
**User's
Manual**

**DAQSTATION CX1000/CX2000
Functional Changes Resulting
from Firmware Upgrade
(Version 3.02 or Later)**



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This manual explains the functions that have been changed on the CX1000/CX2000 with firmware version 3.02. If you purchased a CX1000/CX2000 with firmware version 3.02 or later, change the contents of the following manuals with the contents of this manual.

Manuals Provided on the CD-ROM

Manual Title	Manual No.	Description
CX1000 User's Manual	IM 04L31A01-03E	See this manual for the descriptions of the CX1000 operations.
CX2000 User's Manual	IM 04L31A01-01E	See this manual for the descriptions of the CX2000 operations.
CX1000/CX2000 Communication Interface User's Manual	IM 04L31A01-17E	See this manual for the descriptions of communication commands.
DAQSTANDARD User's Manual	IM 04L31A01-61E	See this manual for the descriptions of the DAQSTANDARD operations.

Paper Manuals

Manual Title	Manual No.	Description
CX1000 Operation Guide	IM 04L31A01-04E	See this manual for a list of initial values of the CX1000.
CX2000 Operation Guide	IM 04L31A01-02E	See this manual for a list of initial values of the CX2000.

Operations on the CX1000/CX2000

With the functional changes, the operations on the CX1000/CX2000 change as follows:

Event Output Setting in Basic Control Settings (New Operation)

Select Common or Separate by carrying out the procedure described below.

- Common (factory default setting)
Set a common event output setting for all program patterns.
- Separate
Set the event output for each program pattern.

Displaying the Setting Display

On the CX2000

Press the keys in the following sequence:

MENU key (switch to the setting mode (control)) > **Hold down the FUNC key for 3 seconds** (switch to the basic setting mode) > **#10 soft key** (select [Control]) > **#2 soft key** (select [DI/DO/SW-registration, AUX (Alarm mode...)])

From the operation display, use the above keys to open the following setting display.

The screenshot shows the 'Control (DI/DO/SW-registration, AUX (Alarm mode...))' screen. It is divided into two main sections: 'DI/DO/SW-registration' and 'AUX'.
The 'DI/DO/SW-registration' section has a 'Module' dropdown set to 'CTRL1-DI'. Below it is a table with 6 rows, each representing a DI channel (DI001 to DI006) and a dropdown menu, all currently set to 'None'.
The 'AUX' section contains several settings:
- 'Loop number' is set to 1.
- 'Remote setting' is set to Off.
- 'Alarm mode' is set to ALWAYS.
- 'SP No. selection source' section has a 'Loop number' dropdown and a row of 6 buttons labeled 1 through 6, all set to Off.
- 'PV/SP math' is set to Off.
- 'CLOG error' is set to Error.
- 'Event output setting' is set to Common.
At the bottom, there are two buttons: 'Common' and 'Separate'.

On the CX1000

Press the keys in the following sequence:

MENU key (switch to the setting mode (control)) > **Hold down the FUNC key for 3 seconds** (switch to the basic setting mode) > **#12 soft key** (select [Control]) > **#4 soft key** (select [AUX (Alarm mode...)])

From the operation display, use the above keys to open the following setting display.

The screenshot shows the 'Setup Mode' screen for the CX1000. It is titled 'Setup Mode' and has an 'Ethernet Link' indicator in the top right corner. The main content is the 'AUX' settings section, which is identical to the CX2000 screen shown above, including the 'DI/DO/SW-registration' table and the 'AUX' configuration options. At the bottom, there are two buttons: 'Common' and 'Separate'.

Setup Procedure

1. Use the **arrow keys** to move the cursor (blue) to the [Event output setting] box. A soft key menu is displayed at the bottom of the display.
2. Press the [Common] or [Separate] **soft key**.
The box for the item you changed turns yellow, and the cursor moves to the next item.
3. Press the **DISP/ENTER key** to confirm the changes.
The boxes for the items you changed turn from yellow to white, and the cursor returns to the first item box.

Saving the Settings

1. Press the **ESC key**.
The display returns to the basic setting menu.
2. Press the **[End] soft key**.
A window appears for you to confirm the saving of the new settings.
3. Select [Yes] and press the **DISP/ENTER key**.
The operation screen is displayed.

Event Output Setting in Setting Mode (Control)

If you selected [Separate] in the Event output setting in Basic Control Settings, carry out the procedure below to set the [Pattern number] box to a program pattern number between [1] and [30].

For a description of the settings other than [Pattern number], see section 5.7, “Program Pattern Settings > Event Output Settings” in the *DAQSTATION CX2000 User’s Manual (IM 04L31LA01-01E)* or the *DAQSTATION CX1000 User’s Manual (IM 04L31LA01-03E)*.

