Shibaura Machine Co., Ltd.

Robot Controller Sample Project File

For TS5000

VGA, WVGA Common Edition

Technical Guide　　　　Ver1.00

Revision History

|  |  |  |
| --- | --- | --- |
| Revision No. | Date | 内容 |
| Rev01 | 2020-09-28 | New Create |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

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# Overview

This Sample Project File is used for connection with Toshiba Machine’s controllers TS5000.

The following functions are prepared when a SCARA robot is used more conveniently.

- Controller’s status can be checked easily.

- Batch monitoring of the signal Interface relay status is available. Bit can be forcibly set/reset.

- The present location of the robot can be acquired to display it.

- The alarm being issued is displayed. Details of the alarm can be also displayed.

- Alarm history can be checked using the alarm history function of the Display unit.

- The instructions of “Alarm Reset”, “Program Reset”, “Signal Reset" and “Buzzer OFF" can be given to the

controller.

- Device Monitor, I/O Monitor, Time Chart, Connection Device Data Transfer screens are prepared

as the maintenance functions.

# Notes

1. The intellectual property rights for the files provided by Schneider Electric Japan Holdings Ltd. belong to us.
2. Downloaded files and the data extracted from those files are no guarantees of our product specifications. Please be aware of this fact.
3. The liability for use of this service lies with the customer.
4. In any case, this is not intended as a warranty for any work for a system that makes use of the data on these screens.
5. For models that can operate in this sample project, please refer to the chapter "5.2. Target device with touch panel" in this manual.
6. Any modifications made to this service by a customer are entirely at the responsibility of the customer.
7. Please be aware that we cannot respond to any inquiries for the purpose of modifying these data.
8. The content and information in the data on these screens and documentation are subject to change without prior notification.

# Restrictions

This screen data is taken from screenshots showing the representative features and functions of the GP4000 Series.

When using the sample project file, be sure to reference our product manual or the connection device manual, including the usage restrictions and safety precautions. In addition, please be aware that we are unable to accept responsibility for damage arising from reasons that cannot be attributable to us, loss of customer opportunity or profit arising from the malfunction of our product, damage arising from special circumstances regardless of whether or not we had foreknowledge of those circumstances, secondary damage, compensation for accidents, damage to our products, or other business-related guarantees.

# How to Use This Project File

When using this project file (henceforth known as “the file”), be sure to confirm the following details:

1. When using the file as-is

Confirm the communication settings.

When using this file as-is, transfer it in GP-Pro EX to a display console with a touch panel.

When connecting, refer to section “5. System configuration” of this Manual.

For communication settings, refer to “5.6 Communication Settings” of this Manual.

1. How to combine with other files

In GP-Pro EX, select [Project] → [Utilities] → [Copy from Another Project].

For further details, refer to “Startup to Shutdown” in our reference manual.

However, there are issues to be aware of, such as overlapping screen numbers, so also refer to sections 3) and later.

1. Screen numbers when combining

There may be times when things get overwritten, such as when there are duplicate screen numbers.

When combining the file with a file currently being created, be aware of the screen numbers.

Refer to “6.1 Screen List” for screen numbers that are being used by the file.

When combining with 2), it is possible to designate a copy destination screen number before starting to copy. Before combining, be sure to either designate a screen number when copying, or change the screen number in advance.

When changing a screen number, be sure to also change the screen number for the screen replacement switch.

Be aware that if no changes are made to the screen replacement destination screen number, unexpected operations may occur.

Refer to “6.2 Screen Transition” for details on screen transition.

1. Changing addresses

When changes are made to the address of a connection device that has been configured on the screen, it will not operate properly.

Do not make changes to these addresses.

1. Sampling settings when connecting files

　　 This file uses the sampling function.

When sampling settings are configured in the file currently being created, check to ensure the settings are not duplicated. If the settings are duplicated, they may be overwritten.

This file uses “Block 1.”

1. Dealing with each screen

The “Call Screen” function is used in this file. Therefore, do not delete the screen including the word “background” when checking the screen title from the screen list window.

# Device Configuration

## System Configuration

GP-4501T (10.4inch　VGA)

SP-5400WA (7inch　WVGA)



Robot Controller

・TS5000



Ethernet

Scara Robot

Figure 5‑1 System Configuration

- The power supply specifications of GP and SP vary depending on the model.

For details on the system configuration, refer to the catalog and the hardware manual.

