No.EX##-OMV0017-F

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-BECAC (Compact Wireless Base)
EXW1-RDXNE4## (Compact Wireless Remote)
EXW1-RDYNE4## (Compact Wireless Remote)
EXW1-RDM#E3## (Compact Wireless Remote)
EXW1-RL#PA#C (Compact Wireless Remote)

SMC Corporation

Contents

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.

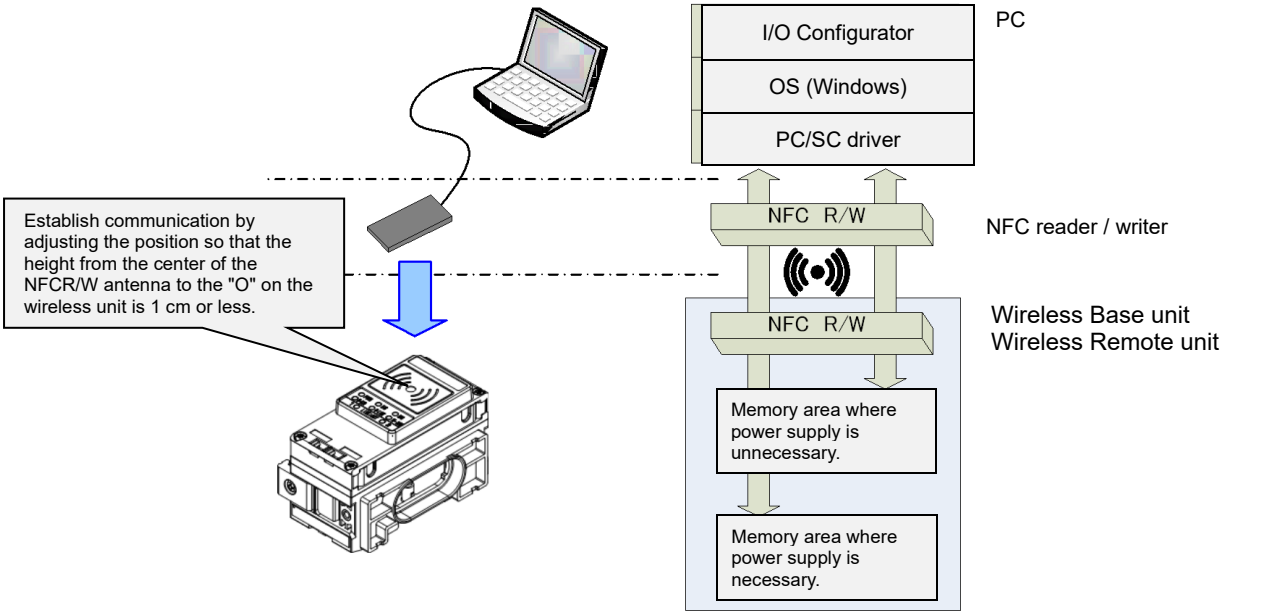
- Setting the parameters of wireless units
- Changing the details of a wireless system
- Pairing Wireless Base / Remote units

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
EXW1-BECAC 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



※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".

* The product is available in Japanese, English, and Chinese by setting the language in the Windows OS.

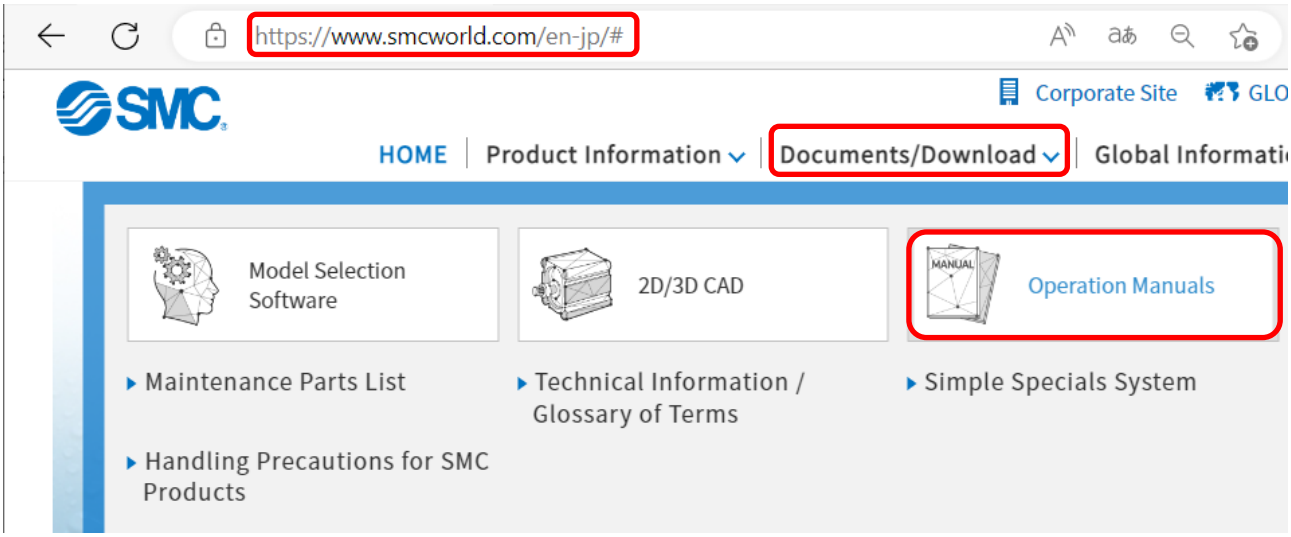
1.3 About this manual

This manual can be used with the I/O Configurator (NFC version) ver. 2.11.0.

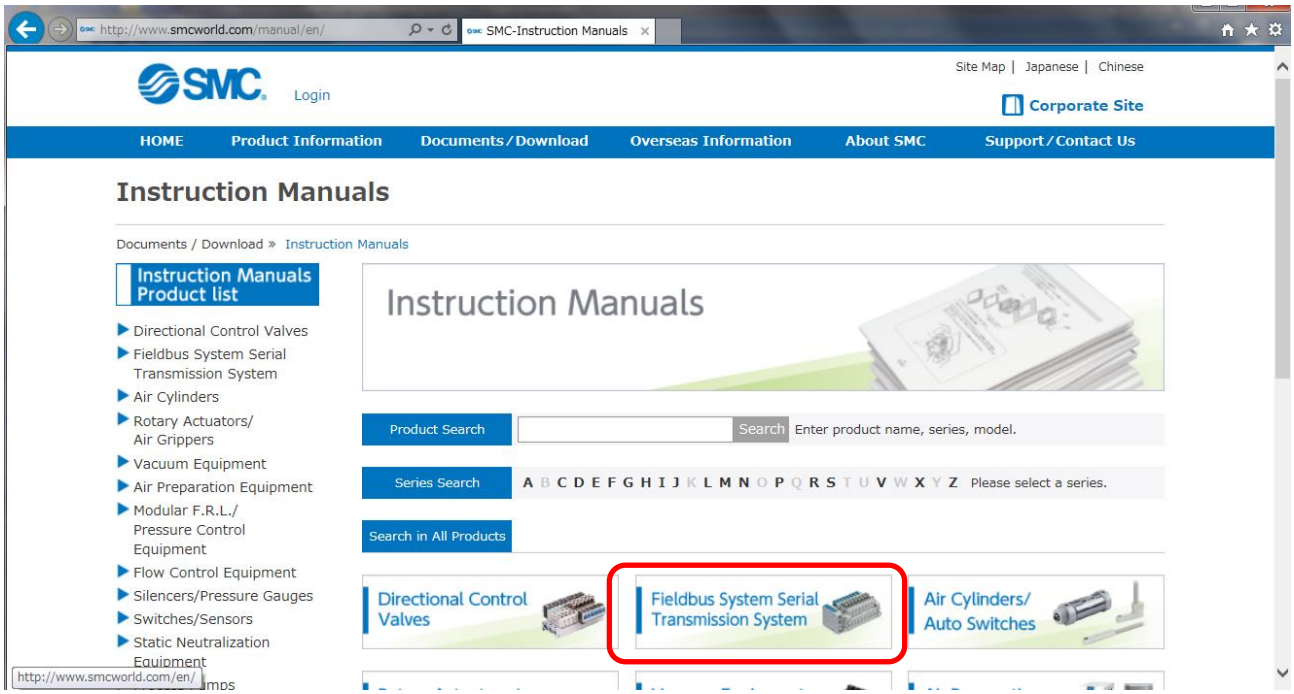
2. Basic operations with the I/O Configurator (NFC version)

2.1 Download the I/O Configurator (NFC version)

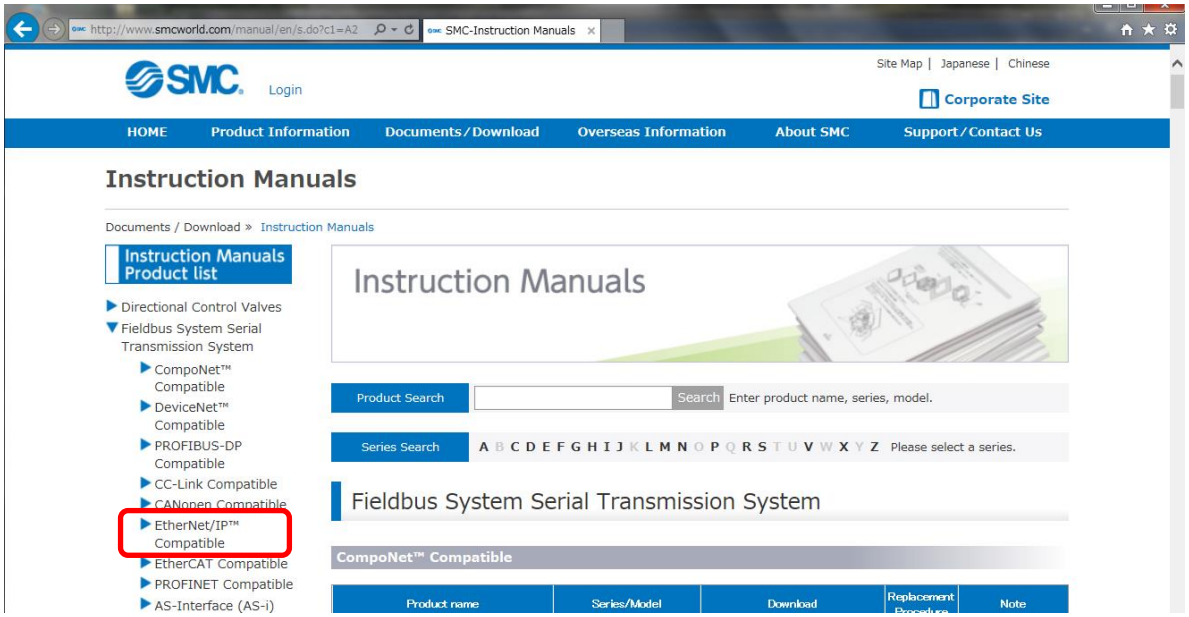
(1) On the SMC website (https://www.smcworld.com), select [Documents/Download] and click [Operation Manuals].



(2) Select the Fieldbus System Serial Transmission System.



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



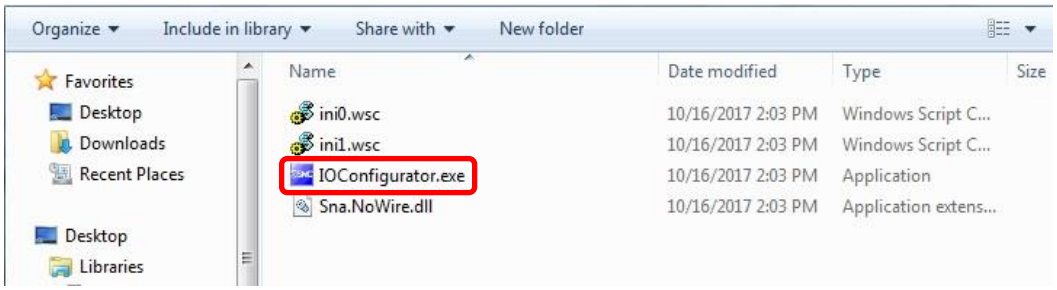
(4) Scroll down the page of the Fieldbus Serial Transmission System and click the Configuration File for the I/O Configurator (NFC version). The download will begin.

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)

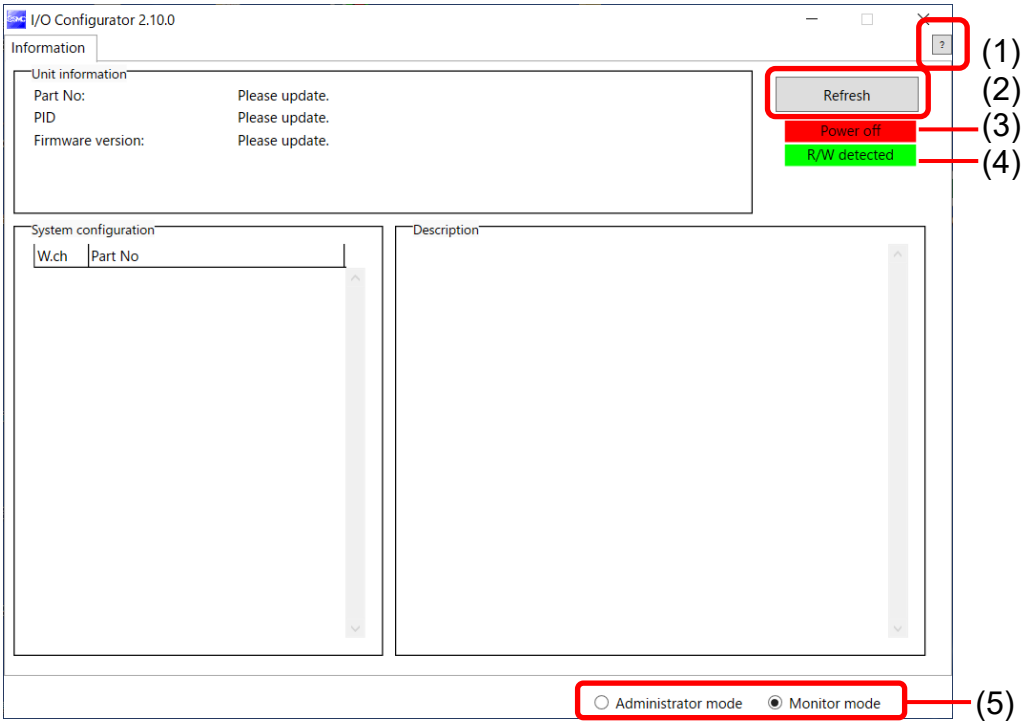
(1) Unzip the downloaded zip file.
(2) Double-click "IOConfigurator.exe". The I/O Configurator (NFC version) will start up.



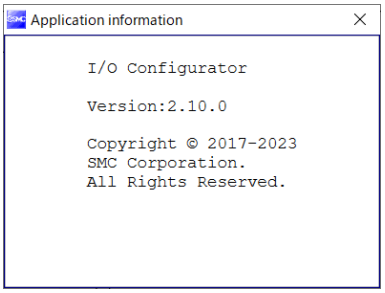
To move IOConfigurator.exe to the desktop or another location, move the folder of the I/O Configurator, or create a shortcut of IOConfigurator.exe and invoke and use the program through it.

2.3 Screen layout

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



- Basic characteristics

No.	Item	Explanation
1	Version information button	The I/O Configurator (NFC version) revision details will appear by clicking the [?] button. 
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. 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. R/W detected : NFC communication with the wireless unit is available. R/W undetected or No Driver : NFC reader / writer is not identified or USB is not connected.
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).

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.

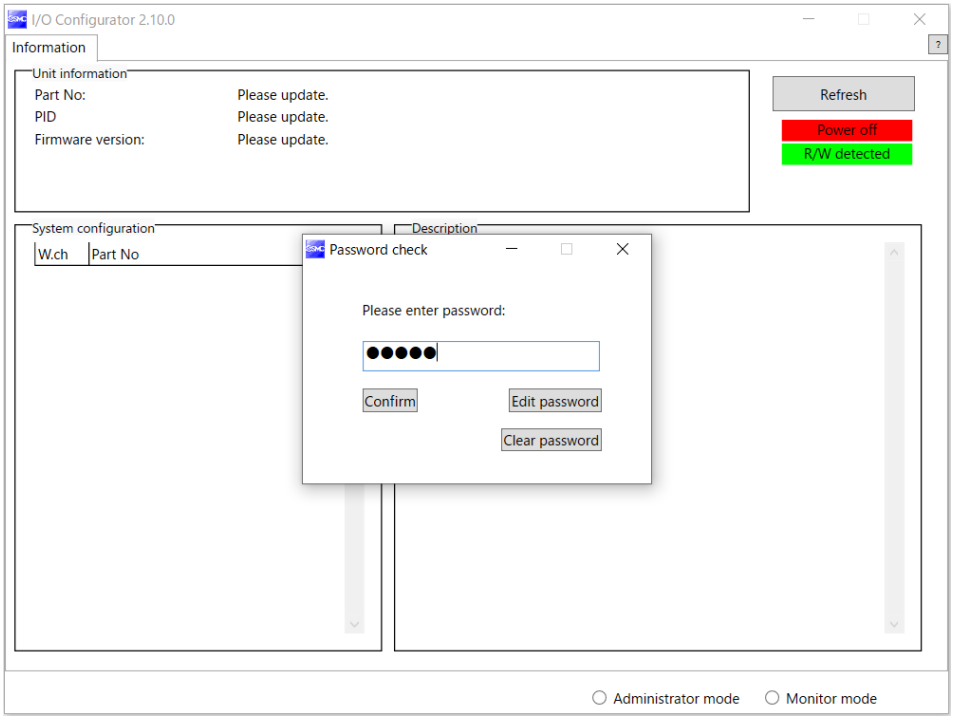
- Monitor mode
  Wireless unit information or I/O map and parameter settings can be read. Parameters cannot be set.
  The Forced output function cannot be used.
- Administrator mode
  All functions can be used.

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/).

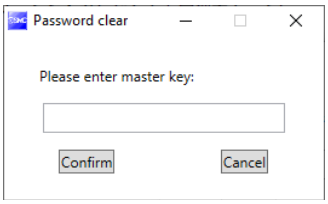
- Troubleshooting

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.

- 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)

↓

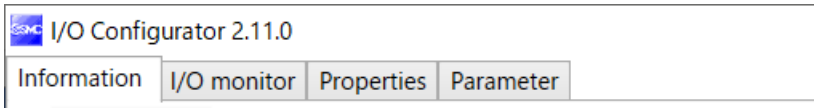
(8) Click [Refresh]

↓

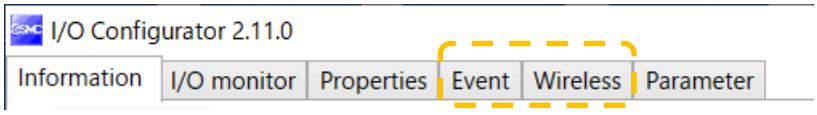
(9) Check that the updated settings and values are applied correctly

2.6 Explanation of screens

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



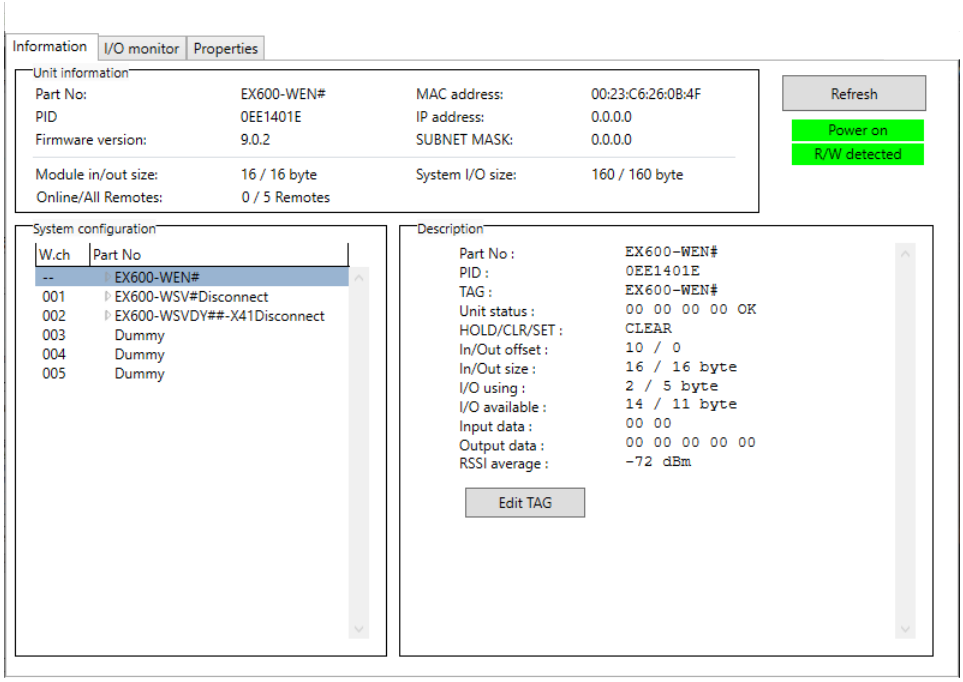
On an EXW1-series Base unit, [Event] and [Wireless] tabs are displayed to the right of the [Properties] tab.



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

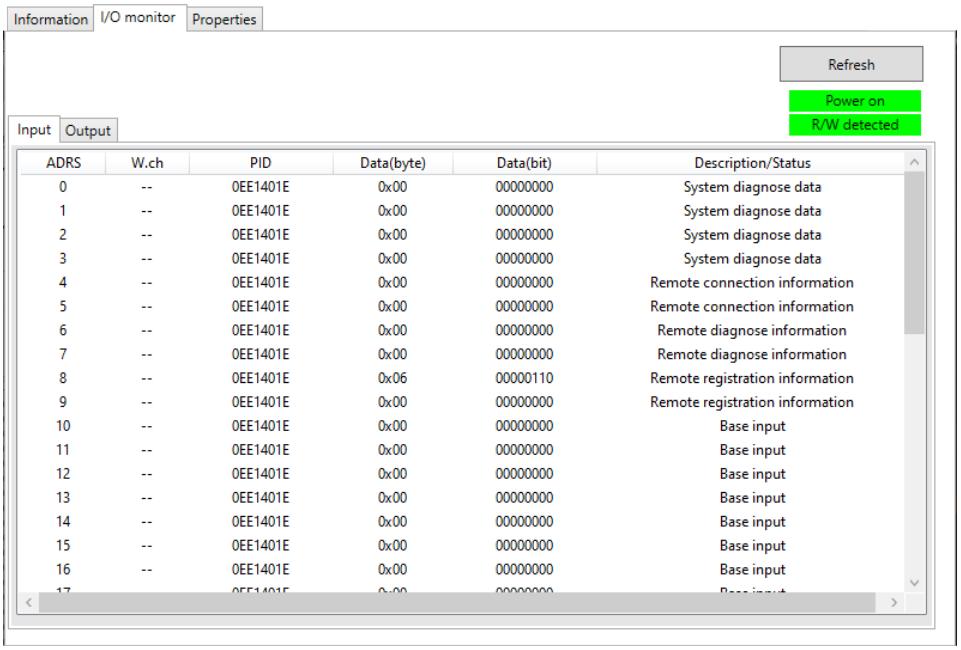
- Information tab

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

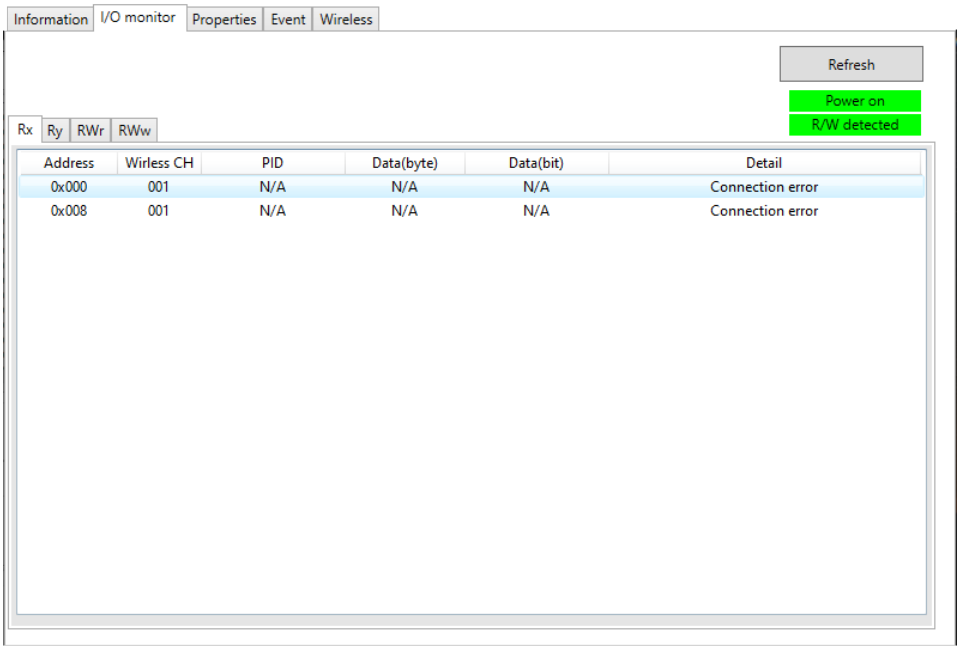


● I/O monitor tab

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.



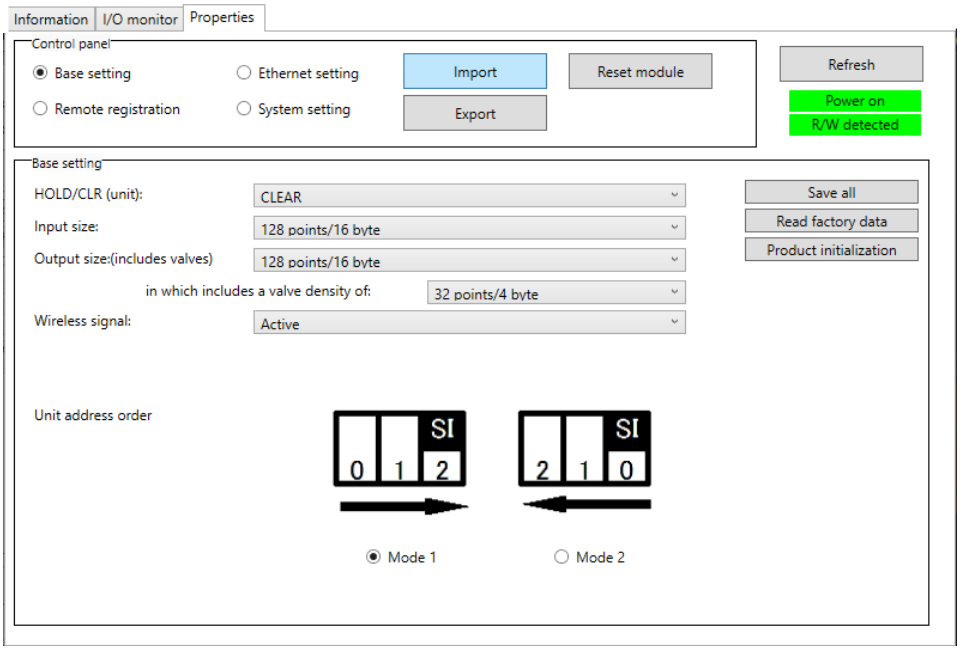
ADRS	W.ch	PID	Data(byte)	Data(bit)	Description/Status
0	--	0EE1401E	0x00	00000000	System diagnose data
1	--	0EE1401E	0x00	00000000	System diagnose data
2	--	0EE1401E	0x00	00000000	System diagnose data
3	--	0EE1401E	0x00	00000000	System diagnose data
4	--	0EE1401E	0x00	00000000	Remote connection information
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

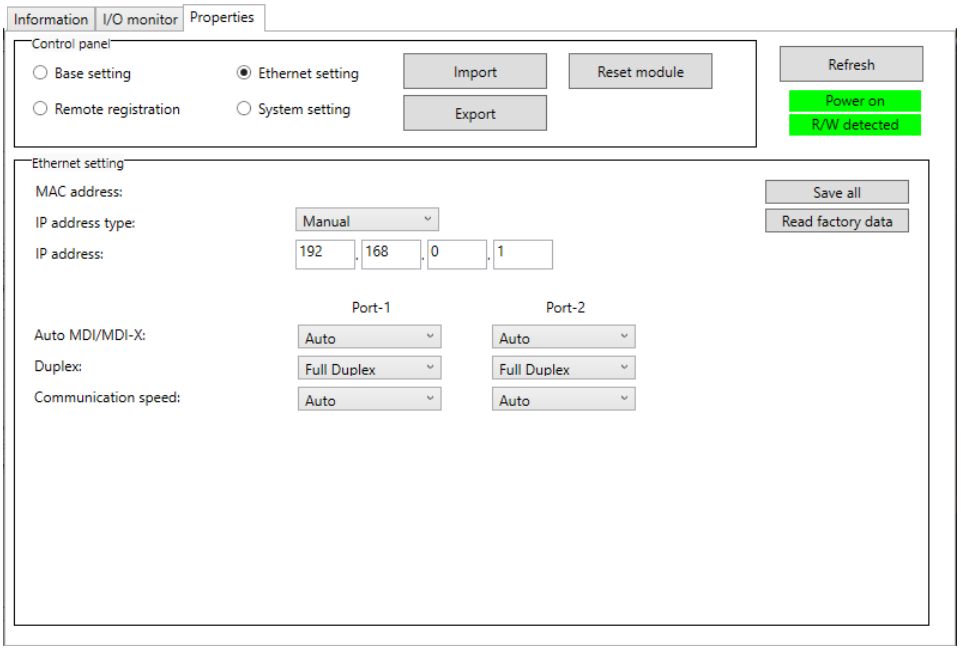


Address	Wirless CH	PID	Data(byte)	Data(bit)	Detail
0x000	001	N/A	N/A	N/A	Connection error
0x008	001	N/A	N/A	N/A	Connection error

● Properties tab

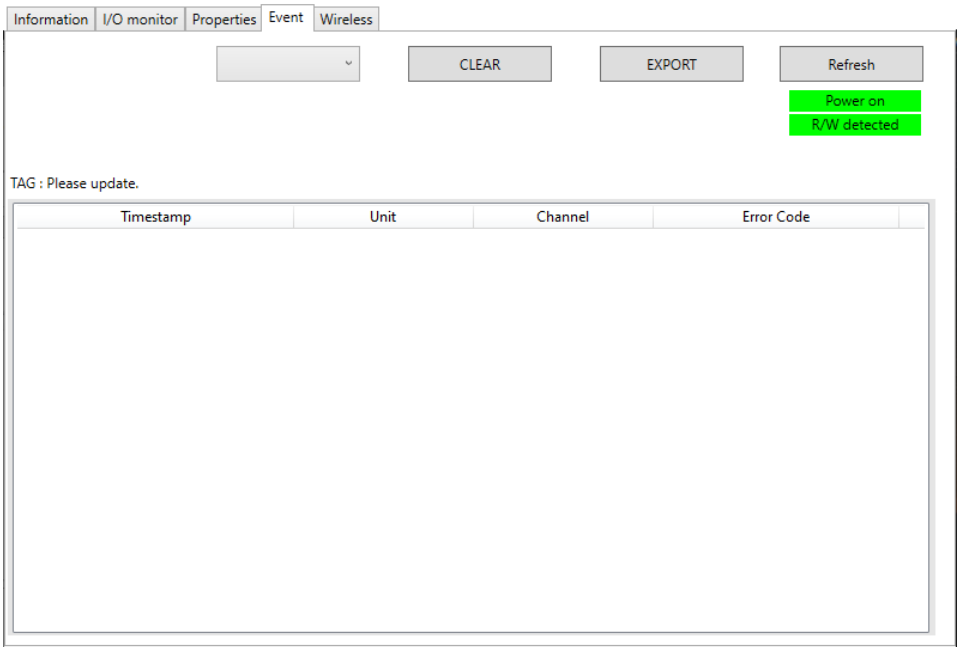
Settings of a connected wireless unit can be changed in the Properties tab.
The area displayed for making settings can be changed by selecting a radio button in the "Control panel".