Opening the Setting Display

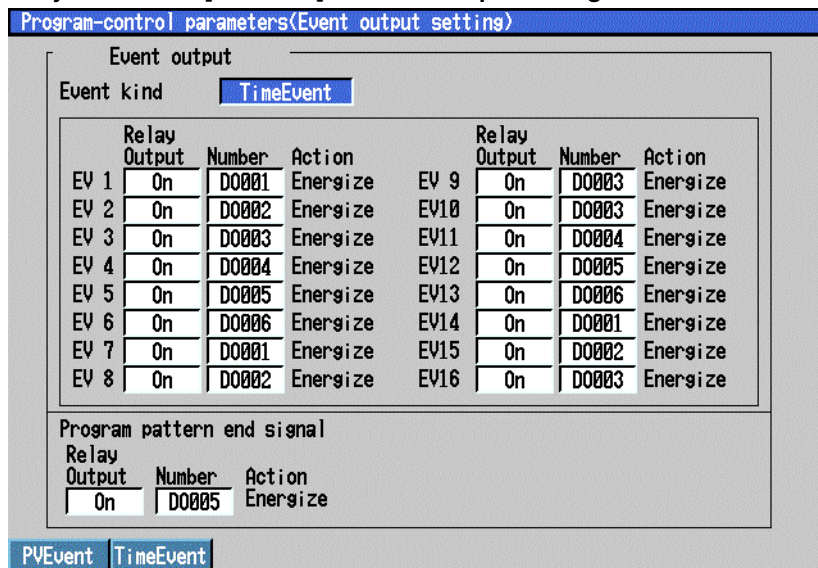
On the CX2000

Press the keys in the following sequence:

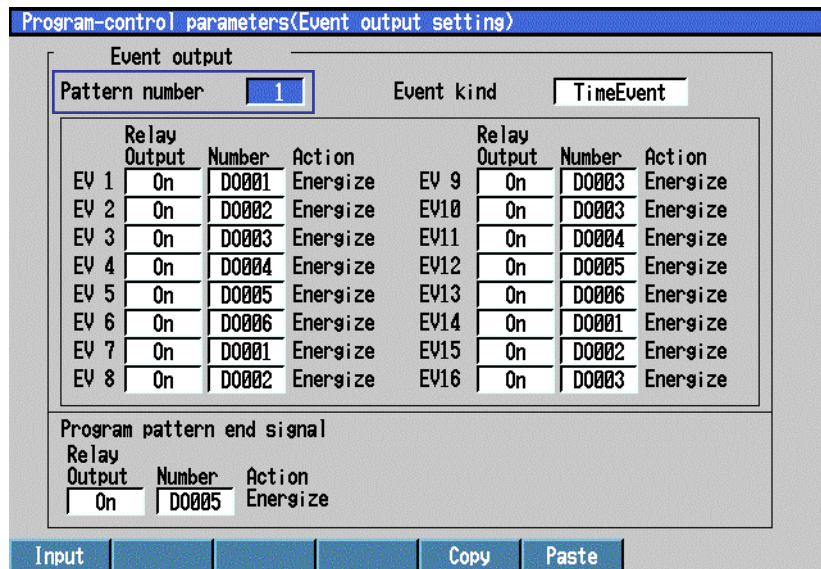
MENU key (switch to the setting mode (control)) > **#7 soft key** (select [Program-control parameters]) > **#2 soft key** (select [Event output setting])

From the operation display, use the above keys to open the following display.

- **If you selected [Common] for Event output setting in Basic Control Settings**



- If you selected [Separate] for Event output setting in Basic Control Settings



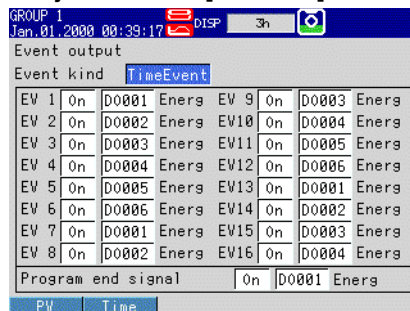
On the CX1000

Press the keys in the following sequence:

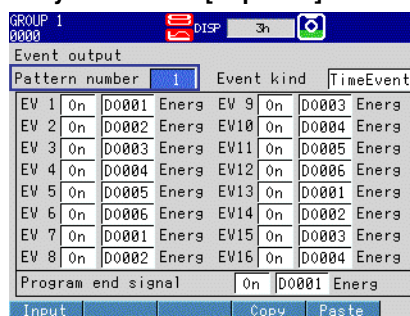
MENU key (switch to the setting mode (control)) > **#7 soft key** (select [Program-control parameters]) > **#6 soft key** (select [Event output setting])

From the operation display, use the above keys to open the following display.