- To use the sample project file, it is necessary to incorporate a dedicated ladder logic program in the robot controller

## Target Model

The model name described here refers to the model name selected in GP-Pro EX.

The table is created based on GP-Pro EX Ver4.09.

The sample project file is available for the models as shown below.

VGA: connection\_gp4501\_v\_TSM-TS5000\_ml\_V100.prx

WVGA: connection\_sp5400\_wv\_TSM-TS5000\_ml\_V100.prx

Table 4‑1 Target Display Model with Touch Panel

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| シリーズ名 | 機種名 | 対象プロジェクト機種 | | 備考 |
| VGA | WVGA |
| GP41\*\* Series | GP-4104 |  |  |  |
| GP-4105 |  |  |  |
| GP-4106 |  |  |  |
| GP-4107 |  |  |  |
| GP-4114T |  |  |  |
| GP-4115T |  |  |  |
| GP-4115T3 |  |  |  |
| GP-4116T |  |  |  |
| GP-42\*\* Series | GP-4201T |  |  |  |
| GP-4201TM (Modular Type) |  |  |  |
| GP-4201TW |  |  |  |
| GP-4203T |  |  |  |
| GP-43\*\* Series | GP-4301T |  |  |  |
| GP-4301TM (Modular Type) |  |  |  |
| GP-4301TW |  |  |  |
| GP-4303T |  |  |  |
| GP-4311HT | ○\*1 |  |  |
| GP-44\*\* Series | GP-4401T | ○\*1 |  |  |
| GP-4401WW |  |  |  |
| GP-45\*\* Series | GP-4501T (Analog Touch Panel) | ◎ |  |  |
| GP-4501T (Matrix Touch Panel) | ○\*1 |  |  |
| GP-4501TW |  |  |  |
| GP-4503T |  |  |  |
| GP-4521T | ○\*1 |  |  |
| GP-46\*\* Series | GP-4601T (Analog Touch Panel) | ○\*2 |  |  |
| GP-4601T (Matrix Touch Panel) | ○\*2 |  |  |
| GP-4603T | ○\*2 |  |  |
| GP-4621T | ○\*2 |  |  |
| GP-4G\*\* Series | GP-4G01 VGA (640\*480) | ○\*1 |  |  |
| GP-4G01 SVGA (800\*600) | ○\*2 |  |  |
| GP-4G01 WVGA (800\*480) |  | ○\*2 |  |
| GP-Rear Module Series | GP-4000M (Rear Modular Type) |  |  |  |
| LT-42\*\* Series | LT-4201TM (Modular Type DIO) | ○\* |  |  |
| LT-4201TM (Modular Type Analog) | ○\* |  |  |
| LT-43\*\* Series | LT-4301TM (Modular Type DIO) | ○\* |  |  |
| LT-4301TM (Modular Type Analog) | ○\* |  |  |
| LT-Rear Module Series | LT-4000M (Rear Module DIO) | ○\* |  |  |
| LT-4000M (Rear Module Analog) | ○\*1 |  |  |
| SP-5B00 | SP-5400WA WVGA (800\*480) |  | 〇\*1 |  |
| SP-5500TP VGA (640\*480) | 〇\*1 |  |  |
| SP-5500TP SVGA (800\*600) | 〇\*2 |  |  |
| SP-5500WA WXGA (1280\*800) |  | 〇\*2 |  |
| SP-5600TA XGA (1024\*768) |  |  |  |
| SP-5600TP VGA (640\*480) | 〇\*1 |  |  |
| SP-5600TP SVGA (800\*600) | 〇\*2 |  |  |
| SP-5600TP XGA (1024\*768) |  |  |  |
| SP-5600WA WXGA (1280\*800) |  | 〇\*2 |  |
| SP-5660TP VGA (640\*480) | ○\*1 |  |  |
| SP-5660TP SVGA (800\*600) | 〇\*2 |  |  |
| SP-5660TP XGA (1024\*768) |  |  |  |
| SP-5700TP VGA (640\*480) | ○\*1 |  |  |
| SP-5700TP SVGA (800\*600) | 〇\*2 |  |  |
| SP-5700TP XGA (1024\*768) |  |  |  |
| SP-5700WC FWXGA (1366\*768) |  |  |  |
| SP-5800WC FWXGA (1366\*768) |  |  |  |
| DC Power Supply Adapter SVGA (800\*600) | 〇\*2 |  |  |
