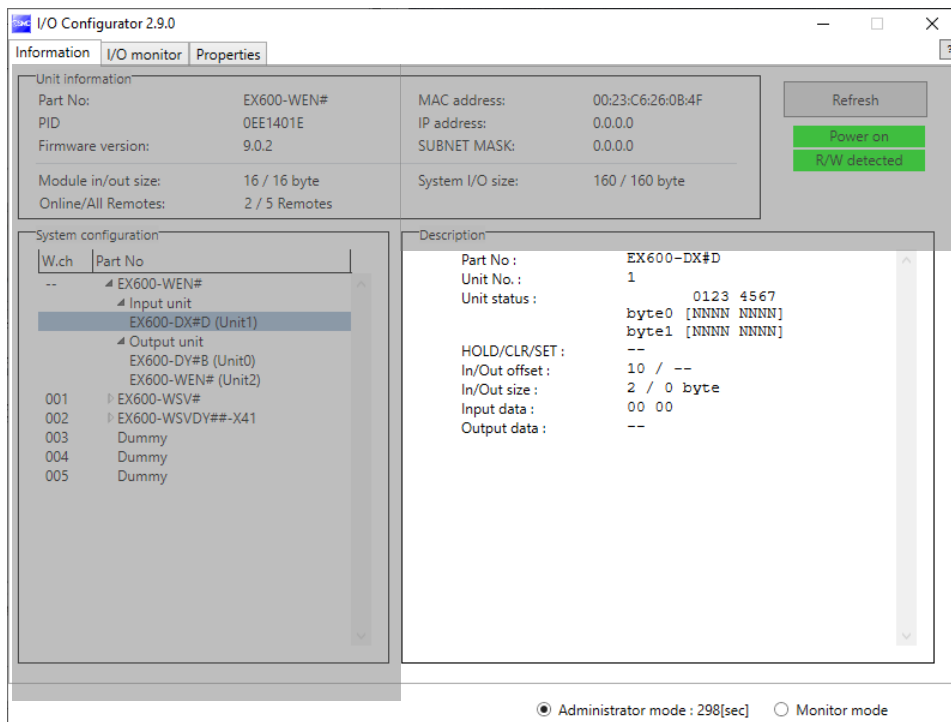| Display | Description |
|---|---|
| Part No | Wireless unit product number. |
| PID | Wireless unit PID. |
| TAG | Wireless unit user tag number. |
| Unit status | The wireless unit status is displayed in 4 bytes as hexadecimal numbers.<br>◆**Display for diagnostic information error**<br><br>Diagnostic information 1   Diagnostic information 3<br>Unit status :   80 00 00 00 ShortCircuit<br>Diagnostic information 2   Diagnostic information 4<br><br>\* Refer to the Operation Manual for details of diagnostic information. |
| HOLD / CLR / SET | Displays the output operation when communication of the wireless unit is disconnected. |
| In / Out offset | Displays the start position of the address to which the selected unit is mapped on the I/O map. |
| In / Out size | Control input and output size of the wireless unit. |
| I/O used | The number of allocated input and output bytes actually used by the wireless unit. |
| I/O available | The number of allocated input and output bytes which are available for use by the wireless unit. |
| Input data | Displays input data value which is sent to the wireless unit. |
| Output data | Displays output data value sent from the wireless unit. |
| RSSI average | The average radio wave strength received by the wireless unit. |

**SMC**

2) Valve



- Description display (valve)

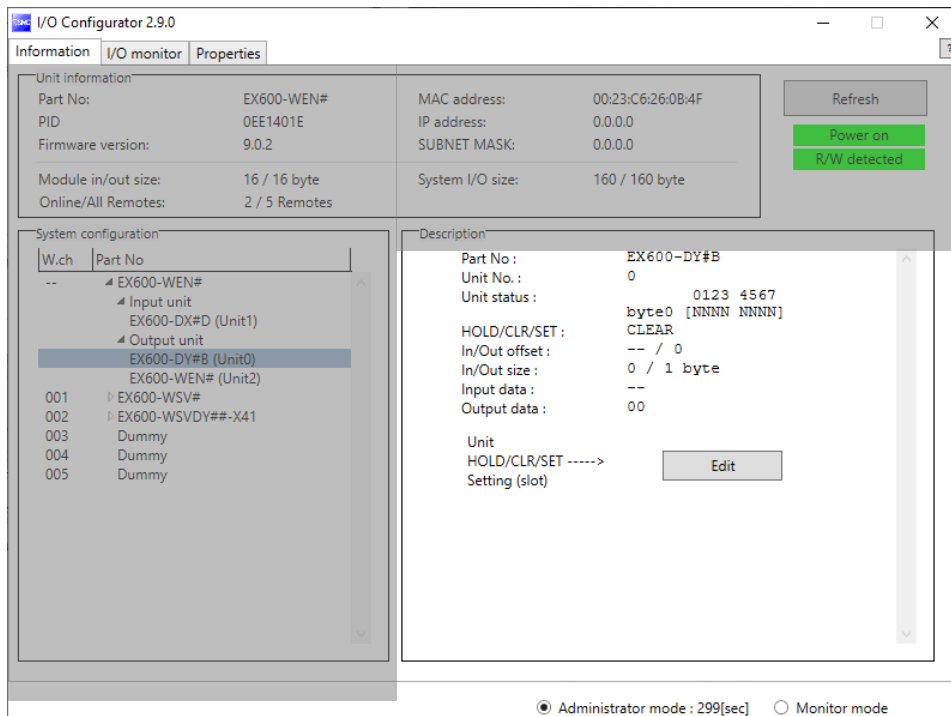| Display | Description |
|---|---|
| Part No | Wireless Base / Remote product number. |
| Unit No. | Mapped position for the valve. Displays the mapped position of the selected digital input unit.<br>* Refer to "5.3.2 Parameters", "Unit address order" for details on mapped position. |
| Unit status | Displays the mapped diagnostic data bits for the selected valve.<br><br><br><br>* Content of diagnostics<br>  N: Normal    Error is not detected<br>  O: Bit Open    Load is not connected (disabled at initial status)<br>  S: Bit Short    Short circuit of the load output is detected<br>  L: Limit Over    Contact operation exceeded the limit (disabled at initial status)<br>  P: Power Short    Short circuit of the load power supply is detected |
| HOLD / CLR / SET | Output operation when communication of the valve is disconnected. |
| In / Out offset | Displays the start position of the address to which the selected unit is mapped on the I/O map. |
| In / Out size | Valve input / output size. Input size is always 0 bytes. |
| Input data | "--" is displayed for the valve (setting is only applicable to units with inputs). |
| Output data | Displays the data which is sent from the valve. |

SMC

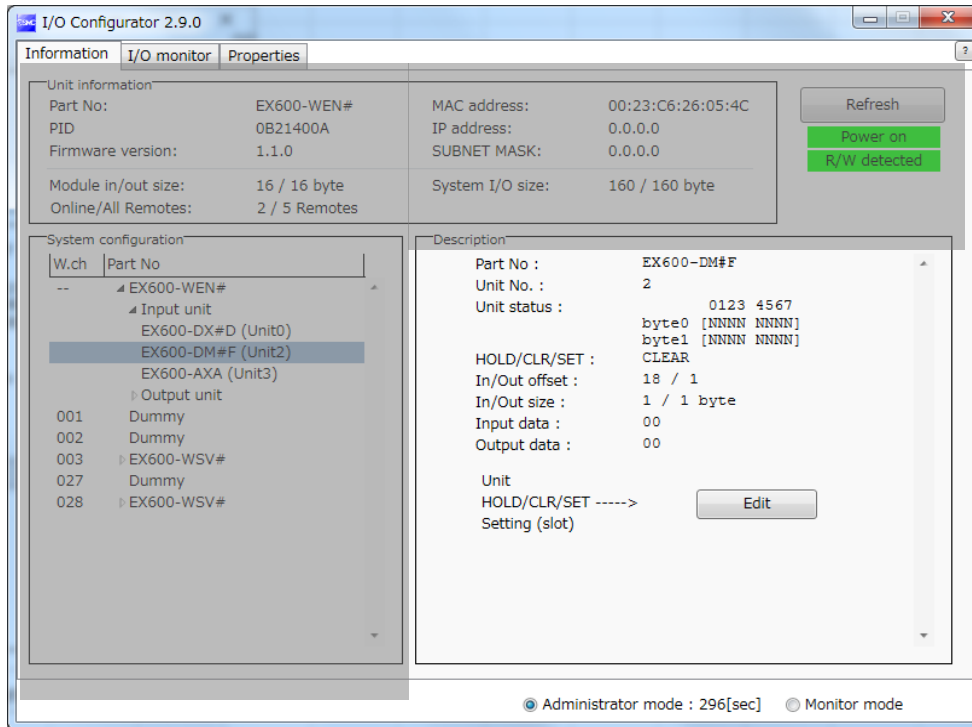## 5.1.4.2    IO unit (digital)
Digital input unit (product number: EX600-DX#D)



Digital output unit (product number: EX600-DY#B)

Digital input / output unit (product number: EX600-DM#F)



I/O Configurator 2.9.0

Information | I/O monitor | Properties

Unit information
Part No:            EX600-WEN#        MAC address:        00:23:C6:26:05:4C        Refresh
PID                 0B21400A          IP address:         0.0.0.0                 Power on
Firmware version:   1.1.0             SUBNET MASK:        0.0.0.0                 R/W detected

Module in/out size:  16 / 16 byte     System I/O size:    160 / 160 byte
Online/All Remotes:  2 / 5 Remotes

System configuration
W.ch  Part No                          Description
--    ▲ EX600-WEN#                     Part No :           EX600-DM#F
        ▲ Input unit                   Unit No. :          2
          EX600-DX#D (Unit0)           Unit status :                    0123 4567
          EX600-DM#F (Unit2)                               byte0 [NNNN NNNN]
          EX600-AXA (Unit3)                                byte1 [NNNN NNNN]
        ▷ Output unit                  HOLD/CLR/SET :      CLEAR
001     Dummy                          In/Out offset :     18 / 1
002     Dummy                          In/Out size :       1 / 1 byte
003   ▷ EX600-WSV#                     Input data :        00
027     Dummy                          Output data :       00
028   ▷ EX600-WSV#
                                        Unit
                                        HOLD/CLR/SET ----->     Edit
                                        Setting (slot)

                                        ● Administrator mode : 296[sec]   ○ Monitor mode

- Description display (digital unit)

| Display | Description |
|---|---|
| Part No | Displays the product number of the digital unit (input, output, input / output). |
| Unit No. | Displays the mapped position of the digital unit (input, output, input / output). <br> * Refer to "5.3.2 Parameters", "Unit address order" for details on mapped position. |
| Unit status | Displays the mapped diagnostic data bits for the digital unit (input, output, input / output). <br><br>  <br><br> Address in the unit <br> Example: byte 1, bit 3 <br><br> Content of diagnostic <br><br> * Content of diagnostic <br> N: Normal   Error is not detected <br> O: Bit Open   Load is not connected (disabled at initial status) <br> S: Bit Short   Short circuit of the load output is detected <br> L: Limit Over   Contact operation exceeded the limit (disabled at initial status) <br> P: Power Short   Short circuit of the load power supply is detected |
| HOLD / CLR / SET | "--" is displayed for an input unit. <br> Displays the output operation when communication of an output unit or input / output unit is disconnected. |
| In / Out offset | Displays the start position of the address to which the selected unit is mapped on the I/O map. |
| In / Out size | Input size is shown for an input unit. Output size is always 0 bytes. <br> Output size is shown for an output unit. Input size is always 0 bytes. <br> Both input and output sizes are shown for an input / output unit. |
| Input data | "--" is displayed for an output unit. <br> Displays input data value which is sent to an input unit or input / output unit. |
| Output data | "--" is displayed for an input unit. <br> Displays output data value which is sent from an output unit or input / output unit. |

SMC
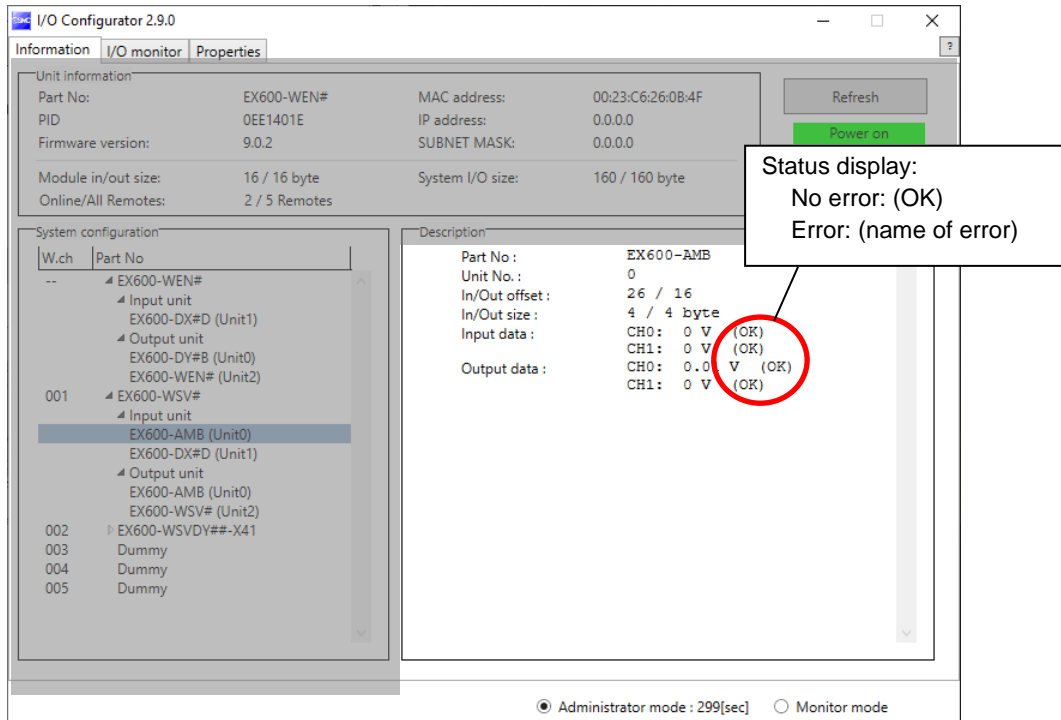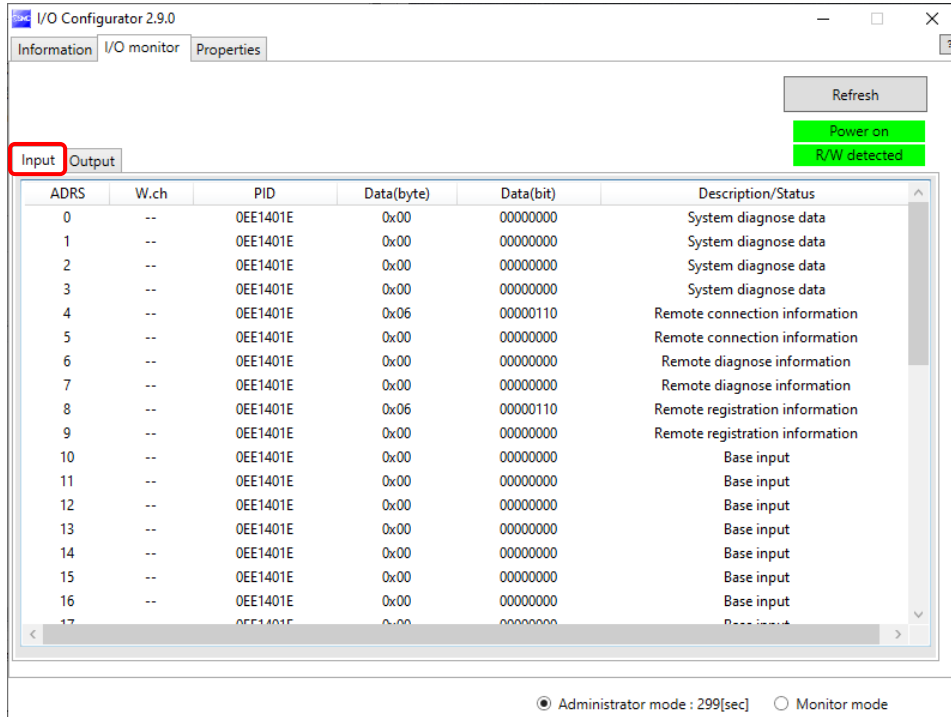
## 5.1.4.3 IO unit (analog)
Analog input unit (product number: EX600-AXA)