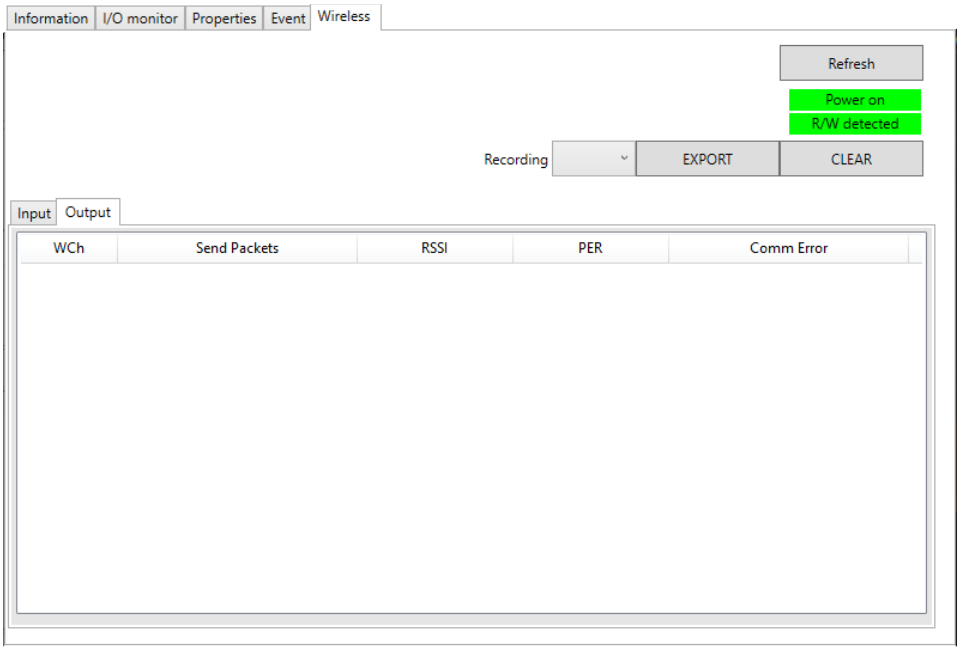
● Event tab

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.



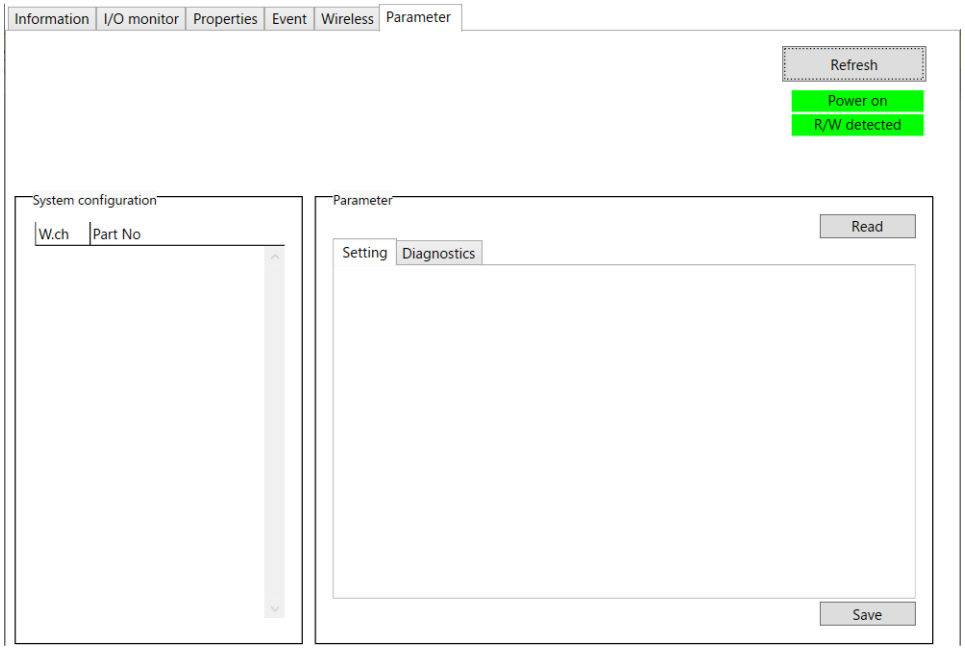
● Wireless tab

Displayed on an EXW1-series Base unit, this tab makes it possible to check wireless log data.



●Parameter tab

This tab makes it possible to check and change the parameters of the Wireless Base or Wireless Remotes.



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. 2.11.0 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

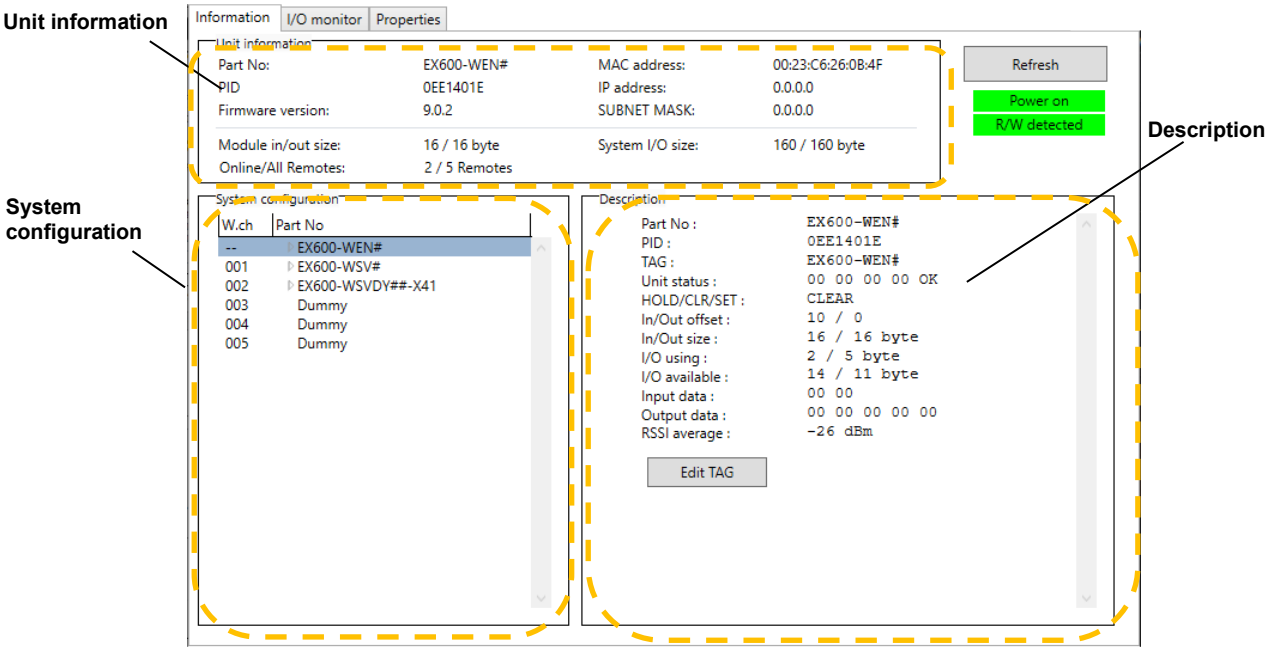
↓ * Refer to the operation manual of the Base for details.

Procedure 3 Connection to PLC

Note) Refer to the operation manual of the PLC manufacturer for connection to PLC and I/O Configurator.

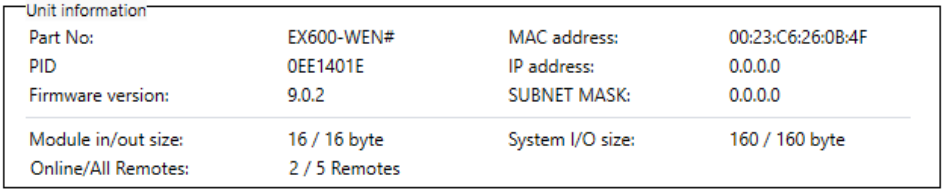
3.2 Reading and obtaining device information

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.

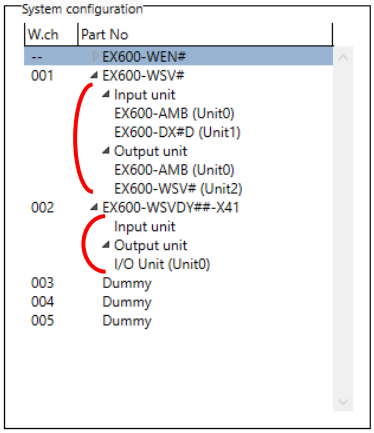


Depending on the displayed item, the status can still be checked even when power to the wireless unit is off.

● 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.



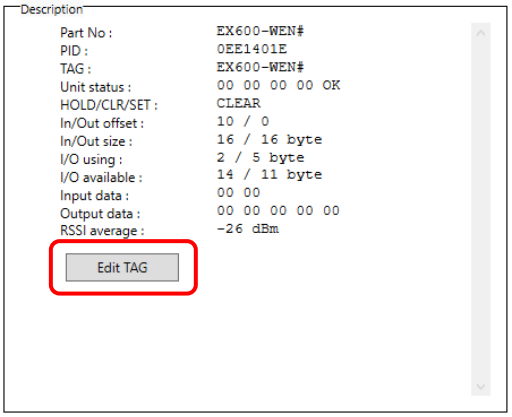
● Description area

Description of the unit selected in the system configuration area.

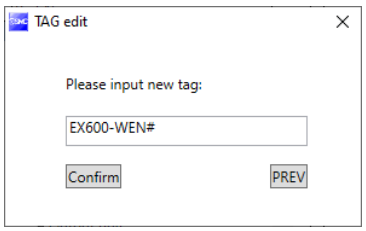
3.2.1 Entry of individual identification (Edit TAG)

Only the wireless 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].

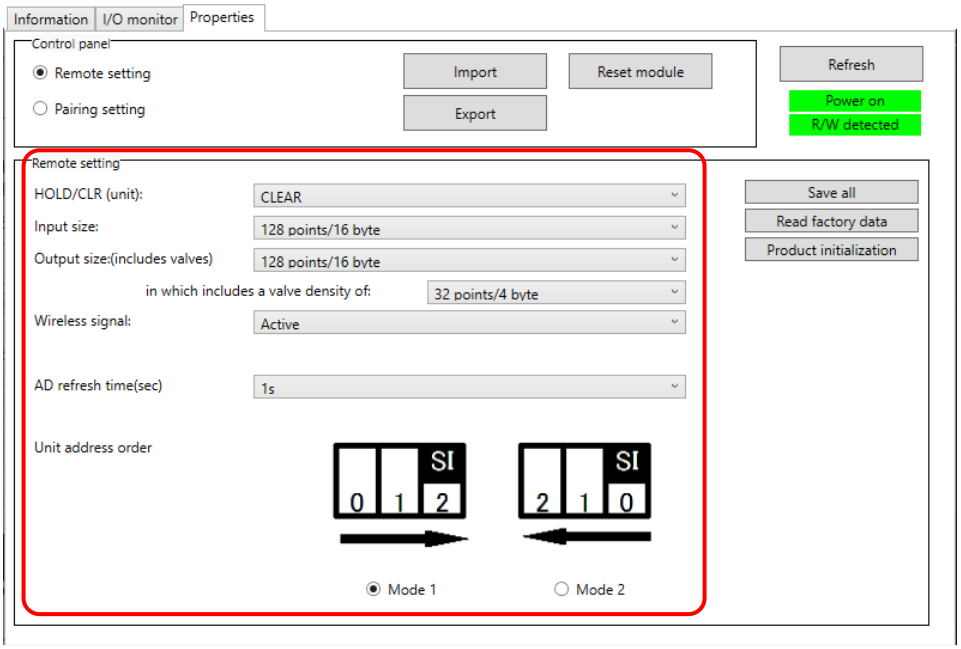
3.3 Remote setting

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)



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.

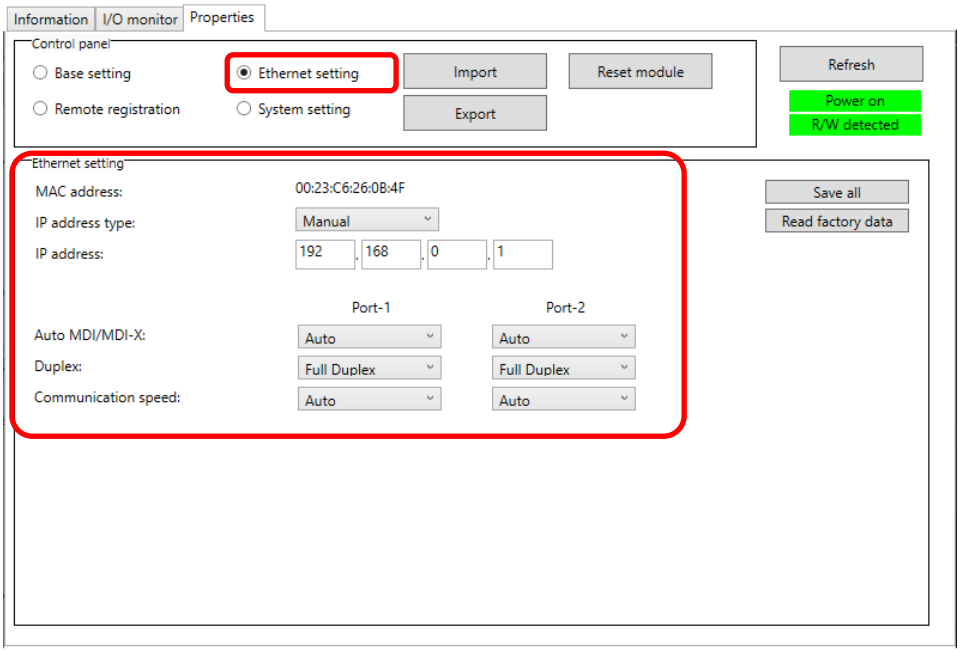
Remote unit setting items (example using manifold-type wireless unit EX600-WSV#)

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").

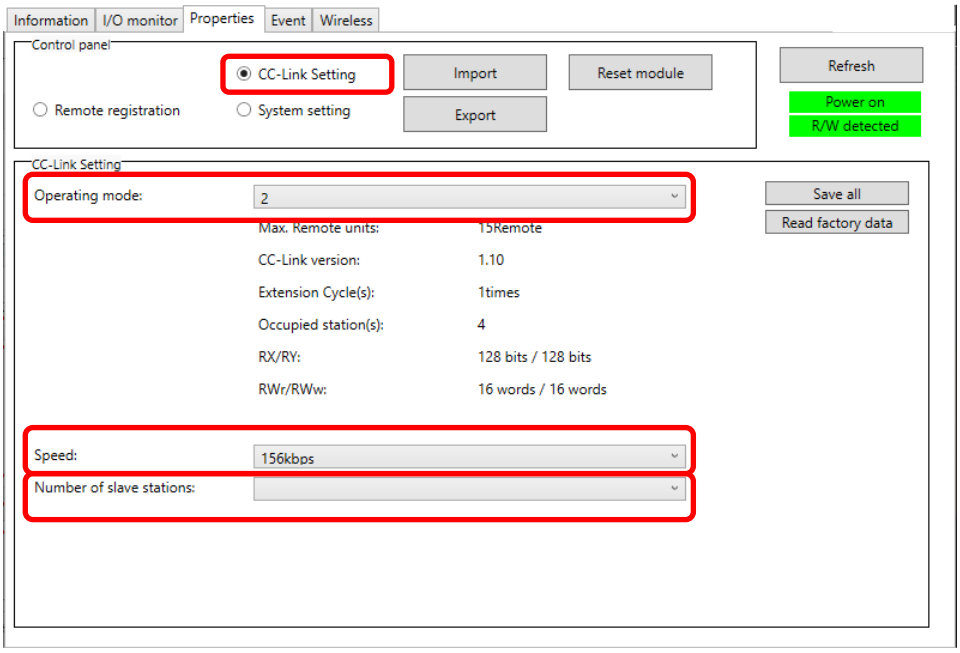
Ethernet setting items (example using manifold-type wireless unit EX600-WEN)

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.

● 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#)

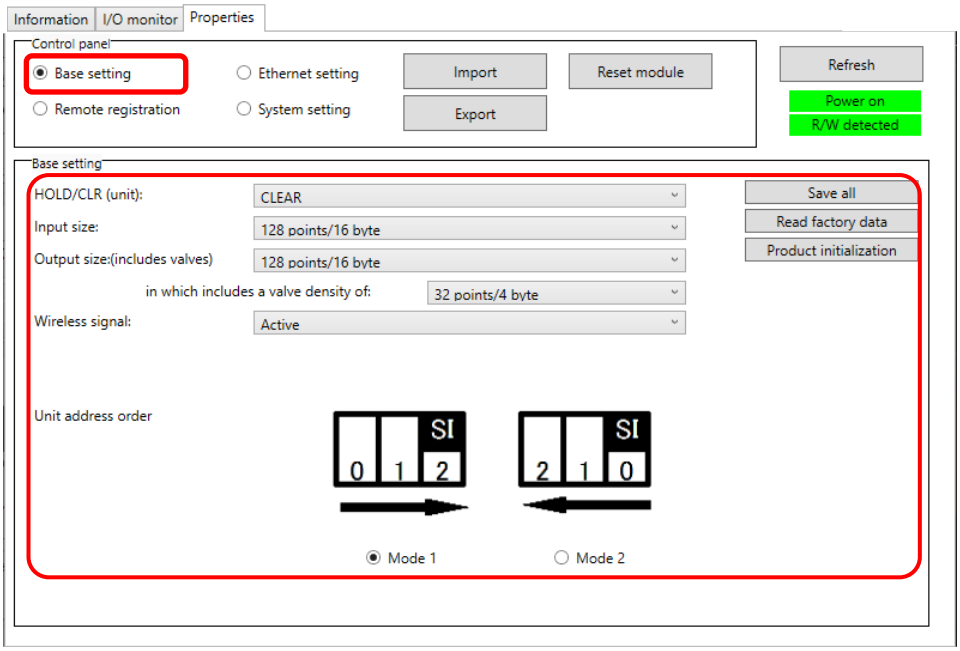
Parameter name	Set value	Initial value
Operating mode	1 to 8	2
Speed	156 kbps / 625 kbps / 2.5 Mbps / 5 Mbps / 10 Mbps	156 kbps
Number of slave stations	1 to 64 stations	No value

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

● 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#)

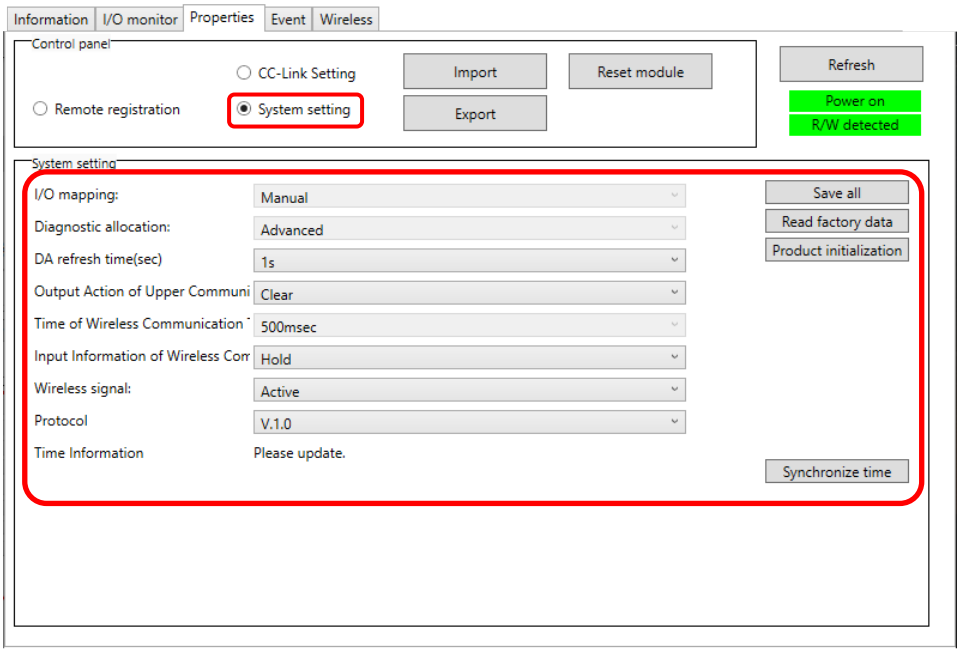
Parameter name	Set value	Initial value
HOLD/CLR (unit)	CLEAR / HOLD / Software Control	CLEAR
Input size	0 to 128 points (0 to 16 bytes)	128 points/16 byte
Output size (includes valves)	0 to 128 points (0 to 16 bytes)	128 points/16 byte
in which includes a valve density of	0 to 32 points (0 to 4 bytes)	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#)

● 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.

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

Parameter	Set value	Initial value
I/O mapping	Auto	Auto
Diagnostic allocation	None/Simple/ Advanced	Advanced
Max. Remote units	15 /31/63 Remotes	15 Remotes
Wireless communication timeout	100/200/500/1,000 msec /2,000/5,000 msec	500 msec
Power Transmission Level	High/Middle/Low	High
Wireless communication	Active/Idle	Active
Protocol	V.1.0/V.2.0	V.2.0

•The protocol version is set to V.2.0 by default; to use EX600-W series Remote devices, change the protocol version to V.1.0 before pairing them.

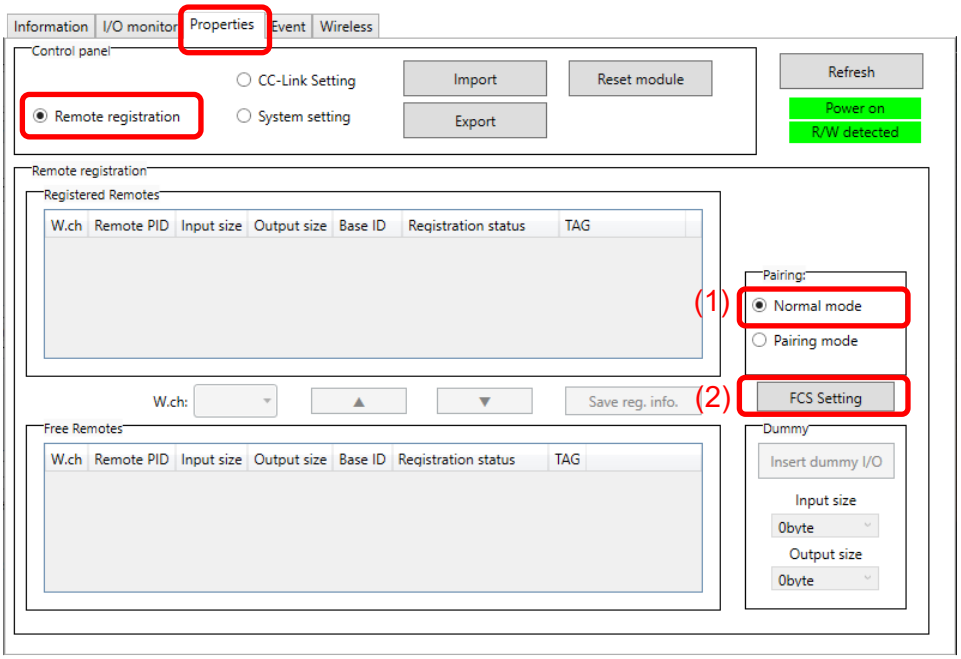
System setting items (example using manifold-type Wireless Base EX600-WEN# / EX600-WPN#)

Parameter	Set value	Initial value
I/O mapping	Manual / Auto	Manual (EX600-WEN#) 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#) 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".

● Frequency channel select function (F.C.S.)
With a Wireless Base unit that supports CC-Link or EtherCAT (EXW1-BMJA#, EXW1-BECAC), the frequency channel can be selected.
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. Refer to the operation manual for the product in use.
* 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].

No.	Item	Description
(1)	Read button	Retrieves the current channel selection configuration.
(2)	W-LAN Channel indicators	The W-LAN indicators make it possible to select frequency channels corresponding to W-LAN channel at one time. * In the example above, W-LAN Channel: CH.10 is selected.
(3)	W-CH indicators	The W-CH indicators make it possible to select frequencies for each CH. * In the example above, frequencies 2419, 2426-2428, and 2446-2468 [MHz] are unused Channels. Note that frequencies 2446-2468 [MHz] correspond to (1) W-LAN Channel: CH.10 above.
(4)	Clear button	Select 79 frequency channels by default.
(5)	Apply button	Save the W-CH selection configuration.

- Indicator colors

Color	Description	Remarks
Green	Active frequency channel (W-CH area) W-LAN channel that does not conflict with Active frequency channels (W-LAN Channel 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 operation 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.
•If the FCS function is to be used, please perform the FCS setting prior to pairing. After pairing the advertising channels are fixed which limits the channels available for FCS setting.

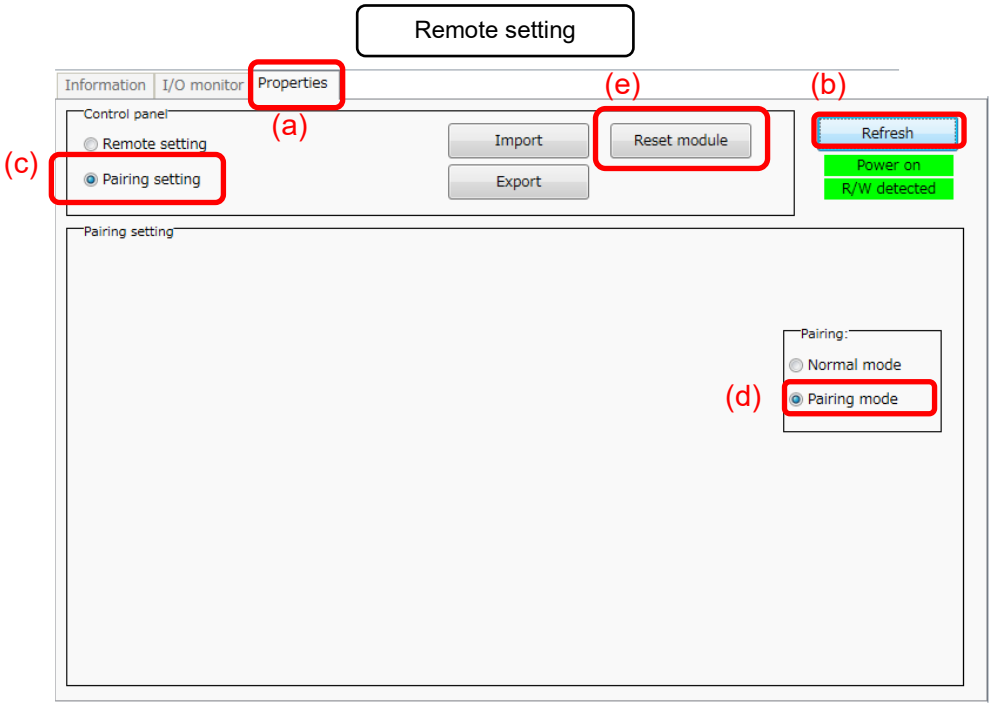
•Ensure the power supply for both the base and remote is on when they are paired
•Exchange of I/O data is not possible during pairing
Do no chage the pairing mode during the operation.
•Module unit size of the remote is transferred to the base unit during the paring procedure.
When this size is changed after the pairing, please re-confifure the system.

Any parameter changes are enabled after the product is powered on or by pressing the "Reset module" button.