| DC Power Supply Adapter XGA (1024\*768) |  |  |  |
| SP-5B10 | SP-5400WA WVGA (800\*480) |  | ◎ |  |
| SP-5500TP VGA (640\*480) | 〇\*1 |  |  |
| SP-5500TP SVGA (800\*600) | 〇\*2 |  |  |
| SP-5500WA WXGA (1280\*800) |  | 〇\*2 |  |
| SP-5600TA XGA (1024\*768) |  |  |  |
| SP-5600TP VGA (640\*480) | 〇\*1 |  |  |
| SP-5600TP SVGA (800\*600) | 〇\*2 |  |  |
| SP-5600TP XGA (1024\*768) |  |  |  |
| SP-5600WA WXGA (1280\*800) |  | 〇\*2 |  |
| SP-5660TP VGA (640\*480) | 〇\*1 |  |  |
| SP-5660TP SVGA (800\*600) | 〇\*2 |  |  |
| SP-5660TP XGA (1024\*768) |  |  |  |
| SP-5700TP VGA (640\*480) | 〇\*1 |  |  |
| SP-5700TP SVGA (800\*600) | 〇\*2 |  |  |
| SP-5700TP XGA (1024\*768) |  |  |  |
| SP-5700WC FWXGA (1366\*768) |  |  |  |
| SP-5800WC FWXGA (1366\*768) |  |  |  |
| DC Power Supply Adapter SVGA (800\*600) |  | 〇\*2 |  |
| DC Power Supply Adapter XGA (1024\*768) |  |  |  |
| SP-5B40 | SP-5400WA WVGA (800\*480) |  | ○\*1 |  |
| SP-5500TP SVGA (800\*600) | 〇\*2 |  |  |
| SP-5500WA WXGA (1280\*800) |  | 〇\*2 |  |
| SP-5600TA XGA (1024\*768) |  |  |  |
| SP-5600TP SVGA (800\*600) | 〇\*2 |  |  |
| SP-5600WA WXGA (1280\*800) |  | 〇\*2 |  |
| SP-5660TP SVGA (800\*600) | 〇\*2 |  |  |
| SP-5660TP XGA (1024\*768) |  |  |  |
| SP-5700TP SVGA (800\*600) |  |  |  |
| SP-5700TP XGA (1024\*768) |  |  |  |
| DC Power Supply Adapter SVGA (800\*600) | 〇\*2 |  |  |
| DC Power Supply Adapter XGA (1024\*768) |  |  |  |
| SP-5B41 | SP-5400WA WVGA (800\*480) |  | ○\*1 |  |
| SP-5500TP SVGA (800\*600) |  |  |  |
| SP-5500WA WXGA (1280\*800) |  | ○\*2 |  |
| SP-5600TA XGA (1024\*768) |  |  |  |
| SP-5600TP SVGA (800\*600) |  |  |  |
| SP-5600TP XGA (1024\*768) |  |  |  |
| SP-5600WA WXGA (1280\*800) |  | ○\*2 |  |
| SP-5660TP SVGA (800\*600) |  |  |  |
| SP-5660TP XGA (1024\*768) |  |  |  |
| SP-5700TP SVGA (800\*600) |  |  |  |
| SP-5700TP XGA (1024\*768) |  |  |  |
| SP-5700WC FWXGA (1366\*768) |  |  |  |
| SP-5800WC FWXGA (1366\*768) |  |  |  |
| DC Power Supply Adapter SVGA (800\*600) |  |  |  |
| DC Power Supply Adapter XGA (1024\*768) |  |  |  |
| DC Power Supply Adapter HD720p (1280\*720) |  |  |  |
| DC Power Supply Adapter WXGA (1280\*800) |  | 〇\*2 |  |
| DC Power Supply Adapter SXGA (1280\*1024) |  |  |  |
| DC Power Supply Adapter FWXGA (1360\*768) |  |  |  |
| DC Power Supply Adapter FWXGA (1366\*768) |  |  |  |
| DC Power Supply Adapter WXGA+ (1440\*900) |  |  |  |
| DC Power Supply Adapter WXGA++ (1600\*900) |  |  |  |
| DC Power Supply Adapter Full HD (1920\*1080) |  |  |  |
| SP-5B90 | SP-5490WA WVGA (800\*480) |  | ○\*1 |  |
| SP-5690WA WXGA (1280\*800) |  | ○\*2 |  |
| SP-5790WA FWXGA (1366\*768) |  |  |  |

\* The model with the “○\*1” mark can be used when “Change Display” is executed and connection device changed.