Status display:
  No error: (OK)
  Error: (name of error)

Analog output unit (product number: EX600-AYA)



Status display:
  No error: (OK)
  Error: (name of error)

**SMC**

No.EX##-OMV0017-D

Analog input / output unit (product number: EX600-AMB)



- Description display (analog unit)

| Display | Description |
|---------|-------------|
| Part No | Displays the product number of the analog unit (input, output, input / output). |
| Unit No. | Displays the mapped position of the analog unit (input, output, input / output). <br> * Refer to "5.3.2 Parameters", "Unit address order" for details on mapped position. |
| In / Out offset | Displays the start position of the address to which the selected unit is mapped on the I/O map. |
| In / Out size | Input size is shown for an input unit. Output size is always 0 bytes. <br> Output size is shown for an output unit. Input size is always 0 bytes. <br> Both input and output sizes are shown for an input / output unit. |
| Input data | "--" is displayed for an output unit. <br> Displays input data value which is sent to an input unit or input / output unit. |
| Output data | "--" is displayed for an input unit. <br> Displays output data value which is sent from an output unit or input / output unit. |

## 5.2 I/O monitor tab

In the I/O monitor tab, the wireless unit I/O mapping data can be monitored when the power status is "Power on".   Diagnostic information or details of input / output can be checked by double-clicking any address line in the display. Forced output mode can be selected in the [Output] tab.

### 5.2.1 Input tab

The input tab shows the input mapping information of the wireless unit.



- Input display

| Display | Description | Displayed items |
|---|---|---|
| ADRS | Displays the input map address. | Base unit: 0 to 159<br>Remote unit: 0 to 15 |
| W.ch | Wireless unit channel.<br>(Wireless channel of the Wireless Base is displayed as [- -]. | --, ch001 to 127 |
| PID | Wireless unit PID. | Individual per unit. |
| Data(byte) | Input data is displayed in bytes. | 0x00 to 0xFF, no information |
| Data(bit) | Input data is displayed in bits. | 00000000 to 11111111, no information |
| Description/<br>Status | Details of input data. | Base unit:<br>- System diagnose data<br>- Remote connection information<br>- Remote diagnose information<br>- Remote registration information<br>- Base input<br>- Remote input<br>- Reserve input<br>- Connection error<br>Remote unit:<br>- Remote input |

### 5.2.2 Output tab

The output tab shows the output mapping information of the wireless unit.
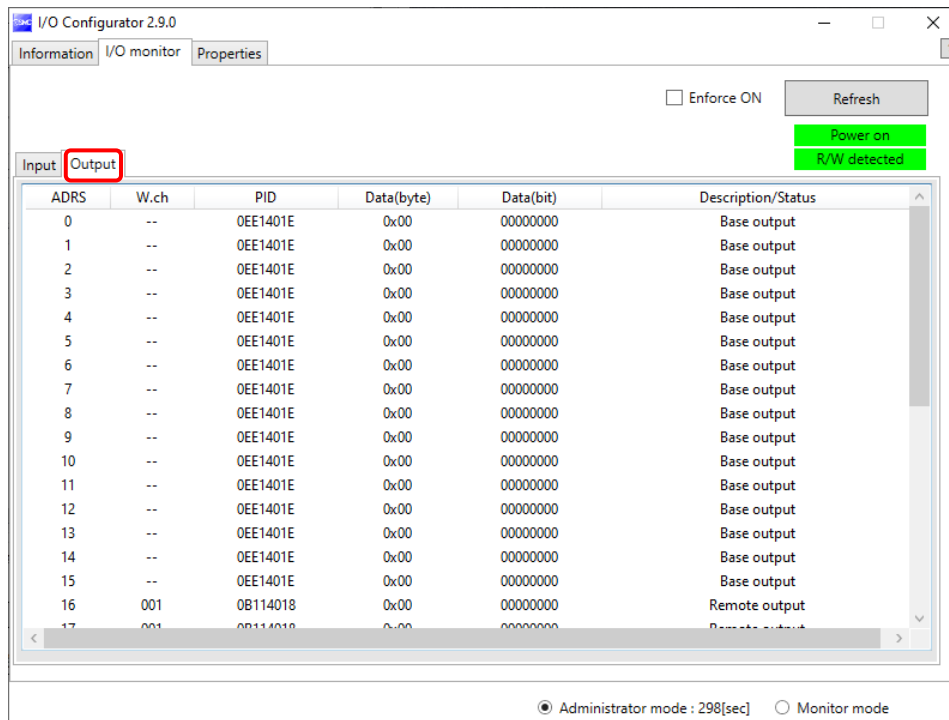


- Output display

| Display | Description | Displayed items |
|---|---|---|
| Enforce ON | Forced output mode can be selected by clicking [Enforce ON].<br>* Refer to "4.4 Forced output" for details of operation. | Check marked: Forced output on<br>Not check marked: Forced output off |
| ADRS | Displays the output map address. | Base unit: 0 to 159<br>Remote unit: 0 to 15 |
| W.ch | Wireless unit channel.<br>(Wireless channel of the Base is displayed as [- -]. | --, ch001 to 127 |
| PID | Wireless unit PID. | Individual per unit. |
| Data(byte) | Output data is displayed in bytes. | 0x00 to 0xFF, no information |
| Data(bit) | Output data is displayed in bits. | 00000000 to 11111111, no information |
| Description/Status | Details of output data. | Base unit:<br>- Base output<br>- Remote output<br>- Reserve output<br>- Connection error<br>Remote unit:<br>- Remote output |

### 5.2.3    IO details

The IO Details window will open by double-clicking the line of an address of the I/O unit which is connected to the wireless unit.

No.EX##-OMV0017-D
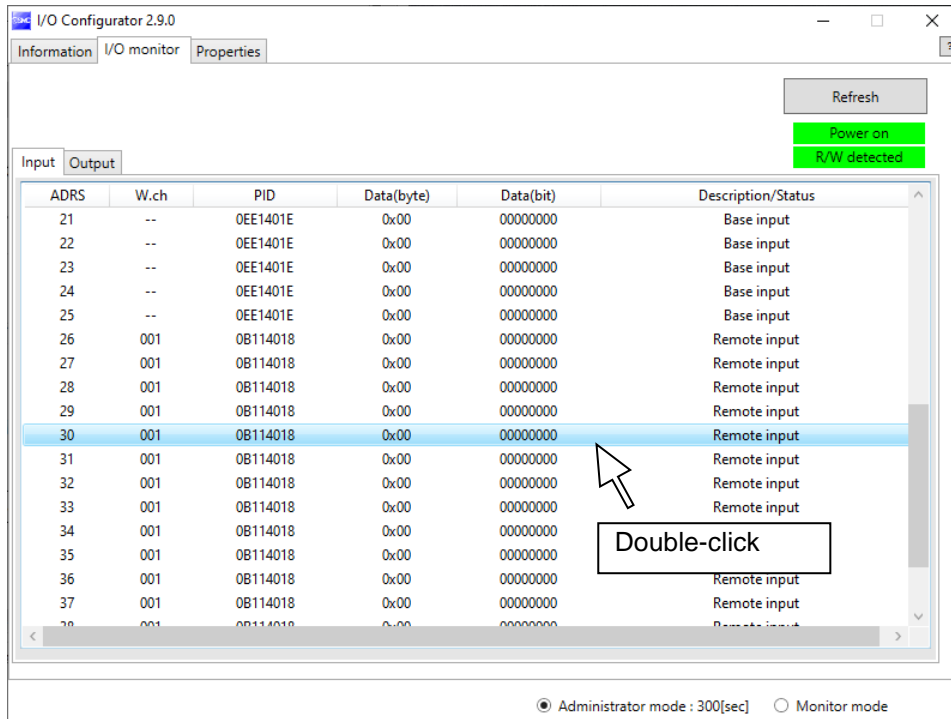
IO unit information and input / output data can be checked in the IO Detail window.
The diagnostic error type is represented by different background colours. The meaning of a background colour can be checked by clicking [>>].
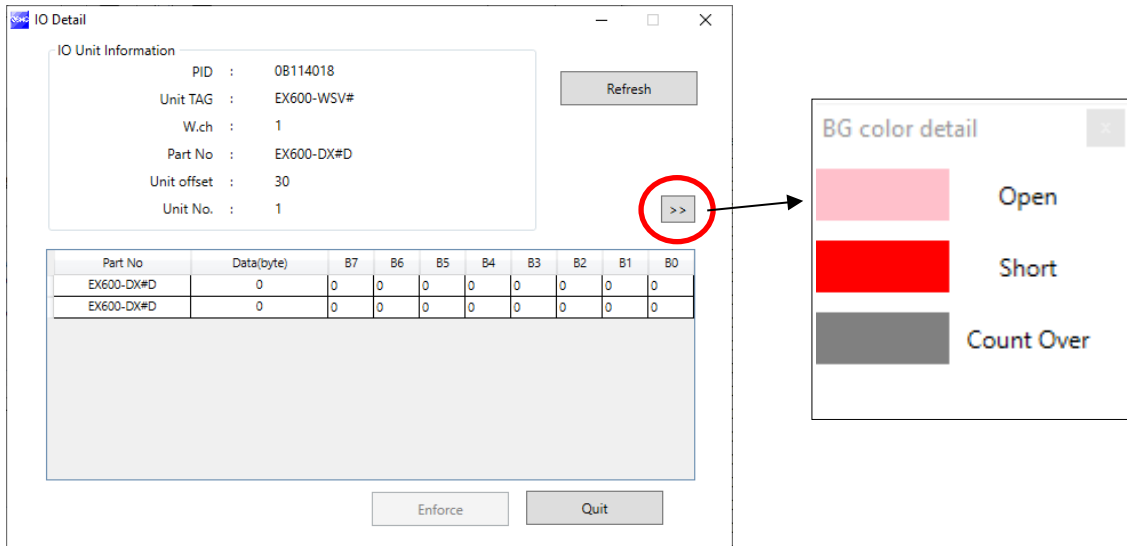


- Background colour

| Background colour | Display | Description |
|---|---|---|
| | Open | Detection of unconnected load<br>* Disabled in initial state. Enable the function from the I/O Configurator (Web version). |
| | Short | Short circuit detection |
| | Count Over | Contact frequency upper limit detection<br>* Disabled in initial state. Enable the function from the I/O Configurator (Web version). |

* I/O details vary depending on the unit.