- If you selected [Common] for Event output setting in Basic Control Settings



- If you selected [Separate] for Event output setting in Basic Control Settings



Setup Procedure

1. Use the **arrow keys** to move the cursor (blue) to the item box you wish to change. A soft key menu is displayed at the bottom of the display.
2. Press the **soft key** corresponding to the value you wish to select. The box for the item you changed turns yellow, and the cursor moves to the next item.
3. Repeat steps 1 and 2 to change the value of all the items you wish to change.
4. Press the **DISP/ENTER key** to confirm the changes. The boxes for the items you changed turn from yellow to white, and the cursor returns to the first item box.

Changing the Displayed Language

You can select [Chinese] by carrying out the procedure below.

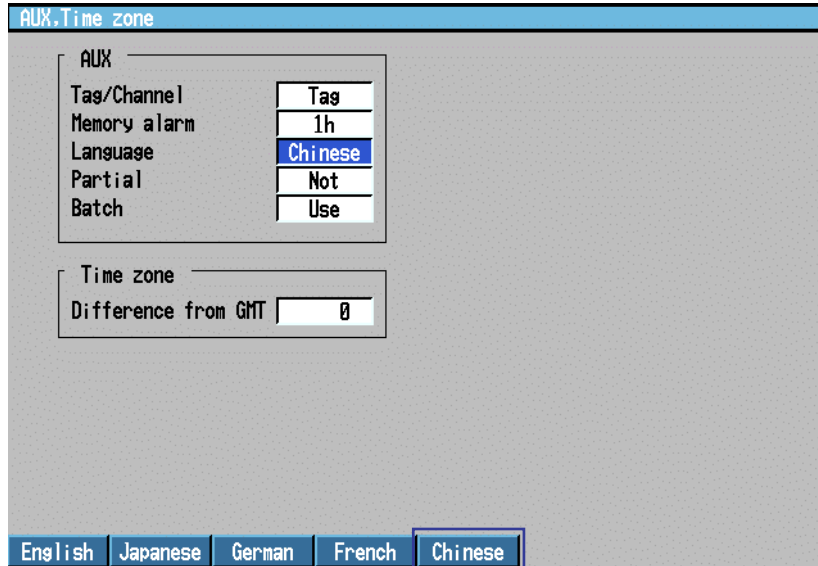
Displaying the Setting Display

On the CX2000

Press the keys in the following sequence:

MENU key (switch to the setting mode (control)) > **Hold down the FUNC key for 3 seconds** (switch to the basic setting mode) > **#9 soft key** (select [Aux, Time zone])

From the operation display, use the above keys to open the following setting display.

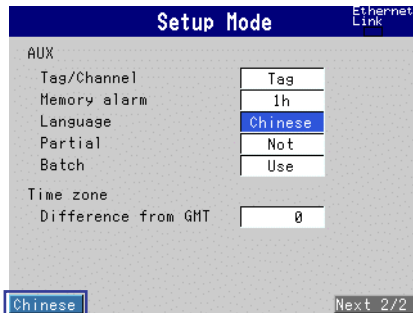


On the CX1000

Press the keys in the following sequence:

MENU key (switch to the setting mode (control)) > **Hold down the FUNC key for 3 seconds** (switch to the basic setting mode) > **#11 soft key** (select [Aux, Time zone])

From the operation display, use the above keys to open the following setting display.



Setup Procedure

1. Use the **arrow keys** to move the cursor (blue) to the [Language] box. [English], [Japanese], [German], [French], and [Chinese] appear in the soft key menu at the bottom of the display. [Chinese] appear when you press the Next 1/2 soft key.
2. Press the [English], [Japanese], [German], [French], or [Chinese] **soft key**. The [Language] box turns yellow, and the cursor moves to the next item.
3. Press the **DISP/ENTER key** to confirm the changes. The boxes for the items you changed turn from yellow to white, and the cursor returns to the first item box.

Saving the Settings

1. Press the **ESC key**.
The display returns to the basic setting menu.
2. Press the **[End] soft key**.
A window appears for you to confirm the saving of the new settings.
3. Select [Yes] and press the **DISP/ENTER key**.

Precautions to Be Taken When Loading Setup Data

As a general rule, load setup data of the same firmware version. If you must load setup data of different versions, note the following points.

- **When loading setup data that has been saved on version 3.01 using version 3.02**
Event output settings (time event, PV event, and program pattern end signal settings) in Setting mode (Control) are not loaded.
- **When loading setup data that has been saved on version 3.02 using version 3.01**
 - Event output setting (common or separate) in Basic Control Settings is not loaded.
 - Event output settings (time event, PV event, and program pattern end signal settings) in Setting mode (Control) are not loaded.
 - Setup data is not loaded when the displayed language is set to Chinese.