3.5.1 Pairing procedure

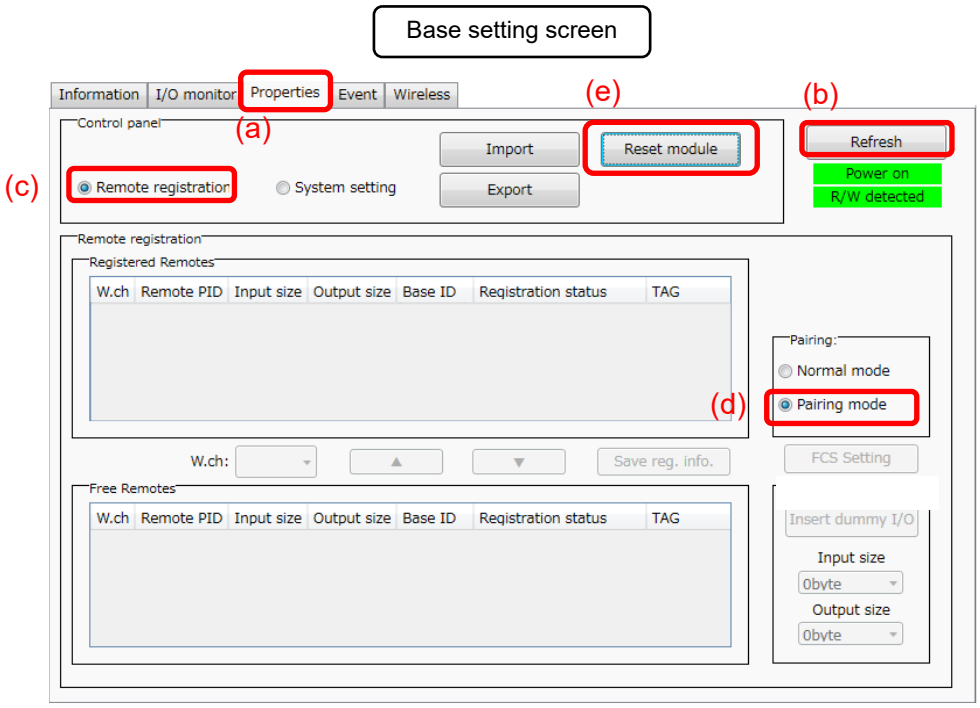
(1) Switch the Remote to pairing mode

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.



(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].



- A Base unit that supports CC-Link or EtherCAT (EXW1-BMJA#, EXW1-BECAC) 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.

(3) Pair and register the Base and Remote

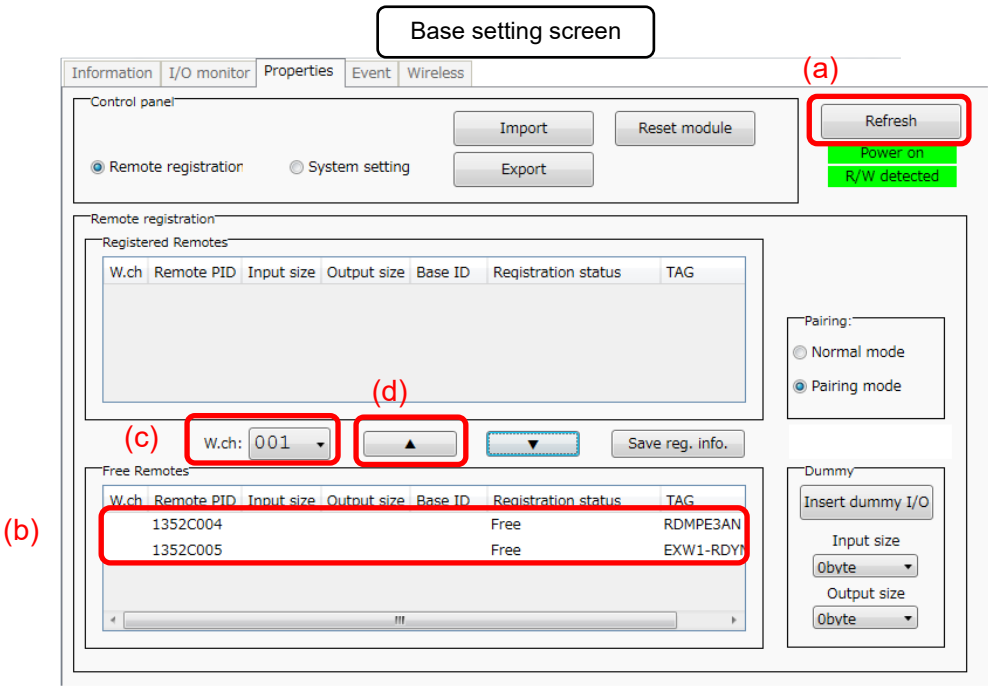
(a) Clicking [Refresh] causes Remotes in pairing mode to be listed in the Free Remotes area.

(b) Select the Remote that is to be rlstered,
Change the Input size and Output size settings as required.

(c) specify a wireless channel and then

(d) click ▲

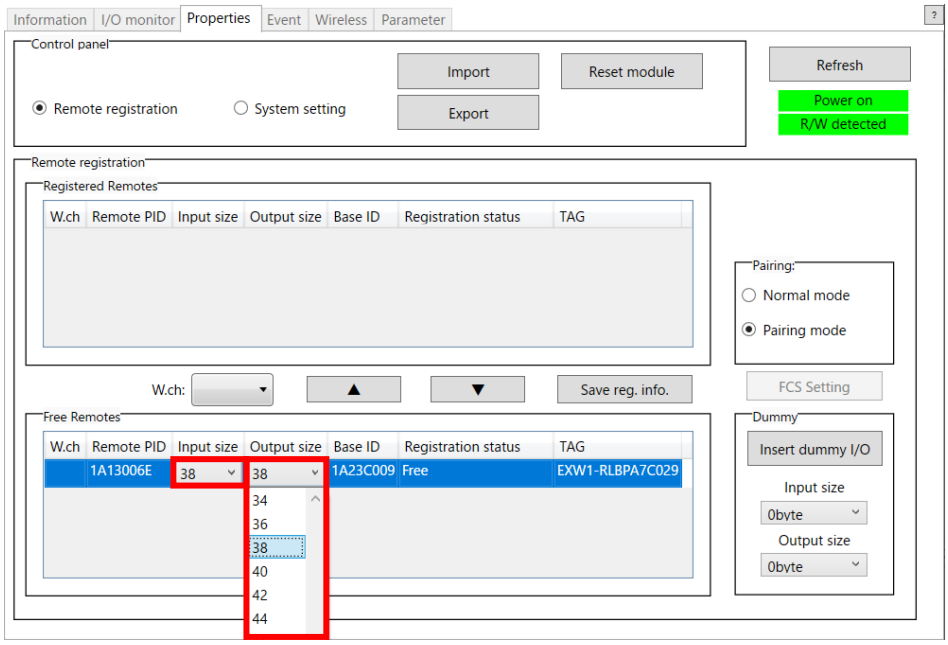
.



- 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

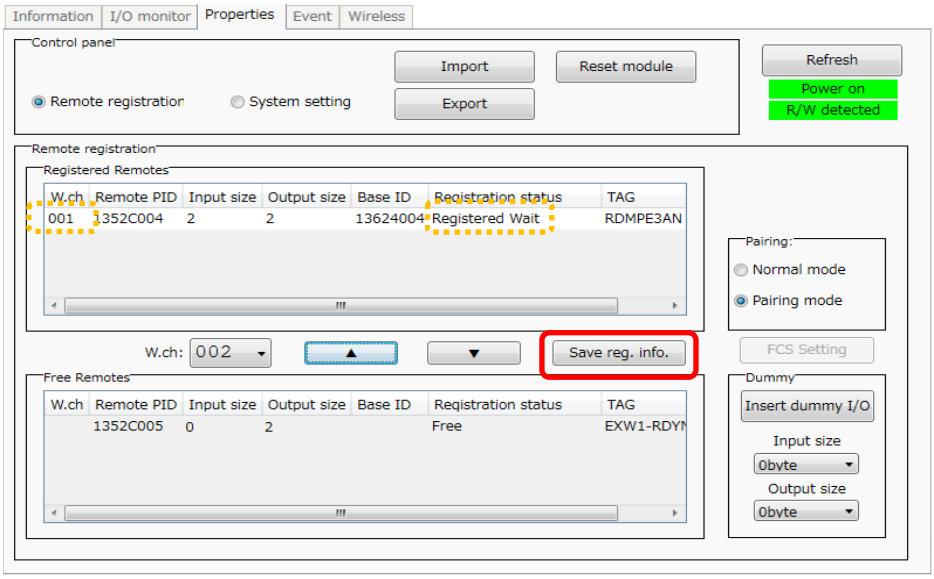
* Input size / Output size setting

In protocol V.2.0, it is possible to configure remotes (such as EXW1-RL*PA*C) with variable input/output occupied bytes.* Refer to the "I/O Map" section in the Operation Manual for each product for the range of Input/Output size to be set.



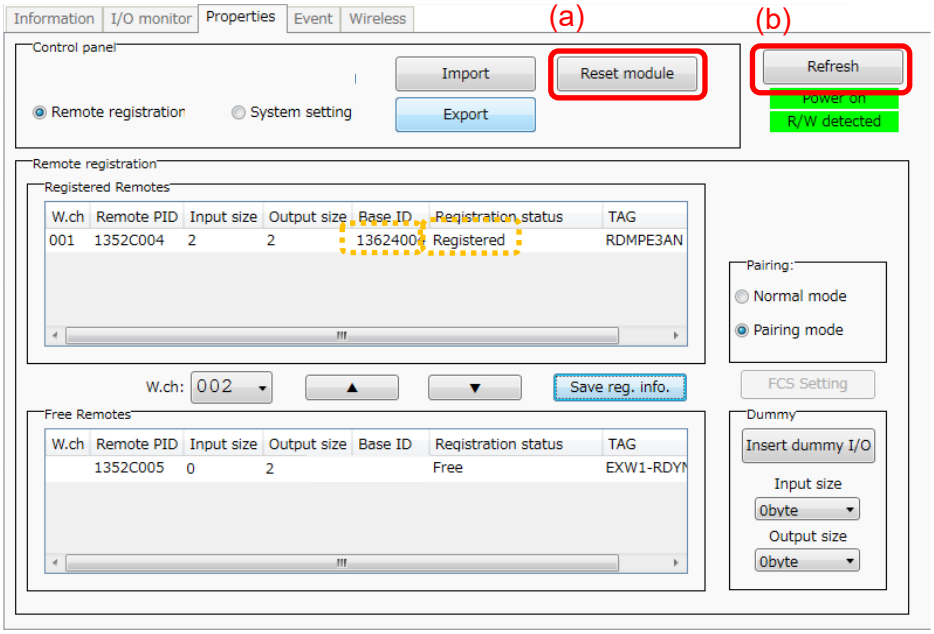
The Remote that is to be registered on the specified wireless channel moves to the Registered Remotes area. Make sure that the registration status is Registered Wait, and click [Save reg. info.].

Base setting screen



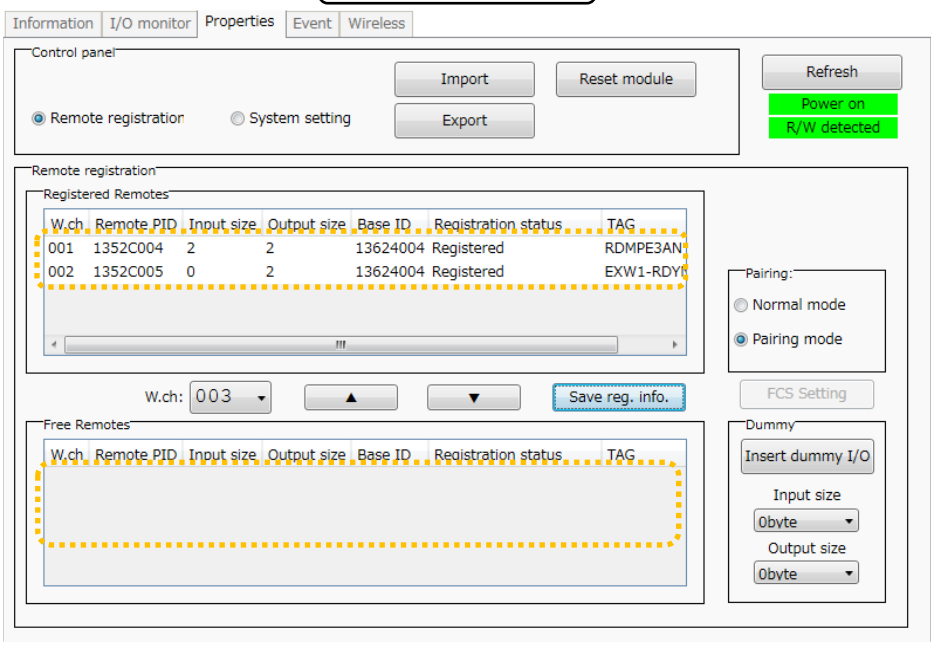
Click (a) [Reset module] and (b) [Refresh] and check that the registration status changes to Registered.

Base setting screen



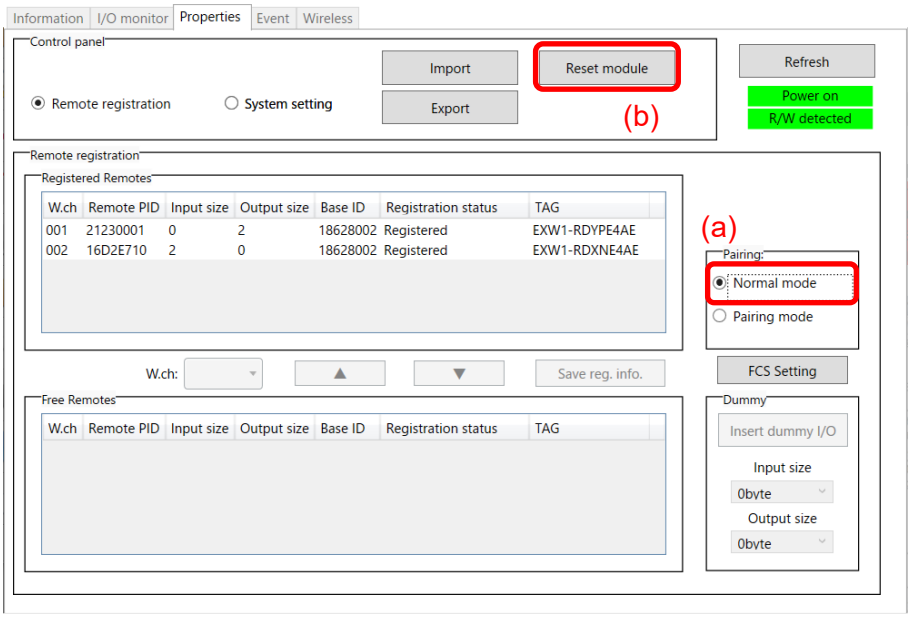
* The example below shows two Remote modules registered on channel 1 and channel 2.

Base setting screen



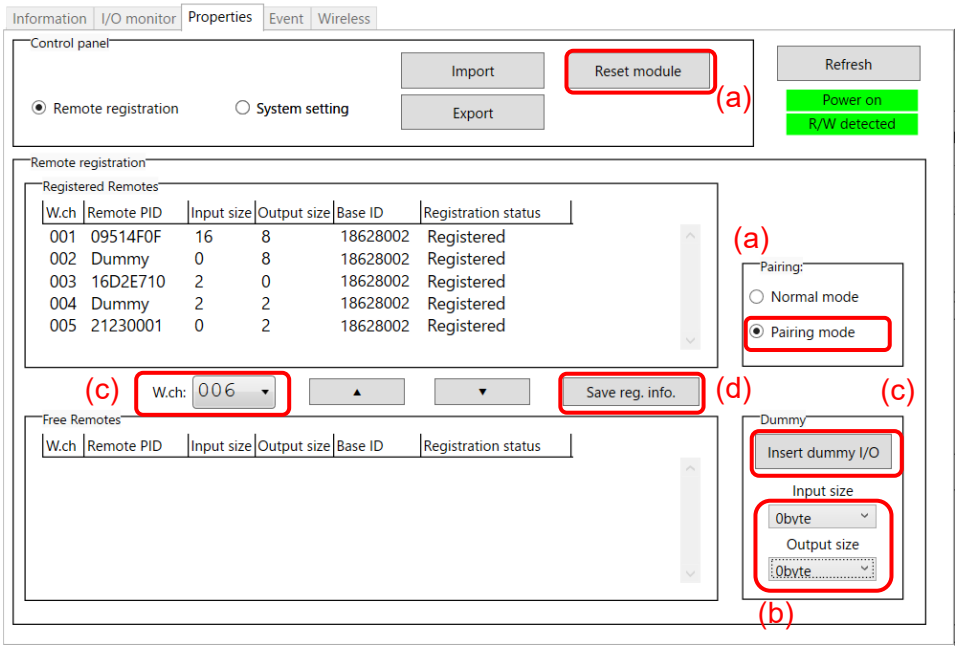
Configure the registration of dummy Remotes as necessary.

(4) Disable the pairing mode of the Base (Normal mode)
Connect to the Base using NFC,
(a) Select [Normal mode]
(b) Click [Reset module] to reselhe Base.
(c) Check connection with registerd Remotes.



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.



(a) **Change the operating mode** of the Wireless Base unit

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

(b) **Set inputs / outputs** of the dummy Remote

Set the number of inputs and outputs of the dummy Remote.

(c) **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”.)

(d) **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

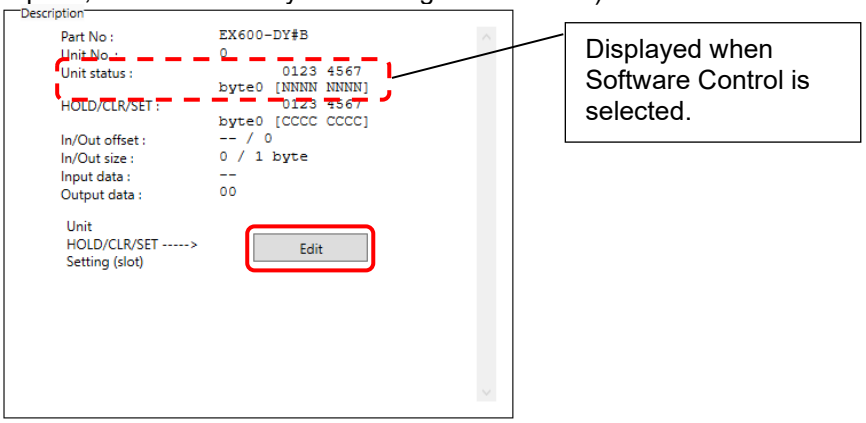
"HOLD/CLR setting (unit): Software control" of "Base / Remote setting", the output operation for when the Ethernet communication is disconnected, can be selected for valve output or output unit independently, in 1-point units, using "CLEAR", "HOLD", or "SET". The values for the Hold / Clear for each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

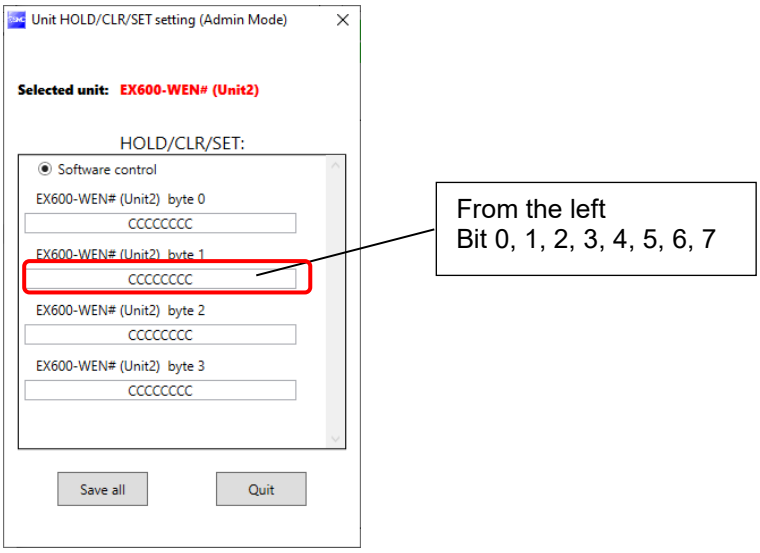
* Editing is possible from the "Description" on the Information tab when "HOLD/CLR (unit)" is set to "Software Control". In order to set "HOLD/CLR (unit)" to "Software Control", change the setting using "Base setting" or "Remote setting" in the "Properties" tab.
* The output operation when wireless communication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

◆ Hold / Clear setting procedure

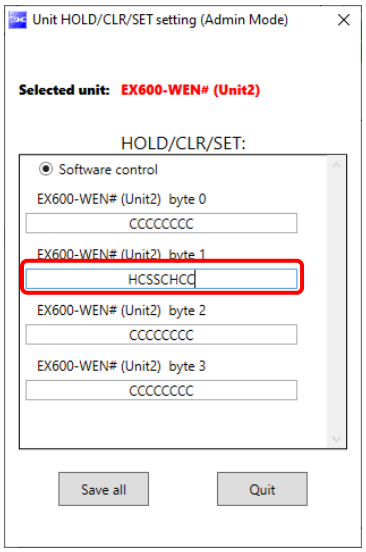
(1) Display the description of the output unit.
(For how to display the description, refer to "5.1.2 System configuration area".)



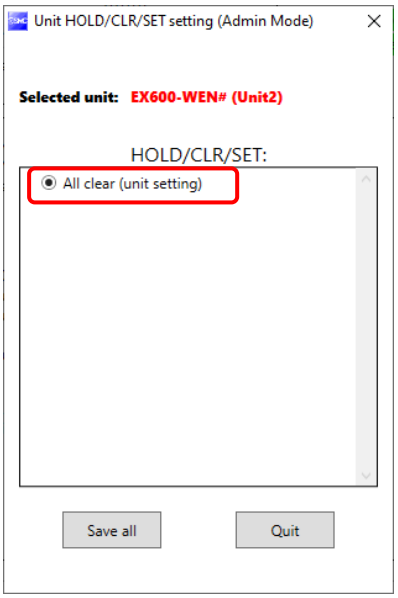
(2) The window for Unit HOLD/CLR/SET setting appears by clicking the [Edit] button.

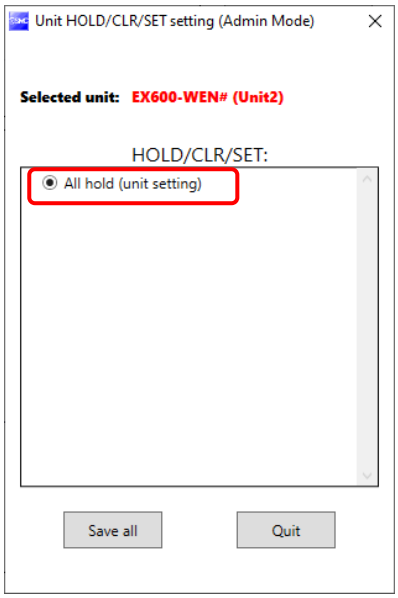


(3) Upper case letters are used to express the current status of Clear / Hold.
The settable values are C (CLEAR), H (HOLD) or S (SET). Enter 8 characters. When the required values have been entered, click the "Save all" to store the data.



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





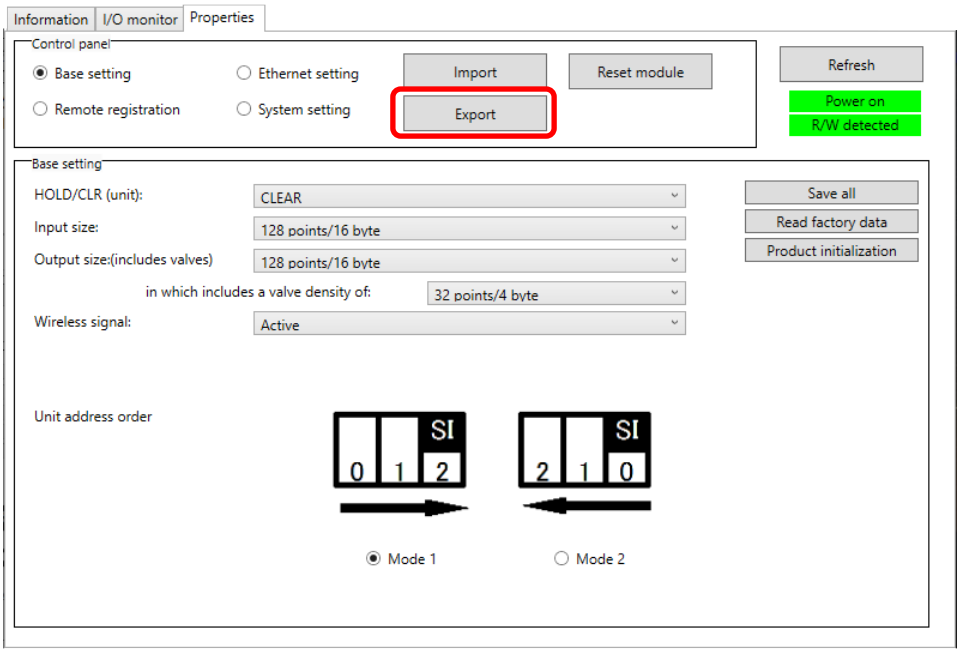
Hold / Clear / Set: CLEAR Hold / Clear / Set: HOLD

3.8 Using a setting file

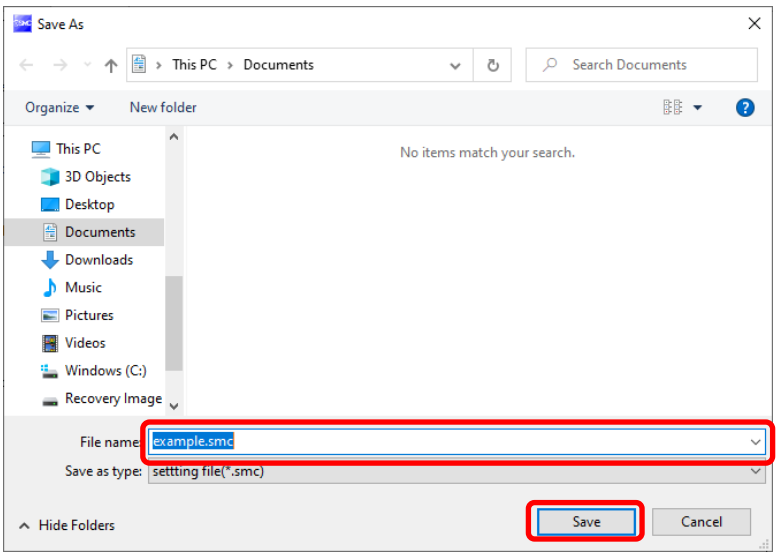
The [Export] button in the Properties tab enables the setting of the connected unit using the current NFC reader / writer to be saved to a PC in the format of ".smc". Importing as explained in the next item enables the unit setting to be reflected in other units.

◆ Procedure for exporting the settings

(1) Click [Export]

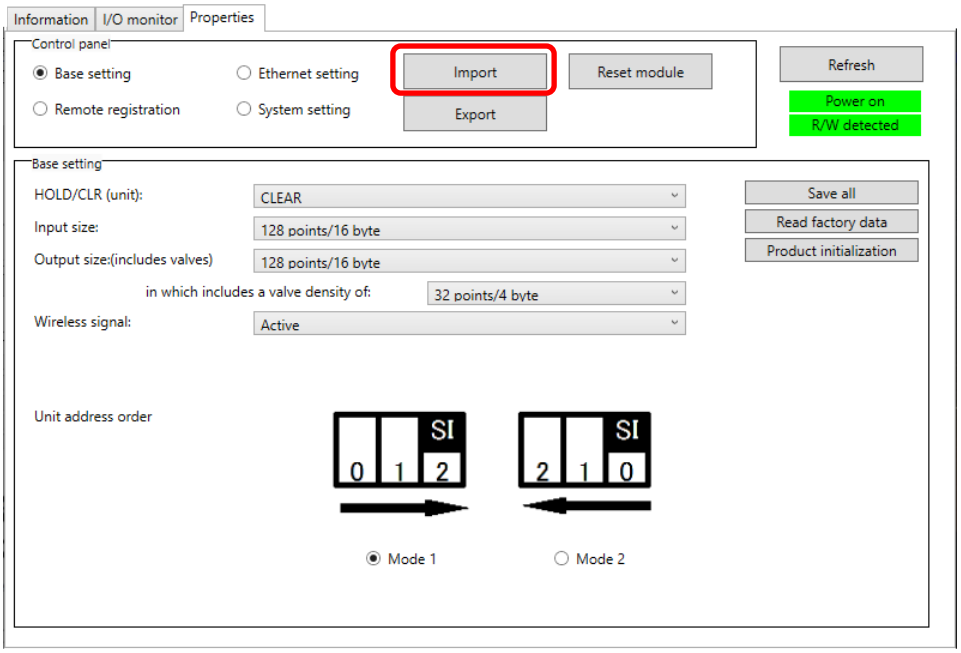


(2) Input the file name and store the file.