## 5.2.4    Information tab, description
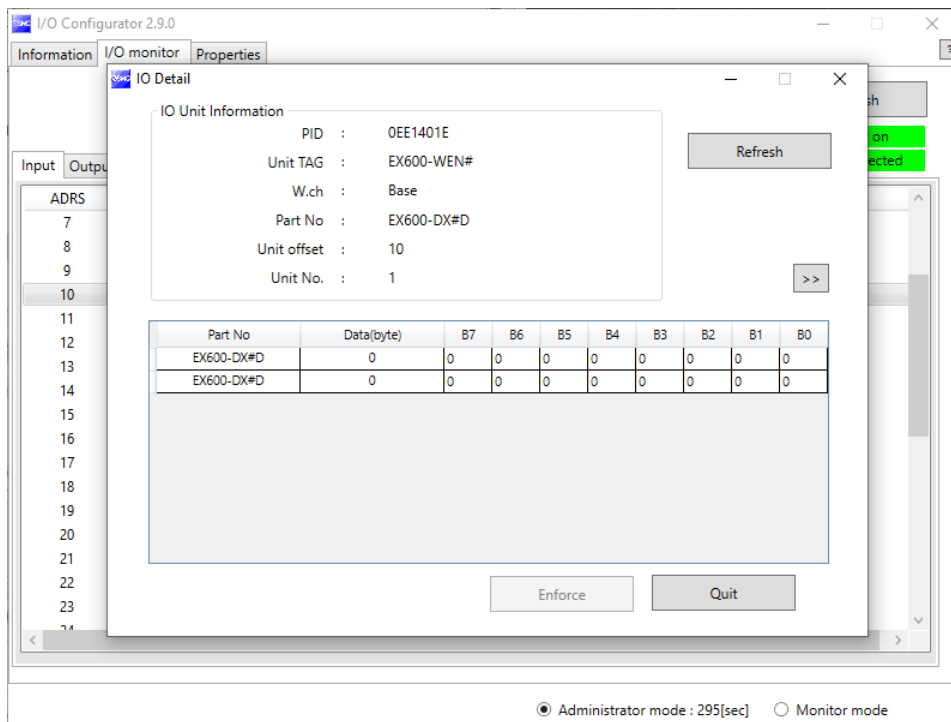### 5.2.4.1    Wireless unit (manifold type (valve))
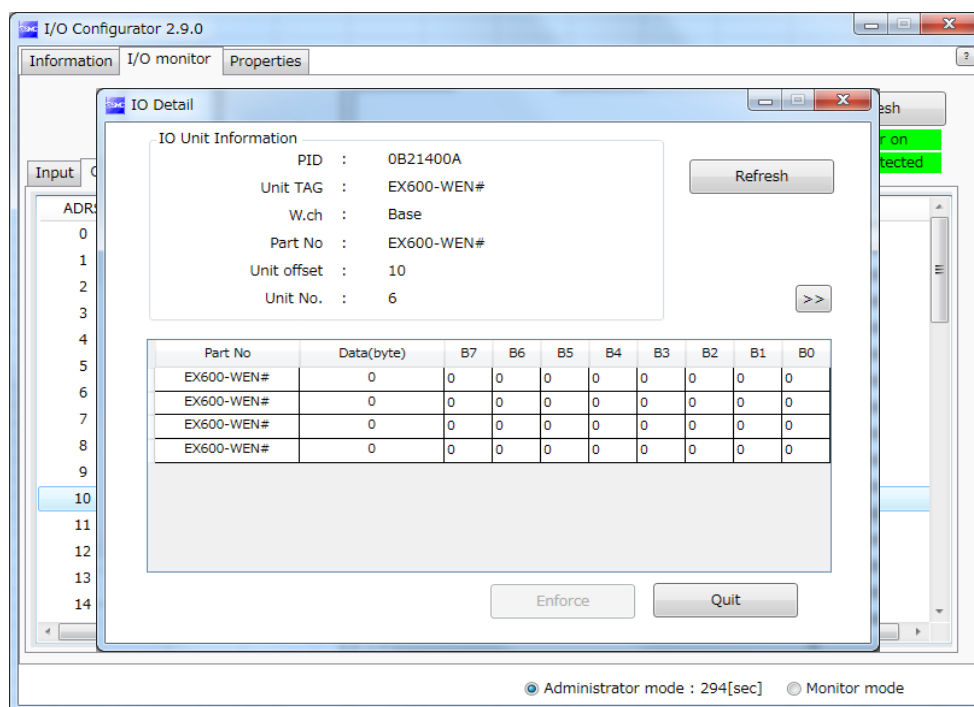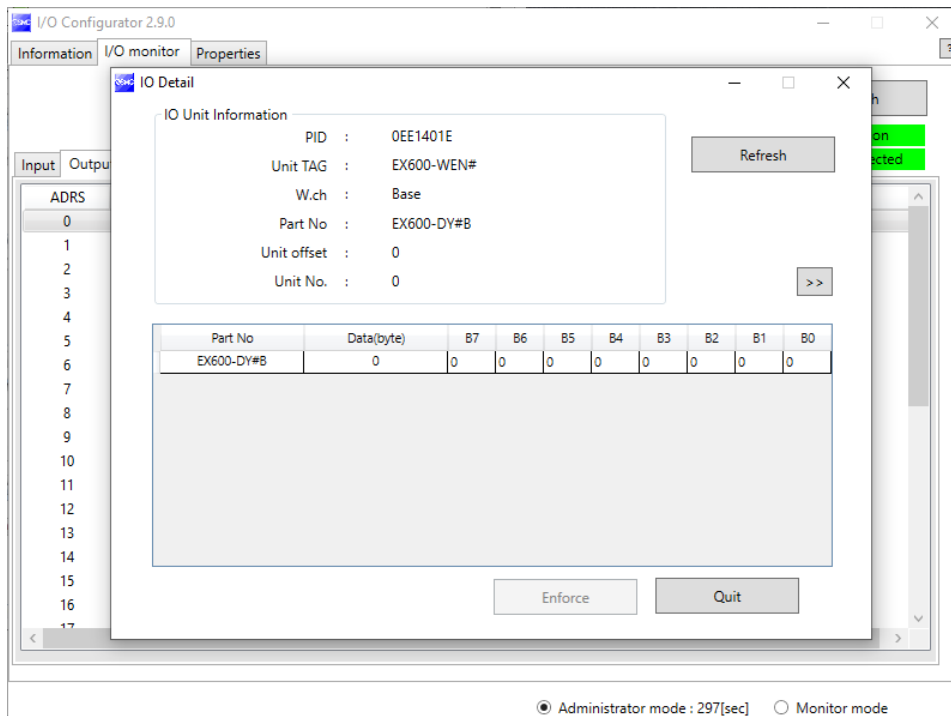


- IO details (manifold type (valve))

| Display | Description |
|---|---|
| PID | Displays the PID of the Wireless Base / Remote to which the selected valve is connected. |
| Unit TAG | Displays the tag of the Wireless Base / Remote to which the selected valve is connected. |
| W.ch | Displays the channel name of the Wireless Base / Remote to which the selected valve is connected.<br>"Base" is displayed for the Base. "1" to "127" is displayed for the Remote. |
| Part No | Displays the product number of the Wireless Base / Remote to which the selected valve is connected. |
| Unit offset | Displays the start position of the address to which the selected unit is mapped on the I/O map. |
| Unit No. | Displays the mapped position of the selected valve (relates to position of the unit within manifold).<br>* Refer to "5.3.2 Parameters", "Unit address order" for details on mapped position. |

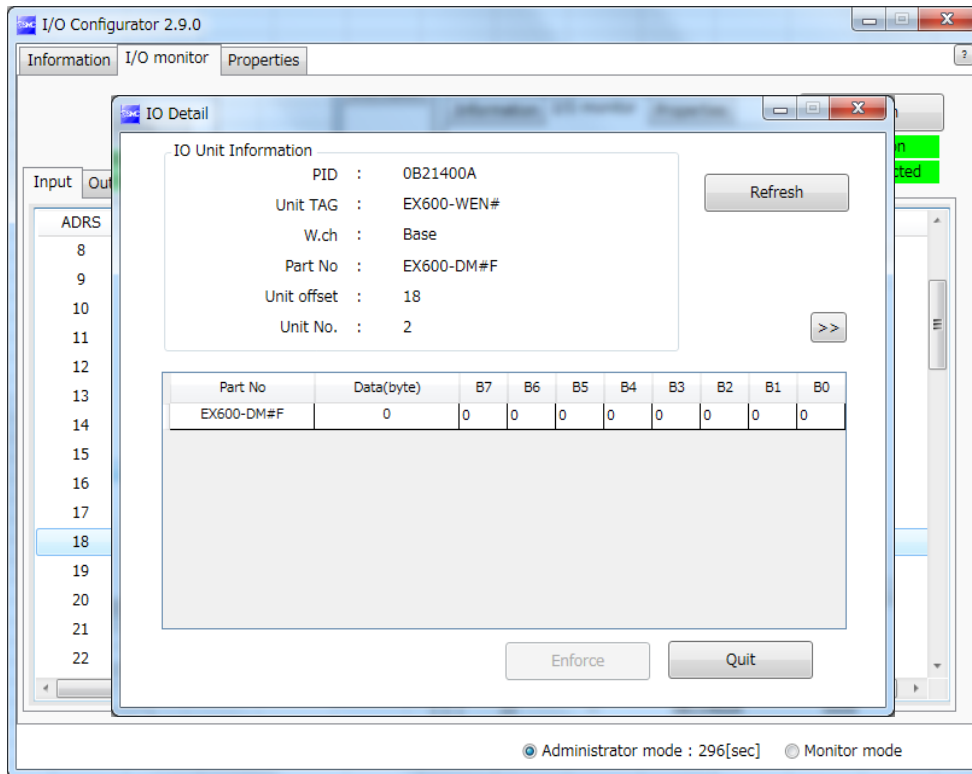## 5.2.4.2    IO unit (digital)
Digital input unit (product number: EX600-DX#D)



Digital output unit (product number: EX600-DY#B)

Digital input / output unit (product number: EX600-DM#F)



- IO unit information (digital unit)

| Display | Description |
|---|---|
| PID | Displays the PID of the Wireless Base / Remote to which the digital unit (input, output, input / output) is connected. |
| Unit TAG | Displays the tag of the Wireless Base / Remote to which the digital unit (input, output, input / output) is connected. |
| W.ch | Displays the channel name of the Wireless Base / Remote to which the digital unit (input, output, input / output) is connected. "Base" is displayed for the Base. "1" to "127" is displayed for the Remote. |
| Part No | Displays the product number of the digital unit (input, output, input / output). |
| Unit offset | Displays the start position of the address to which the selected unit is mapped on the I/O map. |
| Unit No. | Displays the mapped position of the digital unit (input, output, input / output).<br>* Refer to "5.3.2 Parameters", "Unit address order" for details on mapped position. |

### 5.2.4.3    IO unit (analog)
Analog input unit (product number: EX600-AXA)



Analog output unit (product number: EX600-AYA)

Analog input / output unit (product number: EX600-AMB)



- IO unit information (analog unit)

| Display | Description |
|---------|-------------|
| PID | Displays the PID of the Wireless Base / Remote to which the analog unit (input, output, input / output) is connected. |
| Unit TAG | Displays the tag of the Wireless Base / Remote to which the analog unit (input, output, input / output) is connected. |
| W.ch | Displays the channel name of the Wireless Base / Remote to which the analog unit (input, output, input / output) is connected. "Base" is displayed for the Base. "1" to "127" is displayed for the Remote. |
| Part No | Displays the product number of the analog unit (input, output, input / output). |
| Unit offset | Displays the start position of the address to which the selected unit is mapped on the I/O map. |
| Unit No. | Displays the mapped position of the analog unit (input, output, input / output).<br>* Refer to "5.3.2 Parameters", "Unit address order" for details on mapped position. |

- Channel status (analog input unit)

| Data format | Displayed analog value |
|-------------|------------------------|
| Offset binary, sign and magnitude, 2's complement | +/-□□□ mA (current range) |
|  | +/-□□□ V (voltage range) |
| Scaled | +/-□□---□ |

- Channel status (analog output unit)

| Data format | Displayed analog value |
|---|---|
| 12-bit resolution, 11-bit resolution | +/-□□□ mA (current range) |
| | +/-□□□ V (voltage range) |
| Scaled | +/-□□---□ |

- Channel status (analog input / output unit)

| Data format | Displayed analog value |
|---|---|
| 12-bit resolution, 11-bit resolution | +/-□□□ mA (current range): Input or output value |
| | +/-□□□ V (voltage range): Input or output value |
| Scaled | +/-□□---□: Input or output value |

## 5.3 Properties tab

The settings of a currently connected wireless unit can be changed in the Properties tab. The procedure consists of a control panel and parameters.
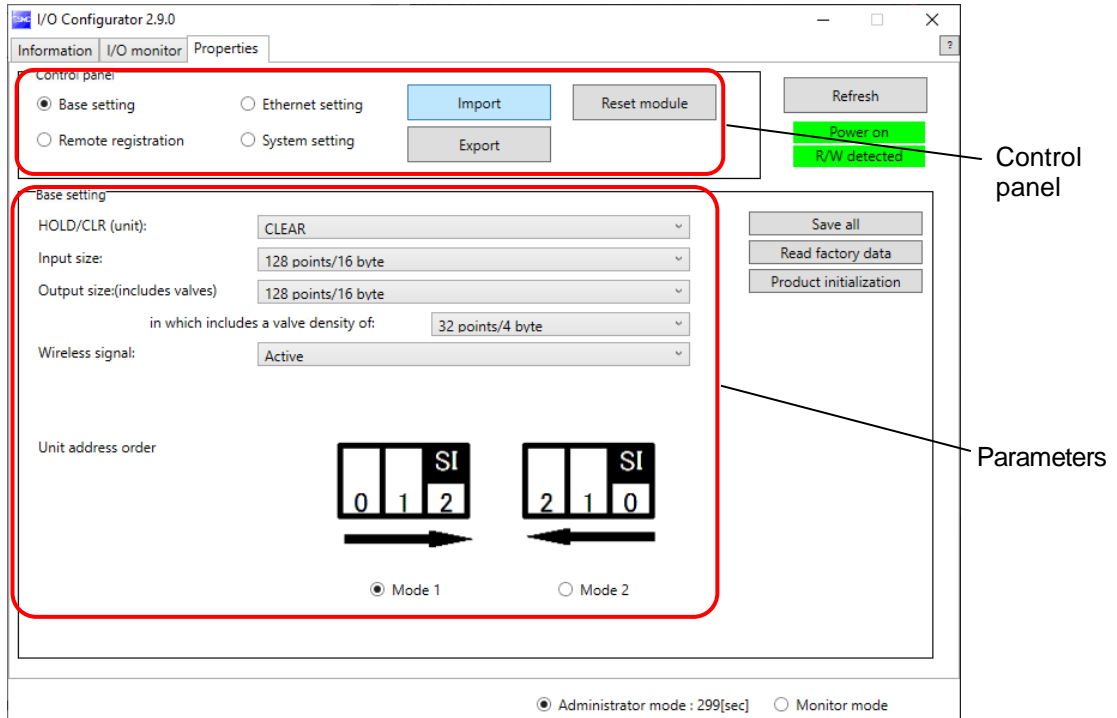
## 5.3.1　Control panel

A control panel for changing the displayed parameters consists of 4 radio buttons and 3 buttons.
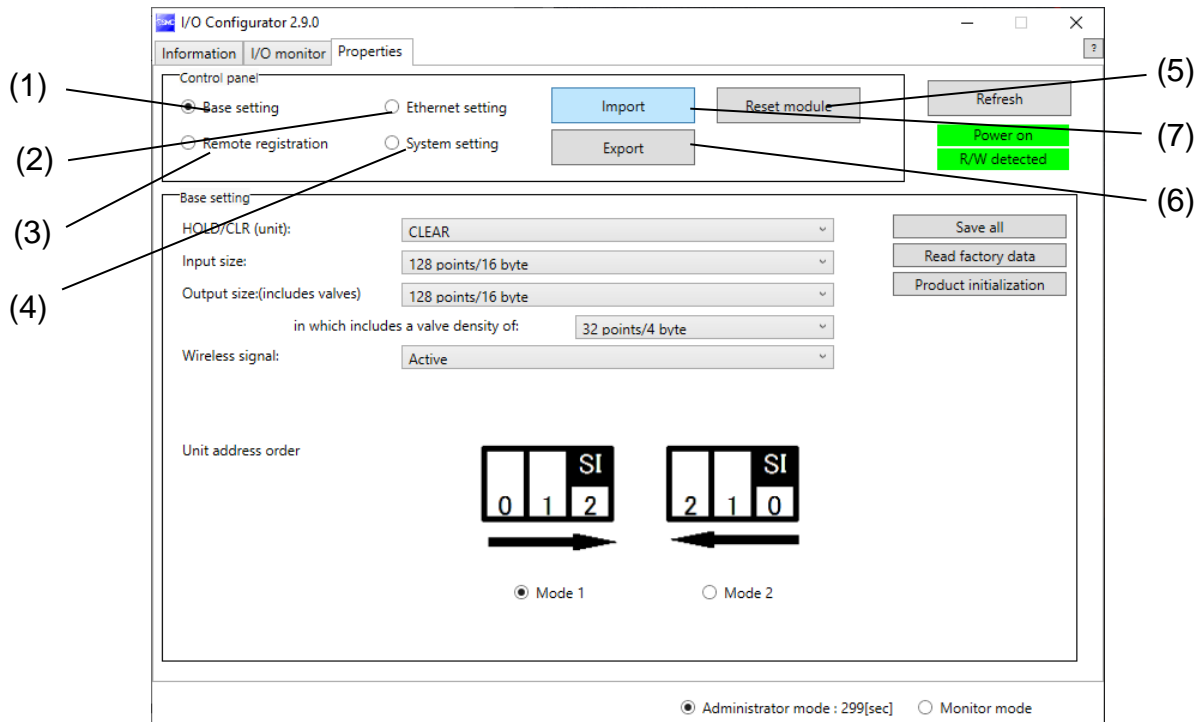


- Radio buttons for selecting the parameters to display (Base unit).

| No. | Name | Function |
|---|---|---|
| 1 | Base setting | Switch to the Base unit parameters. Occupied points for the module input / output can be set.<br>Not displayed for a Base unit that supports CC-Link (EXW1-BMJA#). |
| 2 | Ethernet setting | Switch to Ethernet parameters. Perform IP address setting.<br>Displayed for a Base unit that supports EtherNet/IP (EX600-WEN#). |
| 2 | CC-Link setting | Set the operating mode, etc.<br>Displayed for a Base unit that supports CC-Link (EXW1-BMJA#). |
| 3 | Remote registration | Switch to the Remote unit registration display. A wireless Remote or dummy Remote can be registered in the Wireless Base. |
| 4 | System setting | Switch to system parameters. The number of occupied points for system input / output can be set. |

- Radio buttons for selecting the parameters to display (Remote unit).

| No. | Name | Function |
|---|---|---|
| 1 | Remote setting | Switch to the Remote unit parameters. Occupied points for the module input / output can be set. |
| 2 | Pairing setting | Switch to pairing parameters. Switch to pairing mode. |

- Control panel buttons

| No. | Name | Functions |
|---|---|---|
| 5 | Reset module | Set parameters are reflected once power is supplied to the wireless unit. Click [Reset module] in order to reflect parameters that were set while power was still being supplied. |
| 6 | Export | Button to export the configuration of the wireless unit to a PC (saved as file type ".smc").   Refer to "3.8 Using a setting file" for details on using this button. |
| 7 | Import | Button to import the saved configuration of a wireless unit from a PC (file type ".smc"). Refer to "3.8 Using a setting file" for details on using this button. |

* When the [Reset module] button is used, the wireless unit restarts and Ethernet communication or wireless communication is temporarily interrupted.