Function for Switching the Program Pattern Using Contact Inputs in BCD Code (Version 3.20 or Later)

In addition to the binary representation that was conventionally used to specify the program pattern number when the program pattern was switched using contact inputs, a way of specifying the program pattern using binary-coded decimal (BCD) representation has been added.

Bits Used When Specifying the Program Pattern Number Using BCD Code

Program Pattern Number Used	Pattern Number Designation Bit					
	10's digit		1's digit			
	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
1						✓
Up to 3					✓	✓
Up to 7				✓	✓	✓
Up to 9			✓	✓	✓	✓
Up to 19		✓	✓	✓	✓	✓
Up to 30	✓	✓	✓	✓	✓	✓

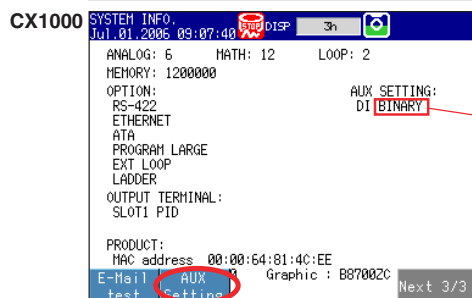
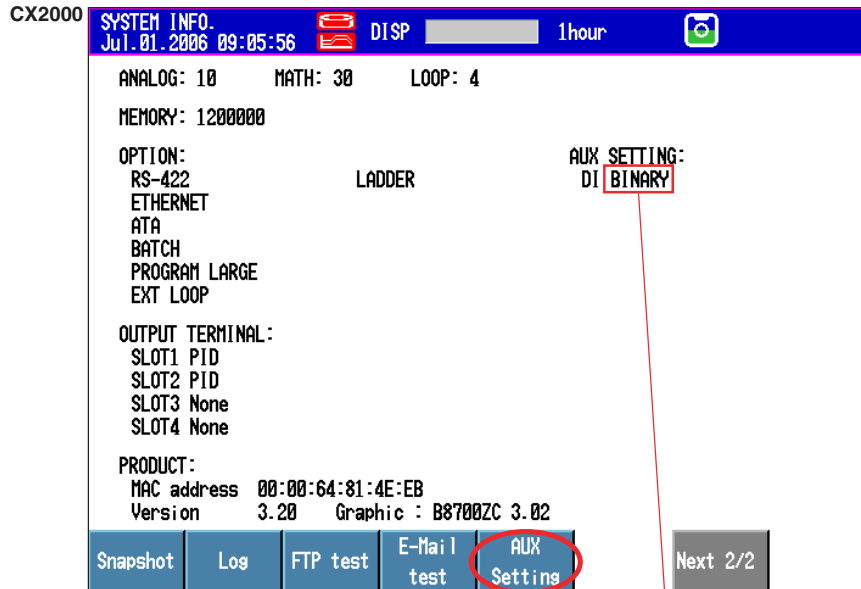
For example, set [PatternNo1bit] and [PatternNo4bit] to ON (10010) to specify pattern number [12]. Contact inputs that can be registered to [PatternNo0bit] to [PatternNo5bit] are [DI001 to DI006], [DI101 to DI106], and [DI201 to DI206] of the control output terminal block and [RI001 to RI006] of the control expansion DIO terminal block.

Switching between BCD and Binary (Version 3.20 or Later)

Use the soft keys on the system information display to switch between binary and BCD. You cannot make the switch during control operation, during data acquisition to the internal memory, or during computation (the [Aux Setting] soft key below does not appear).

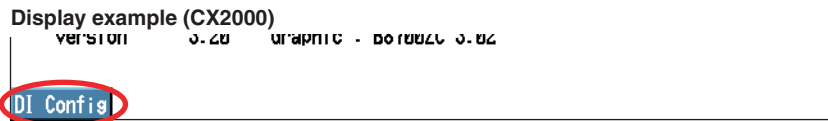
Switching from Binary to BCD

1. **FUNC key** > **[Log]** soft key (switch to SYSTEM INFO. display) > **FUNC key** > **[AUX Setting]** soft key



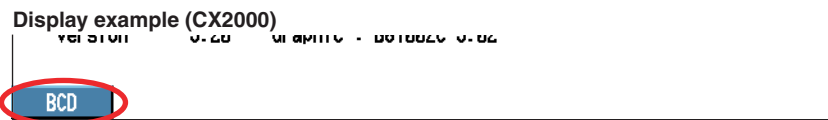
Displays the current setting (BINARY or BCD)

2. Press the **[DI Config] soft key**.



3. Press the **[BCD] soft key**.

* If BCD is currently specified, the [Binary] soft key is displayed. If binary specified, the [BCD] soft key is displayed.



Note

- The binary/BCD setting is not saved to the setup file. Thus, the binary/BCD setting does not change even if you load the setup data into the CX. Moreover, the binary/BCD setting does not change when the CX is turned OFF.
- The binary/BCD setting cannot be changed using communication commands or a PC software application (such as DAQSTANDARD).