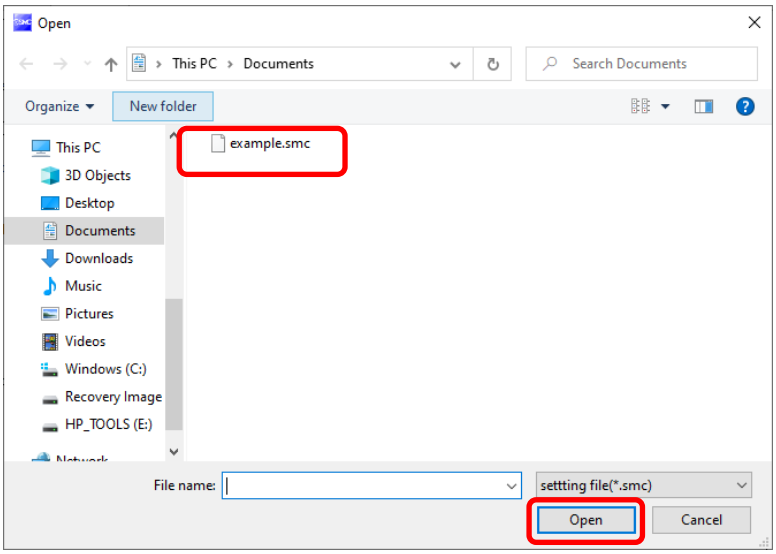


◆ Procedure for importing the settings

(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	-

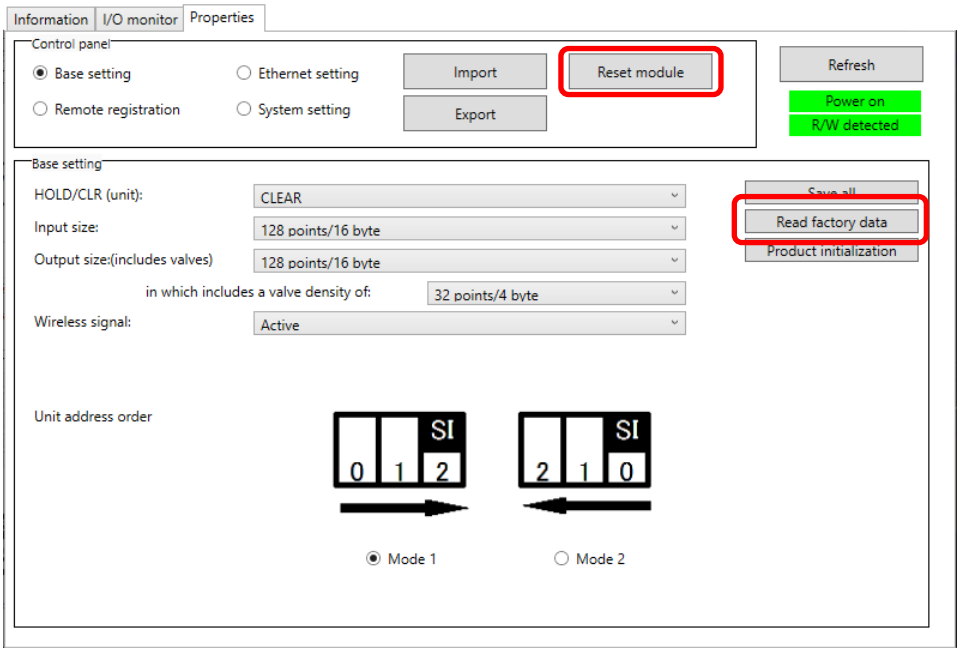
- Import / Export settings (EXW1 series)

Item		Base		Remote		
		EXW1-BMJA#	EXW1-BECAC	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	OK	-	-	-
CC-Link setting	Operating mode	OK	-	-	-	-
	Speed	OK	-	-	-	-
	Number of slave stations	OK	-	-	-	-
System setting	I/O mapping	OK	OK	-	-	-
	Diagnostic allocation	OK	OK	-	-	-
	DA refresh time (sec)	OK	-	-	-	-
	Output Action of Upper Communication	OK	-	-	-	-
	Time of Wireless Communication / Wireless communication timeout	OK	OK	-	-	-
	Input Information of Wireless Communication	OK	-	-	-	-
	Power Transmission Level	-	OK	-	-	-
	Wireless signal	OK	OK	-	-	-
	Protocol	OK	OK	-	-	-
	Time Information	-	-	-	-	-
Information tab	TAG	OK	OK	OK	OK	OK

3.9 Reading of factory data

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

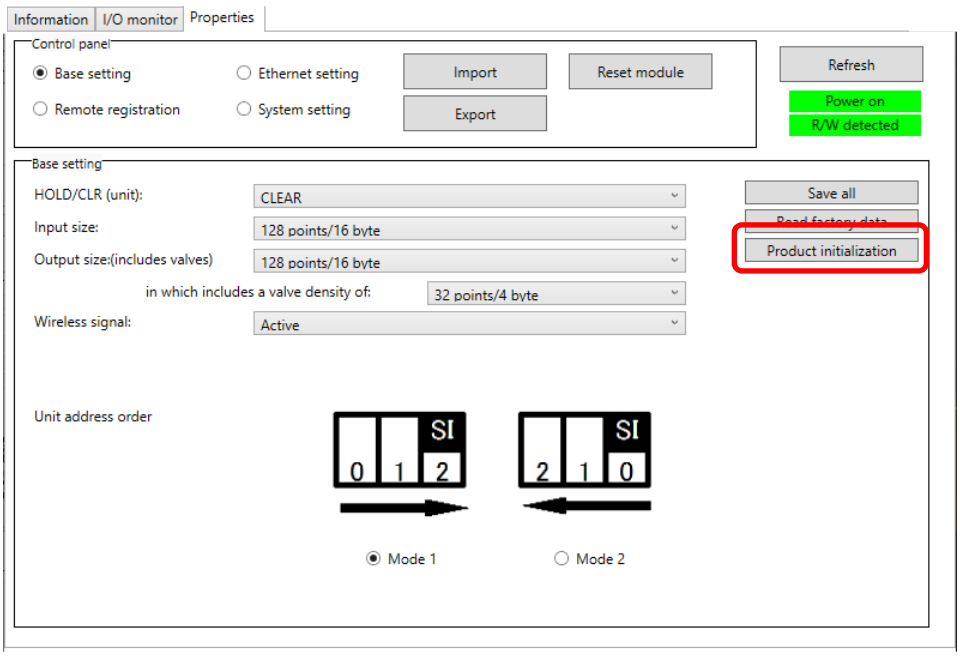
In order to reflect the setting, turn off the power and on again or click [Reset module] when the power is on. Turn on the power supply if the power is off.



◆ 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 I/O 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))

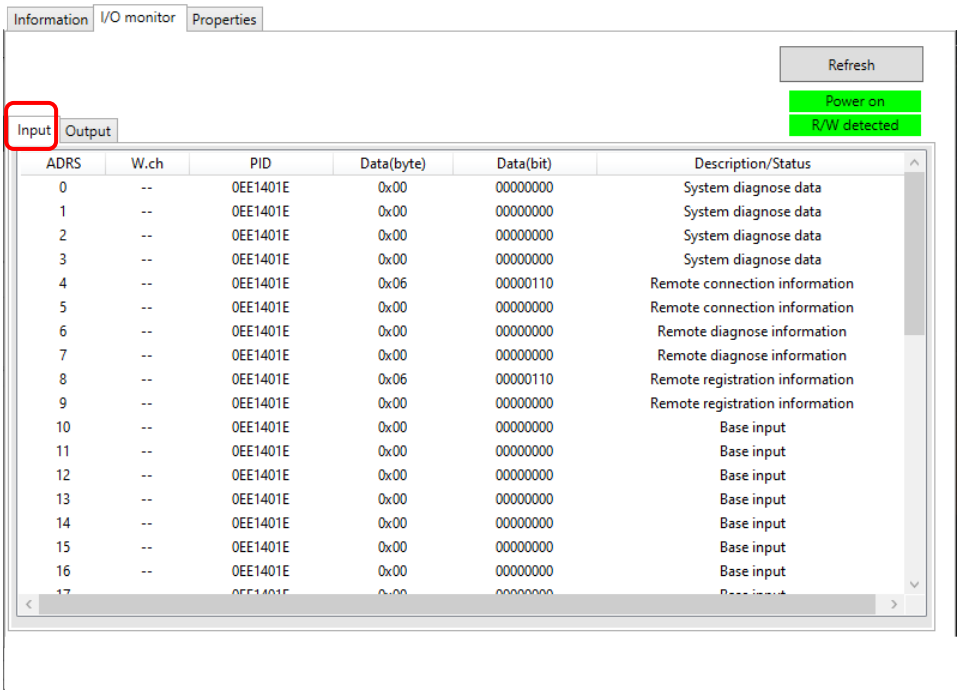
Initialized items			Base		Remote
			EX600-WEN#	EX600-WPN#	EX600-WSV#
Properties tab	Base / Remote settings	HOLD / CLR (unit)	OK	OK	OK
		Input size	OK	OK	OK
		Output size	OK	OK	OK
		in which includes a valve density of	OK	OK	OK
		Wireless signal	OK	OK	OK
		AD refresh time (sec)	-	-	OK
		Unit address order	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.



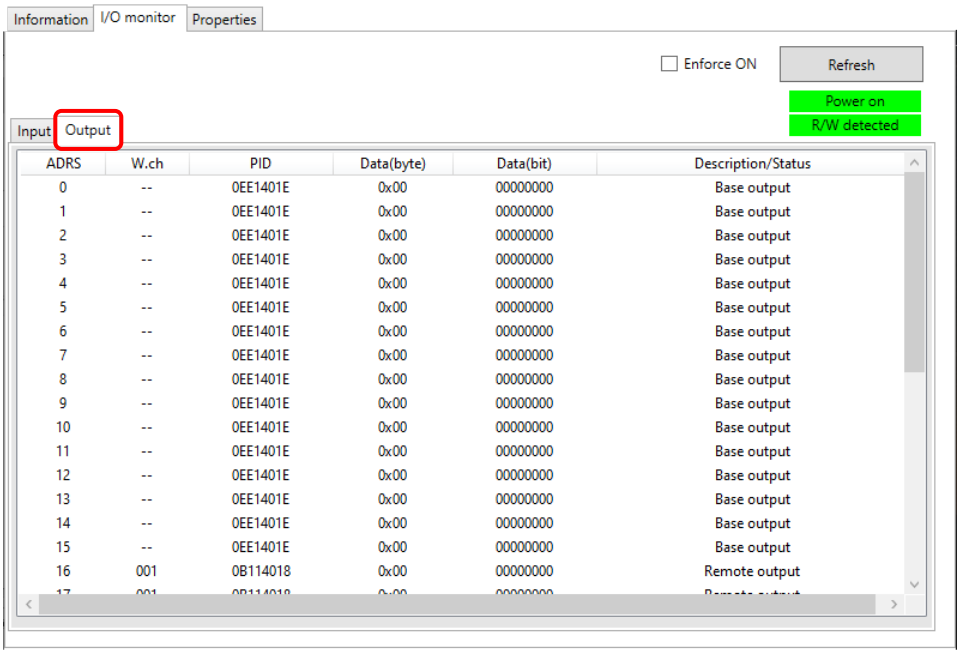
ADRS	W.ch	PID	Data(byte)	Data(bit)	Description/Status
0	--	0EE1401E	0x00	00000000	System diagnose data
1	--	0EE1401E	0x00	00000000	System diagnose data
2	--	0EE1401E	0x00	00000000	System diagnose data
3	--	0EE1401E	0x00	00000000	System diagnose data
4	--	0EE1401E	0x06	00000110	Remote connection information
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

- Input display

Display	Description
ADRS	Displays the input map address.
W.ch	Wireless unit channel. (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.



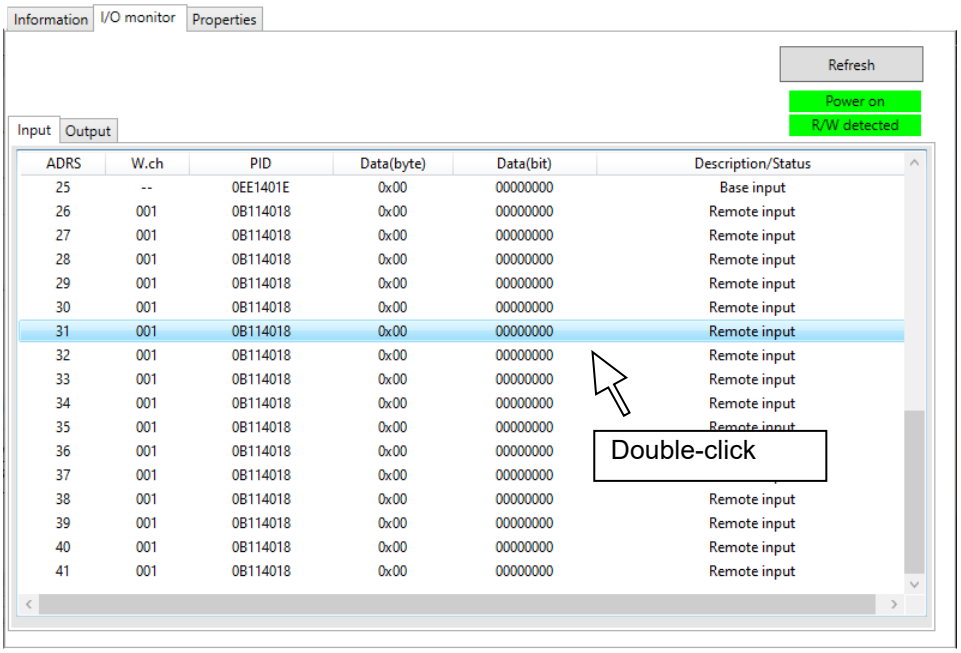
ADRS	W.ch	PID	Data(byte)	Data(bit)	Description/Status
0	--	0EE1401E	0x00	00000000	Base output
1	--	0EE1401E	0x00	00000000	Base output
2	--	0EE1401E	0x00	00000000	Base output
3	--	0EE1401E	0x00	00000000	Base output
4	--	0EE1401E	0x00	00000000	Base output
5	--	0EE1401E	0x00	00000000	Base output
6	--	0EE1401E	0x00	00000000	Base output
7	--	0EE1401E	0x00	00000000	Base output
8	--	0EE1401E	0x00	00000000	Base output
9	--	0EE1401E	0x00	00000000	Base output
10	--	0EE1401E	0x00	00000000	Base output
11	--	0EE1401E	0x00	00000000	Base output
12	--	0EE1401E	0x00	00000000	Base output
13	--	0EE1401E	0x00	00000000	Base output
14	--	0EE1401E	0x00	00000000	Base output
15	--	0EE1401E	0x00	00000000	Base output
16	001	0B114018	0x00	00000000	Remote output

- Output display

Display	Description
Enforce ON	Forced output mode can be selected by clicking [Enforce ON]. * Refer to "4.4 Forced output" for details on operation.
ADRS	Displays the output map address.
W.ch	Wireless unit channel. (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.

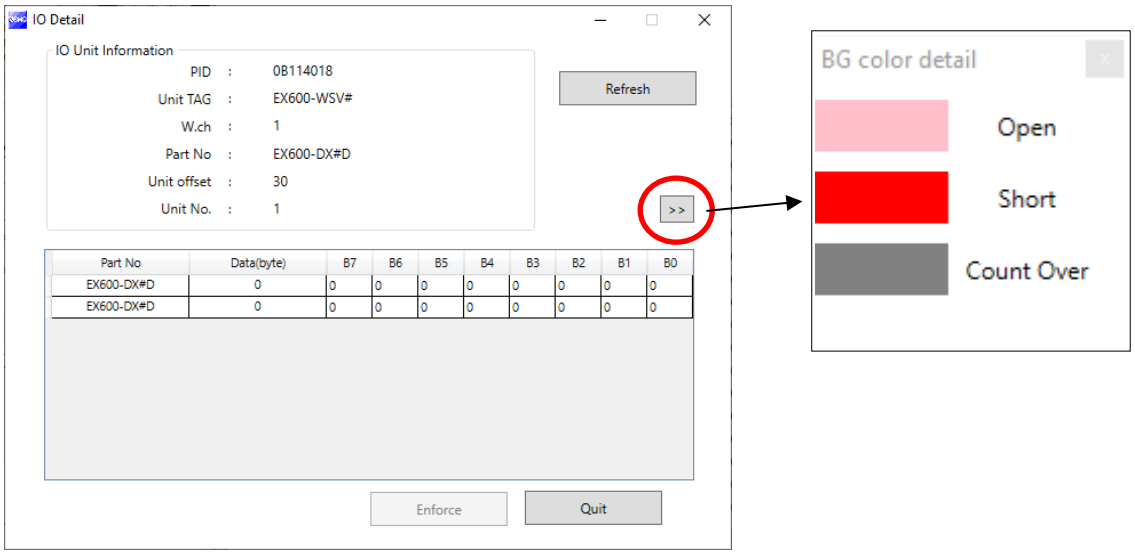
4.3 Detailed Input / output information

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.



ADRS	W.ch	PID	Data(byte)	Data(bit)	Description/Status
25	--	0EE1401E	0x00	00000000	Base input
26	001	0B114018	0x00	00000000	Remote input
27	001	0B114018	0x00	00000000	Remote input
28	001	0B114018	0x00	00000000	Remote input
29	001	0B114018	0x00	00000000	Remote input
30	001	0B114018	0x00	00000000	Remote input
31	001	0B114018	0x00	00000000	Remote input
32	001	0B114018	0x00	00000000	Remote input
33	001	0B114018	0x00	00000000	Remote input
34	001	0B114018	0x00	00000000	Remote input
35	001	0B114018	0x00	00000000	Remote input
36	001	0B114018	0x00	00000000	
37	001	0B114018	0x00	00000000	
38	001	0B114018	0x00	00000000	Remote input
39	001	0B114018	0x00	00000000	Remote input
40	001	0B114018	0x00	00000000	Remote input
41	001	0B114018	0x00	00000000	Remote input

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.

4.4 Forced output

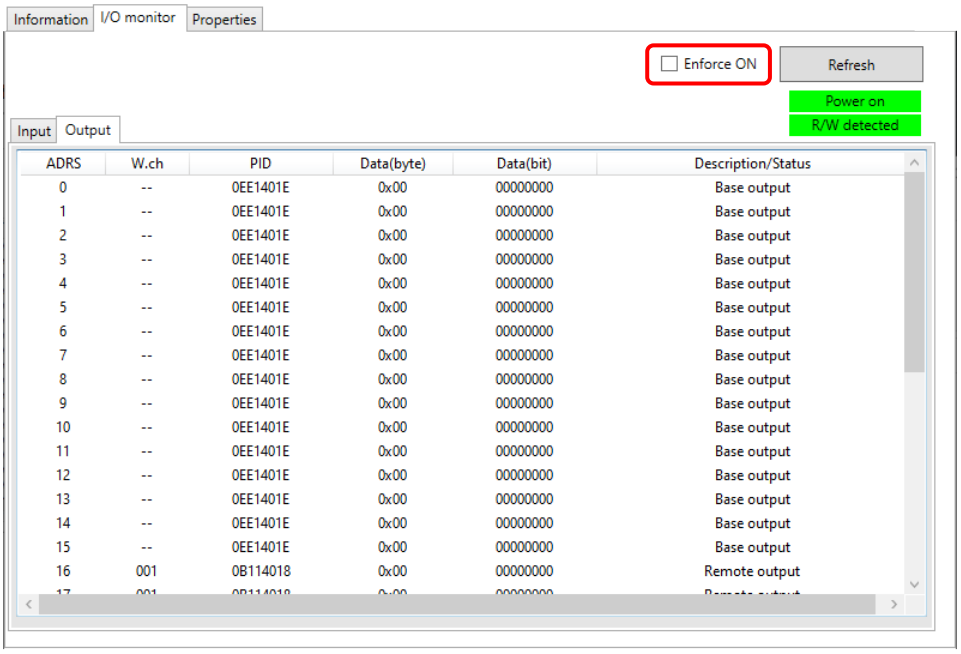
4.4.1 Forced output conditions

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

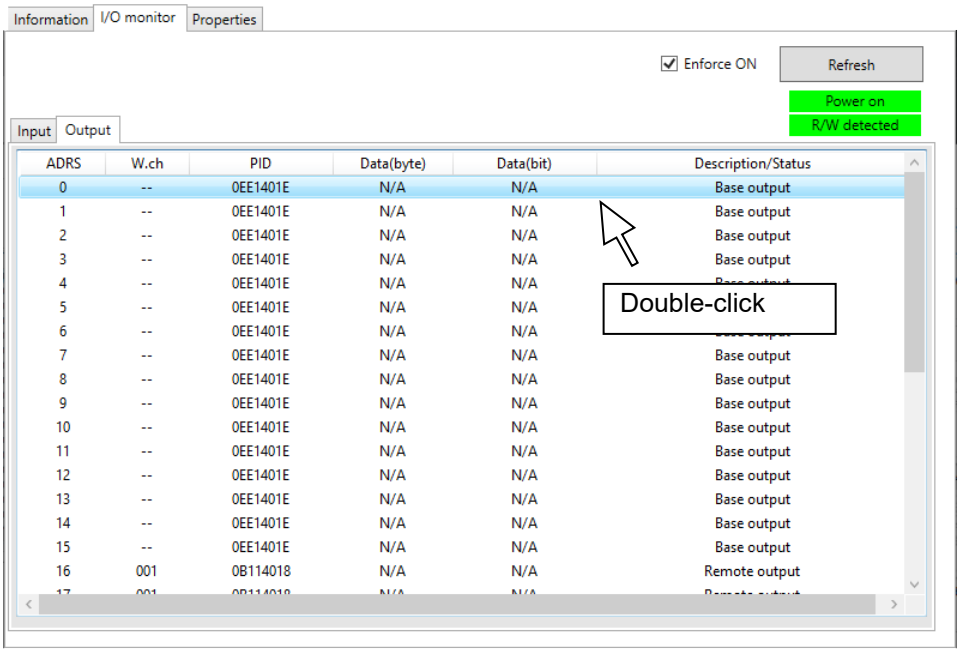
	[Forced output from the Wireless Base]	[Forced output from the Wireless Remote]
Forced output conditions	Login to Administrator mode. Not connected with the PLC by Ethernet.	Login to Administrator mode. Not wirelessly connected with Wireless Base.
Applicable item for forced output	Wireless Base / Remote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

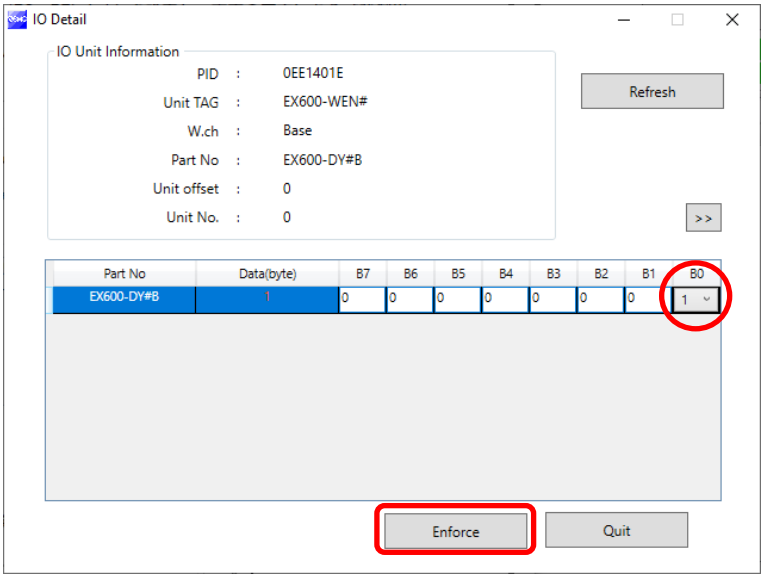


The window below appears when the mode is changed to forced output mode. Select the output unit to change to forced output and double-click it.

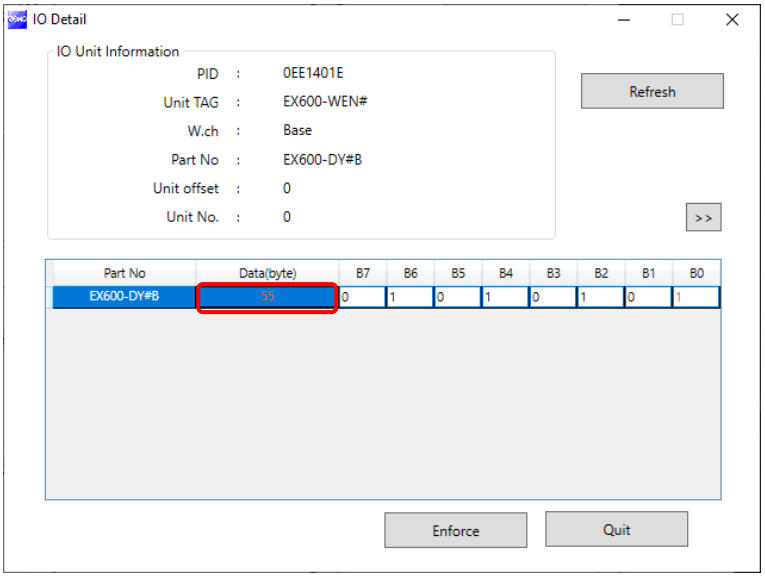


ADRS	W.ch	PID	Data(byte)	Data(bit)	Description/Status
0	--	0EE1401E	N/A	N/A	Base output
1	--	0EE1401E	N/A	N/A	Base output
2	--	0EE1401E	N/A	N/A	Base output
3	--	0EE1401E	N/A	N/A	Base output
4	--	0EE1401E	N/A	N/A	
5	--	0EE1401E	N/A	N/A	
6	--	0EE1401E	N/A	N/A	
7	--	0EE1401E	N/A	N/A	Base output
8	--	0EE1401E	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

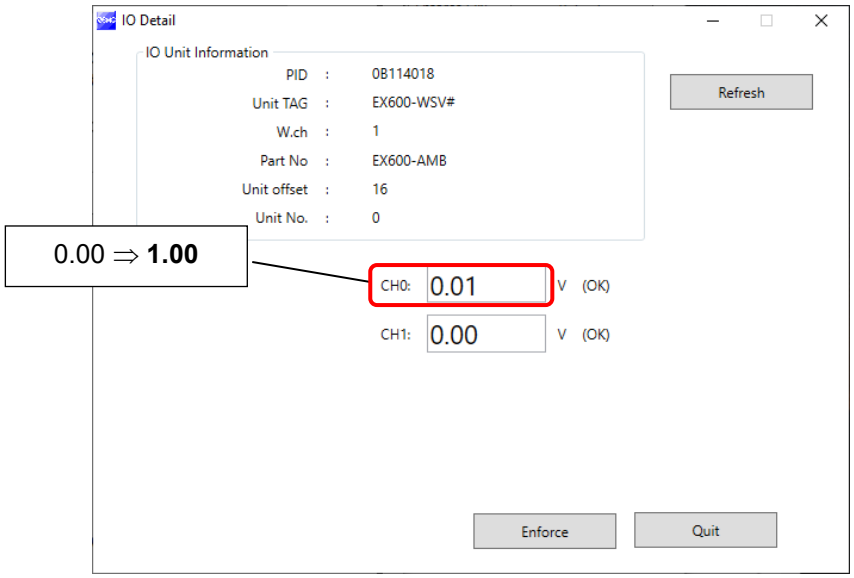
In the [IO Detail] window, select the bit (B0 to B7) to change to forced output and set to "1". The set value is output by clicking the [Enforce] button at the bottom of the window.
The power supply for the output unit is necessary to activate the output equipment for forced output mode.
Refer to the Operation Manual for the SMC Wireless System for details of the power supply for output.



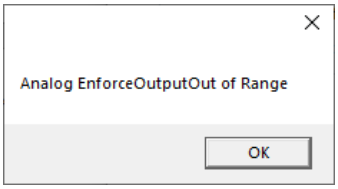
[Forced output in byte units]
Enter the value between 0x00 and 0xFF in "Data(byte)". The value in bytes is output by clicking the [Enforce] button.



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.

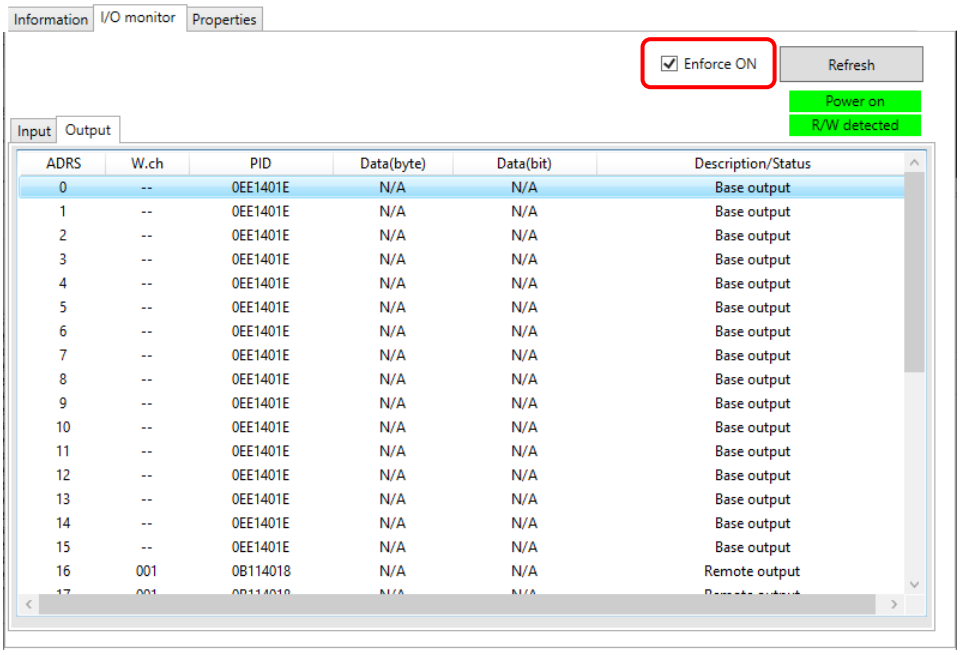


If the entered value is outside the settable range, the dialog box below will be displayed. Enter a value again.



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.