\* The model with the “○\*2” mark can be used by changing the display of the project and converting the resolution, but change the layout, connected device settings, etc. as necessary.

\* SD card or USB memory is required to use this project. SD card is required for Open Box (SP-5B40, SP-5B41)

## Software

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Manufacturer | Name | Series | Model | Remarks |
| 1 | Schneider Electric Holding Ltd. | GP-PRO EX |  | PFXEXEDV40 | Ver4.00.000 |
| 2 | Shibaura Machine Co., Ltd | Programming tool |  | TC-WORKS |  |

Table ５‑2 Software

The sample project file is created using GP-Pro EX (Ver4.00.000).

If the version you use is lower than Ver4.00.000, update is required.

## Connection Devices

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Manufacturer | Name | Series | Model | Remarks |
| 1 | Shibaura Machine Co., Ltd. | Robot controller |  | TS5000 |  |

Table ５‑3 Connection Devices

## Communication Setting

Please set the IP address set in the robot controller to the IP address of individual device setting.

It is not necessary to change the IP address of the connected device No. that is not connected.

### Communication Method

|  |  |
| --- | --- |
| Item | Note |
| Ethernet (TCP) | TS5000 |

### Number of connectable units

|  |
| --- |
| Unit |
| 4 |

### Target model

* TS5000 Series（Robot Controller）

### Connection Setting

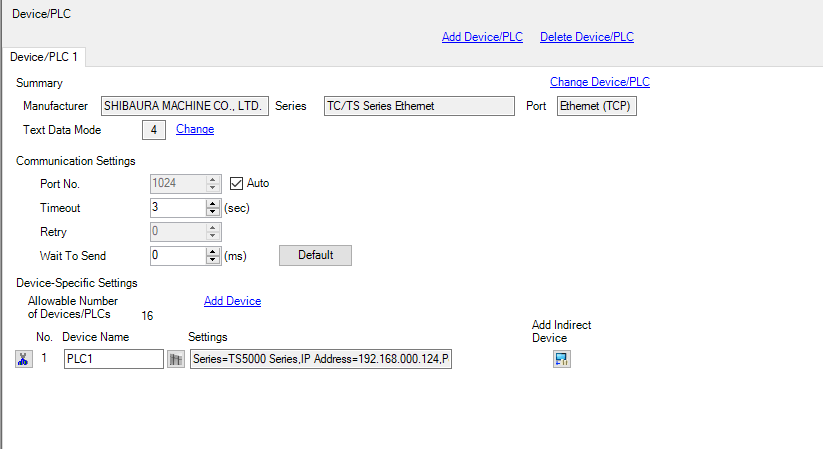
|  |  |
| --- | --- |
| Item | Initial Value |
| Port No. | Robot Series:2110 (Fixed) |
| Time Out | 3(sec) |
| Retry | 0 |
| Wait | 0(ms) |
| IP Address | Robot：192.168.0.124 (Setting changeable) |

\*For the Port No., the port number on the display unit is automatically assigned.

### GP-Pro EX Communication Settings

Please set the IP address set in the robot controller to the IP address of individual device setting.

It is not necessary to change the IP address of the connected device No. that is not connected.



|  |  |  |
| --- | --- | --- |
| Item | Range | Initial |
| Port No. | 1024 | 1024 |
| Auto | ON-OFF | ON |
| Timeout | 3 | 3 |
| Retry | 0 | 0 |
| Wait to Send | 0 | 0 |

# Screen Configuration

## Screen types

These sample parts provide the following 9 type of function

|  |  |  |
| --- | --- | --- |
| Screen Title | Screen Image | Function |
| Initial screen |  | - Sample Project initial screen |
| Status screen |  | - Status monitor of TS3000 |
| Robot I/F screen |  | - Communication of signal part with robot (main) |
| Current position monitoring screen | G:\DATA\東芝機械\コクパ\Doc\Pic\JP\Pic_jp (9).png | - Monitor screen for the current position  (SCARA and Vertical Articulated Robots) |
| JOG screen |  | - JOG operation of Robot  (SCARA and Vertical Articulated Robots) |
| Teach screen |  | - Teach operation of Robot  (SCARA and Vertical Articulated Robots)  Reading/Writing P data  from/to TS3000  Loading the current position and setting arbitrary data |
| Alarm/Warning screen |  | - Monitoring an alarm and a warning which are being generated in TS3000  - Displaying the details of the alarm and the warning  - Displaying the alarm/warning history which has been generated |
| Maintenance screen |  | - Device Monitor  - I/O Monitor Time Chart  - Device/PLC Data Transfer function  - Robot Type |
| Reset screen |  | - Alarm Reset  - Program Reset  - Signal Reset |