Registering Contact Inputs When Using BCD Codes (Version 3.20 or Later)

Carry out the procedure below to register the contact inputs.

For settings other than the registration of contact inputs of BCD codes, see section 4.2, “Control > Contact input-registration/AUX (Alarm mode...)” in the *DAQSTATION CX2000 User’s Manual (IM 04L31A01-01E)* or section 4.3, “Control > Contact input-registration” in the *DAQSTATION CX1000 User’s Manual (IM 04L31A01-03E)*.

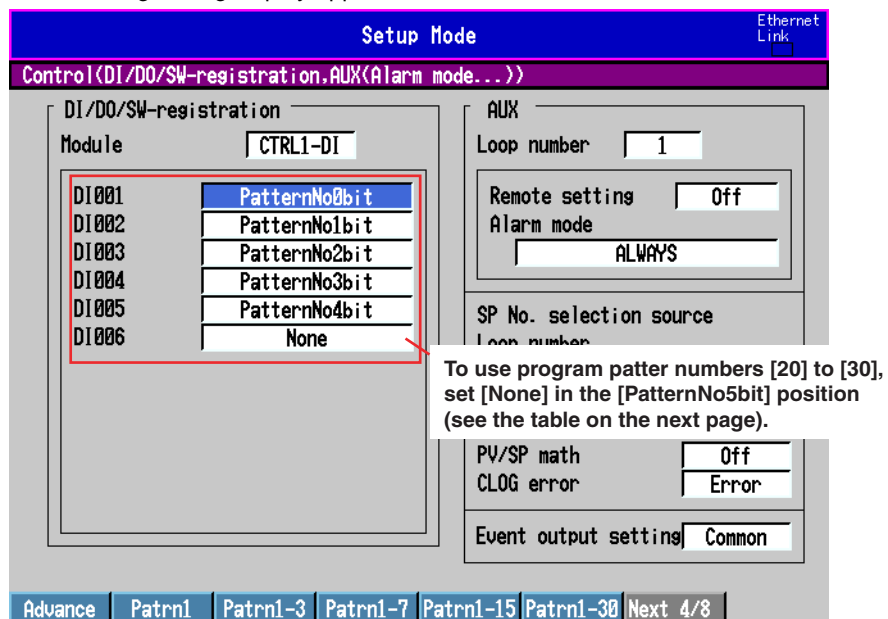
Opening the Setting Display

On the CX2000

Press the keys in the following sequence:

MENU key (switch to Set mode (control)) > Hold down the **Hold down the FUNC key for 3 seconds** (switch to basic setting mode) > **#10 soft key** (select [Control]) > **#2 soft key** (select [Contact input-registration/AUX (Alarm mode...)])

The following setting display appears.

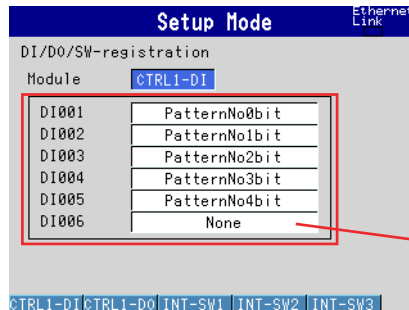


On the CX1000

Press the keys in the following sequence:

MENU key (switch to Set mode (control)) > **Hold down the FUNC key for 3 seconds** (switch to basic setting mode) > **#12 soft key** (select [Control]) > **#3 soft key** (select [Contact input-registration])

The following setting display appears.



To use program patter numbers [20] to [30], set [None] in the [PatternNo5bit] position (see the table below).

Setup Procedure

1. Use the **arrow keys** to move the cursor (blue) to the [Module] box.
A soft key menu is displayed at the bottom of the display.
2. Press the soft key corresponding to the terminal block to be used.
The box for the item you changed turns yellow, and the cursor moves to the next item.
3. Press the soft key corresponding to the program pattern number to be used.
The box for the item you changed turns yellow, and the cursor moves to the next item.

Program Pattern Number Used	Required Number of Bits (BCD)	Setup Procedure	
		CX1000	CX2000
1	1	[Ptrn 1] soft key	[Ptrn 1] soft key
Up to 3	2	[Ptrn 1 - 3] soft key	[Ptrn 1 - 3] soft key
Up to 7	3	[Ptrn 1 - 7] soft key	[Ptrn 1 - 7] soft key
Up to 9	4	[Ptrn 1 - 15] soft key	[Ptrn 1 - 15] soft key
Up to 19	5	[Ptrn 1 - 30] soft key	[Ptrn 1 - 30] soft key
Up to 30	6	[Ptrn 1 - 30] soft key	[Ptrn 1 - 30] soft key
		Be sure to set [None] for the [PatternNo5bit] position.	