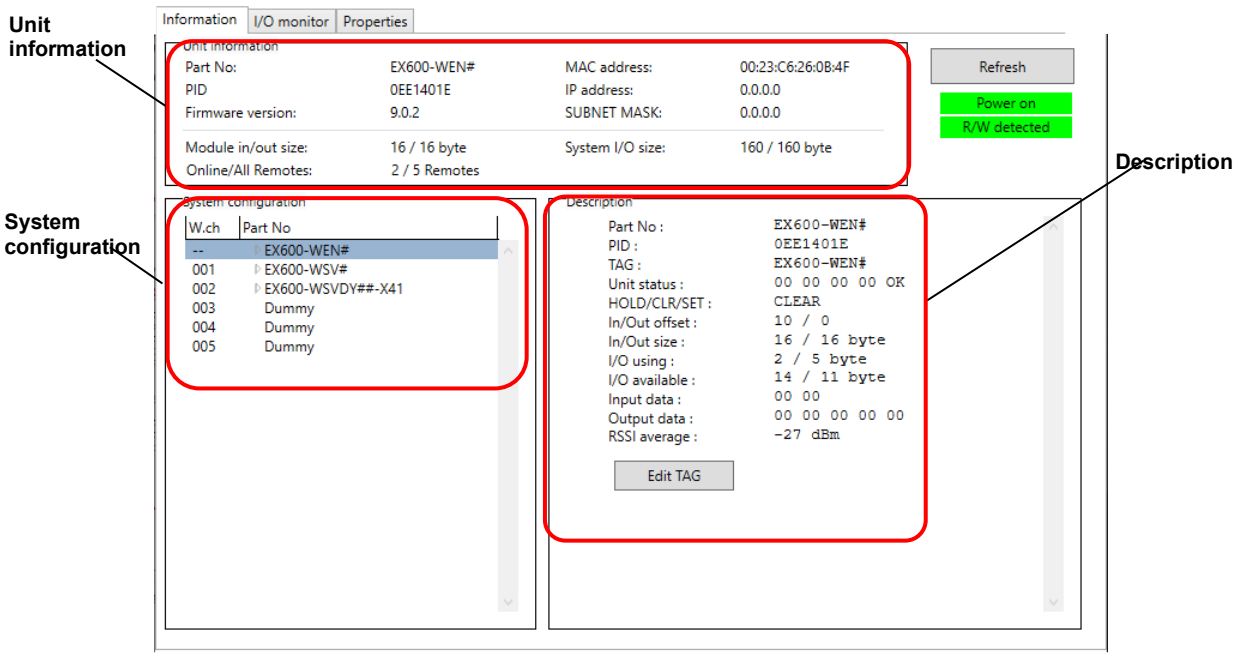
ADRS	W.ch	PID	Data(byte)	Data(bit)	Description/Status
0	--	0EE1401E	N/A	N/A	Base output
1	--	0EE1401E	N/A	N/A	Base output
2	--	0EE1401E	N/A	N/A	Base output
3	--	0EE1401E	N/A	N/A	Base output
4	--	0EE1401E	N/A	N/A	Base output
5	--	0EE1401E	N/A	N/A	Base output
6	--	0EE1401E	N/A	N/A	Base output
7	--	0EE1401E	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

- 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.

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

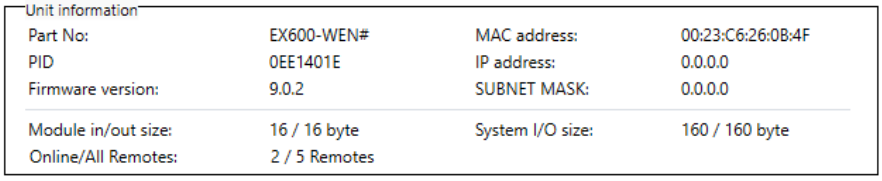
5.1 Information tab

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.

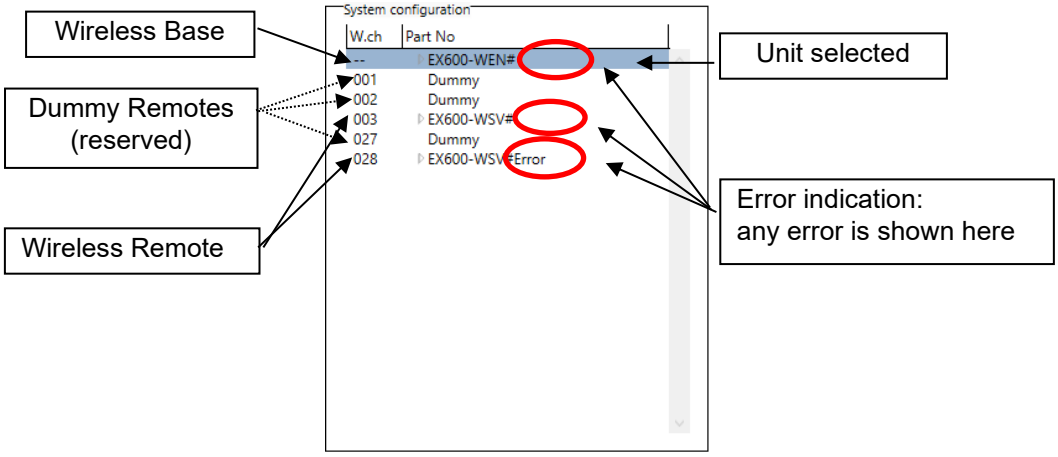


- Unit information display

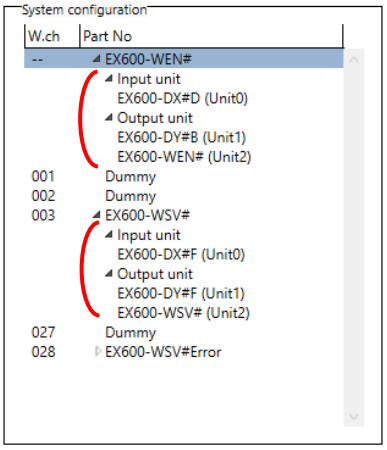
Display	Description	NFC access	
		Power on	Power off
Part No	Unit product number.	Yes	Yes
PID	Unit PID.	Yes	Yes
Firmware version	Displays software version of the unit.	Yes	Yes
MAC address	Unit MAC address.	Yes	Yes
IP address	Unit IP address.	Yes	No
SUBNET MASK	Subnet mask of unit.	Yes	No
Module in / 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.

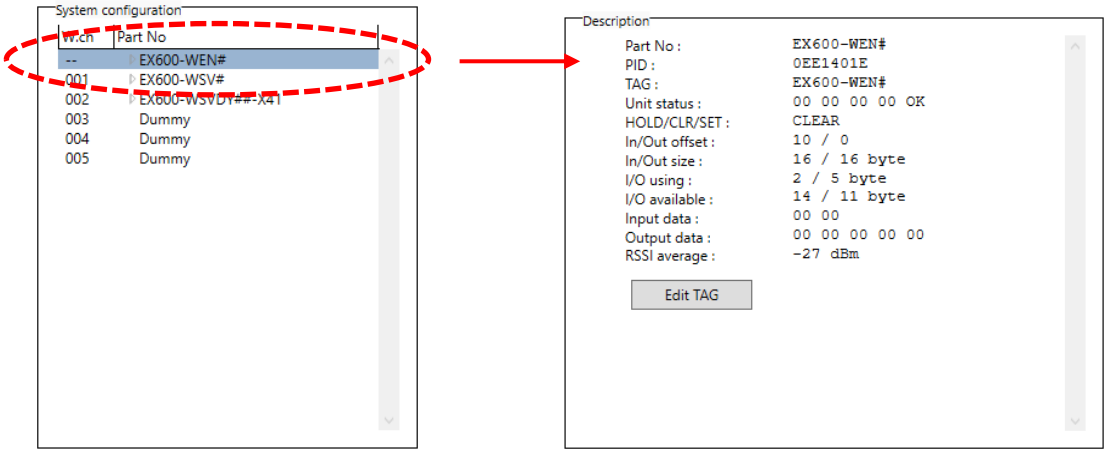


Connected I/O units can be checked by double-clicking on a wireless unit displayed in the system configuration area or clicking on the "▶" to the left.



5.1.3 Description area

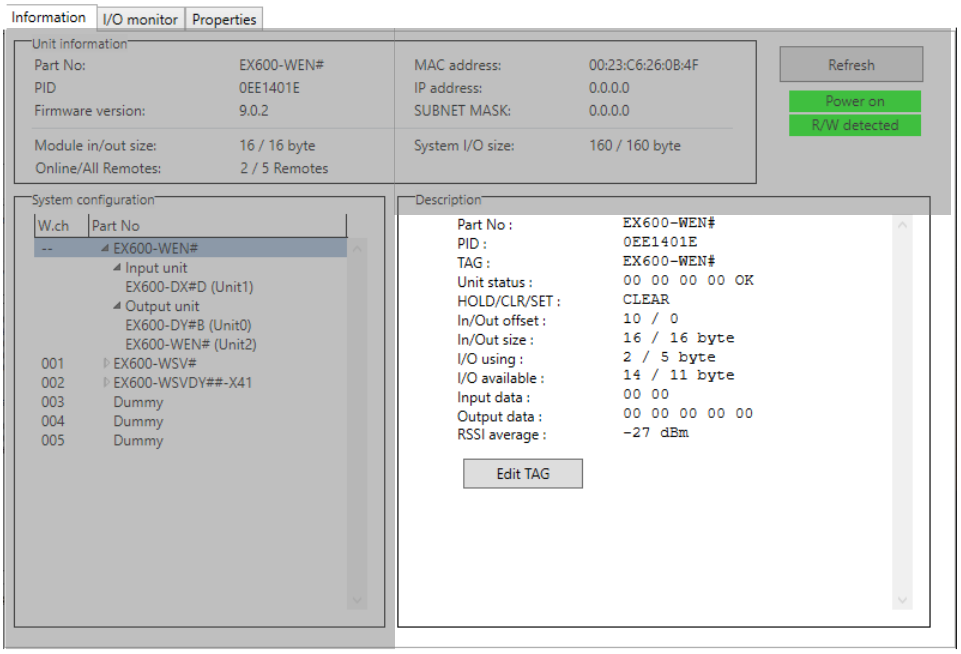
Description of the unit selected in the system configuration area.



5.1.4 Information tab, description

5.1.4.1 Wireless unit (manifold type)

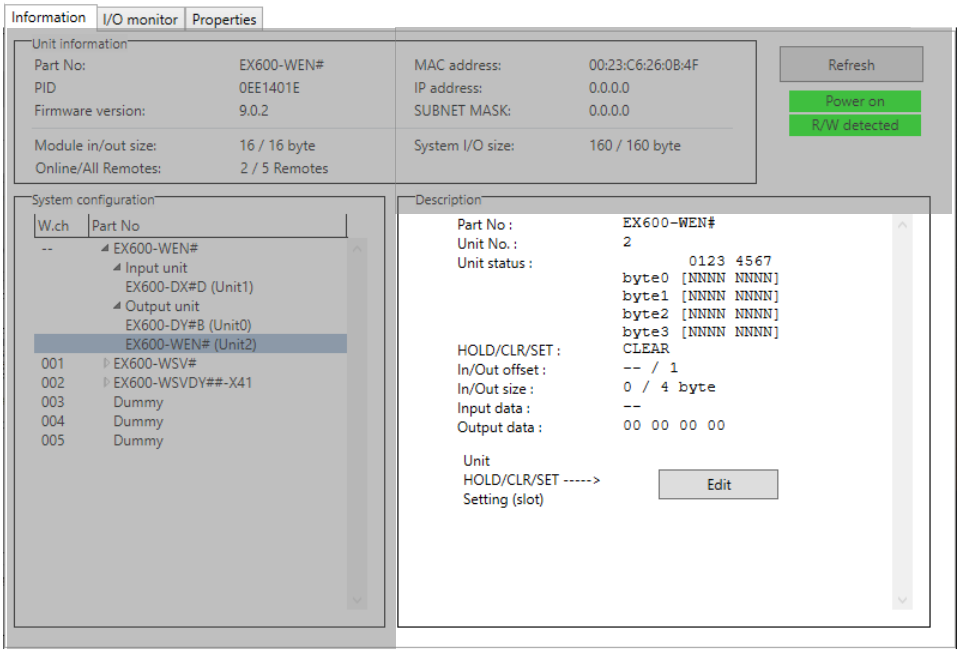
1) Communication unit



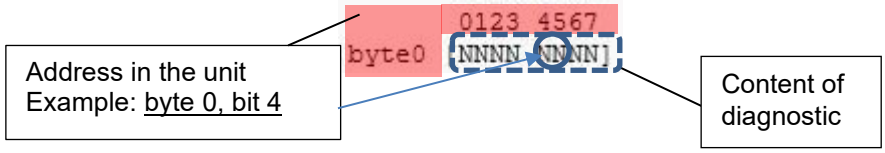
- Description display (communication unit)

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. ◆**Display for diagnostic information error**  * 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 using	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.

2) Valve

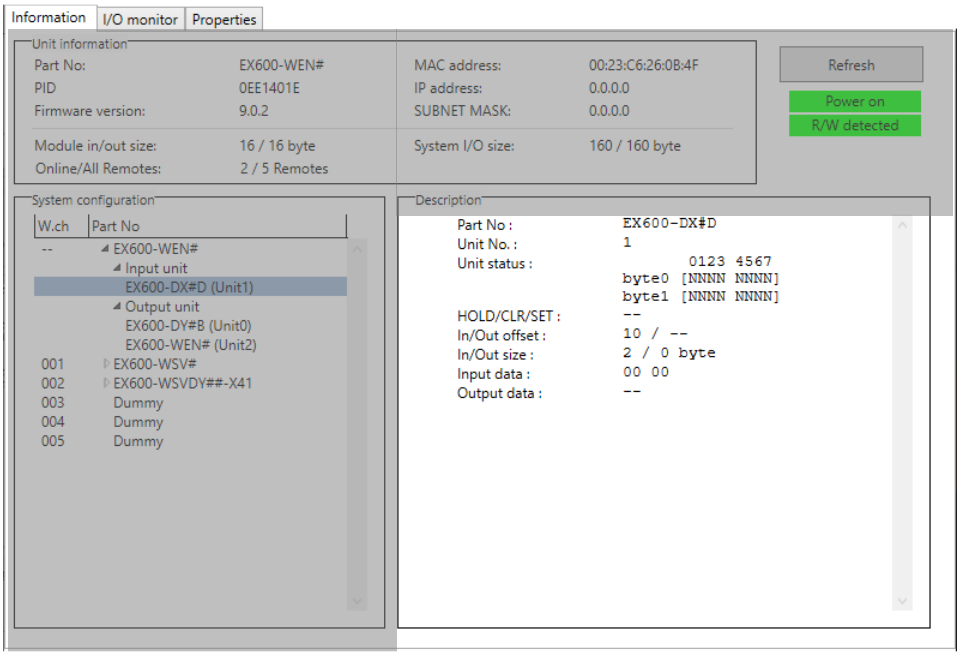


- Description display (valve)

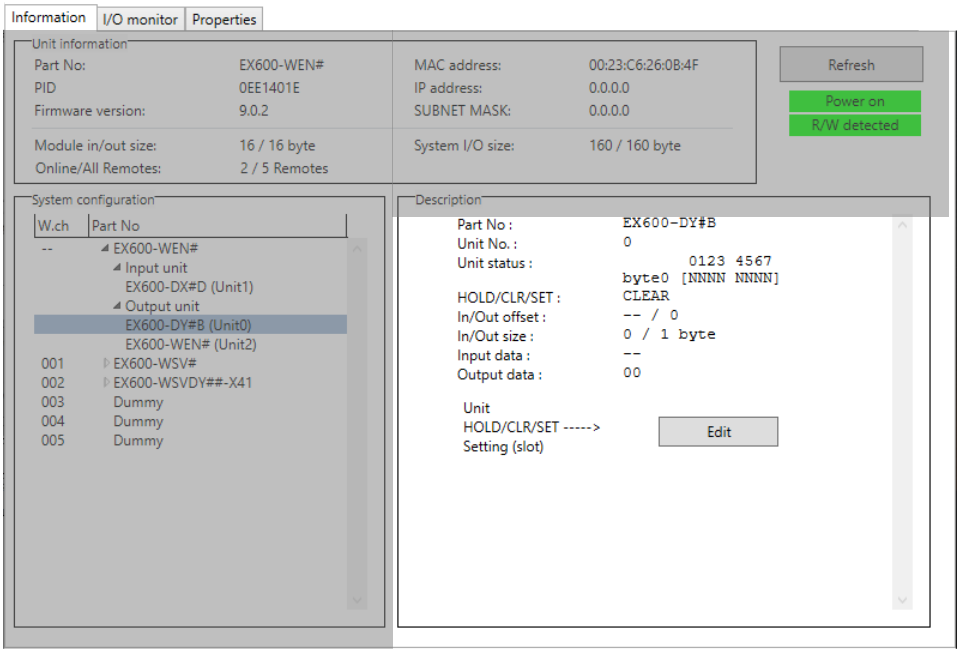
Display	Description
Part No	Wireless Base / Remote product number.
Unit No.	Mapped position for the valve. Displays the mapped position of the selected digital input unit. * Refer to "5.3.2 Properties", "Unit address order" for details on mapped position.
Unit status	Displays the mapped diagnostic data bits for the selected valve.  * Content of diagnostics N: Normal Error is not detected O: Bit Open Load is not connected (disabled at initial status) S: Bit Short Short circuit of the load output is detected L: Limit Over Contact operation exceeded the limit (disabled at initial status) 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.

5.1.4.2 IO unit (digital)

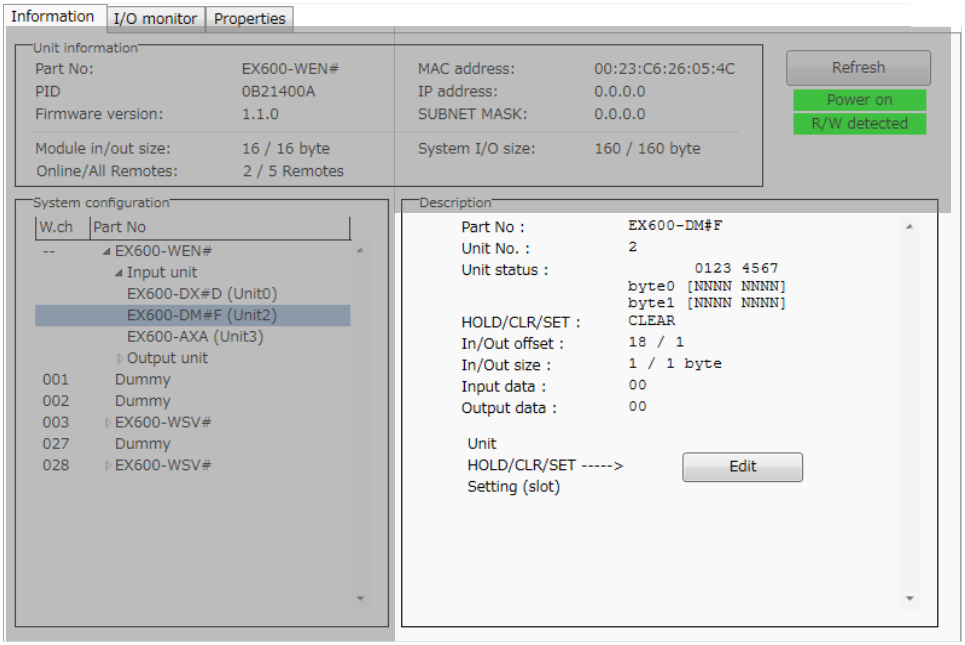
Digital input unit (product number: EX600-DX#D)



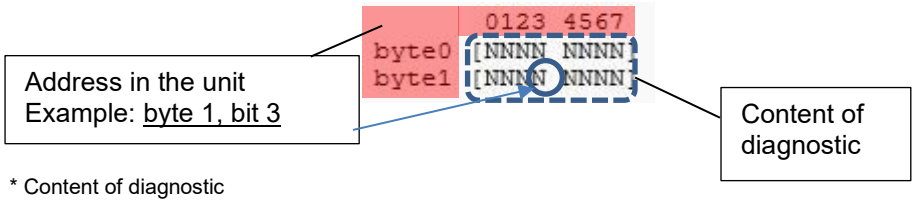
Digital output unit (product number: EX600-DY#B)



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

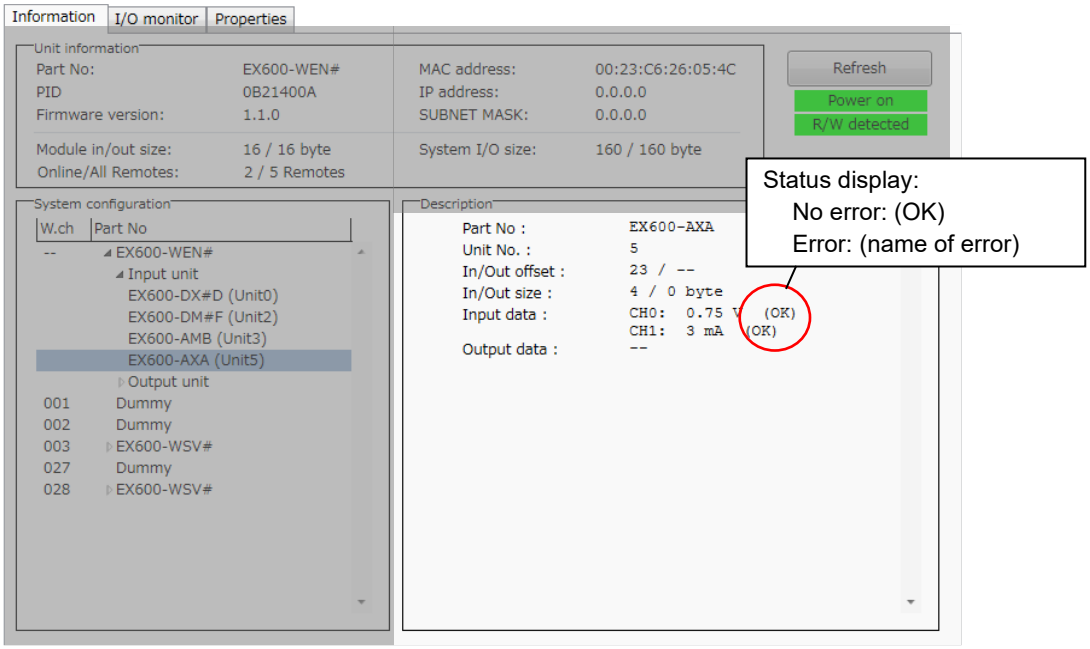


- Description display (digital unit)

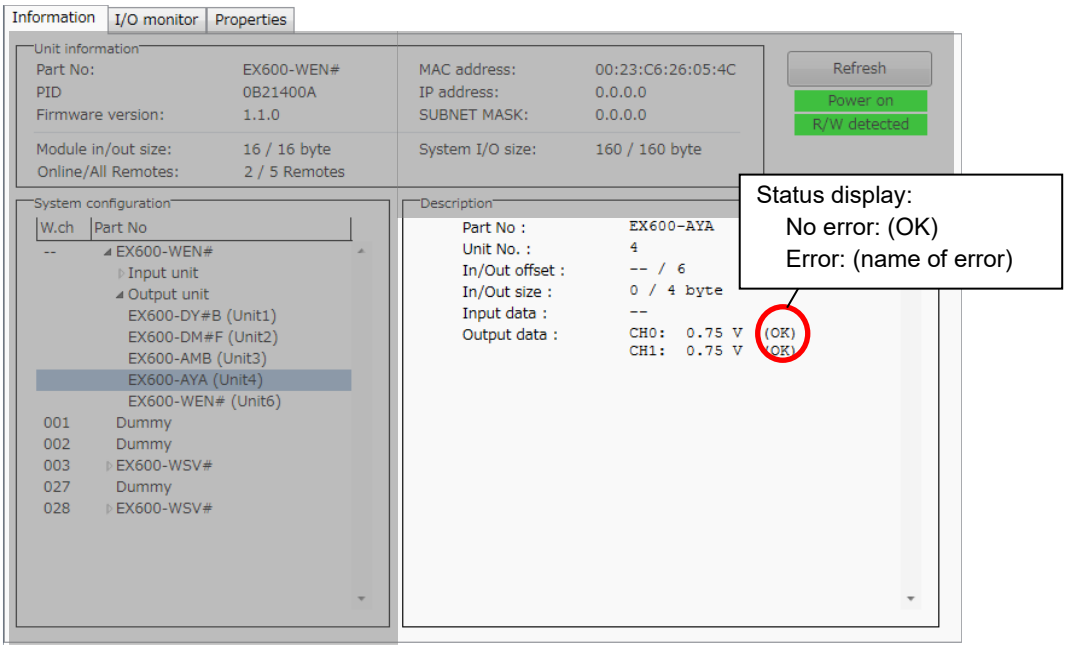
Display	Description
Part No	Displays the product number of the digital unit (input, output, input / output).
Unit No.	Displays the mapped position of the digital unit (input, output, input / output). * Refer to "5.3.2 Properties", "Unit address order" for details on mapped position.
Unit status	Displays the mapped diagnostic data bits for the digital unit (input, output, input / output).  * Content of diagnostic N: Normal Error is not detected O: Bit Open Load is not connected (disabled at initial status) S: Bit Short Short circuit of the load output is detected L: Limit Over Contact operation exceeded the limit (disabled at initial status) P: Power Short Short circuit of the load power supply is detected
HOLD / CLR / SET	"--" is displayed for an input unit. 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. Output size is shown for an output unit. Input size is always 0 bytes. Both input and output sizes are shown for an input / output unit.
Input data	"--" is displayed for an output unit. Displays input data value which is sent to an input unit or input / output unit.
Output data	"--" is displayed for an input unit. Displays output data value which is sent from an output unit or input / output unit.

5.1.4.3 IO unit (analog)

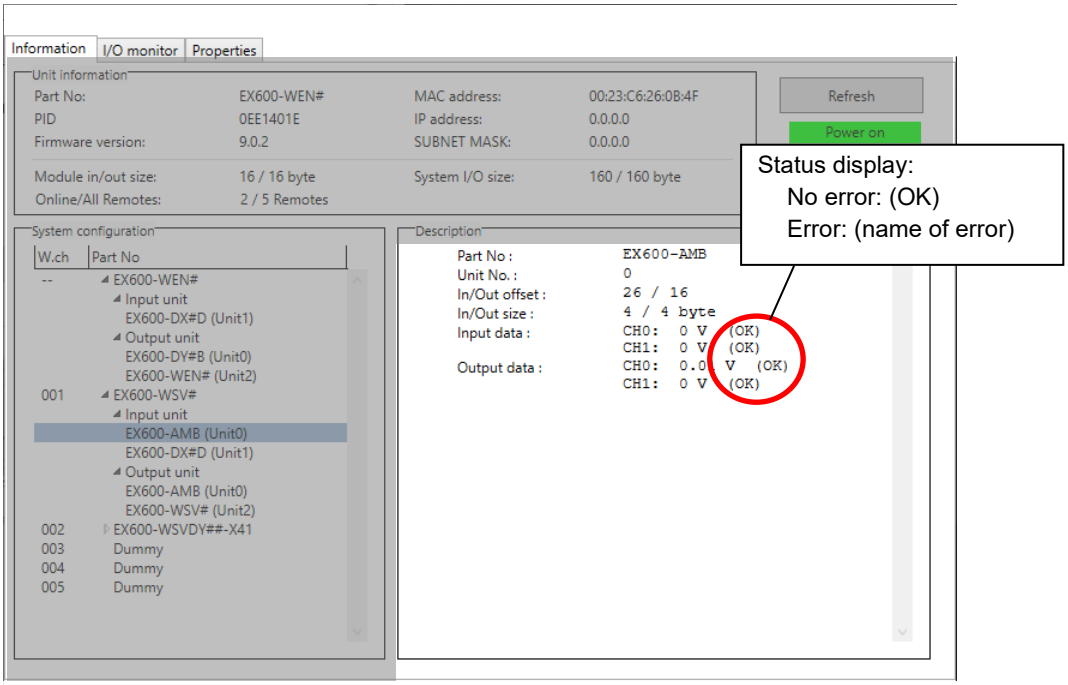
Analog input unit (product number: EX600-AXA)



Analog output unit (product number: EX600-AYA)



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



- Description display (analog unit)

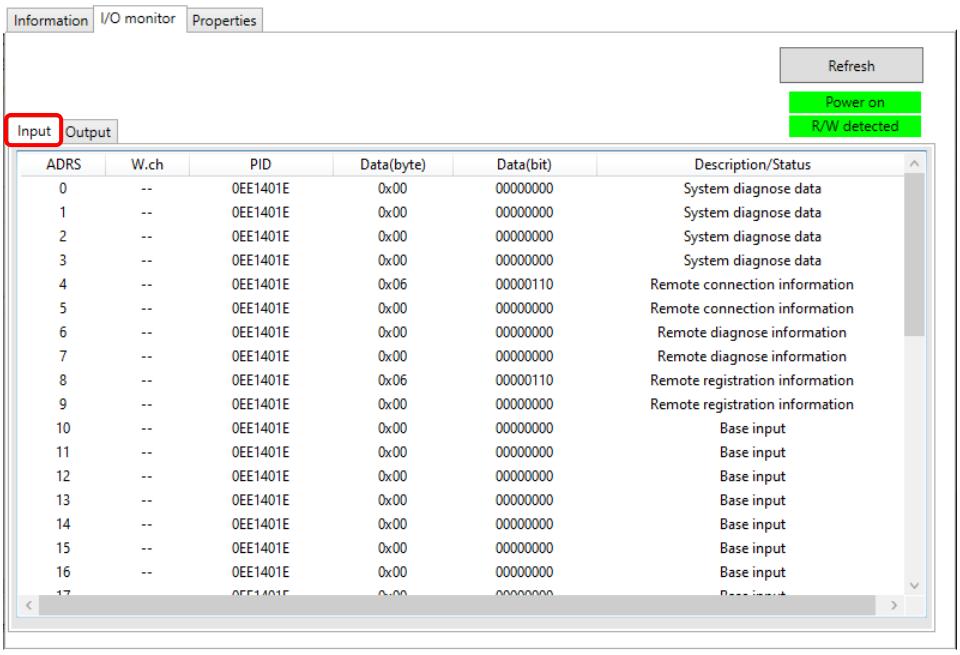
Display	Description
Part No	Displays the product number of the analog unit (input, output, input / output).
Unit No.	Displays the mapped position of the analog unit (input, output, input / output). * Refer to "5.3.2 Properties", "Unit address order" for details on mapped position.
In / Out offset	Displays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