Table 6‑1 Screens

## Screen Transition

|  |
| --- |
| [B8670, B8671: Teach screen]  [B8660, B8661: JOG screen]  [B8630, B8631 Current Position Monitoring  [B8620-B8625: Robot Interface]  [B8610: Status]  [B8600: Initial Screen] |

Figure 6‑1 Screen Transition 1

|  |
| --- |
| CAP20110128153827296  [B8651: I/O Time Chart screen]  [B8650: Maintenance screen]  [B8643: Reset screen]  [B8640: Alarm Monitor screen]  [B8641: Alarm History screen] |

Figure 6‑2 Screen Transition 2

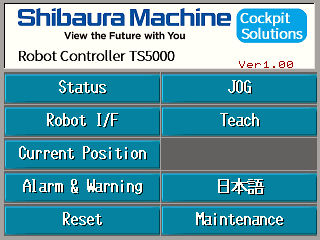
# Detailed screen explanation

## Initial Screen (B8600)

### Overview

The initial screen of the Sample Project File

### Screen Image



1

Figure 7‑1 Initial Screen

| No. | Item | Description |
| --- | --- | --- |
| 1 | Switch | Switches the screen to each monitor screen. |

Table7‑1 Initial Screen

## Status Screen (B8610)

### Overview

The status is monitored in this screen, and you can check and give instructions for servo ON/OFF and RUN/STOP.

### Screen Image

9

1

2

3

4

5

6

7

8

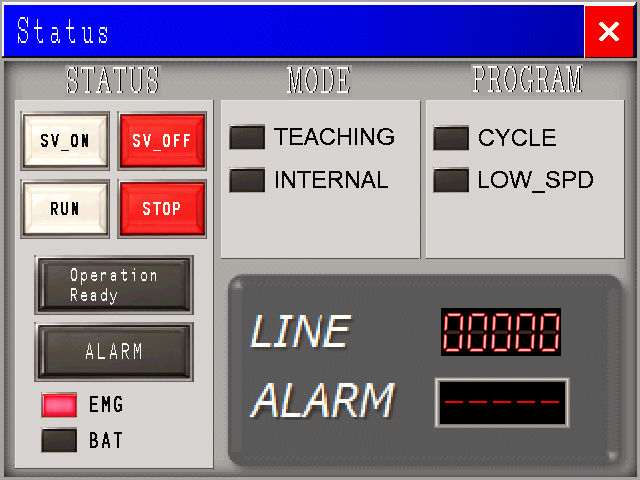


Figure 7‑2 Status Screen

| No. | Item | Description |
| --- | --- | --- |
| 1 | Switch/Lamp | Gives an instruction for turning ON/OFF the servo and displays the state with lamp. |
| 2 | Switch/Lamp | Gives an instruction for running and stopping the program and displays the state with lamp. |
| 3 | Lamp | Lit when the controller is ready. |
| 4 | Lamp | Lit while an alarm is generated. |
| 5 | Lamp | EMG is lit during emergency stop.  BAT is lit while the battery alarm is generated. |
| 6 | Lamp | The selected operation mode is lit. |
| 7 | Lamp | CYCLE is lit in the cycle operation mode.  LOW\_SPD is lit in the low speed mode. |
| 8 | Numeric Display | LINE: The number of program execution steps is displayed.  USER: The value specified for “PLCDATAW” of the program is displayed.  ALARM: The alarm code being generated is displayed.    The numerical values cannot be input directly. |
| 9 | Switch | Switches the screen to the initial screen. |

Table 7‑2 Status Screen

## Robot I/F Screen (B8617-B8628)

### Overview

The interface relay state of the signal exchanges is monitored in this screen.