### 5.3.2   Parameters

(1) Base setting

Base unit setting display.
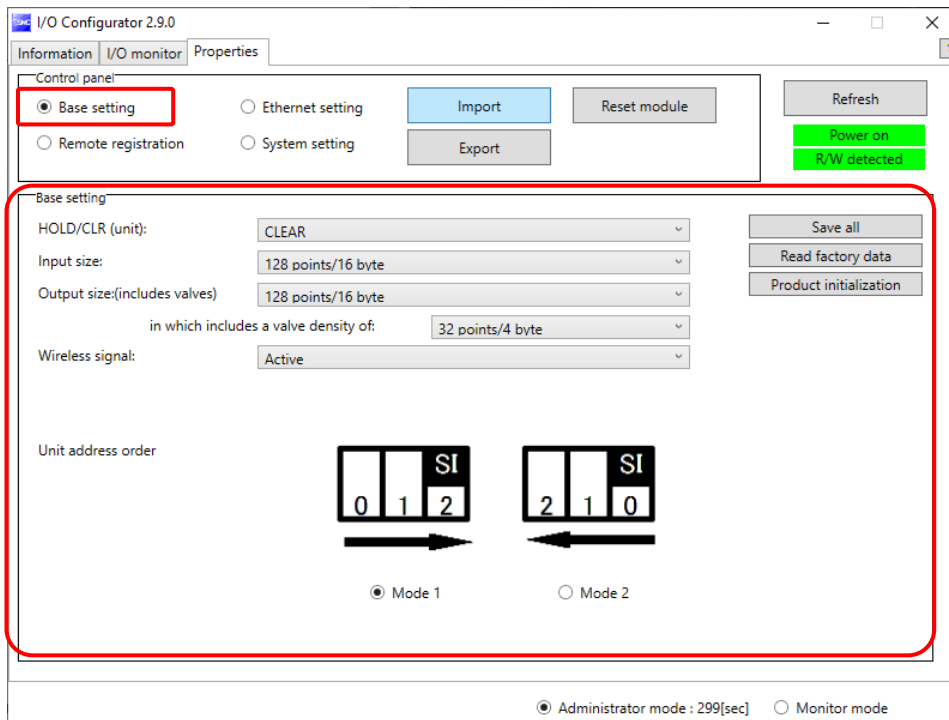
- Base unit parameters

| Parameter name | Set value | Initial value | Description |
|---|---|---|---|
| HOLD/CLR (unit) | CLEAR HOLD Software Control | CLEAR | Define all settings that are in output operation status when fieldbus communication is disconnected.<br>CLEAR: Clear the output.<br>HOLD: Fix the output at the current value.<br>Software Control: CLEAR, HOLD or SET for individual points can be set using bit data.<br>* Software Control is selectable only for manifold-type units.<br>Refer to "3.7 Software Control" for setting details. |
| Input size | 0 to 128 points (0 to 16 bytes) | 128 points / 16 byte | Set the number of inputs which can be controlled by the Wireless Base unit.<br>Setting range: 0 to 128 points (0 to 16 bytes). Increase or decrease by 16 points. |
| Output size (includes valves) | 0 to 128 points (0 to 16 bytes) | 128 points / 16 byte | Set the number of outputs which can be controlled by the Wireless Base unit.<br>Setting range: 0 to 128 points (0 to 16 bytes). Increase or decrease by 16 points.<br>The module output points include the number of points of the valve manifold output. |
| in which includes a valve density of | 0 to 32 points (0 to 4 bytes) | 32 points / 4 byte | Set the number of outputs to be allocated to the valve manifold output from the number of points set in the module output size.<br>As the valve manifold output points are included in the module output points, the number of effective points are limited to within the setting range of the module output points.<br>Setting range: 0 to 32 points (0 to 4 bytes). Increase or decrease by 8 points. |
| Wireless signal | Active Idle | Active | Define the operation status of wireless communication. *<br>Wireless communication is updated in real time. Turning the power supply off and on again or a Reset is not necessary.<br>Active: Wireless communication is available.<br>Idle: Disconnect the wireless communication. |
| Unit address order | Mode 1 Mode 2 | Mode 1 | Define the address assignment direction of the EX600 I/O units connected to the Wireless Base unit.<br>The address assignment direction is changed by mode 1/mode 2. Be careful about the I/O mapping.<br>(Refer to the I/O Mapping Order of Wireless Base / Remote Module of the Operation Manual (page 50) for details)<br>Mode 1: Assigned to the right from the end plate.<br>Mode 2: Assigned to the left from the wireless unit. |

- Base unit setting buttons

| No. | Name | Functions |
|---|---|---|
| 1 | Save all | Changed settings are stored in the equipment. Perform a Reset to reflect the setting. |
| 2 | Read factory data | Button to read the default value of the window being displayed. Refer to "3.9 Reading of factory data" for details on using this function. |
| 3 | Product initialization | Initialize (reset) the unit to the default condition. Refer to "3.10 Initialization of the product" for details on using this function. |

(2) Ethernet setting

Ethernet setting display.

Displayed for a Base unit that supports EtherNet/IP (EX600-WEN#).



- Ethernet parameters

| Parameter name | Set value | Initial value | Note |
|---|---|---|---|
| MAC address | - | - | MAC address of the product is displayed. |
| IP address type | Manual / DHCP / Remote Control | Manual | Select the IP address setting mode. Select the mode suitable for your network environment. Manual: The IP address is set by inputting it directly. DHCP: The IP address is set automatically via the DHCP server. The IP address obtained will be lost when the power supply is cut. Remote Control [*1]: The mode to respond to the Enable DHCP and Disable DHCP commands [*2] as used with BOOTP / DHCP Server provided by Rockwell Automation. |
| IP address | IP address | 192.168.0.1 | Set the IP address (The IP address is valid only when "Manual" mode is selected). |
| Auto MDI/MDI-X | Auto / MDIX / MDI | Auto | Select either straight cable or crossed cable. Select the setting suitable for your environment. |
| Duplex | Full Duplex / Half Duplex | Full Duplex | Set to Full or Half Duplex. Select the setting suitable for your environment. When the communication speed is set to [Auto], it is set automatically regardless of the Duplex setting. |
| Communication speed | Auto / 100 Mbps / 10 Mbps | Auto | Set the communication speed. Select the setting suitable for your environment. |

*1 Function supported with firmware ver. 1.1.0 and later. The firmware version is displayed in the Information tab (refer to "5.1 Information tab").

*2 Enable DHCP: Information including the IP address can be obtained from BOOTP / DHCP Server.
　　　　　　If power is supplied again in this state, information including the IP address is obtained again.
　Disable DHCP: IP address etc. cannot be obtained from BOOTP / DHCP Server.
　　　　　　Previous settings can be held if power is supplied under this condition.

## (3) CC-Link setting

CC-Link setting display. Displayed for a Base unit that supports CC-Link (EXW1-BMJA#).
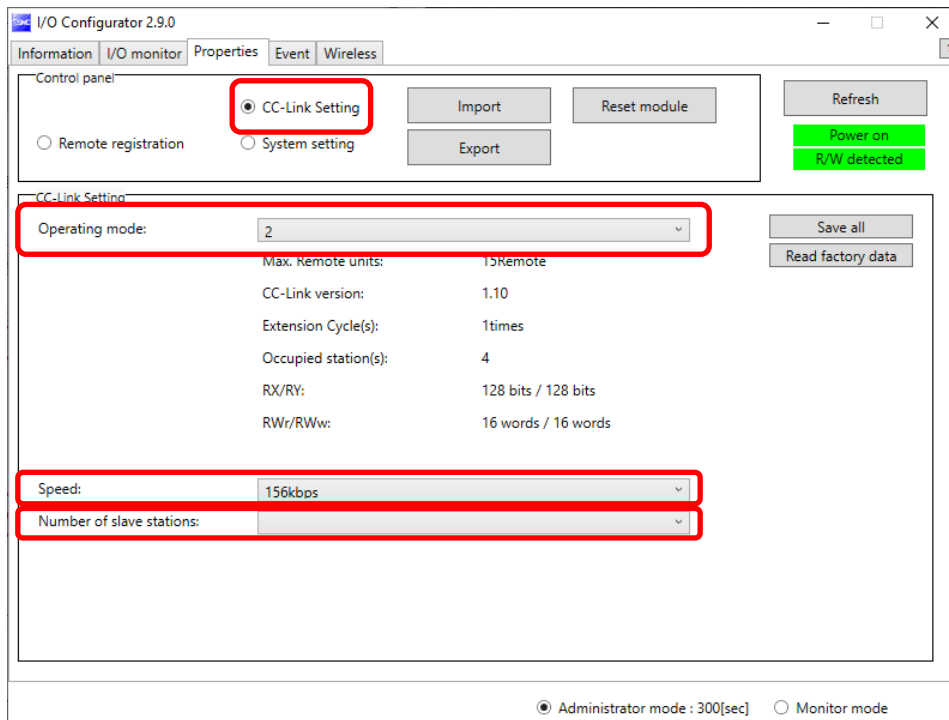


- CC-Link parameters

| Parameter name | Set value | Initial value | Note |
|---|---|---|---|
| Operating mode | 1 to 8 | 2 | CC-Link version, number of occupied stations, etc. |
| Speed | 156 kbps / 625 kbps / 2.5 Mbps / 5 Mbps / 10 Mbps | 156 kbps | Set the communication speed. |
| Number of slave stations | 1 to 64 stations | 0 | Change the setting in accordance with the installation conditions. |

SMC

(a) Operating mode setting
    This setting specifies a CC-Link operating mode.
    Setting range: 1 to 8

| Operating mode | Number of registerable units | CC-Link setting | | | Occupied area | |
|---|---|---|---|---|---|---|
| | | CC-Link Ver. | Extended cyclic | Number of occupied stations | Bit area RX/RY | Word area RWr/RWw |
| 1 | 15 | 1.10 | x1 | 2 | 64/64 | 8/8 |
| 2 | 15 | 1.10 | x1 | 4 | 128/128 | 16/16 |
| 3 | 15 | 2.00 | x8 | 2 | 384/384 | 64/64 |
| 4 | 15 | 2.00 | x8 | 4 | 896/896 | 128/128 |
| 5 | 31 | 2.00 | x8 | 2 | 384/384 | 64/64 |
| 6 | 31 | 2.00 | x8 | 4 | 896/896 | 128/128 |
| 7 | 63 | 2.00 | x8 | 4 | 896/896 | 128/128 |
| 8 | 127 | 2.00 | x8 | 4 | 896/896 | 128/128 |

* The last register of the bit area (16 bits) cannot be used as it is allocated for the system area.


(b) Speed
    Specifies the CC-Link communication speed.
    Setting range: 156 kbps / 625 kbps / 2.5 Mbps / 5 Mbps / 10 Mbps


(c) Station number setting
    Specifies a station number to assign to the compact Wireless Base (Remote device station) on CC-Link.
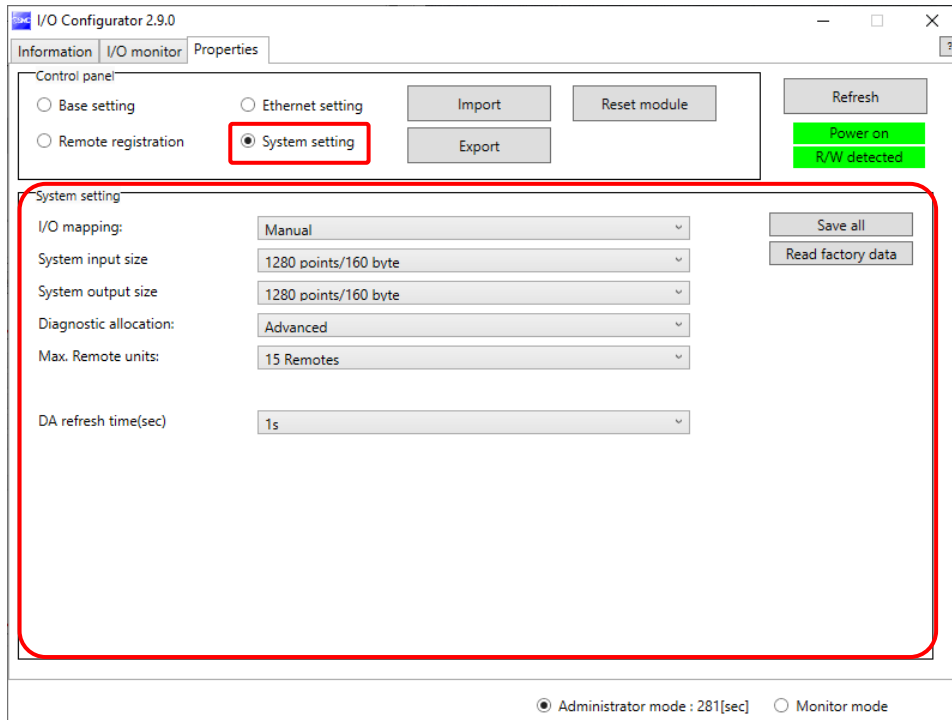    Setting range: 1 to 64
    * The settable range varies depending on the selected operating mode (number of occupied stations).
    * To avoid a station number conflict, the station number is set to 0 (station number error) by default.
      Change the station number in accordance with the unit installation conditions.