4. Press the **DISP/ENTER key** to confirm the changes.
The boxes for the items you changed turn from yellow to white, and the cursor returns to the first item box.

Save the Settings

1. Press the **ESC key**.
The display returns to the basic setting menu.
2. Press the **[End] soft key**.
A confirmation dialog box appears.
3. Select [Yes] and press the **DISP/ENTER key**.
The operation screen is displayed.

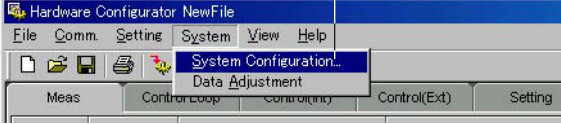
Operations on the DAQSTANDARD

With the functional changes on the CX1000/CX2000, the operations on the DAQSTANDARD change as follows:

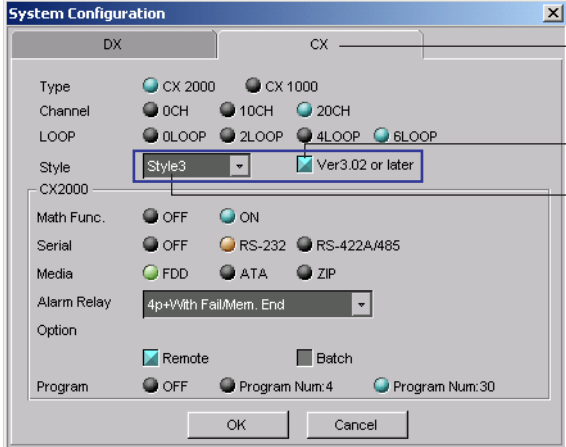
System Configuration

When creating a new hardware configuration file or when changing the system configuration to match the specifications of the CX to be connected after opening an existing hardware configuration file, set Style to Style3 and select the Ver 3.02 or later check box. For a description of other setup parameters, follow the explanations in section 3.2, "Setting and Checking the System Configuration and Initializing Setup Data" in the *DAQSTANDARD User's Manual (IM 04L31A01-61E)*.

1. Click [System Configuration] on the [System] menu.



2. The [System Configuration] dialog box opens.



3. Click [CX].

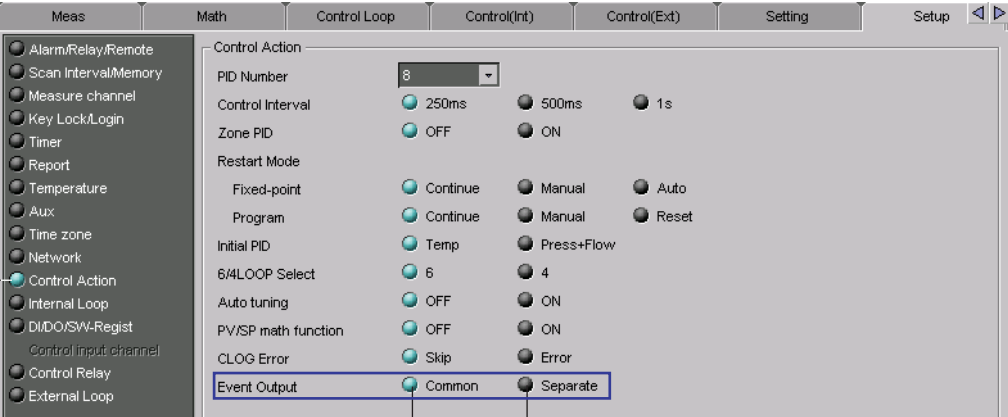
Select the check box

Choose [Style3]

Setting Control Action Related Parameters in Control Function Basic Settings

Set the [Event Output] to [Common] or [Separate]. For a description of other setup parameters, follow the explanations in section 3.3, "Control Function Basic Settings" in the *DAQSTANDARD User's Manual (IM 04L31A01-61E)*.

Click [Control Action].