### Screen Image

3

2

1

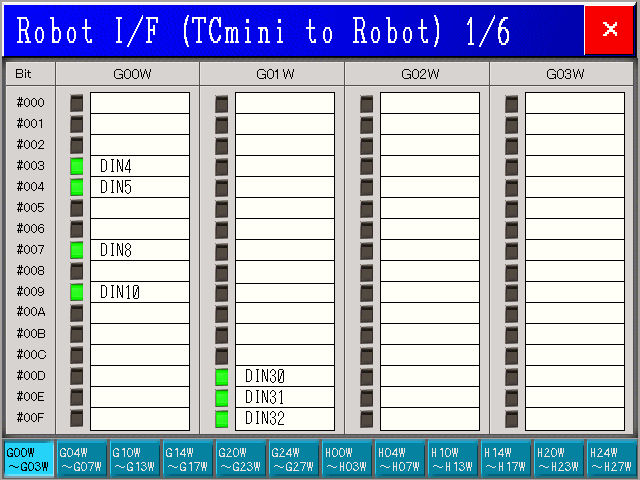


Figure 7‑3 Robot Interface Screen

| No. | Item | Description |
| --- | --- | --- |
| 1 | Switch/Lamp | Lit when the bit of the address concerned is ON.  Bit can be forcibly set with touch operation. |
| 2 | Switch | Changes the address to be monitored. |
| 3 | Switch | Switches the screen to the initial screen. |

Table 7‑3 Robot I/F Screen

## Current Position Monitor Screen (B8630, B8631)

### Overview

The current position of the robot is acquired.

The value is an integer of -32768 to 32767mm (deg), and the value below the decimal point is rounded down.

The screen corresponding to the robot type selected on the Maintenance screen is displayed.

### Screen Image

3

3

1

2

1

2

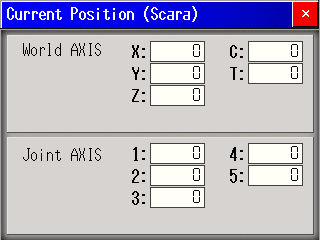
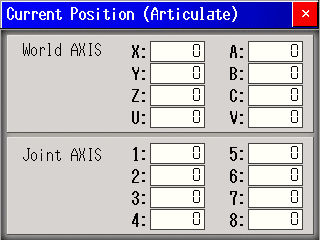
　

Figure 7‑4 Current Value Monitor Screen (SCARA) Figure 7‑5 Current Value Monitor Screen (Vertical Articulated)

| No. | Item | Description |
| --- | --- | --- |
| 1 | Numerical Display | Displays the current position in the World Axis system. |
| 2 | Numerical Display | Displays the current position in the Joint Axis system. |
| 3 | Switch | Switches the screen to the initial screen. |

Table 7‑4 Current Value Monitor Screen

## JOG Screen (B8660, B8661)

### Overview

The arm is operated in this screen.

The arm operates by touching each coordinate and axis in the JOG screen.

### Screen Image

6

1

4

5

2

3

6

1

4

5

2

3

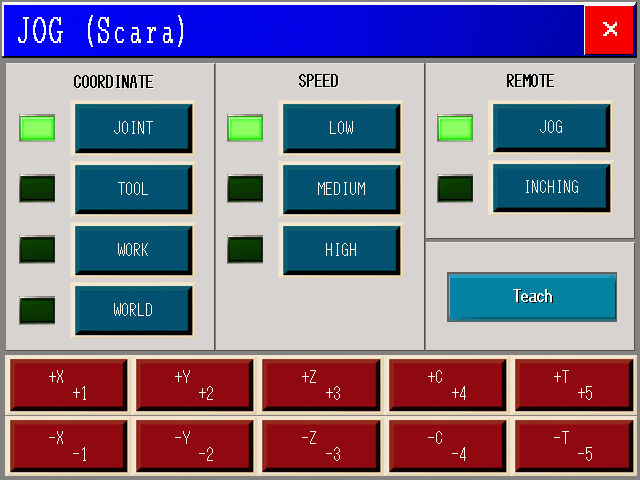
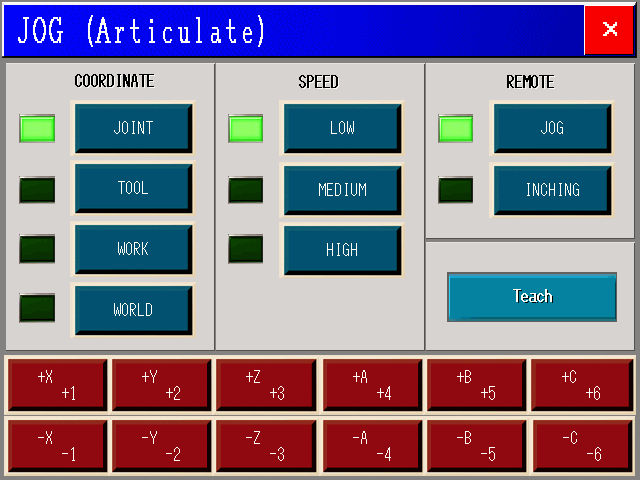
　