## (4) System setting
System setting display.
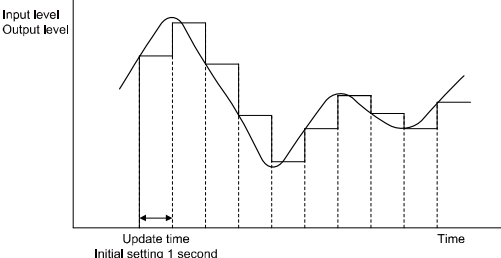
- Compact Wireless Base (EXW1-BMJA# etc.)

| Parameter | Set value | Initial value | Note |
|---|---|---|---|
| I/O mapping | Manual | Manual | Specifies an I/O mapping method.<br>* "Manual" is fixed for EXW1-BMJA#. |
| Diagnostic allocation | Advanced | Advanced | Specifies diagnostic information to map to the Word area.<br>Setting range: Advanced<br>Detailed (System diagnosis + Remote connection / diagnosis / registration information)<br>* "Advanced" is fixed for EXW1-BMJA#.<br>* Refer to the "Diagnostic mapping" section in the Operation Manual for details. |
| DA refresh time(sec) *1 | 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 30 / 60 s | 1 s | Set the data update time of the analog output unit connected to the Wireless Remote.<br>* The analog input update time is set for every Wireless Remote unit. |
| Output action when upper communication to disconnected. | Clear / Hold / Individual | Clear | Sets the output action of the entire wireless system for when the CC-Link communication is disconnected.<br>CLEAR: Clear the output.<br>HOLD: Fix the output at the current value.<br>Individual: The set value of each Wireless Remote is valid (not the entire system).<br>* The [CLEAR] and [HOLD] values of the [HOLD/CLR (unit)] setting of EX600-WEN/WPN/WSV specifies output actions for valves and I/O units (EX600-DYP# etc.) connected to EX600-WEN/WPN/WSV. Note that this setting does not apply to the wireless system wide output action (different from EXW1-BMJA#). |
| Timing of Wireless Communication | 20 / 40 / 100/ 200 / 500 / 1,000 / 2,000 / 5,000 msec | 500 msec | Activated only when protocol V.2.0 is used<br>If wireless communication (including retries) does not succeed due to obstacles or for other reasons, it is judged to have failed after a set amount of time and disconnected. Afterwards, the Base and the Remote are reconnected. |
| Input Information of Wireless Communication | Clear / Hold | Hold | Specifies input information for when the wireless communication is disconnected.<br>CLEAR: Clear the input.<br>HOLD: Fix the input at the current value. |
| Wireless signal | Active / Idle | Active | Sets the operation status of wireless communication.<br>Active: Wireless communication output is active<br>Idle: Wireless communication output is idle |
| Protocol | V.1.0 / V.2.0 | V.1.0 | Sets the wireless communication protocol.<br>* To pair with an EX600-W-series unit, V.1.0 must be set.<br>This also applies when building a wireless system consisting of both EXW1 and EX600-W series. Refer to "5.3.2 Parameters" for details. |
| Time Information | - | Unsynchronized | The time information is the time that the product recognizes. It is used for a timestamping event and other logs.<br>Until "synchronization" is performed, it displays the time elapsed since startup. |
| Synchronize time | - | - | The time information of the PC is sent to the product and is synchronized. If the time information of the PC is required for timestamping event and other logs, perform time synchronization. |

*1 It is necessary to set the data update time for each analog input unit connected to the Wireless Remote.

❗
- The protocol version is set to V.1.0 by default; to use the 1 Mbps wireless communication speed and the frequency channel selecting function (F.C.S.) in a wireless system consisting solely of EXW1-series devices, change the protocol version to V.2.0 before pairing them.

SMC

- Wireless unit (manifold type) (EX600-WEN# / EX600-WPN# etc.)

| Parameter | Set value | Initial value | Note |
|---|---|---|---|
| I/O mapping | Manual / Auto | Manual (EX600-WEN#) Auto (EX600-WPN#, fixed) | Define the I/O mapping of the entire wireless system including the Wireless Remote unit registered to the Wireless Base unit.<br>Auto: All I/O points mapped to the Wireless Base unit and Wireless Remote unit are identified and mapped automatically.<br>(The total number of connected I/O points is the total number of I/O points set by the diagnostic information, Wireless Base and registered Remote Unit.)<br>Manual: Fixed at the number of I/O points set in "System input size" and "System output size".<br>* "Auto" is fixed for EX600-WPN#. |
| System input size | 16, 128 to 1280 points (2 bytes to 160 bytes) in 128-point (16-byte) units | 1280 points / 160 byte | Set the number of inputs which can be controlled by the entire wireless system.<br>* Number can only be set when "Manual" is used for I/O mapping.<br>* Cannot be set with EX600-WPN#. |
| System output size | 16, 128 to 1280 points (2 bytes to 160 bytes) in 128-point (16-byte) units | 1280 points / 160 byte | Set the number of outputs which can be controlled by the entire wireless system.<br>* Number can only be set when "Manual" is used for I/O mapping.<br>* Cannot be set with EX600-WPN#. |
| Diagnostic allocation | None / Simple / Advanced | Advanced | Set the diagnostic information allocated to the I/O map. Refer to the "Diagnostic allocation" section in the Operation Manual (page 56) for details.<br>None: No diagnostic data<br>Simple: System diagnostics<br>Advanced: System diagnostics + Wireless Remote connection / diagnostics / registration information |
| Max. Remote units | 0 / 15 / 31 / 63 / 127 Remotes (EX600-WEN#) 0 / 15 / 31 Remotes (EX600-WPN#) | 15 Remotes | Set the number of Wireless Remote units which are registered to the Wireless Base unit.<br>Wireless channels for the number of the set units are enabled. |
| DA refresh time (sec) *1 | 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 30 / 60 s | 1 s | Set the data update time of the analog output unit connected to the Wireless Remote.<br>* The analog input update time is set for every Wireless Remote unit. Refer to "3.3 Remote setting".<br> |

● Protocol setting

Refer to the table below for wireless communication protocols.
To pair an EXW1-series unit with an EX600-W-series unit, V.1.0 must be set.
This also applies when building a wireless system consisting of both EXW1 and EX600-W series.

- V.1.0: The same wireless communication method as EX600-W is used, and the [frequency channel selecting function (F.C.S.)] are not available. The communication speed is 250 kbps.
- V.2.0: This version can be applied to a wireless system consisting solely of EXW1 series units. The [Individual setting of Output while upper communication is not established] and [Frequency channel selecting function (F.C.S.)] are available. The communication speed is 1 Mbps.

See the table of combinations provided below.

| Combination*4 | | Applicable function | | | |
|---|---|---|---|---|---|
| Wireless Base | Wireless Remote | Communication distance | Protocol | Frequency channel selection function (F.C.S.) | Web function |
| EXW1 | EXW1 | Up to 100 m | V.1.0 / V.2.0 | Available *1 | - |
| EXW1 | EXW1+EX600 | *2 | V.1.0 | Not available | - |
| EXW1 | EX600 | Up to 10 m | V.1.0 | Not available | - |
| EX600 | EXW1 | Up to 10 m | V.1.0 | Not available | Available *3 |
| EX600 | EXW1+EX600 | Up to 10 m | V.1.0 | Not available | Available *3 |
| EX600 | EX600 | Up to 10 m | V.1.0 | Not available | Available |

*1 Available in protocol V.2.0.
*2 Up to 100 m between an EXW1-series Base and Remote, and up to 10 m between an EXW1-series Base and an EX600-W-series Remote.
*3 The settings and monitor function are restricted when EX600-WEN/WPN and EXW1-R# are used in combination.
*4 For combinations involving EX600-W series, refer to the operation manual for the product in use.

> ❗
> - **The protocol can be changed only when no Remote is registered in the EXW1-BMJA#.**
>   Make changes only after unregistering any registered Remotes.
>   Note that an unregistration pop-up window will appear in the I/O Configurator.

**SMC**

No.EX##-OMV0017-D

## (5) Remote registration

For this wireless system, it is necessary to register the PID for each product to establish communication without interference from another network. The Remote unit registration display consists of "Registered Remotes", "Remote registration buttons", "Free Remotes", "Pairing", and "Dummy" items.

\* Registration of Remotes needs to be performed with power supplied.    \* Refer to "3.5 Pairing" for the procedure to register Remotes.
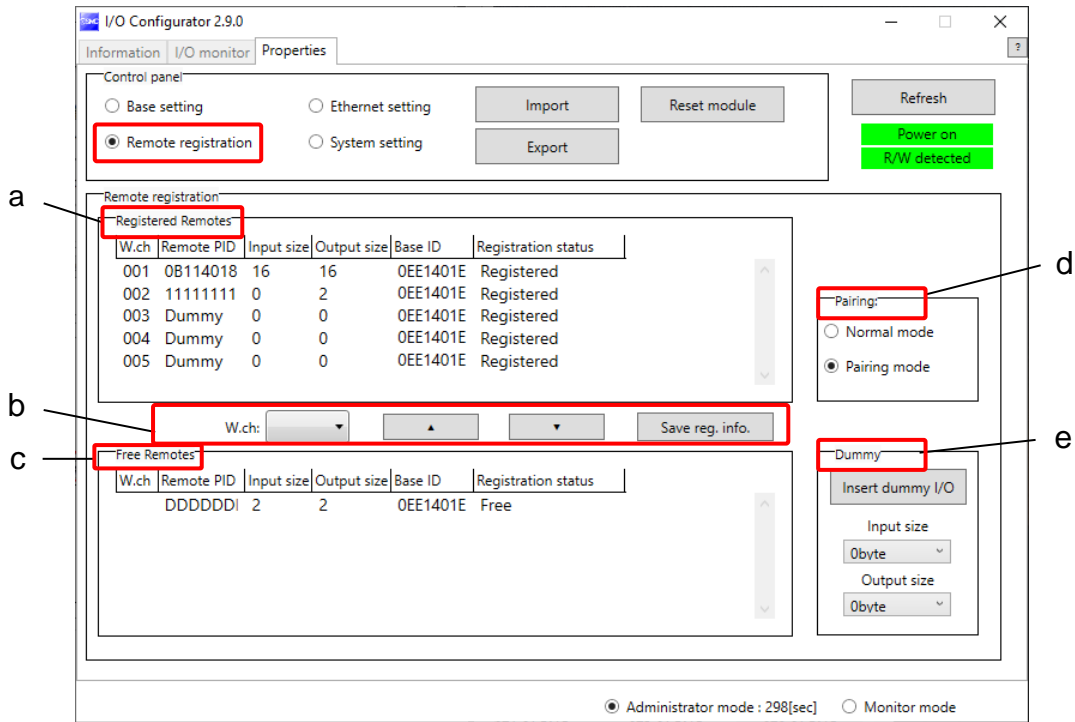


### (5)-a Registered Remotes

Details of registered Remotes.



- Registered Remote display

| Display | Description |
| --- | --- |
| W.ch | Wireless Base channel used when the Wireless Remote was registered. |
| Remove PID | Indicates the PID of the Wireless Remote. |
| Input size | Wireless Remote input size. |
| Output size | Wireless Remote output size. |
| Base ID | PID of the registered Wireless Base. |
| Registration status | Current registration status.<br>(Registered information is saved ⇒ "Registered", registered information is not saved ⇒ "Registered Wait", registration is not successful ⇒ "Registered Failed")<br>\* When the registration is not successful, "Registered Failed" is displayed.   Start the registration again. |

## (5)-b Remote registration buttons

Remote registration buttons are <u>only</u> enabled when wireless units are <u>in pairing mode</u>.

| W.ch: | [ ▼ ] | [ ▲ ] | [ ▼ ] | Save reg. info. |
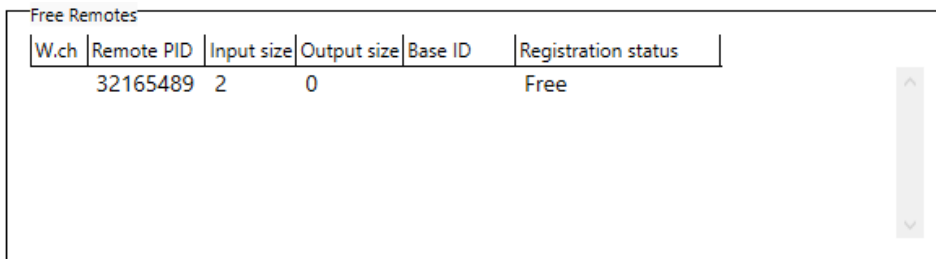
- Remote registration button display

| Display | Description |
|---|---|
| W.ch | Select the channel used to register the Remote to the Wireless Base. (Only channels available for registration will be displayed) |
| [▲] | Move the Wireless Remote from Free Remotes to Registered Remotes. (Specify the wireless channel before moving) |
| [▼] | Remove a Wireless Remote from "Registered Remotes". (The Wireless Remote will now be displayed in the "Free Remotes" area) |
| Save reg. info. | Register the Remotes shown in "Registered Remotes" with the status "Registered Wait" ("Registered" will be displayed when the Remote is successfully registered to the Wireless Base) |

## (5)-c Free Remotes

Nodes for Remote units in pairing mode and not yet registered to a Base are listed in the Free Remotes area.

| Free Remotes | | | | | |
|---|---|---|---|---|---|
| W.ch | Remote PID | Input size | Output size | Base ID | Registration status |
| | 32165489 | 2 | 0 | | Free |

- Free Remote display

| Display | Description |
|---|---|
| W.ch | No information to display. |
| Remote PID | Indicates the PID of the Wireless Remote. |
| Input size | Wireless Remote input size. |
| Output size | Wireless Remote output size. |
| Base ID | Previously registered Base PID. |
| Registration status | Displays the status "Free". |

## (5)-d Pairing

The radio buttons used for pairing are only settable in <u>Administrator mode</u>. They can be set even when power is off.
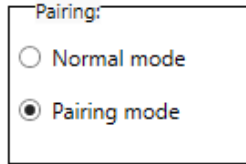


- Pairing radio button display

| Item | Description |
|---|---|
| Normal mode | Change to normal (non-pairing) mode. Indicates that the current status is Normal (pairing disabled) mode. |
| Pairing mode | Change to pairing mode. Indicates that the current status is pairing mode. |

## (5)-e Dummy Remote

Use a dummy Remote to secure memory space for a Wireless Remote in the I/O map without registering a Remote. A Wireless Remote unit can be added later even after a system has been built without changing the I/O map by registering it to the dummy area.
The Wireless Remote unit mapping order to the I/O map is from the smallest channel to the largest channel with the wireless channels which have been set during Remote unit registration.
At this time, the wireless channel in which no Wireless Remote unit is registered will be ignored.
When adding a new Wireless Remote unit, it may be required to change the I/O map depending on the wireless channel number.
The dummy Remote can be registered only with a Wireless Base unit.
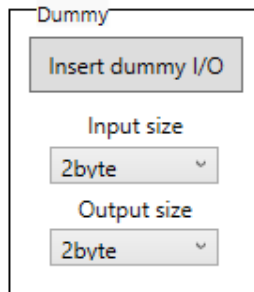


- Dummy Remote button display

| Item | Description |
|---|---|
| Insert dummy I/O | Move the dummy Remote to "Registered Remotes". |
| Input size | Set the input size for the dummy Remote (0 to 16 bytes). |
| Output size | Set the output size for the dummy Remote (0 to 16 bytes). |

* Refer to "3.6 Dummy Remote" for further details and for how to register dummy Remotes.