When setting the event output for each program pattern

When applying the event output setting to all program patterns

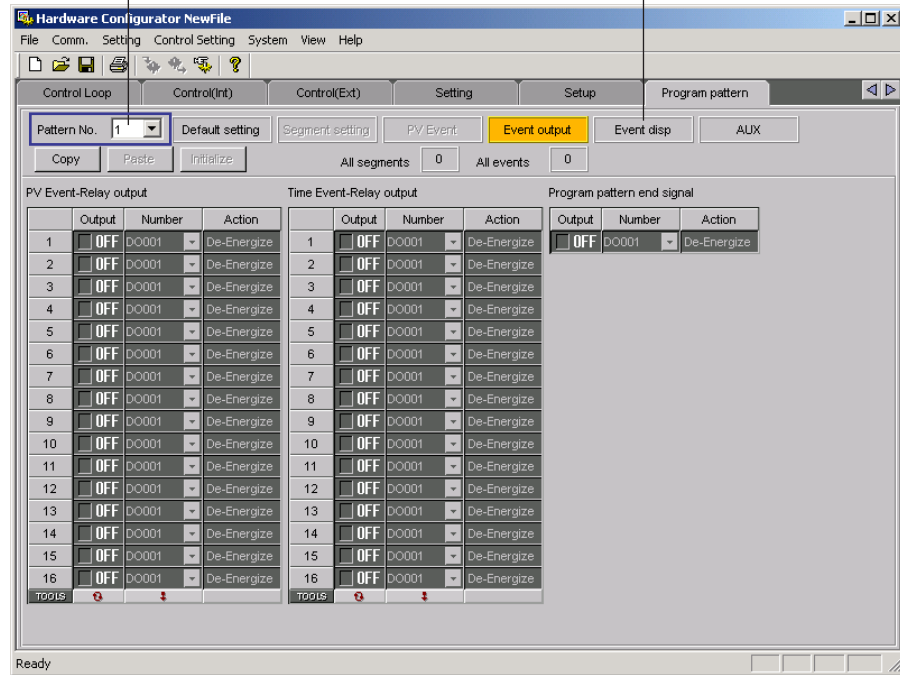
Event Output Setting in Program Control Related Setup Operations

If you set [Event Output] to [Separate], select the pattern number in the [Pattern No.] list box. For a description of the setup parameters of event output setting, follow the explanations in “Event Output Setting (PV event-relay output/Time event-relay output/ Program pattern end signal)” in section 3.6, “Program Control Related Setup Operations” in the *DAQSTANDARD User’s Manual (IM 04L31A01-61E)*.

Click [Event disp] to show the settings of event display group.

**When the event output setting is [Separate], select the pattern number.
(Cannot be selected when the event output setting is [Common].)**

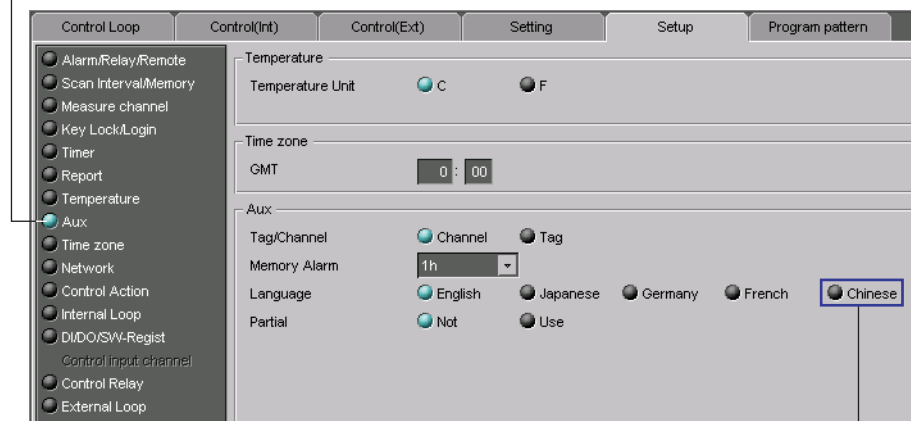
Set the event display group.



Selecting the Displayed Language

You can select Chinese as the displayed language.

Click here. (Or choose the [Setting] menu > [SETUP [Basic] Setting] > [Setting].)



You can select [Chinese].

List of Parameters

List of Parameters are given in the *DAQSTATION CX2000 Operation Guide (IM04L31A01-02E)* or the *DAQSTATION CX1000 Operation Guide (IM04L31A01-04E)*.

With the functional changes, the parameters below (underlined sections) have been changed.

Basic Setting Mode

CX2000: #9 AUX, Time zone

CX1000: #12 AUX, Time zone

Chinese has been added to AUX > Language.

Parameter	Selectable Range or Selections	Initial Value
AUX > Tag/Channel	Tag/Channel	Tag
AUX > Memory alarm	Off, 1h, 2h, 5h, 10h, 20h, 50h, or 100h	1h
AUX > Language	English, Japanese, German, French, or <u>Chinese</u>	English
AUX > Partial	Use/Not	Not
Time zone > Difference from GMT	-1200 to 1200	0
Batch	Use/Not	Use

CX2000: #10 Control <#2 DI/DO/SW-registration, AUX (Alarm mode...)>

CX1000: #12 Control <#4 AUX (Alarm mode...)>

AUX > Event output setting has been added.