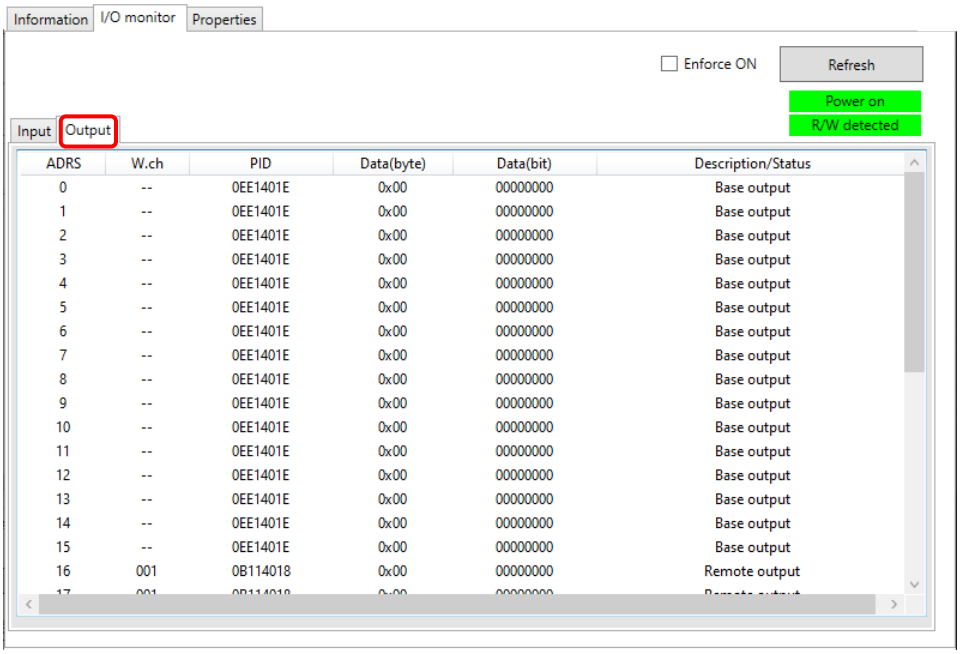
ADRS	W.ch	PID	Data(byte)	Data(bit)	Description/Status
0	--	0EE1401E	0x00	00000000	System diagnose data
1	--	0EE1401E	0x00	00000000	System diagnose data
2	--	0EE1401E	0x00	00000000	System diagnose data
3	--	0EE1401E	0x00	00000000	System diagnose data
4	--	0EE1401E	0x06	00000110	Remote connection information
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

- Input display

Display	Description	Displayed items
ADRS	Displays the input map address.	Base unit: 0 to 159 Remote unit: 0 to 15
W.ch	Wireless unit channel. (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/ Status	Details of input data.	Base unit: - System diagnose data - Remote connection information - Remote diagnose information - Remote registration information - Base input - Remote input - Reserve input - Connection error Remote unit: - Remote input

5.2.2 Output tab

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



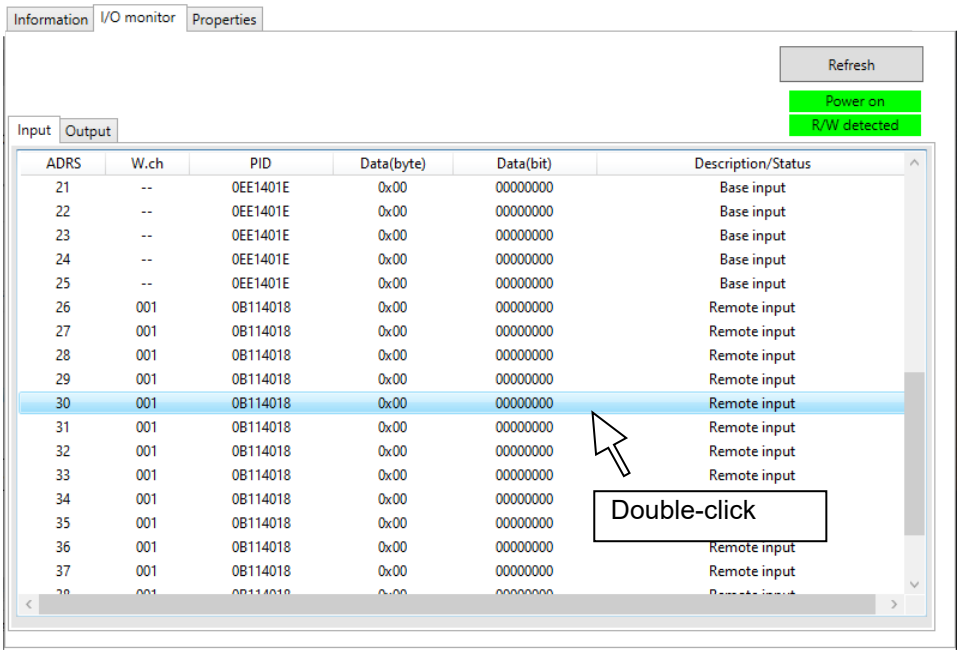
ADRS	W.ch	PID	Data(byte)	Data(bit)	Description/Status
0	--	0EE1401E	0x00	00000000	Base output
1	--	0EE1401E	0x00	00000000	Base output
2	--	0EE1401E	0x00	00000000	Base output
3	--	0EE1401E	0x00	00000000	Base output
4	--	0EE1401E	0x00	00000000	Base output
5	--	0EE1401E	0x00	00000000	Base output
6	--	0EE1401E	0x00	00000000	Base output
7	--	0EE1401E	0x00	00000000	Base output
8	--	0EE1401E	0x00	00000000	Base output
9	--	0EE1401E	0x00	00000000	Base output
10	--	0EE1401E	0x00	00000000	Base output
11	--	0EE1401E	0x00	00000000	Base output
12	--	0EE1401E	0x00	00000000	Base output
13	--	0EE1401E	0x00	00000000	Base output
14	--	0EE1401E	0x00	00000000	Base output
15	--	0EE1401E	0x00	00000000	Base output
16	001	0B114018	0x00	00000000	Remote output

- Output display

Display	Description	Displayed items
Enforce ON	Forced output mode can be selected by clicking [Enforce ON]. * Refer to "4.4 Forced output" for details of operation.	Check marked: Forced output on Not check marked: Forced output off
ADRS	Displays the output map address.	Base unit: EX600-WEN*, EX600-WPN* 0 to 159 EXW1-BECAC 0 to 1472 Remote unit: 0 to 15
W.ch	Wireless unit channel. (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: - Base output - Remote output - Reserve output - Connection error Remote unit: - Remote output

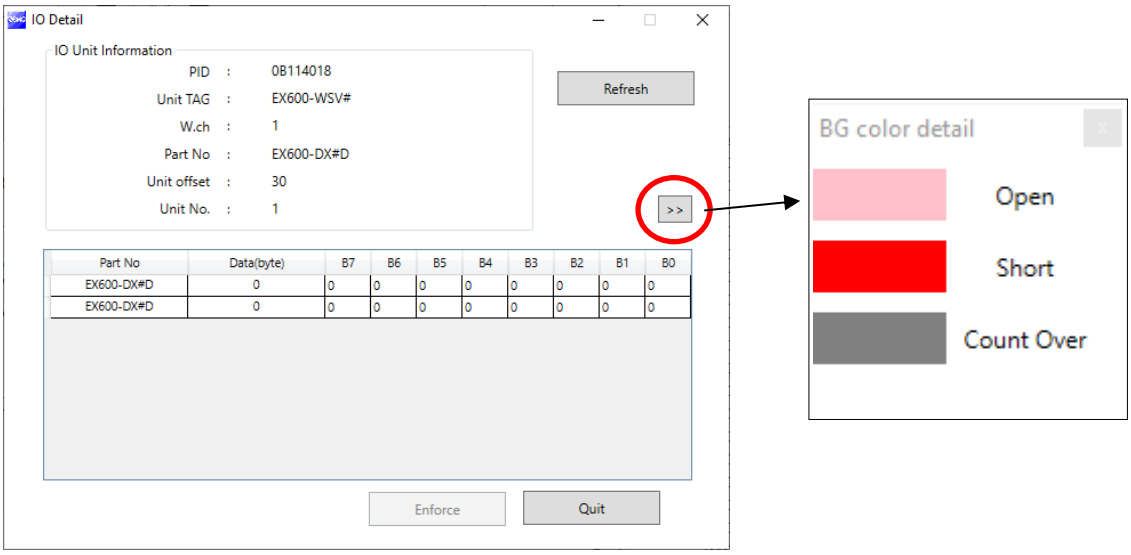
5.2.3 IO details

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.



ADRS	W.ch	PID	Data(byte)	Data(bit)	Description/Status
21	--	0EE1401E	0x00	00000000	Base input
22	--	0EE1401E	0x00	00000000	Base input
23	--	0EE1401E	0x00	00000000	Base input
24	--	0EE1401E	0x00	00000000	Base input
25	--	0EE1401E	0x00	00000000	Base input
26	001	0B114018	0x00	00000000	Remote input
27	001	0B114018	0x00	00000000	Remote input
28	001	0B114018	0x00	00000000	Remote input
29	001	0B114018	0x00	00000000	Remote input
30	001	0B114018	0x00	00000000	Remote input
31	001	0B114018	0x00	00000000	Remote input
32	001	0B114018	0x00	00000000	Remote input
33	001	0B114018	0x00	00000000	Remote input
34	001	0B114018	0x00	00000000	
35	001	0B114018	0x00	00000000	
36	001	0B114018	0x00	00000000	Remote input
37	001	0B114018	0x00	00000000	Remote input

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 [>>].



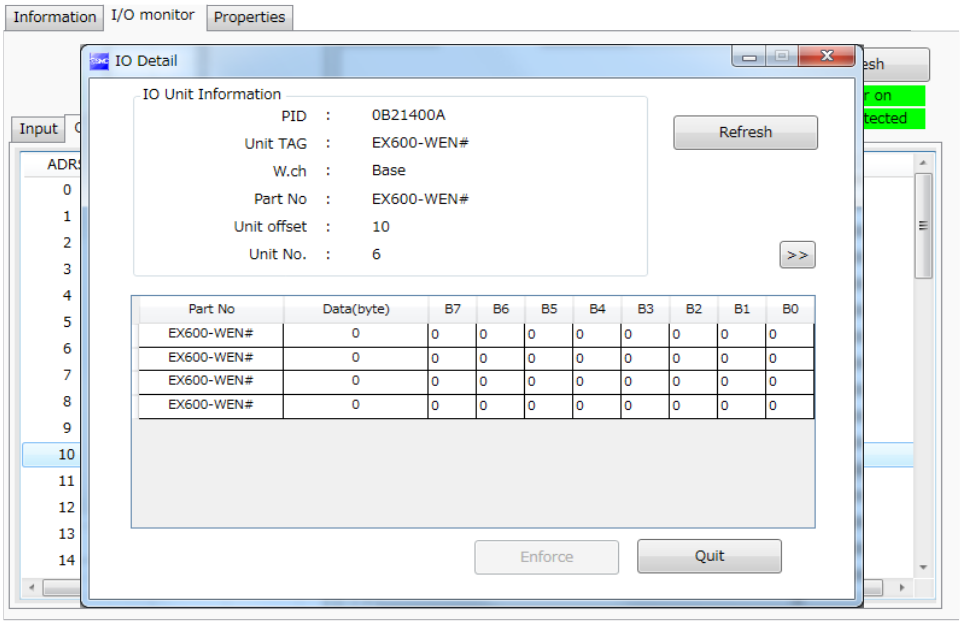
- Background colour

Background colour	Display	Description
	Open	Detection of unconnected load * 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 * 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))

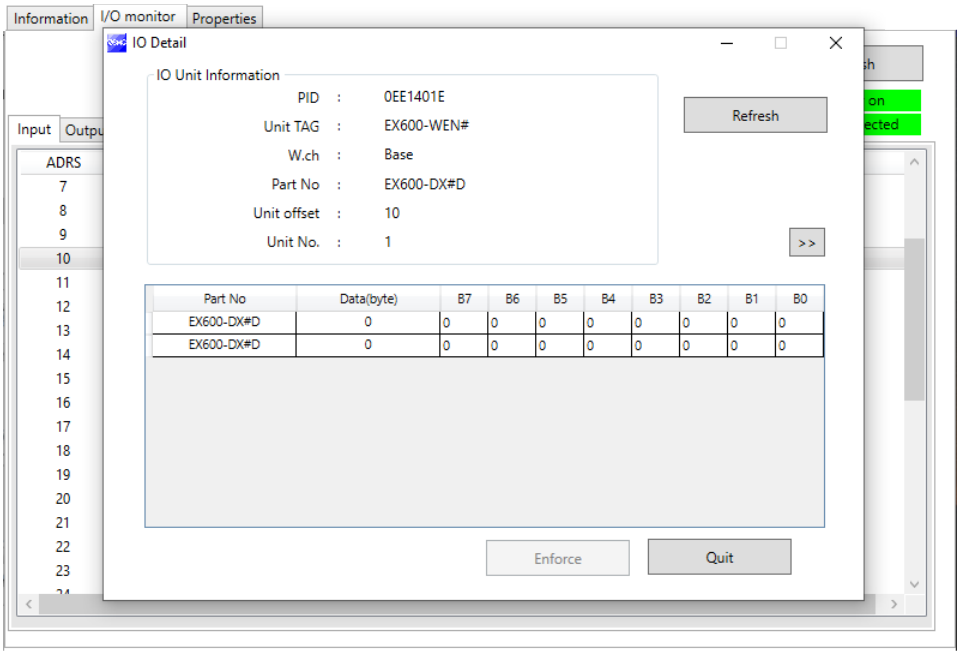


- IO details (manifold type (valve))

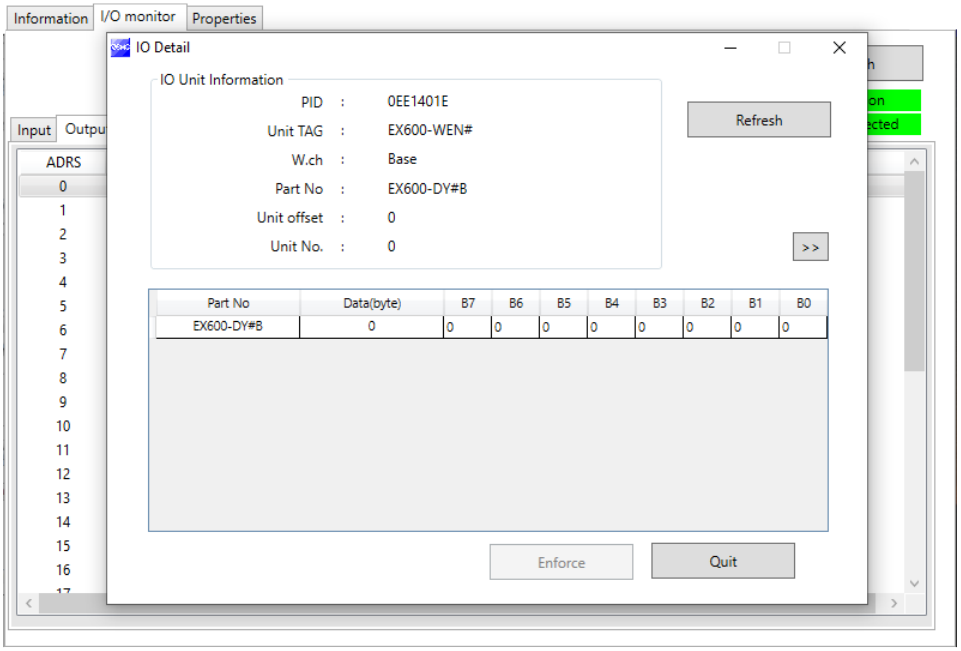
Display	Description
PID	Displays the PID of the Wireless Base / Remote to which the selected valve is connected.
Unit TAG	Displays the tag of the Wireless Base / Remote to which the selected valve is connected.
W.ch	Displays the channel name of the Wireless Base / Remote to which the selected valve is connected. "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). * Refer to "5.3.2 Properties", "Unit address order" for details on mapped position.

5.2.4.2 IO unit (digital)

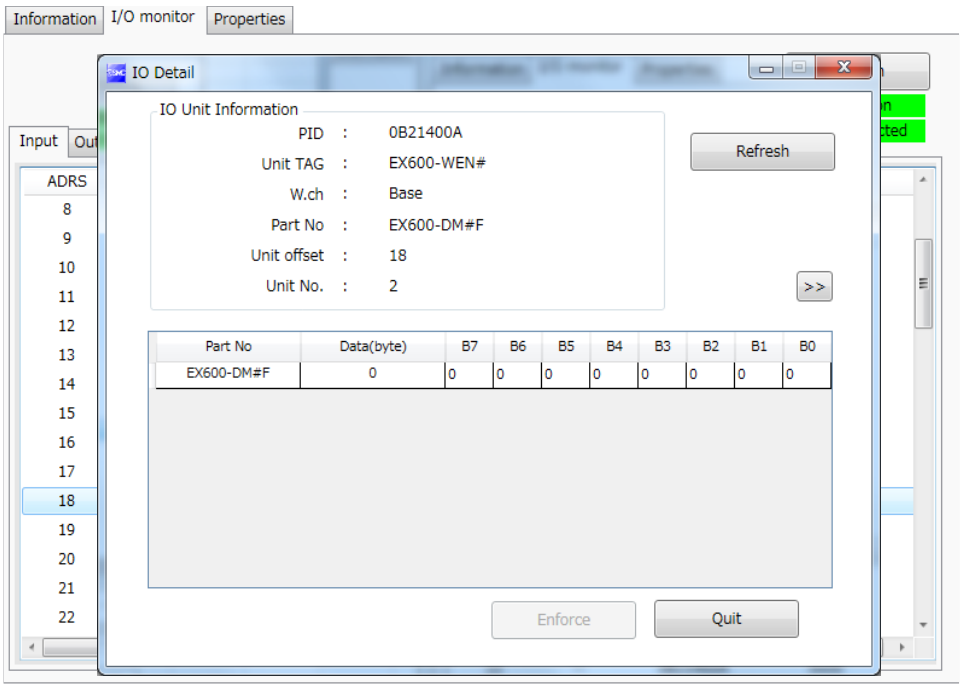
Digital input unit (product number: EX600-DX#D)



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



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

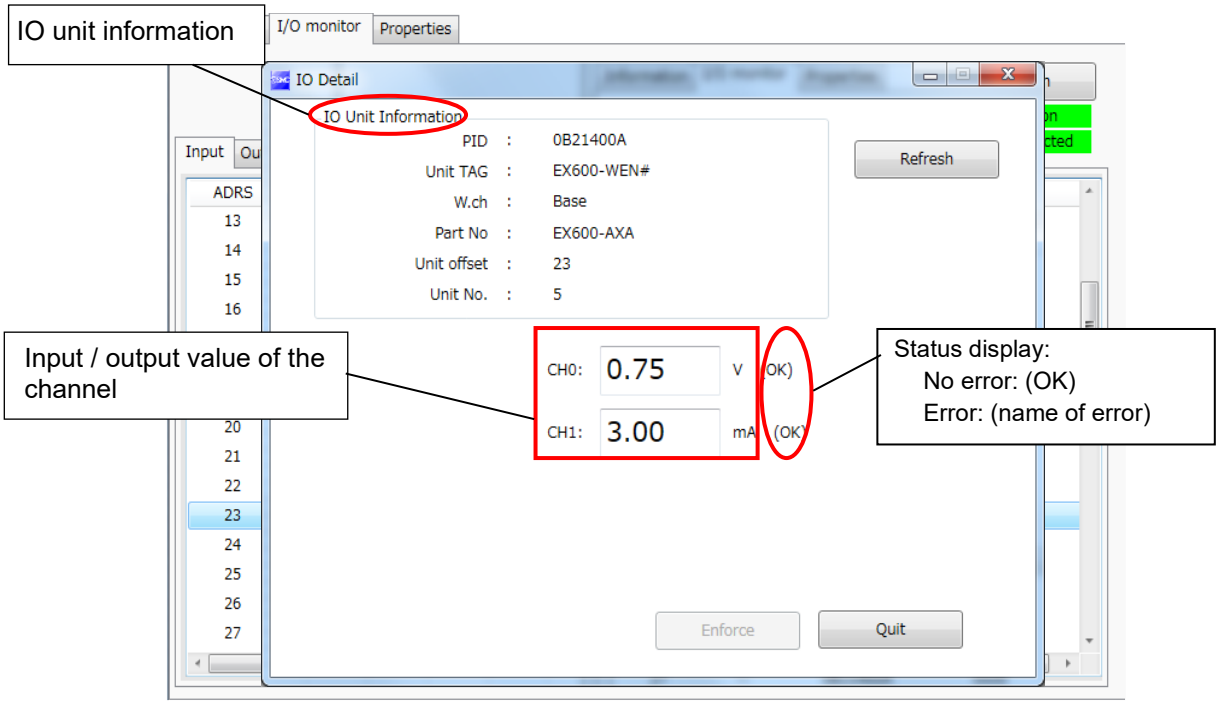


- IO unit information (digital unit)

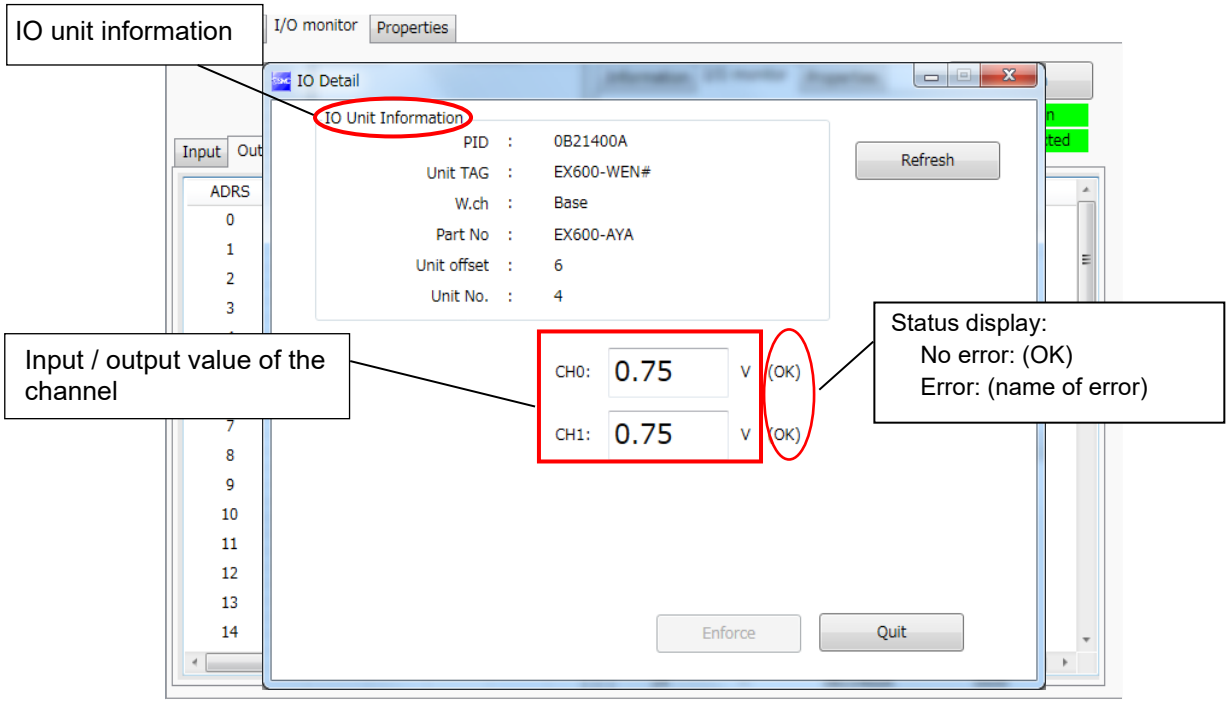
Display	Description
PID	Displays the PID of the Wireless Base / Remote to which the digital unit (input, output, input / output) is connected.
Unit TAG	Displays the tag of the Wireless Base / Remote to which the digital unit (input, output, input / output) is connected.
W.ch	Displays the channel name 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). * Refer to "5.3.2 Properties", "Unit address order" for details on mapped position.

5.2.4.3 IO unit (analog)

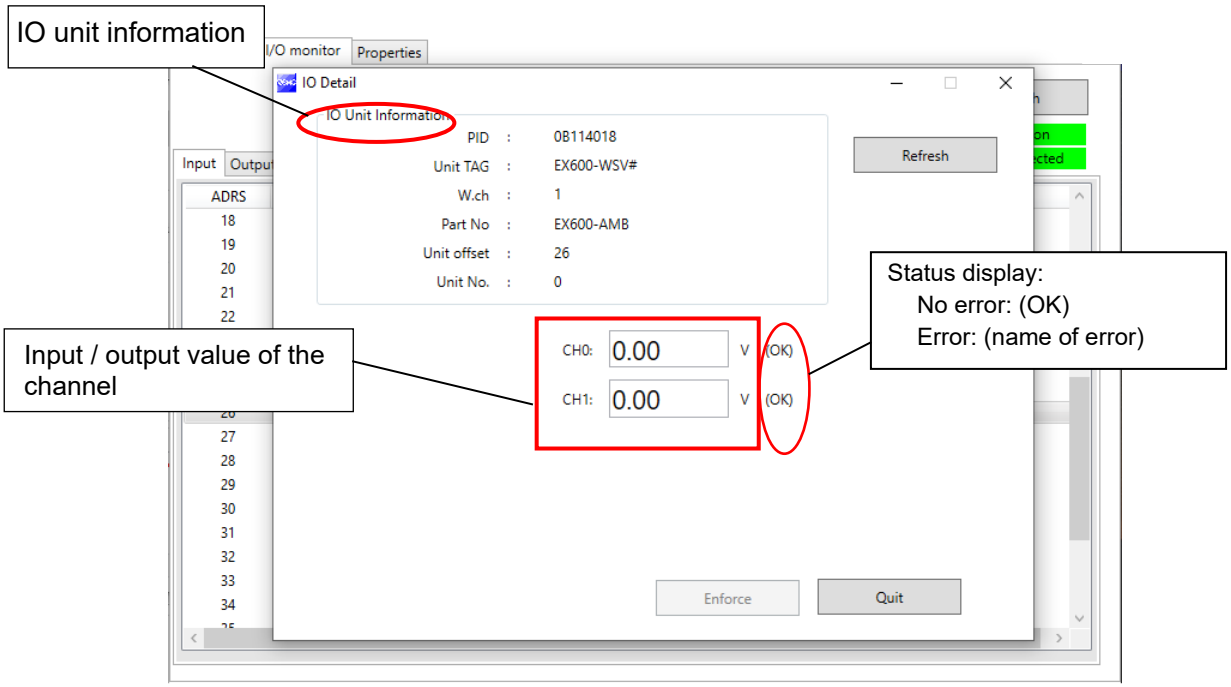
Analog input unit (product number: EX600-AXA)



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). * Refer to "5.3.2 Properties", "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)

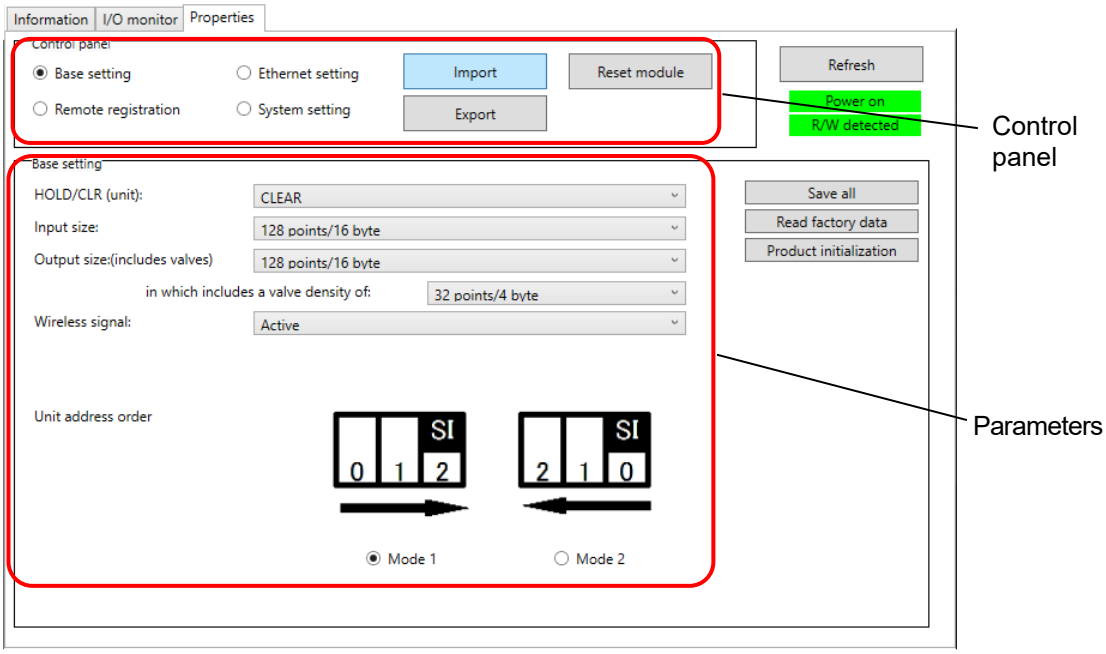
Data format	Displayed analog value
12-bit resolution, 11-bit resolution	+/-□□□ mA (current range)
	+/-□□□ V (voltage range)
Scaled	+/-□□---□