---

> ❗
> - Before registering a dummy Remote, it is necessary to set the number of inputs / outputs.
>   If a Wireless Remote unit with inputs / outputs which are different from the set numbers is registered, the I/O map should be changed.

**SMC**

(5)-f FCS Setting (Frequency Channel Select)

The frequency channel can be selected using this function. This function is only supported by protocol V.2.0. Specify protocol V.2.0 in [System setting].

FCS Setting cannot be used if communication with subordinate Remotes uses a mixture of protocols. Ensure that only Remote units that support protocol V.2.0 are registered to the Base with which FCS Setting is to be used.

\* The number of selectable frequency channels varies depending on the country in use. For more details, check the product number.

●Countries other than the USA, Canada, and South Korea: ch 5 to 79    ●USA, Canada, and South Korea: ch 15 to 79

\* If no channel is selected, communication is established on ch 79 by default.

Follow the steps below to configure the function on the Remote unit registration screen on the Properties tab.

(1)   Set [Pairing] to [Normal mode].
       Refer to "3.5 Pairing" for details on pairing.

(2)   Click [FCS Setting].
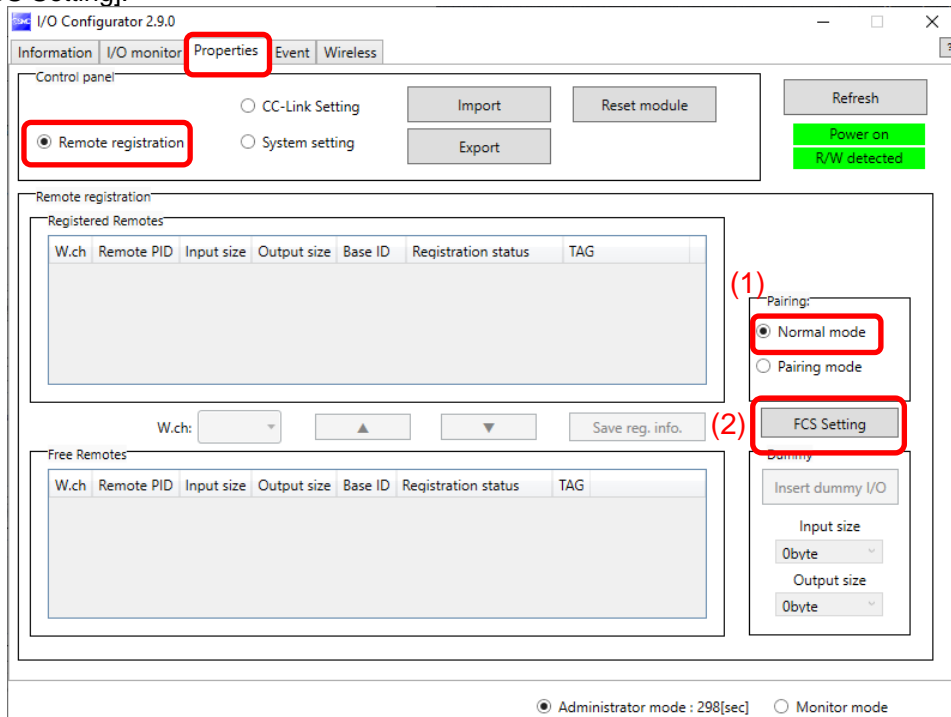
The Frequency Channel Select Window is displayed.
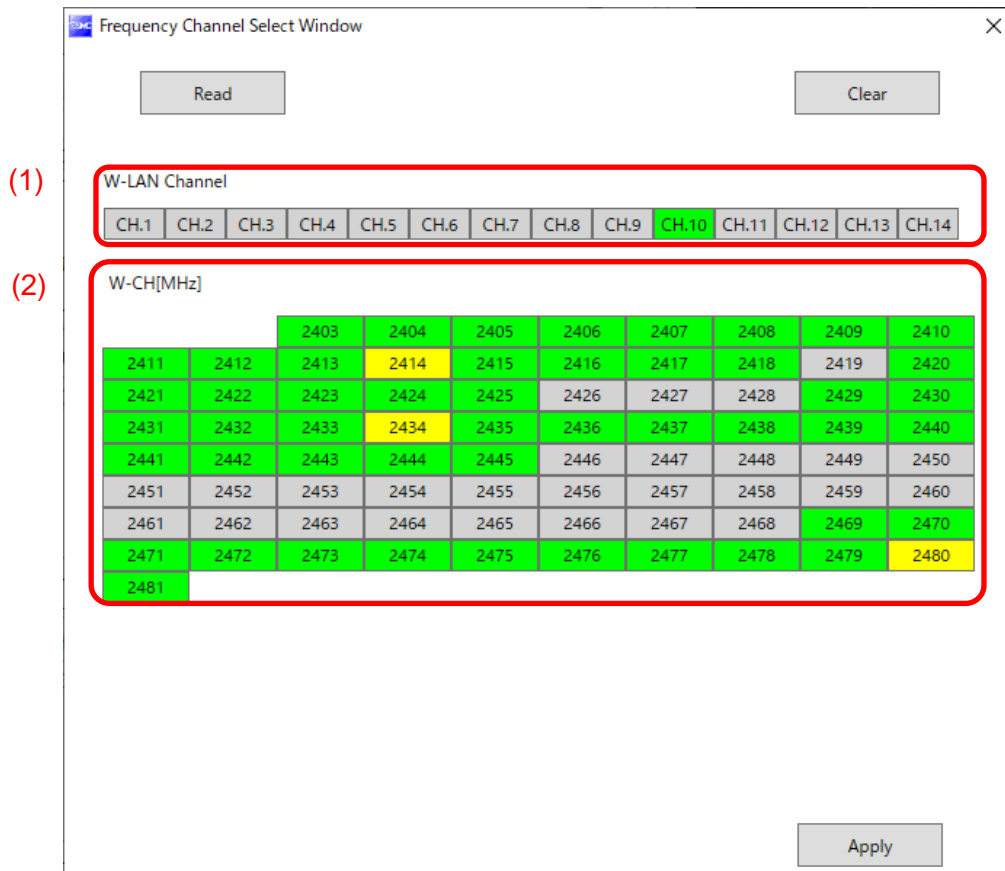


(1) W-LAN Channel indicators
   The W-LAN indicators make it possible to select frequencies corresponding to W-LAN channels at one time.
   * In the example above, W-LAN Channel: CH.10 is selected.

(2) W-CH indicators
   The W-CH indicators make it possible to select frequencies for each channel.
   * In the example above, frequencies 2419, 2426 to 2428, and 2446 to 2468 [MHz] are unused channels.
     Note that frequencies 2446 to 2468 [MHz] correspond to (1) W-LAN Channel: CH.10 above.

- Indicator colours

| Colour | Description | Note |
|---|---|---|
| Green | Selected W-LAN channel (W-LAN Channel area) Active frequency channel (W-CH area) | |
| Yellow | Advertise channel | Cannot be set for inactive frequency channels |
| Grey | Inactive frequency channel | |

⊕
  - If advertise channels are included in the CH at the time of selecting a W-LAN Channel, they cannot be selected. To select them, initialize the product or remove all the registered Remotes and then configure F.C.S. before performing pairing.
  - To use 5 to 7 frequency channels, neighbouring frequencies need to be separated by 3 MHz.
  - To use 8 to 14 frequency channels, neighbouring frequencies need to be separated by 2 MHz.
  - To use 15 frequency channels or more, neighbouring frequencies can be selected.

## (6) Remote setting

The parameters of a Remote unit can be changed as required.
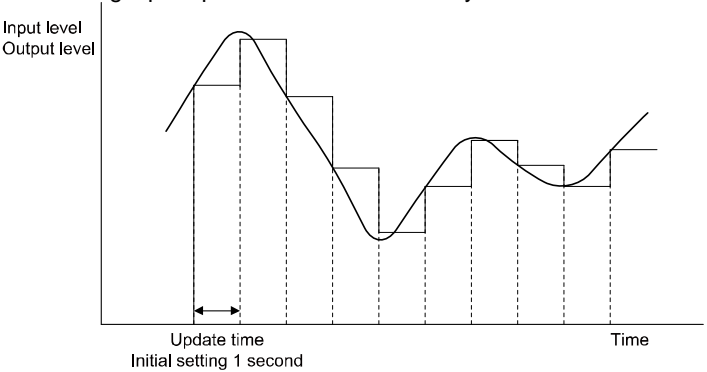
- Remote parameters
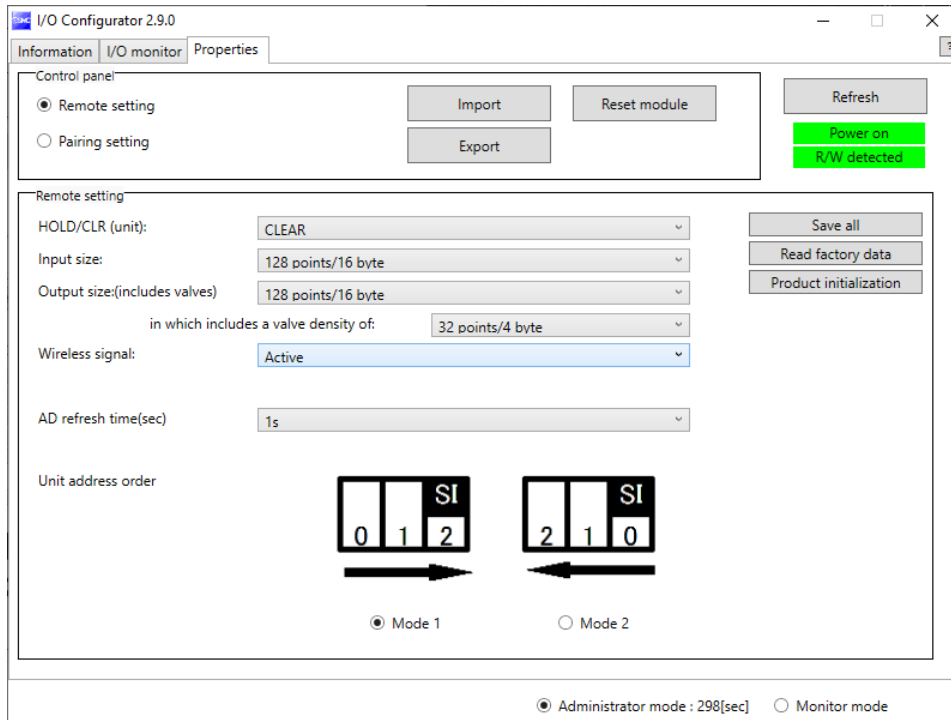Compact wireless unit (EXW1-RDXNE4## / EXW1-RDYNE4## / EXW1-RDM#E3## etc.)

| Parameter | Set value | Initial value | Note |
|---|---|---|---|
| Input size* | 16 points (16 bits) | 16 points (16 bits) | Fixed<br>For the EXW1-RD#, the number is fixed at 16 (16 bits).<br>* Although the number of occupied inputs of EXW1-RDM# is fixed at 16 (16 bits), only the lower 8 bits are available. |
| Output size (includes valves) | 16 points (16 bits) | 16 points (16 bits) | Fixed<br>For the EXW1-RD#, the number is fixed at 16 (16 bits).<br>* Although the number of occupied outputs of EXW1-RDM# is fixed at 16 (16 bits), only the lower 8 bits are available. |
| Wireless signal | Active / Idle | Active | If set to "Idle", the wireless communication is disconnected. |
| Power Supply Voltage Monitor (Control/Input) | Enable / Disable | Enable | If set to "Enable", a drop in the US1 (for control/input) power supply voltage can be detected. |
| Power Supply Voltage Monitor (Output) | Enable / Disable | Disable | EXW1-RDY#<br>EXW1-RDM#<br>If set to "Enable", a drop in the US2 (for output) power supply voltage can be detected. |
| Output action when upper communication is disconnected. | Clear / Hold | Clear | Specify an output action for when the fieldbus communication is disconnected.<br>CLEAR: Clear the output.<br>HOLD: Fix the output at the current value.<br>Individual: Each output setting can be specified.<br>CLEAR, HOLD, SET: Output ON |
| Output action when wireless community is disconnected. | Clear / Hold | Hold | Specify an output action for when the wireless communication is disconnected.<br>CLEAR: Clear all Remote output.<br>HOLD: Fix all the Remote output at the current value. |

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Wireless unit (manifold type) (EX600-WSV#)

| Parameter | Set value | Initial value | Note |
|---|---|---|---|
| HOLD/CLR (unit) | CLEAR / HOLD / Software Control | CLEAR | Define all settings that are in the output operation status when fieldbus communication is disconnected.<br>CLEAR: Clear the output.<br>HOLD: Fix the output at the current value.<br>Software Control: CLEAR, HOLD or SET for individual points can be set using bit data.<br>* Software Control is selectable only for manifold type units. Refer to "3.7 Software Control" for setting details. |
| Input size | 0 to 128 points (0 bytes to 16 bytes) in 16-point units | 128 points / 16 byte | Set the number of inputs which can be controlled by the Wireless Remote unit. |
| Output size (includes valves) | 0 to 128 points (0 bytes to 16 bytes) in 16-point units | 128 points / 16 byte | Set the number of outputs which can be controlled by the Wireless Remote unit.<br>The module output points include the number of points of the valve manifold output. |
| in which includes a valve density of | 0 to 32 points (0 bytes to 4 bytes) in 8-point units | 32 points / 4 byte | Set the number of outputs to be allocated to the valve manifold output from the number of points set in the module output size.<br>As the valve manifold output points are included in the module output points, the number of effective points are limited to within the setting range of the module output points. |
| Wireless signal | Active / Idle | Active | Define the operation status of wireless communication.<br>Active: Wireless communication is available.<br>Idle: Disconnect the wireless communication. |
| AD refresh time (sec) | 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 30 / 60 s (Initial value 1 s) | 1 s | Set the data update time of the analog input unit connected to the Wireless Remote.<br>The analog input update time is set for every Wireless Remote unit.<br><br>Input level<br>Output level<br><br>Update time<br>Initial setting 1 second    Time |
| Unit address order | Mode 1 / Mode 2 | Mode 1 | Define the address assignment direction of the EX600 I/O units connected to the Wireless Base unit.<br>The address assignment direction is changed using mode 1 / mode 2. Be careful about the I/O mapping.<br>(Refer to the I/O Mapping Order of Wireless Base / Remote Module of the Operation Manual (page 50) for details)<br>Mode 1: Assigned to the right from the end plate.<br>Mode 2: Assigned to the left from the wireless unit. |

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(7) Pairing setting

Setting for wireless communication between the Wireless Base unit and Wireless Remote unit.