Parameter	Selectable Range or Selections	Initial Value
AUX > Loop number	1 to 6	1
AUX > Remote setting	Off or Remote	Off
AUX > Alarm mode	ALWAYS, STOP, or STOP/MAN	ALWAYS
AUX > SP No. selection source 1 to 6	On/Off	1: On, 2-6: Off
AUX > PV/SP math	On/Off	Off
AUX > CLOG error	Error, Skip	Error
<u>AUX > Event output setting</u>	<u>Common/Separate</u>	<u>Common</u>

Setting mode (Control)

#7 Program control related (only when program control is ON)

"#6 Event output setting" in "Program parameter setting" is no longer available. <#2 Event output setting> is displayed directly under "#7 Program control related." As a result, "AUX (Auto message, Display position)" directly under "#7 Program control related" is displayed as #3 and "AUX (Event group)" is displayed as #4. In addition, "Hysteresis (PV event)" in <#1 Program parameter setting> is displayed as #6 and "Repeat action setting" is displayed as #7.

<#2 Event output setting>

Parameter	Selectable Range or Selections	Initial Value
<u>Event output > Pattern number</u> <u>(only when the event output setting in Basic Control Settings is set to Separate)</u>	<u>1 to 4 (/PG1), 1 to 30 (/PG2)</u>	<u>1</u>
Event output > Event kind	PVEvent, TimeEvent TimeEvent	
Event output > Relay Output EV1 to 16	On/Off	Off
Event output > On EV1 to 16 > Number	DO001 to DO006, DO101 to DO106, DO201 to DO206, RO001 to RO012, SW001 to SW036	DO001
Program pattern end signal > Relay Output	On/Off	Off
Program pattern end signal > On > Number	DO001 to DO006, DO101 to DO106, DO201 to DO206, RO001 to RO012, SW001 to SW036	DO001

Communication Commands

Communication commands are described in chapter 6, "Commands" in the *DAQSTATION CX1000/CX2000 Communication Interface User's Manual (IM04L31A01-17E)*.

New Commands

Basic Setting Commands (Control)

• Event output setting

MN Sets the event output setting method

Syntax MN p1<terminator>
p1: Event output setting method (common or separate)
Query MN[p1]?

Changed Commands

Setting Commands (Control)

• Event output setting

EO Sets the event output

When the event output setting method is separate

Syntax EO p1 , p2 , p3 , p4 , p5<terminator>
p1: Pattern number (1 to 30)
p2: Event kind (TimeEvent, PVEvent)
p3: Event number (1 to 16)
p4: Enable/disable relay output (Off, On)
p5: Relay number*
*: DO001 to DO006
DO101 to DO106
DO201 to DO206
RO001 to RO012 (expansion module)
SW001 to SW036 (internal switch)
DO001 to DO006, SW001 to SW018 on the CX1000.
Query EO?

When the event output setting method is Common

Syntax EO p1 , p2 , p3 , p4<terminator>
p1: Event kind (TimeEvent, PVEvent)
p2: Event number (1 to 16)
p3: Enable/disable relay output (Off, On)
p4: Relay number*
*: DO001 to DO006
DO101 to DO106
DO201 to DO206
RO001 to RO012 (expansion module)
SW001 to SW036 (internal switch)
DO001 to DO006, SW001 to SW018 on the CX1000.
Query EO?

PA Program pattern end signal**When the event output setting method is separate**

Syntax PA p1 , p2 , p3 <terminator>
 p1: Pattern number (1 to 30)
 p2: Enable/disable relay output (Off, On)
 p3: Relay number*
 *: DO001 to DO006
 DO101 to DO106
 DO201 to DO206
 RO001 to RO012 (expansion module)
 SW001 to SW036 (internal switch)
 DO001 to DO006, SW001 to SW018 on the CX1000.

Query PA?

When the event output setting method is Common

Syntax PA p1 , p2 <terminator>
 p1: Enable/disable relay output (Off, On)
 p2: Relay number*
 *: DO001 to DO006
 DO101 to DO106
 DO201 to DO206
 RO001 to RO012 (expansion module)
 SW001 to SW036 (internal switch)
 DO001 to DO006, SW001 to SW018 on the CX1000.

Query PA?

Basic Setting Commands (Measurement)**XU Sets the channel identification display, memory alarm time, language, whether or not to use the partial expanded display function and the batch function**

Syntax XU p1 , p2 , p3 , p4 <terminator>
 p1: The display used to identify the measurement/computation channels (TAG, CHANNEL)
 p2: Memory alarm time (OFF, 1H, 2H, 5H, 10H, 20H, 50H, 100H)
 p3: Language (ENGLISH, JAPANESE, GERMAN, FRENCH, CHINESE)
 p4: Use/Not use partial expanded display function (USE, NOT)

Query XU?

Example Set the display used to identify the measurement/computation channels to channel numbers, the memory alarm length to 1 hour, the language to English, use the partial expansion function and the batch function.
 XU CHANNEL , 1H , ENGLISH , USE , USE

Description The SP command can be used when parameter p4 of this command is set to USE.