- 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

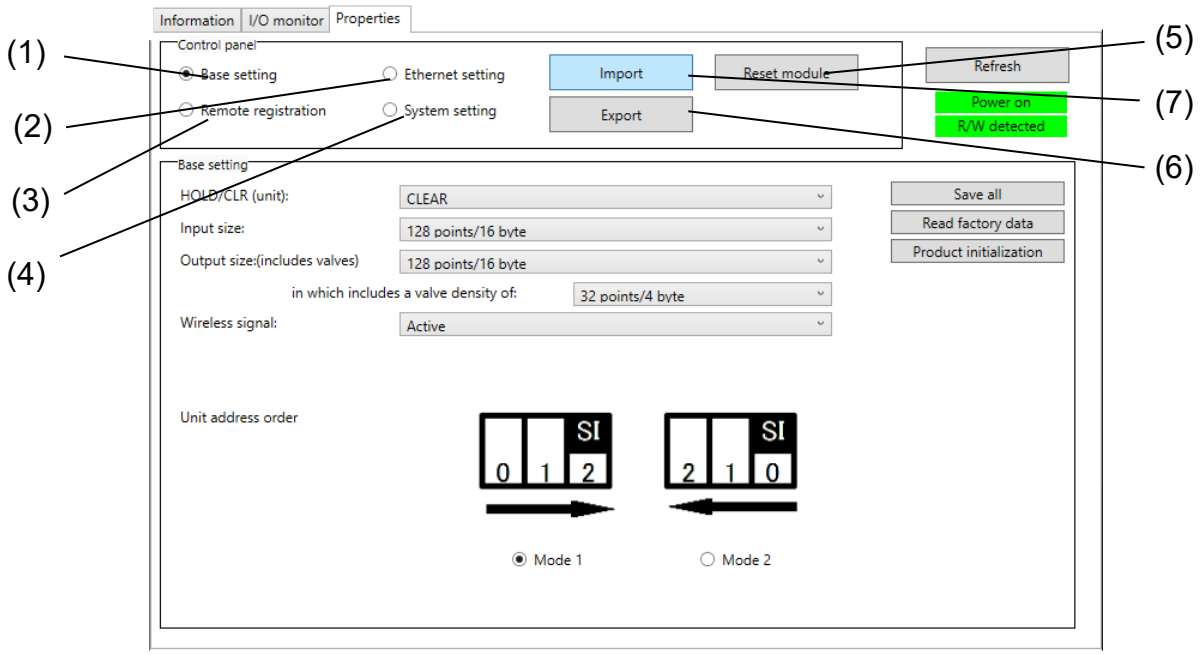
5.3 Properties tab

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. Not displayed for a Base unit that supports CC-Link or EtherCAT (EXW1-BMJA#, EXW1-BECAC).
2	Ethernet setting	Switch to Ethernet parameters. Perform IP address setting. Displayed for a Base unit that supports EtherNet/IP (EX600-WEN#).
	CC-Link setting	Set the operating mode, etc. 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

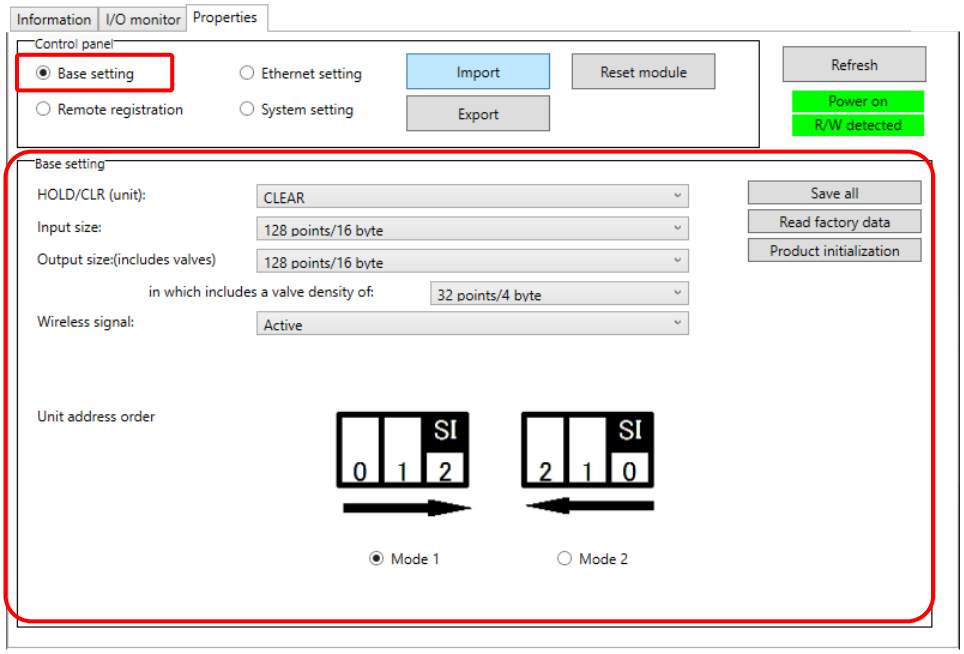
No.	Name	Functions
5	Reset module	Set parameters are reflected once power is supplied to the wireless unit. Click [Reset module] in order to reflect parameters that were set while power was still being supplied.
6	Export	Button to export the configuration of the wireless unit to a PC (saved as file type ".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 Properties

(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. CLEAR: Clear the output. HOLD: Fix the output at the current value. Software Control: CLEAR, HOLD or SET for individual points can be set using bit data. * 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 to 16 bytes)	128 points / 16 byte	Set the number of inputs which can be controlled by the Wireless Base unit. 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. Setting range: 0 to 128 points (0 to 16 bytes). Increase or decrease by 16 points. 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. 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. 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. * Wireless communication is updated in real time. Turning the power supply off and on again or a Reset is not necessary. Active: Wireless communication is available. 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. The address assignment direction is changed by mode 1/mode 2. Be careful about the I/O mapping. (Refer to the I/O Mapping Order of Wireless Base / Remote Module of the Operation Manual (page 50) for details) Mode 1: Assigned to the right from the end plate. Mode 2: Assigned to the left from the wireless unit.

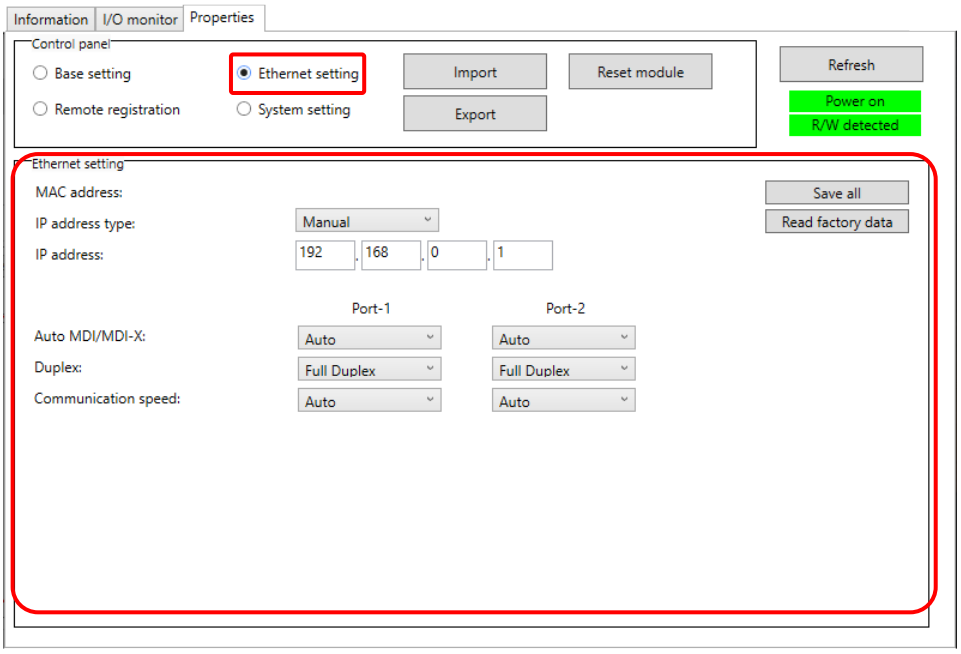
- Base unit setting buttons

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

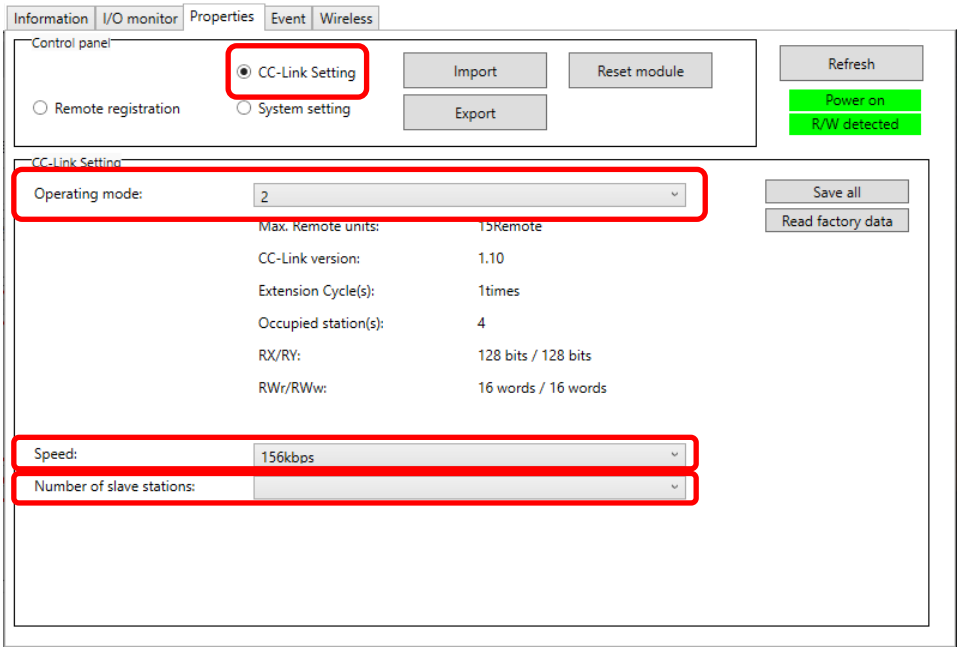
Parameter name	Set value	Initial value	Note
MAC address	-	-	MAC address of the product is displayed.
IP address type	Manual / DHCP / Remote Control	Manual	Select the IP address setting mode. Select the mode suitable for your network environment. Manual: The IP address is set by inputting it directly. 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.

(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

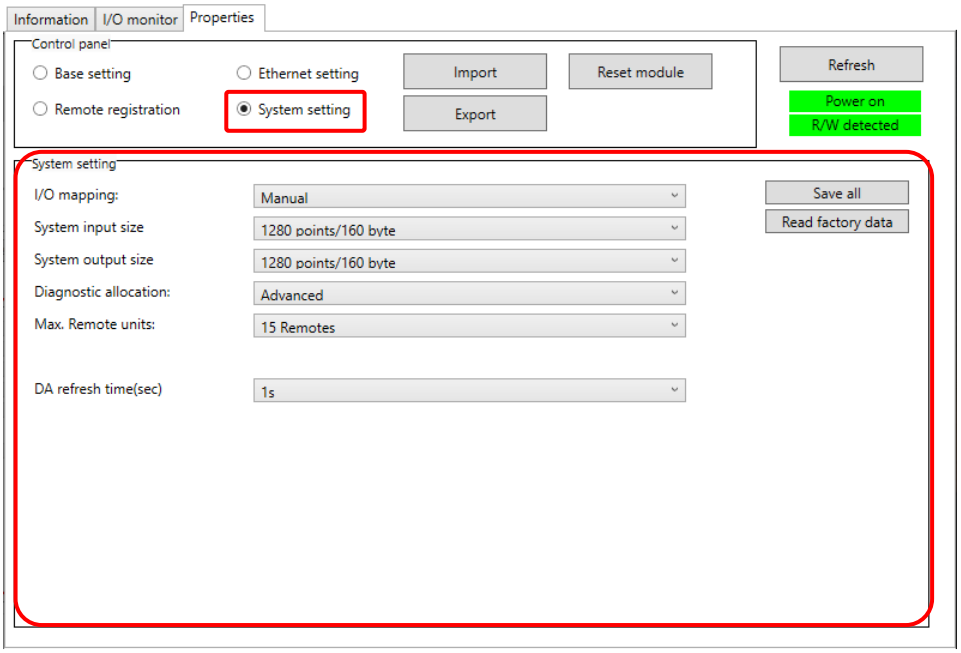
Specifies a station number to assign to the compact Wireless Base (Remote device station) on CC-Link.

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.



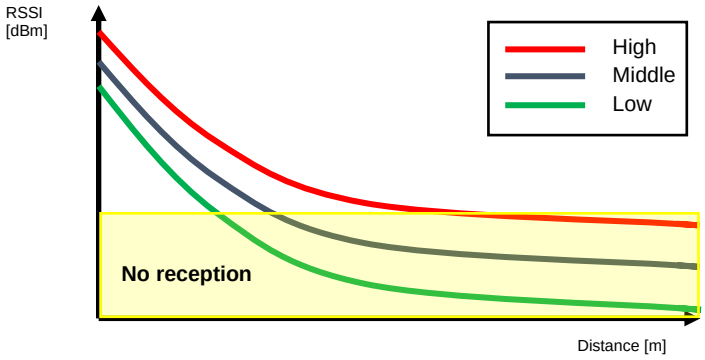
- Compact Wireless Base (EXW1-BMJA#)

Parameter	Set value	Initial value	Note
I/O mapping	Manual	Manual	Specifies an I/O mapping method. * "Manual" is fixed for EXW1-BMJA#.
Diagnostic allocation	Advanced	Advanced	Specifies diagnostic information to map to the Word area. Setting range: Advanced Detailed (System diagnosis + Remote connection / diagnosis / registration information) * "Advanced" is fixed for EXW1-BMJA#. * 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. * 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. CLEAR: Clear the output. HOLD: Fix the output at the current value. Individual: The set value of each Wireless Remote is valid (not the entire system). * 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 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. CLEAR: Clear the input. HOLD: Fix the input at the current value.
Wireless signal	Active / Idle	Active	Sets the operation status of wireless communication. Active: Wireless communication output is active Idle: Wireless communication output is idle
Protocol	V.1.0 / V.2.0	V.1.0	Sets the wireless communication protocol. * To pair 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. Refer to "5.3.2 Properties" 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. 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.

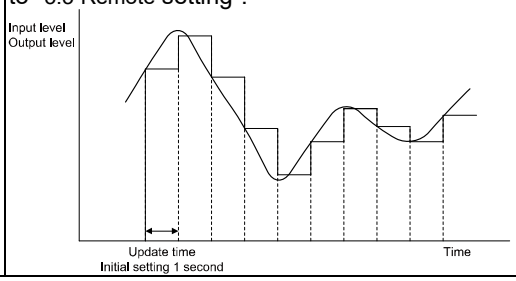
- The protocol version is set to V.1.0 by default; to use the 1 Mbps wireless communication speed and the frequency channel selecting function (F.C.S.) in a wireless system consisting solely of EXW1-series devices, change the protocol version to V.2.0 before pairing them.

- Compact Wireless Base (EXW1-BECAC)

Parameter	Set value	Initial value	Note
I/O mapping	Auto	Auto	Specifies an I/O mapping method. * " Auto" is fixed for EXW1-BECAC.
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. None: No diagnostic data Simple: System diagnostics Advanced: System diagnostics + Wireless Remote connection / diagnostics / registration information
Max. Remote units	15 / 31 / 63 Remotes	15 Remotes	Set the number of Wireless Remote units which are registered to the Wireless Base unit. Wireless channels for the number of the set units are enabled.
Time of Wireless communication timeout	100/ 200 / 500 / 1,000 / 2,000 / 5,000 msec	500 msec	Only available in protocol V.2.0. 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.
Power Transmission Level	High/Middle/Low	High	Only available in protocol V.2.0. It is possible to decrese interference with other wireless products by reducing the output power level. This setting is made in the base and will be applied to any paired Remotes with wireless atdaptor via wireless communication. Setting range: High/Middle/Low (Power Transmission : High > Middle > Low) 
Wireless signal	Active / Idle	Active	Sets the operation status of wireless communication. Active: Wireless communication output is active Idle: Wireless communication output is idle
Protocol	V.1.0 / V.2.0	V.2.0	Sets the wireless communication protocol. * To pair 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. Refer to "5.3.2 Properties" for details.

- The protocol version is set to V.2.0 by default; to use EX600-W series Remote devices, change the protocol version to V.1.0 before pairing them.

- 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. Auto: All I/O points mapped to the Wireless Base unit and Wireless Remote unit are identified and mapped automatically. (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.) Manual: Fixed at the number of I/O points set in "System input size" and "System output size". * "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. * Number can only be set when "Manual" is used for I/O mapping. * 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. * Number can only be set when "Manual" is used for I/O mapping. * 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. None: No diagnostic data Simple: System diagnostics 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. 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. * The analog input update time is set for every Wireless Remote unit. Refer to "3.3 Remote setting". 

● 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

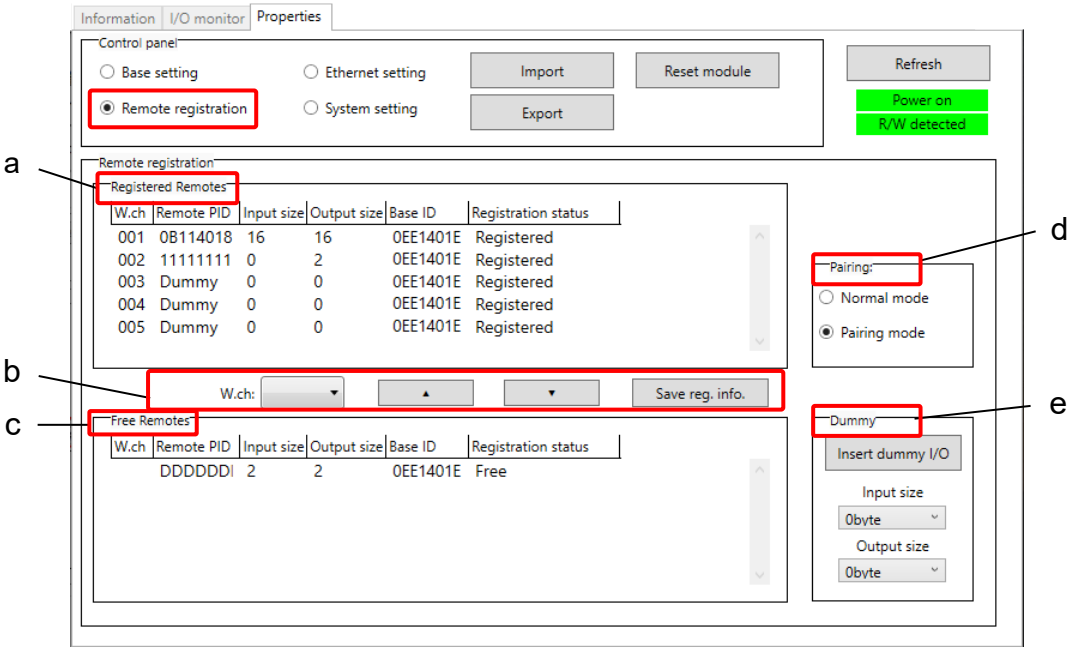
*1 Only available in protocol V.2.0.
*2 Up to 100 m between an EXW1-series Base and Remote, and up to 10 m between an EXW1-series Base and an EX600-W-series Remote.
*3 The settings and monitor function are restricted when EX600-WEN/WPN and EXW1-R# are used in combination.
*4 For combinations involving 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# or EXW1-BECAC.**
  Make changes only after unregistering any registered Remotes.
  Note that an unregistration pop-up window will appear in the I/O Configurator.

(5) Remote registration

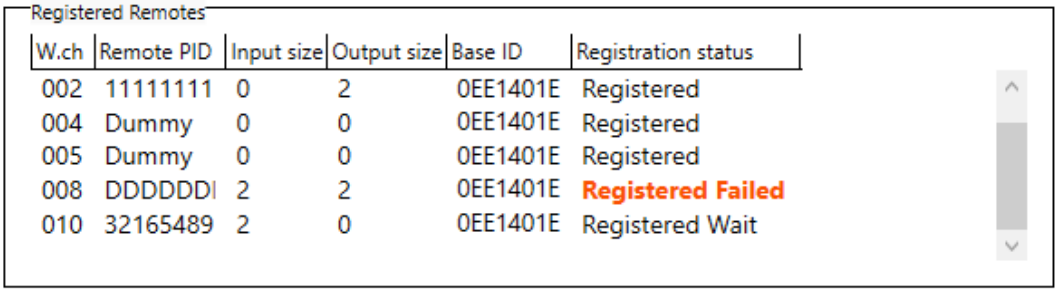
For this wireless system, it is necessary to register the PID for each product to establish communication without interference from another network. The Remote unit registration display consists of "Registered Remotes", "Remote registration buttons", "Free Remotes", "Pairing", and "Dummy" items.

* 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. (Registered information is saved ⇒ "Registered", registered information is not saved ⇒ "Registered Wait", registration is not successful ⇒ "Registered Failed") * When the registration is not successful, "Registered Failed" is displayed. Start the registration again.

(5)-b Remote registration buttons

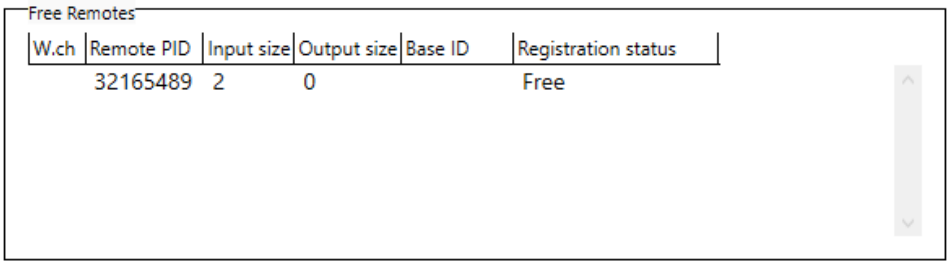
Remote registration buttons are only enabled when wireless units are in pairing mode.

- 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.

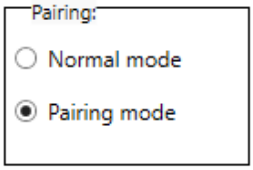


- Free Remote display

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 Administrator mode. They can be set even when power is off.

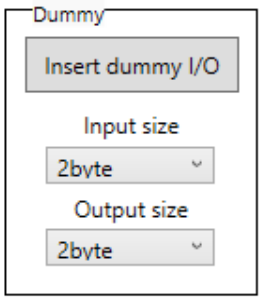


- Pairing radio button display

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.

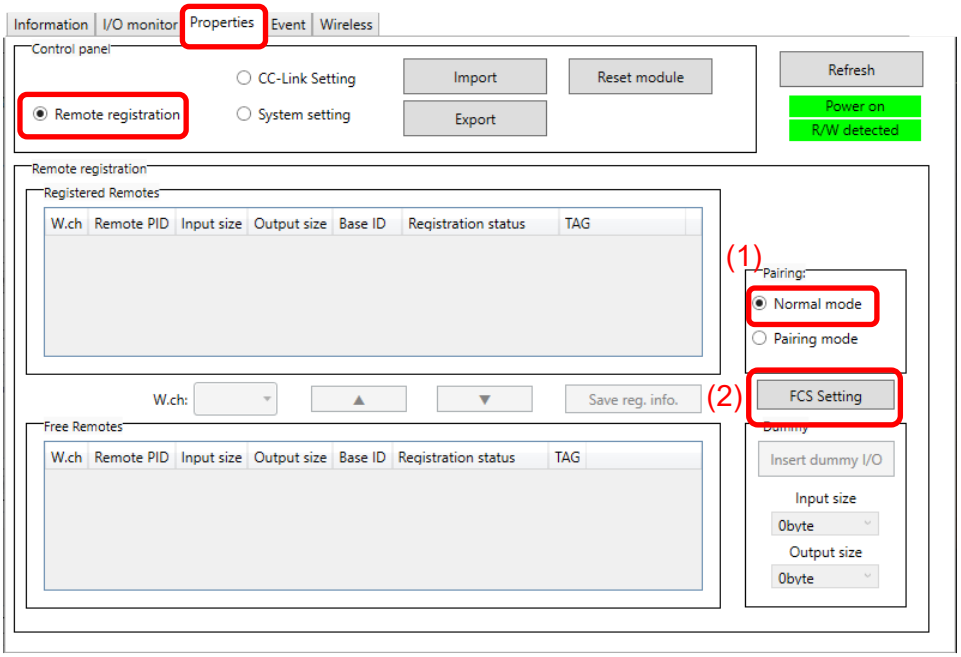
(5)-f FCS Setting (Frequency Channel Select)

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. Refer to the operation manual of the Base for details.
* If no channel is selected, communication is established on ch 79 by default.

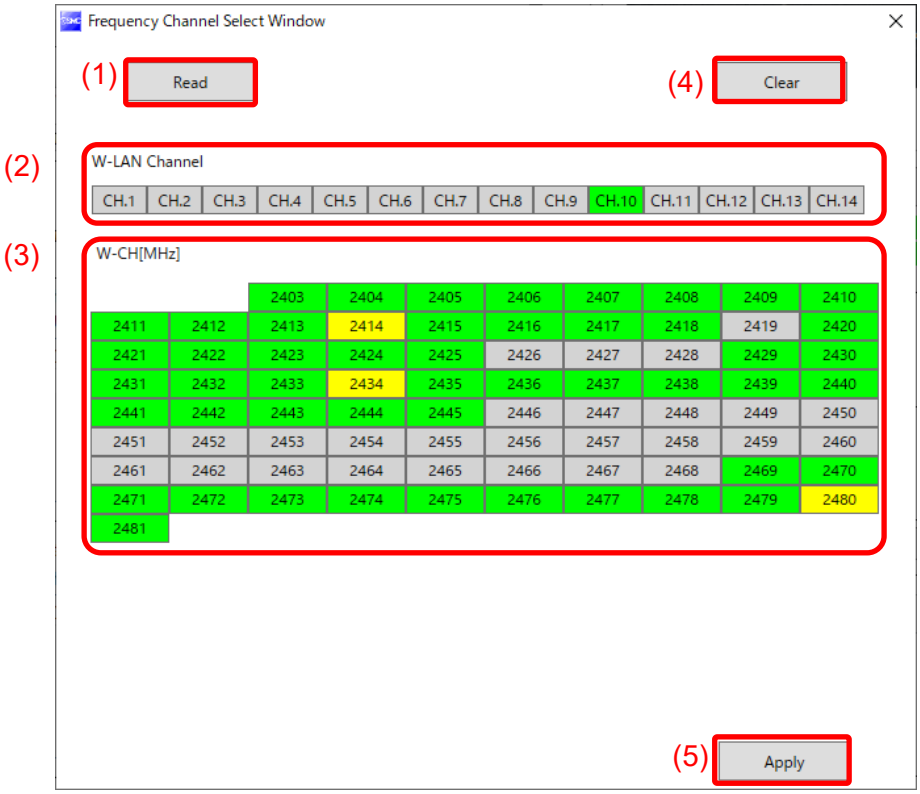
Follow the steps below to configure the function on the Remote unit registration screen on the Properties tab.

(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.



No.	Item	Description
(1)	Read button	Retrieves the current channel selection configuration.
(2)	W-LAN Channel indicators	The W-LAN indicators make it possible to select frequency channels corresponding to W-LAN channel at one time. * In the example above, W-LAN Channel: CH.10 is selected.
(3)	W-CH indicators	The W-CH indicators make it possible to select frequencies for each CH. * In the example above, frequencies 2419, 2426-2428, and 2446-2468 [MHz] are unused Channels. Note that frequencies 2446-2468 [MHz] correspond to (1) W-LAN Channel: CH.10 above.
(4)	Clear button	Select 79 frequency channels by default.
(5)	Apply button	Save the W-CH selection configuration.

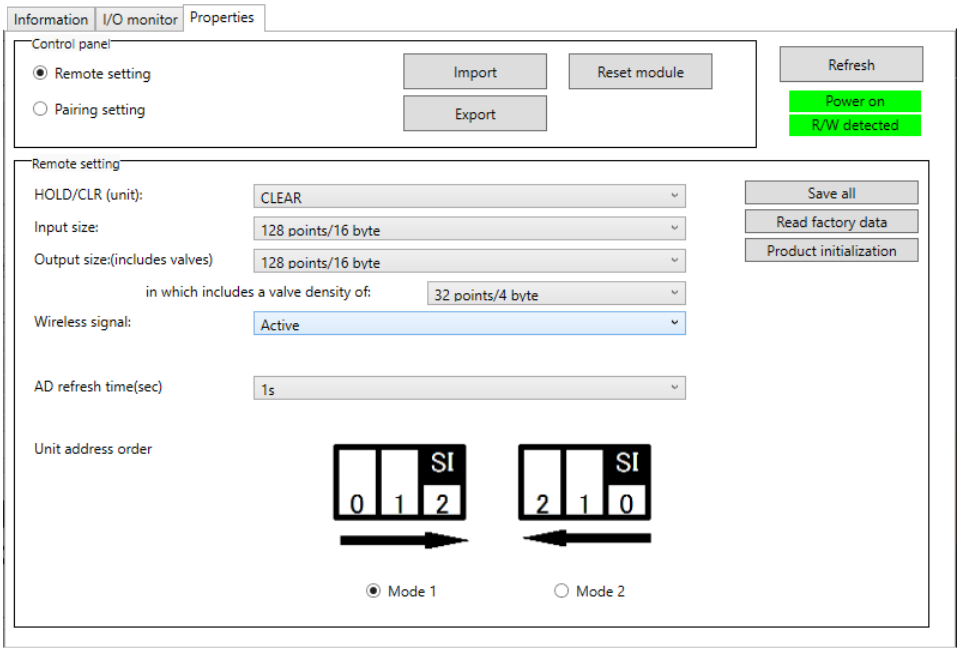
- Indicator colours

Colour	Description	Note
Green	Active frequency channel (W-CH area) W-LAN channel that does not conflict with Active frequency channels (W-LAN Channel 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.

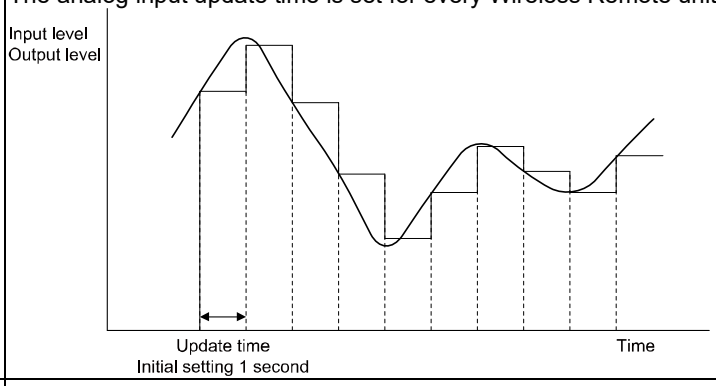


- Remote parameters

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 For the EXW1-RD#, the number is fixed at 16 (16 bits). * 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 For the EXW1-RD#, the number is fixed at 16 (16 bits). * 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# EXW1-RDM# 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. CLEAR: Clear the output. HOLD: Fix the output at the current value. Individual: Each output setting can be specified. 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. CLEAR: Clear all Remote output. HOLD: Fix all the Remote output at the current value.