It is necessary to set the operating mode to pairing when registering the Wireless Remote to Wireless Base.
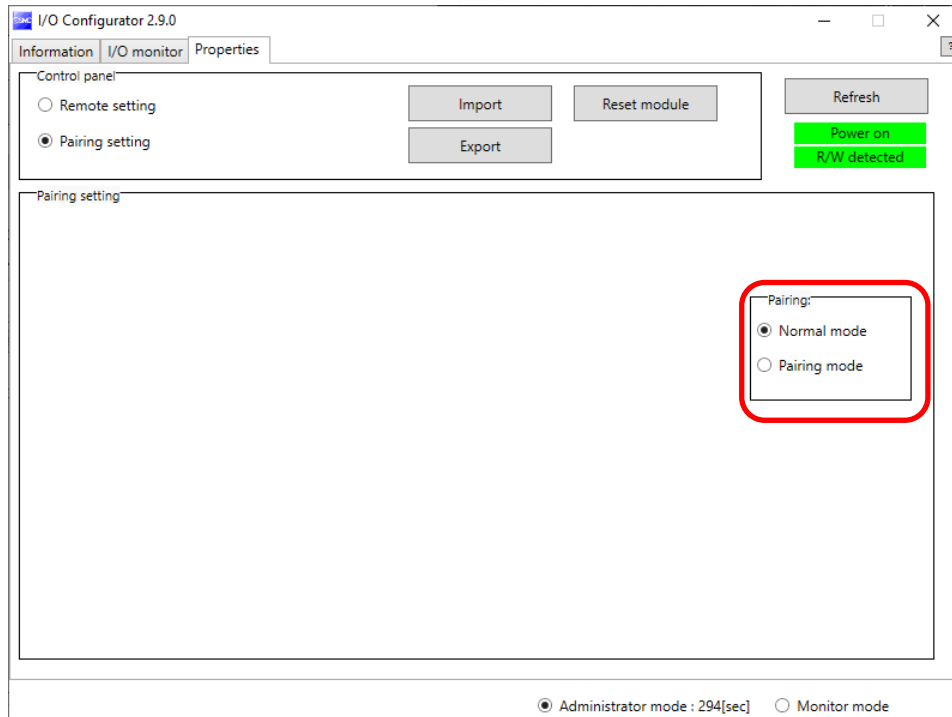


- Radio buttons for selecting the pairing mode.

| Item | Description |
|------|-------------|
| Normal mode | Change to normal (non-pairing) mode. Indicates that the current status is Normal (pairing disabled) mode. |
| Pairing mode | Switch to pairing mode. Indicates that the current status is pairing mode. |

## 5.4 Event tab

The Event tab makes it possible to check the event information (errors, etc.) of the Wireless Base.
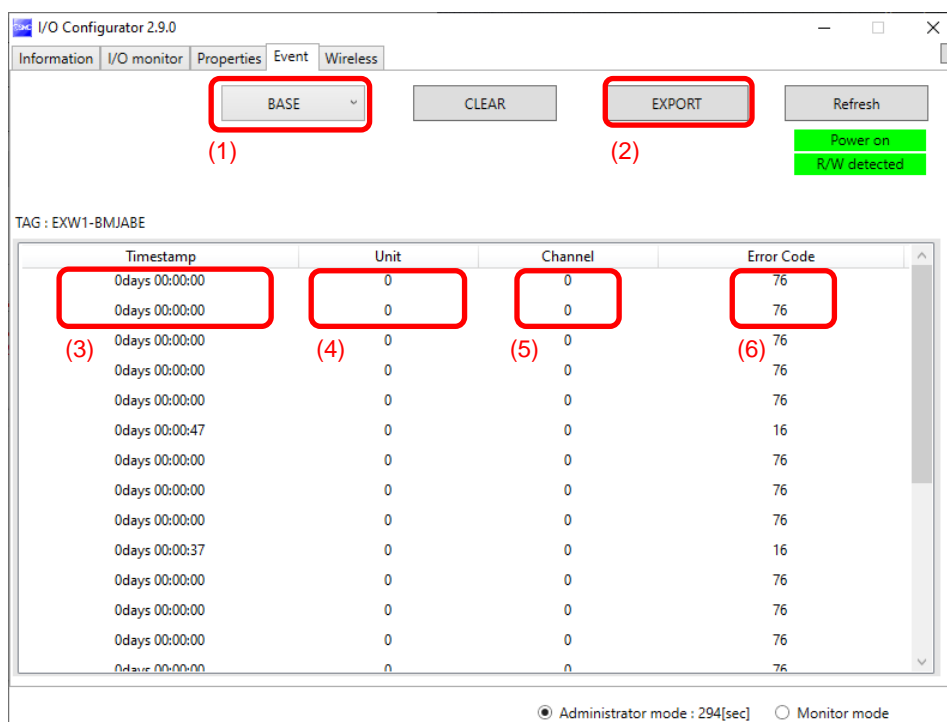


- Event tab display

| No. | Display | Description |
|---|---|---|
| (1) | Model selection | Select a Wireless Remote registered to the Base. |
| (2) | Event data export | Event data can be exported to text files. |
| (3) | Time stamp | The time when the event was obtained is displayed. Synchronized time is displayed only in the case of protocol V.2.0. <br> * Time synchronization needs to be performed in [System setting] on the Properties tab. If time is not synchronized, the time elapsed since the product is turned on is displayed. |
| (4) | Unit | The unit number is displayed. |
| (5) | Channel | The channel number of the Wireless Remote is displayed. |
| (6) | Error Code | The error code is displayed. |

● Error codes

The table below shows error codes with corresponding details and diagnostics maps.

| Error code | Description | Diagnostics map | |
| --- | --- | --- | --- |
| | | Item | Bit no. |
| 1 | Detection of a short circuit of US1 or US2 | System diagnostic 1 | 6 or 7 |
| 2 | Detection of the range upper limit | | 3 |
| 3 | Detection of the range lower limit | | 2 |
| 6 | Detection of unconnected load | | 5 |
| 7 | Detection of the user setting upper limit | | 1 |
| 8 | Detection of the user setting lower limit | | 0 |
| 9 | Detection of the upper limit of the ON/OFF cycles | | 4 |
| 16 | Detection of US1 power supply voltage drop | System diagnostic 2 | 9 |
| 17 | Detection of US2 power supply voltage drop | | 8 |
| 19 | Connection failure between units (during operation) | | 11 |
| 20 | Connection failure between units (when power is supplied) | | 12 |
| 22 | Detection of system error (when power is supplied) | | 14 |
| 23 | Detection of hardware error (during operation) | | 15 |
| 64 | Number of input / output points setting error | System diagnostic 3 | 0 |
| 70 | Detection of system error | | 6 |
| 71 | Detection of hardware error | | 7 |
| 72 | Number of system input / output points setting error | System diagnostic 4 | 8 |
| 73 | Number of registered Remotes setting error (Outside of the wireless channel setting range) | | 9 |
| 76 | Network setting error | | 12 |
| 78 | Wireless registration data corrupted | | 14 |
| 79 | Detection of wireless hardware error | | 15 |

\* Refer to the "Diagnostics map details" section in the Operation Manual for the product.

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## 5.5 Wireless tab

The Wireless tab displays the wireless log data.
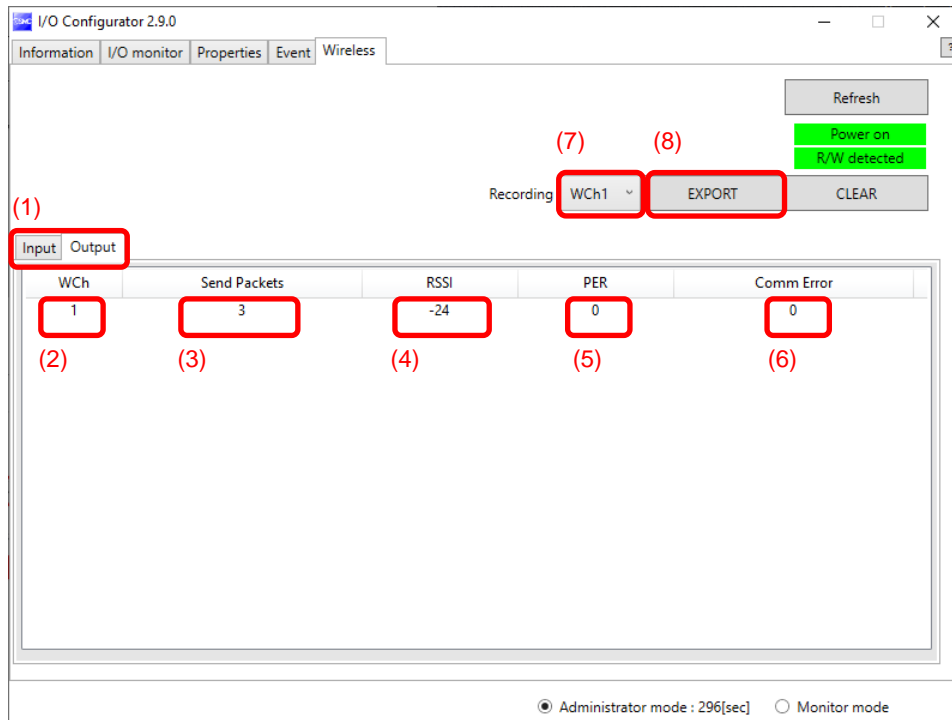


- Wireless tab display

| No. | Display | Description |
|---|---|---|
| (1) | Input / Output tabs | Received data for the Wireless Base is displayed on the Input tab, and sent data is displayed on the Output tab. |
| (2) | WCh | The wireless channel is displayed. |
| (3) | Send Packets / Received Packets | The number of sent / received packets is displayed. |
| (4) | RSSI（Received Signal Strength Indicator） | The radio wave receiving strength is displayed. |
| (5) | PER (Packets Error Rate) | The packet error rate is displayed. |
| (6) | Comm Error (Communication Error) | The number of communication disconnections is displayed. |
| (7) | Selection of wireless channel | Select the wireless channel from which to obtain wireless log data. |
| (8) | Export of wireless log data | The wireless log data from the selected wireless channel is exported. Wireless log data is divided into four csv files. |

● Wireless log data files

Wireless log data is generated and stored in the following four csv files.



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# 6. Wireless system parameter list

- Wireless Base unit (EX600-WEN#) setting parameters

| Classification | | Parameter name | Set value | Initial value | Setting when power is off | Note |
|---|---|---|---|---|---|---|
| Base setting | a) | HOLD/CLR (unit) | CLEAR / HOLD / Software Control | CLEAR | Available | Setting the output operation when the fieldbus communication is disconnected. |
| | b) | Input size | 0 to 128 points (0 to 16 bytes) Increase and decrease by 16 points (2 bytes). | 128 points / 16 byte | Available | |
| | c) | Output size (includes valves) | 0 to 128 points (0 to 16 bytes) Increase and decrease by 16 points (2 bytes). | 128 points / 16 byte | Available | |
| | d) | in which includes a valve density of | 0 to 32 points (0 to 4 bytes) Increase and decrease by 8 points (1 byte). | 32 points / 4 byte | Available | The valve manifold output points are included in the module output points. The number of effective points are limited to within the setting range of the module output points. |
| | e) | Wireless signal | Active / Idle | Active | Available | If set to "Idle", the wireless communication is disconnected. |
| | f) | Unit address order | Mode 1 / Mode 2 | Mode 1 | Available | Mode 1: Allocation to the right from the end plate. Mode 2: Allocation to the left from the wireless unit. |
| Ethernet setting | a) | IP address type | Manual / DHCP / Remote Control | Manual | Available | The IP address can be input manually only when "Manual" mode is selected. |
| | b) | Auto MDI/MDI-X | Auto / MDI / MDI-X | Auto | Available | |
| | c) | Duplex | Full Duplex / Half Duplex | Full Duplex | Available | |
| | d) | Speed | Auto / 100 Mbps / 10 Mbps | Auto | Available | |
| System setting | a) | I/O mapping | Manual | Manual | Available | When the total size (byte) of the I/O mapping is an odd number, 1 byte will be added automatically so that an even number will be allocated. |
| | b) | System input size | 16, 128 to 1280 points (2, 16 to 160 bytes) Increase and decrease by 128 points. | 1280 points / 160 byte | Available | This is not settable when the I/O mapping is set to "Auto". |
| | c) | System output size | 16, 128 to 1280 points (2, 16 to 160 bytes) Increase and decrease by 128 points. | 1280 points / 160 byte | Available | This is not settable when the I/O mapping is set to "Auto". |
| | d) | Diagnostic allocation | None / Simple / Advanced | Advanced | Available | Diagnostic information is allocated to the head of the input data of the I/O map. |
| | e) | Max. Remote units | 0 / 15 / 31 / 63 / 127 Remotes | 15 Remotes | Available | Wireless channels for the number of the set units are enabled. |
| | f) | DA refresh time (sec) | 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 30 / 60 s | 1 s | Available | Set the sampling frequency of the analog output equipment. |

- Wireless Base unit (EX600-WPN#) setting parameters

| Classification | | Parameter name | Set value | Initial value | Setting when power is off | Note |
|---|---|---|---|---|---|---|
| Base setting | a) | HOLD/CLR (unit) | CLEAR / HOLD / Software Control | CLEAR | Available | Setting the output operation when the fieldbus communication is disconnected. |
| | b) | Input size | 0 to 128 points (0 to 16 bytes) Increase and decrease by 16 points (2 bytes). | 128 points / 16 byte | Available | |
| | c) | Output size (includes valves) | 0 to 128 points (0 to 16 bytes) Increase and decrease by 16 points (2 bytes). | 128 points / 16 byte | Available | |
| | d) | in which includes a valve density of | 0 to 32 points (0 to 4 bytes) Increase and decrease by 8 points (1 byte). | 32 points / 4 byte | Available | The valve manifold output points are included in the module output points. The number of effective points are limited to within the setting range of the module output points. |
| | e) | Wireless signal | Active / Idle | Active | Available | If set to "Idle", the wireless communication is disconnected. |
| | f) | Unit address order | Mode 1 / Mode 2 | Mode 1 | Available | Mode 1: Allocation to the right from the end plate. Mode 2: Allocation to the left from the wireless unit. |
| System setting | a) | I/O mapping | Auto | Auto | Available | For PROFINET Wireless Base I/O, only automatic mapping is available. |
| | b) | System input size | - | - | - | This is not settable when the I/O mapping is set to "Auto". |
| | c) | System output size | - | - | - | This is not settable when the I/O mapping is set to "Auto". |
| | d) | Diagnostic allocation | None / Simple / Advanced | Advanced | Available | Diagnostic information is allocated to the head of the input data of the I/O map. |
| | e) | Max. Remote units | 0 / 15 / 31 Remotes | 15 Remotes | Available | Wireless channels for the number of the set units are enabled. |
| | f) | DA refresh time (sec) | 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 30 / 60 s | 1 s | Available | Set the sampling frequency of the analog output equipment. |
| Remote registration | a) | Pairing | Normal / pairing modes | Normal mode | Available | Normal mode: Wireless Remote cannot be registered. (Communication with the registered Remote will be established). Pairing mode: Wireless Remote can be registered. |
| | b) | Remote registration | Allocation and registration of the Wireless Remote unit to the wireless channel. | Remote not registered | Not available | |
| | c) | Dummy Remote | Addition of dummy Remote to the wireless channel | Dummy Remote unset | Not available | Refer to dummy Remote registration for setting details . |