Figure 7‑6 JOG Screen (SCARA) Figure 7‑7 JOG Screen (Vertical Articulated)

| No. | Item | Description |
| --- | --- | --- |
| 1 | Switch/Lamp | Displays and selects the coordinate system to be operated. |
| 2 | Switch/Lamp | Displays and selects the speed of the arm. |
| 3 | Switch/Lamp | Displays and selects the operation when the [6] button is pressed. |
| 4 | Switch | Switches the screen to the initial screen. |
| 5 | Switch | Switches the screen to the Teach screen. |
| 6 | Switch | Operates the arm according to the axis and coordinates. |

Table 7‑5 JOG Screen

## Teach Screen (B8670, B6871)

### Overview

The teach point data is displayed in this screen.

The controller's teach points can be displayed and edited in this screen.

Moreover, the current position is acquired and set it as a teach point.

### Screen Image

1

2

5

4

3

6

1

2

5

4

6

3

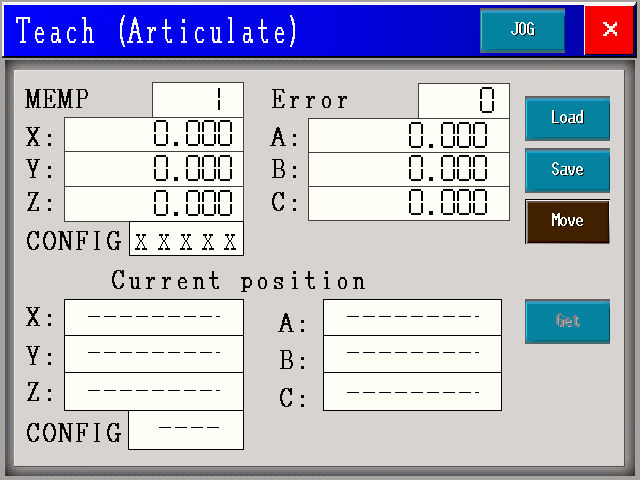
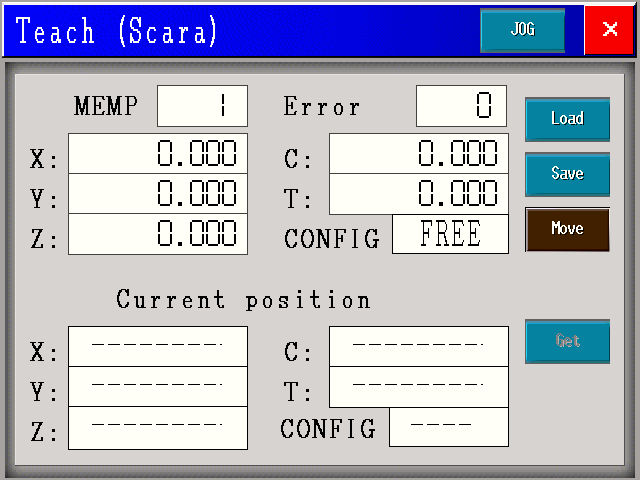


Figure 7‑8 Teach Screen (SCARA) 　　Figure 7‑9 Teach Screen (Vertical Articulated)

| No. | Item | Description |
| --- | --- | --- |
| 1 | Numerical Display | Displays the teach point.  Numerical values can also be input. |
| 2 | Numerical Display | Displays the current position of the arm.  Displays “---“ while the teach point is read and written. |
| 3 | Switch | Switches the screen to the JOG screen. |
| 4 | Switch | Switches the screen to the initial screen. |
| 5 | Switch | Load: The value of “P\*\*” is loaded from the controller to be displayed in the [1] area.  Save: The value of [1] is saved to the controller as the value of “P\*\*”.  Move: The controller will move the axis to the position of “P\*\*”. |
| 6 | Switch | The displayed current position is loaded and displayed it in [1]. |

Table 7‑6 Teach Screen

## Alarm/Warning Screen (B8640)

### Overview

Display the currently generated error. (Maximum, 10 errors)