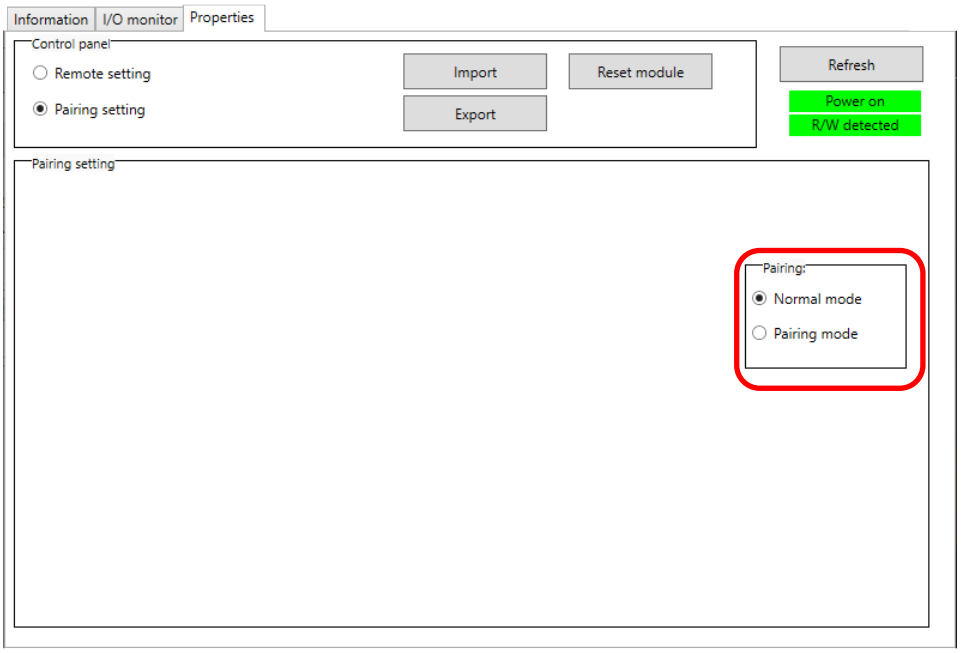
Wireless unit (manifold type) (EX600-WSV#)

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. CLEAR: Clear the output. HOLD: Fix the output at the current value. Software Control: CLEAR, HOLD or SET for individual points can be set using bit data. * 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. 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. 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. Active: Wireless communication is available. 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. The analog input update time is set for every Wireless Remote unit. 
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. The address assignment direction is changed using mode 1 / mode 2. Be careful about the I/O mapping. (Refer to the I/O Mapping Order of Wireless Base / Remote Module of the Operation Manual (page 50) for details) Mode 1: Assigned to the right from the end plate. Mode 2: Assigned to the left from the wireless unit.

(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.

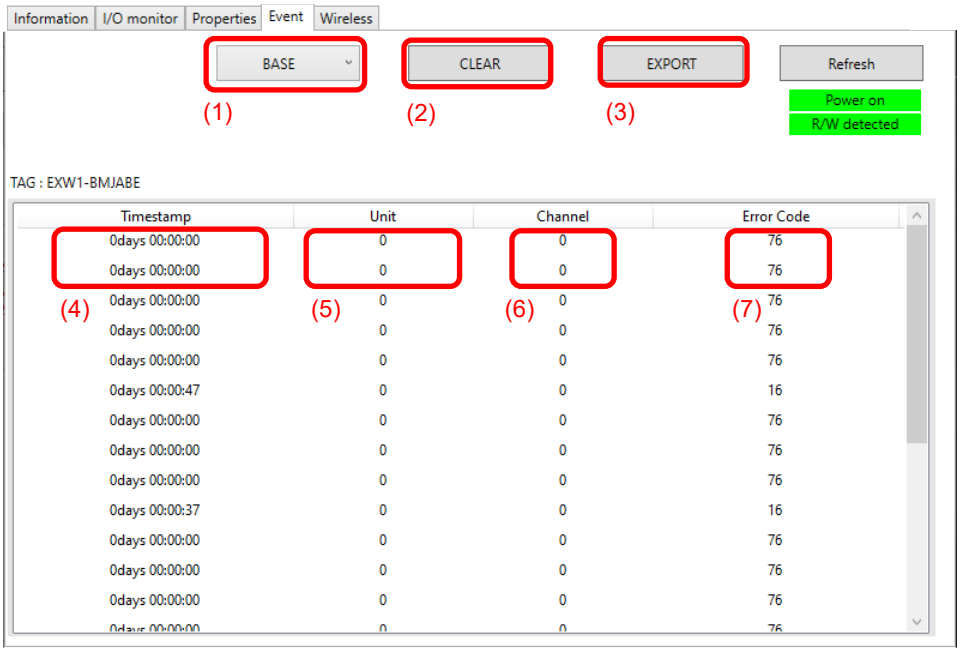


- Radio buttons for selecting the pairing mode.

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)	Clear Event Data	Clear the event data from the selected unit in “Model selection”.
(3)	Event data export	Event data can be exported to text files.
(4)	Time stamp	The time when the event was obtained is displayed. Synchronized time is displayed only in the case of protocol V.2.0. * If time is not synchronized, the time elapsed since the product is turned on is displayed. < EXW1-BMJA#> * Time synchronization needs to be performed in [System setting] on the Properties tab. < EXW1-BECAC >
(5)	Unit	The unit number is displayed.
(6)	Channel	The channel number of the Wireless Remote is displayed.
(7)	Error Code	The error code is displayed.

● Error codes

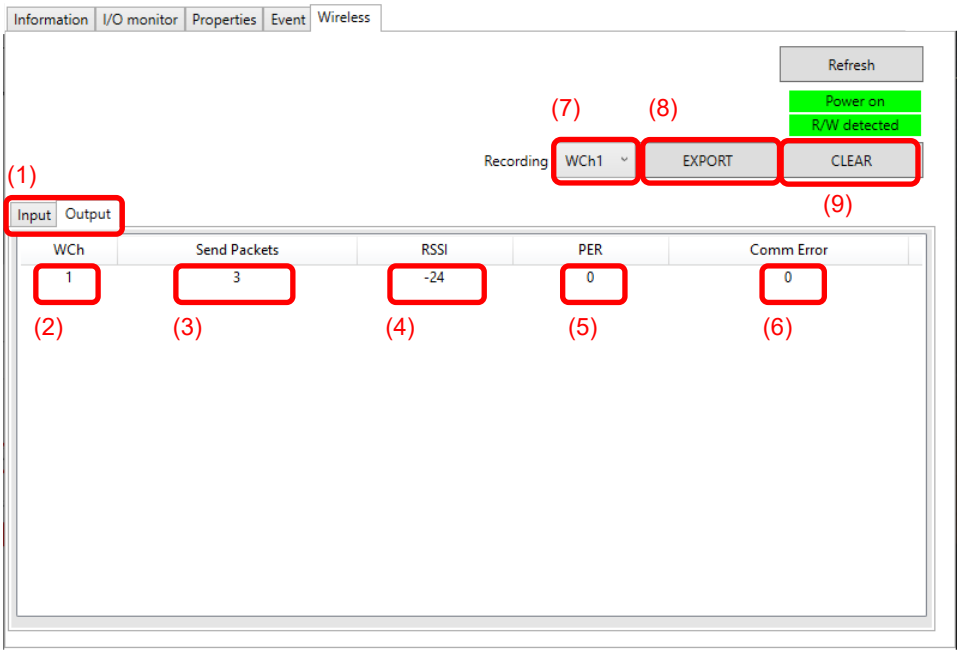
The table below shows error codes with corresponding details and diagnostics maps.

Error code	Description	Diagnostics map		
		Item	Bit no.	
			EXW1-BMJ	Except for EXW1-BMJ
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	1
17	Detection of US2 power supply voltage drop		8	0
19	Connection failure between units (during operation)		11	3
20	Connection failure between units (when power is supplied)		12	4
22	Detection of system error (when power is supplied)		14	6
23	Detection of hardware error (during operation)		15	7
64	Number of input / output points setting error	System diagnostic 3	0	
67	Wireless adaptor internal connection error		3	
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	0
73	Number of registered Remotes setting error (Outside of the wireless channel setting range)		9	1
76	Network setting error		12	-
78	Wireless registration data corrupted		14	6
79	Detection of wireless hardware error		15	7

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

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.
(9)	Clear wireless log	Clear all wireless log data.

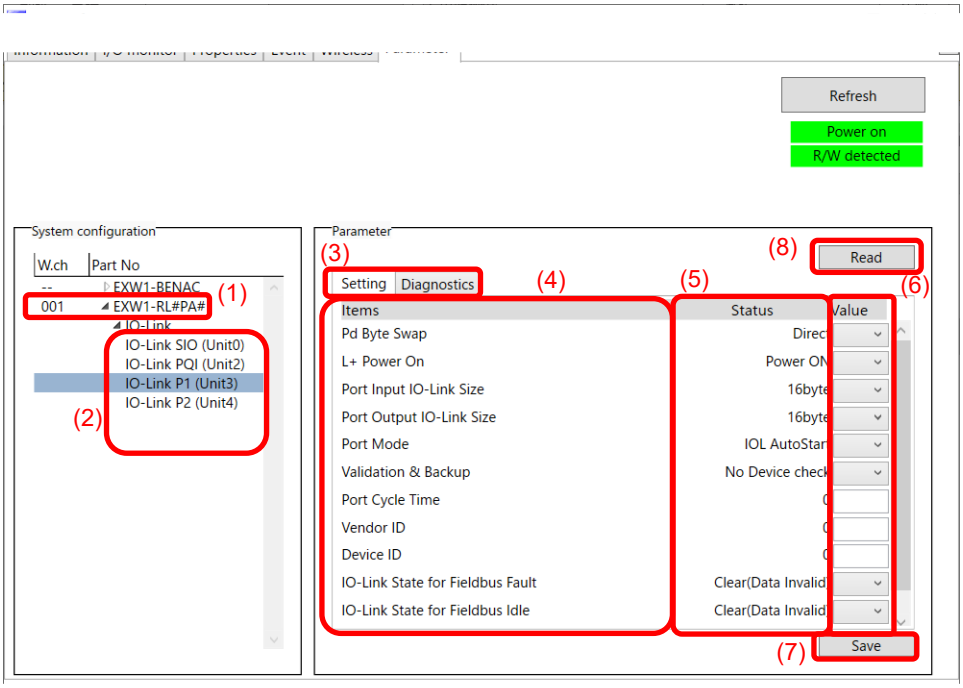
● Wireless log data files

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

Name	Date modified	Type	Size
AllInfo.csv	2021/10/01 15:53	Microsoft Excel CS...	1 KB
RcvRSSI.csv	2021/10/01 15:53	Microsoft Excel CS...	6 KB
Retries.csv	2021/10/01 15:53	Microsoft Excel CS...	1 KB
SndRSSI.csv	2021/10/01 15:53	Microsoft Excel CS...	7 KB

5.6 Parameter tab

Parameter tab consists of 2 areas, "System configuration" and "Parameter". The parameters of unit can be changed as required.



- Wireless tab display

No.	Display	Description
(1)	Part No.	Click to display remote unit parameters in the parameter area.
(2)	Unit No.	Click to display the parameters of the selected IO unit in the parameter frame.
(3)	Setting / Diagnostics Tab	Selects the displayed tab, "Setting parameter" or "Diagnostics parameter".
(4)	Item	The parameter name is displayed.
(5)	Status	Displye the current status of the parameter.
(6)	Value	Enter the parameters to change.
(7)	Save	Saves the entered parameters in “Value” to the product. The setting is available only in administrator mode. *Only settable in Administrator mode.
(8)	Read	Reload the parameters of the tabs displayed.
(9)	Clear wireless log	Clear all wireless log data.

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 / Auto	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.

Classification	Parameter name		Set value	Initial value	Setting when power is off	Note
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 .

- 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 .

- 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.1.0	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 Base unit (EXW1-BECAC) setting parameters

Classification	Parameter name		Set value	Initial value	Setting when power is off	Note
System setting	a)	I/O mapping	Auto	Auto	Available	Fixed at "Auto".
	b)	Diagnostic allocation	None / Simple / Advanced	Advanced	Available	Diagnostic information is allocated to the head of the input data of the I/O map.
	c)	Max. Remote units	15 / 31 / 63 Remotes	15 Remotes	Available	Wireless channels for the number of the set units are enabled.
	d)	Time of Wireless communication timeout	100/200/500/1,000/2,000/5,000 msec	500 msec	Available	
	e)	Power Transmission Level	High / Middle / Low	High	Available	
	f)	Wireless signal	Active / Idle	Active	Available	If set to "Idle", the wireless communication is disconnected.
	g)	Protocol	V.1.0 / V.2.0	V.2.0	Available	
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 unset	Not available	Refer to dummy Remote registration for setting 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.

- Compact Wireless Remote unit (EXW1-RLAPA8C(ClassA)) setting parameters

Classification		Parameter name	Set value	Initial value	Setting when power is off	Note
Parameter Tab Remote Unit	a)	Brown-out Detection for US1	Enable/Disable	Enable	Not vailable	Generated error when US1 power supply voltage goes under approx. 16 V.
	b)	Short Circuit Detection（L+, C/Q)	Enable/Disable	Enable	Not available	Either of the following: ·L+ power supply ·C/Q signal ·P24 power supply
	c)	AD Update time	100-60000	500ms	Not available	Update Time of IO-Link input Process data.
	d)	Output State Fieldbus FaultIdle	Clear/Hold/Individual	Clear	Not vailable	
	e)	Output State for RF Timeout	Clear/Hold/Individual	Hold	Not vailable	
Parameter Tab IO-LinkSIO Unit	a)	Ch 7-0: Hold State for Fieldbus Fault	0x00 to 0xFF	0xFF	Not available	0: Hold the output 1: Depend on output state Bit0: P1 Bit1: P2 Bit2: P3 Bit3: P4 Bit4 to 7: Reserved
	b)	Ch 7-0: Output State for Fieldbus Fault	0x00 to 0xFF	0x00	Not available	0: Turn off the output 1: Turn on the output Bit0: P1 Bit1: P2 Bit2: P3 Bit3: P4 Bit4 to 7: Reserved
	c)	Ch 7-0: Hold State for Fieldbus Idle	0x00 to 0xFF	0xFF	Not available	0: Hold the output 1: Depend on output state Bit0: P1 Bit1: P2 Bit2: P3 Bit3: P4 Bit4 to 7: Reserved
	d)	Ch 7-0: Output State for Fieldbus Idle	0x00 to 0xFF	0x00	Not available	0: Turn off the output 1: Turn on the output Bit0: P1 Bit1: P2 Bit2: P3 Bit3: P4 Bit4 to 7: Reserved
	e)	Ch 7-0: Hold State for RF TimeOut	0x00 to 0xFF	0xFF	Not available	0: Hold the output 1: Depend on output state Bit0: P1 Bit1: P2 Bit2: P3 Bit3: P4 Bit4 to 7: Reserved
	f)	Ch 7-0: Output State for RF TimeOut	0x00 to 0xFF	0x00	Not available	0: Turn off the output 1: Turn on the output Bit0: P1 Bit1: P2 Bit2: P3 Bit3: P4 Bit4 to 7: Reserved

- Compact Wireless Remote unit (EXW1-RLAPA8C(ClassA)) setting parameters (continued)

Classification	Parameter name		Set value	Initial value	Setting when power is off	Note
Parameter Tab IO-Link P#	a)	Pd Byte swap	Direct / Swap 16 bit / Swap 32 bit / Swap all	Direct	Not available	Swap the byte order of the process data, which is exchanged between fieldbus communication and IO-Link master.
	b)	L+ Power ON	Power ON / 1 : Power OFF	Power ON	Not available	For Control L+. Settable IO-Link P1/P2
	c)	Port Input IO-Link Size	Protocol setting : V.2.0 0 to 32 bytes (by 2 bytes)	P1,P2: 16byte P3,P4: 0byte	Not available	
			Protocol setting : V.1.0 0 to 14 bytes (by 2 bytes)	P1: 8byte P2: 6byte P3,P4: 0byte		
	d)	Port Output IO-Link Size	Protocol setting : V.2.0 0 to 32 bytes (by 2 bytes)	P1,P2: 16byte P3,P4: 0byte	Not available	
			Protocol setting : V.1.0 0 to 14 bytes (by 2 bytes)	P1: 8byte P2: 6byte P3,P4: 0byte		
	e)	PortMode*1	Deactivated /IOL_Manual /IOL_Autostart /DI C/Q /DO C/Q	P1, P2 : IOL_Autostart P3, P4 : Deactivated	Not available	
	f)	Validation& Backup*1	No Device Check /Type compatible Device V1.0 /Type compatible Device V1.1 /Type compatible Device V1.1, Backup+Restore /Type compatible Device V1.1, Restore	No Device Check	Not available	
	g)	PortCycle Time *1	0 to 191	0	Not available	0：As fast as possible 1 to 3：0.4ms 4 to 63：0.4 to 6.3 ms (by 0.1 ms) 64 to 127：6.4 to 31.6 ms(by 0.4 ms) 128 to 191：32 to 132.8 ms(by 1.6 ms)
	h)	VendorID*1	0 to 65535	0	Not available	Setting for vendor ID which is compared when the IO-Link device comparison function is valid.
	i)	DeviceID*1	0 to 16777215	0	Not available	Setting for device ID which is compared when the IO-Link device comparison function is valid.
	j)	IO-Link State for Fieldbus Fault	Clear(Data Valid)/ Clear(Data Invalid)/Hold	Clear/ PD Out invalid	Not available	*Clear/ PD Out valid： All outputs are turned OFF and process data outputs remain valid. *Clear/ PD Out invalid： All outputs are turned OFF and Process data outputs become invalid. *Hold： Process data outputs remain valid. IO-link master holds the last process data it received.
	k)	IO-Link State for Fieldbus Idle	Clear(Data Valid)/ Clear(Data Invalid)/Hold	Clear/ PD Out invalid	Not available	
	l)	IO-Link State for RF Timeout	Clear(Data Valid)/ Clear(Data Invalid)/Hold	Clear/ PD Out invalid	Not available	

*1 Reconnect IO-Link devices when parameters are changed. Do no chage the pairing mode during the operation.

- Compact Wireless Remote unit (EXW1-RLBPA7C(ClassB)) setting parameters

Classification		Parameter name	Set value	Initial value	Setting when power is off	Note
Parameter Tab Remote Unit	a)	Brown-out Detection for US1	Enable/Disable	Enable	Not vailable	Generated error when US1 power supply voltage goes under approx. 16 V.
	b)	Brown-out Detection for US2	Enable/Disable	Enable	Not vailable	Generated error when US2 power supply voltage goes under approx. 16 V.
	c)	Short Circuit Detection（L+, C/Q)	Enable/Disable	Enable	Not available	Either of the following: ·L+ power supply ·C/Q signal ·P24 power supply
	d)	AD Update time	100 to 60000	500ms	Not available	Update Time of IO-Link input Process data.
	e)	Output State Fieldbus FaultIdle	Clear/Hold/Individual	Clear	Not vailable	
	f)	Output State for RF Timeout	Clear/Hold/Individual	Hold	Not vailable	
Parameter Tab IO-LinkSIO Unit	a)	Ch 7-0: Hold State for Fieldbus Fault	0x00 to 0xFF	0xFF	Not available	0: Hold the output 1: Depend on output state Bit0: P1 Bit1: P2 Bit2: P24 Bit3 to 7: Reserved
	b)	Ch 7-0: Output State for Fieldbus Fault	0x00 to 0xFF	0x00	Not available	0: Turn off the output 1: Turn on the output Bit0: P1 Bit1: P2 Bit2: P24 Bit3-7: Reserved
	c)	Ch 7-0: Hold State for Fieldbus Idle	0x00 to 0xFF	0xFF	Not available	0: Hold the output 1: Depend on output state Bit0: P1 Bit1: P2 Bit2: P24 Bit3 to 7: Reserved
	d)	Ch 7-0: Output State for Fieldbus Idle	0x00 to 0xFF	0x00	Not available	0: Turn off the output 1: Turn on the output Bit0: P1 Bit1: P2 Bit2: P24 Bit3 to 7: Reserved
	e)	Ch 7-0: Hold State for RF TimeOut	0x00 to 0xFF	0xFF	Not available	0: Hold the output 1: Depend on output state Bit0: P1 Bit1: P2 Bit2: P24 Bit3 to 7: Reserved
	f)	Ch 7-0: Output State for RF TimeOut	0x00-0xFF	0x00	Not available	0: Turn off the output 1: Turn on the output Bit0: P1 Bit1: P2 Bit2: P24 Bit3 to 7: Reserved

- Compact Wireless Remote unit (EXW1-RLBPA7C(ClassB)) setting parameters (continued)

Classification	Parameter name		Set value	Initial value	Setting when power is off	Note
Parameter Tab IO-Link P#	a)	Pd Byte swap	Direct / Swap 16 bit / Swap 32 bit / Swap all	Direct	Not available	Swap the byte order of the process data, which is exchanged between fieldbus communication and IO-Link master.
	b)	L+ Power ON	Power ON / 1 : Power OFF	Power ON	Not available	For Control L+.
	c)	Port Input IO-Link Size	Protocol setting : V.2.0 0 to 32 bytes (by 2 bytes)	P1,P2: 16byte	Not available	
			Protocol setting : V.1.0 0 to 14 bytes (by 2 bytes)	P1: 8byte P2: 6byte		
	d)	Port Output IO-Link Size	Protocol setting : V.2.0 0 to 32 bytes (by 2 bytes)	P1,P2: 16byte	Not available	
			Protocol setting : V.1.0 0 to 14 bytes (by 2 bytes)	P1: 8byte P2: 6byte		
	e)	PortMode*1	Deactivated /IOL_Manual /IOL_Autostart /DI C/Q /DO C/Q	P1, P2 : IOL_Autostart	Not available	
	f)	Validation& Backup*1	No Device Check /Type compatible Device V1.0 /Type compatible Device V1.1 /Type compatible Device V1.1, Backup+Restore /Type compatible Device V1.1, Restore	No Device Check	Not available	
	g)	PortCycle Time *1	0 to 191	0	Not available	0:As fast as possible 1 to 3:0.4ms 4 to 63:0.4 to 6.3 ms (by 0.1 ms) 64 to 127:6.4 to 31.6 ms(by 0.4 ms) 128 to 191:32 to 132.8 ms(by 1.6 ms)
	h)	VendorID*1	0 to 65535	0	Not available	Setting for vendor ID which is compared when the IO-Link device comparison function is valid.
	i)	DeviceID*1	0 to 16777215	0	Not available	Setting for device ID which is compared when the IO-Link device comparison function is valid.
	j)	IO-Link State for Fieldbus Fault	Clear(Data Valid)/ Clear(Data Invalid)/Hold	Clear/ PD Out invalid	Not available	*Clear/ PD Out valid： All outputs are turned OFF and process data outputs remain valid. *Clear/ PD Out invalid： All outputs are turned OFF and Process data outputs become invalid. *Hold： Process data outputs remain valid. IO-link master holds the last process data it received.
	k)	IO-Link State for Fieldbus Idle	Clear(Data Valid)/ Clear(Data Invalid)/Hold	Clear/ PD Out invalid	Not available	
	l)	IO-Link State for RF Timeout	Clear(Data Valid)/ Clear(Data Invalid)/Hold	Clear/ PD Out invalid	Not available	

*1 Reconnect IO-Link devices when parameters are changed. Do no chage the pairing mode during the operation.

- Compact Wireless Remote unit (EXW1-RLBPA7C(ClassB)) setting parameters (continued)

Classification	Parameter name		Set value	Initial value	Setting when power is off	Note
Parameter Tab IO-Link P#	a)	Pd Byte swap	Direct / Swap 16 bit / Swap 32 bit / Swap all	Direct	Not available	Swap the byte order of the process data, which is exchanged between fieldbus communication and IO-Link master.
	b)	L+ Power ON	Power ON / 1 : Power OFF	Power ON	Not available	For Control L+.
	c)	Port Input IO-Link Size	Protocol setting : V.2.0 0 to 32 bytes (by 2 bytes)	P1,P2: 16byte	Not available	
			Protocol setting : V.1.0 0 to 14 bytes (by 2 bytes)	P1: 8byte P2: 6byte		
	d)	Port Output IO-Link Size	Protocol setting : V.2.0 0 to 32 bytes (by 2 bytes)	P1,P2: 16byte	Not available	
			Protocol setting : V.1.0 0 to 14 bytes (by 2 bytes)	P1: 8byte P2: 6byte		
	e)	PortMode*1	Deactivated /IOL_Manual /IOL_Autostart /DI C/Q /DO C/Q	P1, P2 : IOL_Autostart	Not available	
	f)	Validation& Backup*1	No Device Check /Type compatible Device V1.0 /Type compatible Device V1.1 /Type compatible Device V1.1, Backup+Restore /Type compatible Device V1.1, Restore	No Device Check	Not available	
	g)	PortCycle Time *1	0 to 191	0	Not available	0:As fast as possible 1 to 3:0.4ms 4 to 63:0.4 to 6.3 ms (by 0.1 ms) 64 to 127:6.4 to 31.6 ms(by 0.4 ms) 128 to 191:32 to 132.8 ms(by 1.6 ms)
	h)	VendorID*1	0 to 65535	0	Not available	Setting for vendor ID which is compared when the IO-Link device comparison function is valid.
	i)	DeviceID*1	0 to 16777215	0	Not available	Setting for device ID which is compared when the IO-Link device comparison function is valid.
	j)	IO-Link State for Fieldbus Fault	Clear(Data Valid)/ Clear(Data Invalid)/Hold	Clear/ PD Out invalid	Not available	*Clear/ PD Out valid： All outputs are turned OFF and process data outputs remain valid. *Clear/ PD Out invalid： All outputs are turned OFF and Process data outputs become invalid. *Hold： Process data outputs remain valid. IO-link master holds the last process data it received.
	k)	IO-Link State for Fieldbus Idle	Clear(Data Valid)/ Clear(Data Invalid)/Hold	Clear/ PD Out invalid	Not available	
	l)	IO-Link State for RF Timeout	Clear(Data Valid)/ Clear(Data Invalid)/Hold	Clear/ PD Out invalid	Not available	

*1 Reconnect IO-Link devices when parameters are changed. Do no chage the pairing mode during the operation.

- Compact Wireless Remote unit (EXW1-RLAPA8C(ClassA) / EXW1-RLBPA7C(ClassB)) diagnostic parameters

Classification	Parameter name		Display value	Note
Parameter Tab IO-Link P#	a)	PortStatusInfo	NO_DEVICE、 DEACTIVATED、 PORT_DIAG PREOPERATE、 OPERATE、 DI_C/Q、 DO_C/Q	-
	b)	PortQualityInfo	0x00 to 0xFF	0: Process data valid 1: process data invalid Bit0：input Bit1：output Bit2 to 7：Reserved
	c)	RevisionID	0x00-0xFF	IO-Link device revision ID
	d)	TransmissionRate	NOT_DETECTED, COM1, COM2, COM3	Communication speed
	e)	MasterCycleTime	0 to 255	Port cycle time 0:As fast as possible 1 to 3:0.4ms 4 to 63:0.4 to 6.3 ms (by 0.1 ms) 64 to 127:6.4 to 31.6 ms (by 0.4 ms) 128 to 191:32 to 132.8 ms (by 1.6 ms) 192 to 255:132.8 ms
	f)	InputDataLength	0 to 32	Process input data length
	g)	OutputDataLength	0 to 32	Process output data length
	h)	VendorID	0 to 65535	Vendor ID of the IO-Link device connected
	i)	DeviceID	0 to 16777215	Device ID of the IO-Link device connected

- 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-BECAC) (EXW1-RDXNE4#) (EXW1-RDYNE4#) (EXW1-RDM#E3) (EXW1-RLAPA8C) (EXW1-RLBPA7C)	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. 2. Mode is Monitor mode.	1. Disconnect the unit from the higher unit. 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. 2. The Wireless Remote is already registered. 3. Another Wireless Base is in pairing mode.	1. Check that the Wireless Remote is in registration mode. 2. When the Wireless Remote is already registered, it needs to be deleted to register it again. 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.

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
2.0.0	EX600-WEN# EX600-WSV#	First edition
2.1.0	EX600-WPN# EX600-WSV#	Version for EX600-WPN#
2.2.0	EX600-WEN# EX600-WPN# EX600-WSV#	Common version for EX600-WEN# and EX600-WPN# ACS reader / writer has been added to verified NFC reader / writers.
2.6.0	EX600-WEN# EX600-WPN# EX600-WSV#	Remote Control function added to Ethernet setting Change to wireless unit naming
2.9.0	EX600-WEN# EX600-WPN# EX600-WSV# EXW1-RDXNE4# EXW1-RDYNE4# EXW1-RDM#E3 EXW1-BMJA#	Addition of EXW1 series
2.10.0	EX600-WEN# EX600-WPN# EX600-WSV# EXW1-RDXNE4# EXW1-RDYNE4# EXW1-RDM#E3 EXW1-BMJA# EXW1-BECAC	Addition of EXW1-BECAC
2.11.0	EX600-WEN# EX600-WPN# EX600-WSV# EXW1-RDXNE4# EXW1-RDYNE4# EXW1-RDM#E3 EXW1-BMJA# EXW1-BECAC EXW1-RL#	Addition of EXW1-RL# series and Parameter tab

Revision history
A: Contents revised in several places. [August 2018] B: Contents are added. [August 2018] C: Contents revised in several places. [November 2019] D: Content changes [March 2022] E: Content changes [July 2023] F: Content changes [December 2023]

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