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- Compact Wireless Base unit (EXW1-BMJA#) setting parameters

| Classification | Parameter name | | Set value | Initial value | Setting when power is off | Note |
|---|---|---|---|---|---|---|
| CC-Link setting | a) | Operating mode | 1 to 8 | 2 | Available | |
| | b) | Speed | 156 kbps / 625 kbps / 2.5 Mbps / 5 Mbps / 10 Mbps | 156 kbps | Available | |
| | c) | Number of slave stations | 1 to 64 stations | 0 | Available | |
| System setting | a) | I/O mapping | Manual | Manual | Available | Fixed at "Manual". |
| | b) | Diagnostic allocation | Advanced | Advanced | Available | Fixed at "Advanced". |
| | c) | DA refresh time (sec) | 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 30 / 60 s | 1 s | Available | |
| | d) | Output action when upper communication is disconnected. | Clear / Hold / Individual | Clear | Available | |
| | e) | Timing of Wireless Communication | 20 / 40 / 100/ 200 / 500 / 1,000 / 2,000 / 5,000 msec | 500 msec | Available | |
| | f) | Input Information of Wireless Communication | Clear / Hold | Hold | Available | |
| | g) | Wireless signal | Active / Idle | Active | Available | If set to "Idle", the wireless communication is disconnected. |
| | h) | Protocol | V.1.0 / V.2.0 | V.2.0 | Available | |
| | i) | Time Information | - | - | - | |
| | j) | Synchronization time | - | - | - | |
| Remote registration | a) | Pairing | Normal / pairing modes | Normal mode | Available | |
| | b) | Remote registration | Allocation and registration of the Wireless Remote unit to the wireless channel. | Remote not registered | Not available | |
| | c) | Dummy Remote | Addition of dummy Remote to the wireless channel | Dummy Remote not set | Not available | Refer to "3.6 Dummy Remote" for details. |

- Compact Wireless Remote unit (EXW1-RDXNE4## / EXW1-RDYNE4## / EXW1-RDM#E3##) setting parameters

| Classification | | | Parameter name | Set value | Initial value | Setting when power is off | Note |
|---|---|---|---|---|---|---|---|
| Remote setting | | a) | Input size* | 16 points / 2 byte | 16 points / 2 byte | Available | EXW1-RDXNE4# / EXW1-RDM#E3#: 16 points / 2 byte fixed EXW1-RDYNE4#: 0 points / 0 byte fixed |
| | | b) | Output size (includes valves)* | 16 points / 2 byte | 16 points / 2 byte | Available | EXW1-RDYNE4# / EXW1-RDM#E3#: 16 points / 2 byte fixed EXW1-RDXNE4#: 0 points / 0 byte fixed |
| | | c) | Wireless signal | Active / Idle | Active | Available | If set to "Idle", the wireless communication is disconnected. |
| | | d) | Power Supply Voltage Monitor (Control / Input) | Enable / Disable | Enable | Available | |
| | | e) | Power Supply Voltage Monitor (Output) | Enable / Disable | Disable | Available | |
| | | f) | Output action when upper communication is disconnected. | Clear / Hold | Clear | Available | Specify an output action for when the fieldbus communication is disconnected. |
| | | g) | Output action when wireless community is disconnected. | Clear / Hold | EXW1-RDYNE4#: Clear EXW1-RDM#E3#: Hold | Available | Specify an output action for when the wireless communication is disconnected. |
| Pairing setting | | a) | Pairing | Normal/pairing modes | Normal mode | Available | Normal mode: Wireless Remote cannot be registered. (Communication with the registered Remote will be established). Pairing mode: Wireless Remote can be registered. |

- Wireless Remote unit (manifold type) (EX600-WSV#) setting parameters

| Classification | | Parameter name | Set value | Initial value | Setting when power is off | Note |
|---|---|---|---|---|---|---|
| Remote setting | a) | HOLD/CLR (unit) | CLEAR / HOLD / Software Control | CLEAR | Available | Setting the output operation when the fieldbus communication is disconnected. |
| | b) | Input size | 0 to 128 points (0 to 16 bytes) Increase and decrease by 16 points (2 bytes). | 128 points / 16 byte | Available | |
| | c) | Output size (includes valves) | 0 to 128 points (0 to 16 bytes) Increase and decrease by 16 points (2 bytes). | 128 points / 16 byte | Available | |
| | d) | in which includes a valve density of | 0 to 32 points (0 to 4 bytes) Increase and decrease by 8 points (1 byte). | 32 points / 4 byte | Available | The valve manifold output points are included in the module output points. The number of effective points are limited to within the setting range of the module output points. |
| | e) | Wireless signal | Active / Idle | Active | Available | If set to "Idle", the wireless communication is disconnected. |
| | f) | AD refresh time (sec) | 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 30 / 60 s | 1 s | Available | Set the sampling frequency of the analog input equipment. |
| | g) | Unit address order | Mode 1 / Mode 2 | Mode 1 | Available | Mode 1: Allocation to the right from the end plate. Mode 2: Allocation to the left from the wireless unit. |
| Pairing setting | a) | Pairing | Normal / pairing modes | Normal mode | Available | Normal mode: Wireless Remote cannot be registered (Communication with the registered Remote will be established). Pairing mode: Wireless Remote can be registered. |

- Parameters in common with Wireless Base units and Wireless Remote units

| Classification | Parameter name | Set value | Initial value | Setting when power is off | Note |
|---|---|---|---|---|---|
| Information | TAG | Max. 15 characters | Part No (EX600-WEN#) (EX600-WPN#) (EX600-WSV#) (EXW1-BMJA#) (EXW1-RDXNE4#) (EXW1-RDYNE4#) (EXW1-RDM#E3) | Available | Characters which can be input are half-width characters (alphabet, numbers, symbols) representable in ASCII code. Half-width katakana cannot be entered. |

# 7.  Troubleshooting

| Problem no. | Problem | Possible causes | Inspection and countermeasures |
|---|---|---|---|
| 1 | The Wireless Base / Remote unit information cannot be read even when the [Refresh] button is clicked. | 1. The NFC reader / writer has moved away from the antenna of the Wireless Base / Remote unit. 2. The PC does not identify the NFC reader / writer. | 1: Adjust the NFC reader / writer so that it is positioned at the centre of the NFC antenna (circled part). 2-1: Remove the NFC reader / writer from the USB terminal of the PC and connect it again. 2-2: Uninstall the driver for "NFC Port / PaSoRi" and then install it again. 2-3: Install the NFC reader / writer connection driver NFC port software again. |
| 2 | Logged in to Administrator mode, but I/O setting or pairing setting cannot be performed. | The mode has been switched to Monitor mode. Mode automatically changes to Monitor mode when there is no movement of the mouse for 300 seconds in the I/O Configurator. | Log in again to Administrator mode. |
| 3 | Password forgotten. | - | Delete the password by entering the master key. Refer to "2.4 Monitor mode and Administrator mode" for details. |
| 4 | The Wireless Remote unit is registered to the Wireless Base unit, but a communication error was confirmed in the Information tab. | 1. The radio waves do not reach between the Wireless Base and Remote. 2. The Wireless Remote settings might have been changed after the Remote was registered. | 1. Check the LED on the unit. 2. Release pairing once, and perform pairing again. |
| 5 | The set parameters were changed by the Wireless Base (Remote) or with "System setting", but the changes are not reflected. | "Reset" was not performed after saving the set parameters. | Turn off the power supply and on again or click the "Reset" button. |
| 6 | The analog output unit voltage (current) was specified numerically in forced output mode, but the correct value is not output. | 1. The set value is outside of the range. 2. Scaled data format has been selected for analog format. | 1. Enter a value within the range or change the unit setting using the I/O Configurator (Web version). 2. The value must be in hexadecimal. Refer to the EX600 Analog unit Operation Manual for details. |

| Problem no. | Problem | Possible causes | Inspection and countermeasures |
|---|---|---|---|
| 7 | Not possible to change to forced output mode. | 1. Connected with higher unit.<br>2. Mode is Monitor mode. | 1. Disconnect the unit from the higher unit.<br>2. Login from the Administrator mode. |
| 8 | The Wireless Remote unit does not operate with the set input / output size. | The Wireless Remote operates with the input / output size set when the Wireless Remote was registered. | The Wireless Remote follows the input / output size when it was registered to the Wireless Base. Check the Wireless Remote input / output size from the Wireless Base. If the size is not correct, register the size again. |
| 9 | The location and the type of error being generated is unknown. | - | Check the system configuration on the Information tab of the Wireless Base to identify the unit with an error. Check the diagnostic information from the Description to identify the error. Refer to "5.1 Information tab" for details and diagnostic information of each unit. |
| 10 | Free Remotes are not displayed when registering the Remote. | 1. The Wireless Remote is not in pairing mode.<br>2. The Wireless Remote is already registered.<br>3. Another Wireless Base is in pairing mode. | 1. Check that the Wireless Remote is in registration mode.<br>2. When the Wireless Remote is already registered, it needs to be deleted to register it again.<br>3. When another Wireless Base is in pairing mode, the Wireless Remote will be displayed for the Base. Keep to having one Wireless Base in pairing mode. |

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# 8. Specifications / technical information / supplementary information

## 8.1 Terminology

| | Term | Definition |
|---|---|---|
| A | Administrator mode | Administrator mode allows the user to configure the wireless units. Wireless Base / Remote become settable. |
| B | Broken line detection | A broken wire to the input or output equipment has been detected by the diagnostic function. |
| C | CC-Link | Open network developed by Mitsubishi Electric Corporation. Abbreviation of Control & Communication Link. |
| D | DHCP | A protocol that automatically allocates information, necessary to be registered to use the network, such as an IP address, to individual devices connected to the TCP/IP network. |
| | Dummy Remote | A dummy Remote can be used to reserve a dummy area within the I/O map. A Wireless Remote can then be registered to the dummy area at a later time, without having to change the I/O map. |
| E | Export | Function to save the configured values of a wireless unit by exporting them to a PC. |
| F | Fieldbus | Network protocol to establish digital communication between an automated industrial system such as with measurement equipment or manipulation equipment and a PLC. |
| | Full duplex | Communication system that can send and receive data at the same time bi-directionally. |
| H | Half-duplex | Communication method that can send and receive data reciprocally in bi-directional communication. |
| I | Import | Function to reconfigure a wireless unit by importing values stored on a PC. |
| | I/O Configurator (NFC version) | Application used to directly set and monitor the wireless unit parameters via an NFC reader / writer. |
| | I/O Map | Memory area reserved for the I/O data and diagnostic information of the wireless system. |
| | IP address | A 32-bit digit sequence which is assigned to identify devices which are connected to the network. |
| M | MAC address | A unique number assigned to all devices connected to an EtherNet network. |
| | Manifold | A branching object. An object providing convergence. |
| | Module | A module consists of a Wireless Base / Wireless Remote combined with I/O units and valve manifolds. |
| | Monitor mode | Mode which possesses the privileges to monitor the I/O Configurator (NFC version). Wireless Base / Remote settings can be monitored but setting cannot be performed. |
| N | NFC | Abbreviation of Near Field Communication. A non-contact short distance wireless communication used for configuration of the wireless units. The I/O Configurator (NFC version) can directly command the Wireless Base / Remote through an NFC reader / writer. |
| | Number of inputs | Number of points which can receive information from input equipment such as a sensor or switch. |
| | Number of outputs | Number of points which can operate output equipment such as a valve, lamp or motor starter. |

| | Term | Definition |
|---|---|---|
| O | Occupied points for the module input / output | Number of I/O points that can be controlled by a module. |
| P | Pairing | Registration of the PID (Product ID) of the Wireless Remote unit to be connected to the Wireless Base unit. Registration occurs at the initial setting, then the wireless system will activate. |
| | PID | Abbreviation of Product ID. A 32-bit numeric string allocated to identify the wireless unit (Base / Remote). |
| | PLC | Abbreviation of Programmable Logic Controller. A digital computer used for automation of electromechanical processes. |
| R | Refresh button | Button to display the latest configuration of the wireless units, set by the I/O Configurator (NFC version). |
| | Remote Control | The mode to respond to the commands of BOOTP / DHCP Server provided by Rockwell Automation. Gateway address and subnet mask can be set to any value. |
| | Reset button | Button to update the wireless units with the latest configuration set by the I/O Configurator (NFC version). Restarting the controller will also activate the setting. |
| S | Short circuit detection | Diagnostic function which detects generation of an overcurrent due to a short circuit between the output and the positive power supply line or the ground line. |
| | Short circuit protection | Function which avoids damage to the internal circuit when overcurrent is generated due to short circuit between the output and the positive power line or the ground line. |
| W | Wireless Base | A unit which establishes wireless communication of input or output data to the Wireless Remote. It is connected to a PLC to establish communication of input or output data. |
| | Wireless channel | Identification number of the Wireless Remote unit connected to the Wireless Base unit. |
| | Wireless Remote | A unit which establishes wireless communication of input or output data to a Wireless Base. |
| | Wireless unit | A unit which establishes wireless communication. This is a generic name for the Wireless Base and Remote units. |

Revision history

| Revision no. | Applicable models | Updated content |
|---|---|---|
| 2.00 | EX600-WEN#<br>EX600-WSV# | First edition |
| 2.10 | EX600-WPN#<br>EX600-WSV# | Version for EX600-WPN# |
| 2.20 | EX600-WEN#<br>EX600-WPN#<br>EX600-WSV# | Common version for EX600-WEN# and EX600-WPN#<br>ACS reader / writer has been added to verified NFC reader / writers. |
| 2.60 | EX600-WEN#<br>EX600-WPN#<br>EX600-WSV# | Remote Control function added to Ethernet setting<br>Change to wireless unit naming |
| 2.9.0 | EXW1-RDXNE4#<br>EXW1-RDYNE4#<br>EXW1-RDM#E3<br>EXW1-BMJA# | Addition of EXW1 series |

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