### Screen Image

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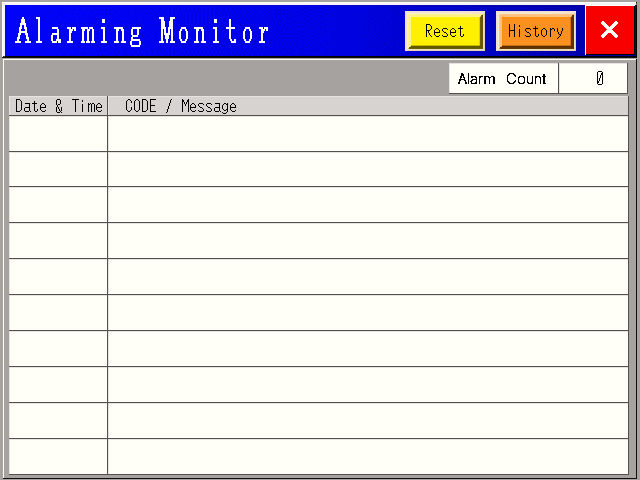


Figure 7‑10 Alarm/Warning Monitor Screen

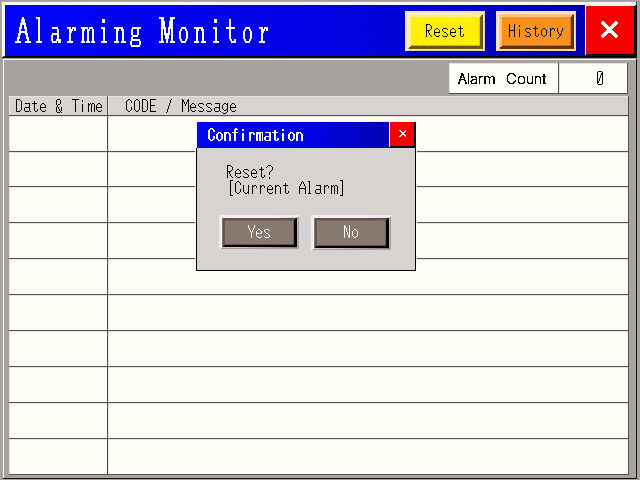
|  |  |  |
| --- | --- | --- |
| No. | Item | Description |
| 1 | Switch | Switches the screen to the alarm history screen. |
| 2 | Switch | Display the alarm reset confirmation window |
| 3 | Data Display | Displays the alarm code and alarm message being generated. |
| 4 | Data Display | Displays the date and time of alarm occurred. |
| 5 | Numeric Display | Displays the alarm count of the alarm being generated. |
| 6 | Switch | Switches the screen to the initial screen. |

Table ７‑7 Alarm/Waring Monitor Scree

### Alarm Reset Window(W0201)

Display the alarm reset confirmation window.

Press the reset button to clear the alarm currently occurring on the robot controller.

3

1

2

Figure ７‑11 Alarm/Warning Monitor Screen and confirmation window

|  |  |  |
| --- | --- | --- |
| No. | Item | Description |
| 1 | Switch | Performs an alarm reset and close window.  Clears the alarm currently occurring on the robot controller. |
| 2 | Switch | Close the window without alarm reset. |
| 3 | Switch | Close the window. |

Table ７‑ 8　Alarm Reset window

## Alarm History Monitor Screen (B8641)

### Overview

Display the past error history (Maximum, 1024 errors)

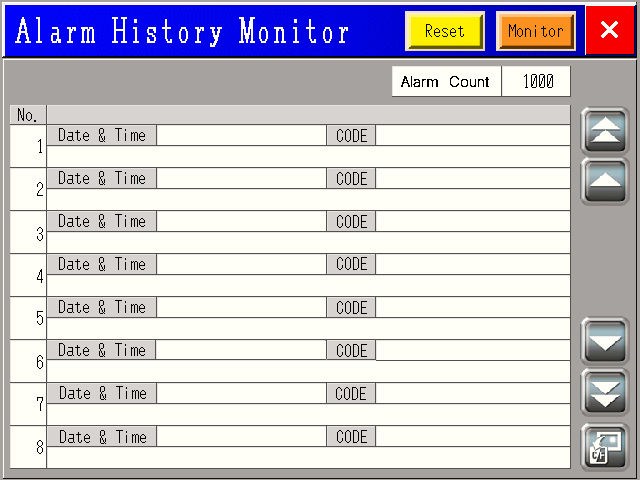
### Screen Image

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Figure 7‑12 Alarm History Monitor Screen

|  |  |  |
| --- | --- | --- |
| No. | Item | Description |
| 1 | Switch | Switches the screen to the current alarm monitor screen. |
| 2 | Switch | Display the alarm history reset window |
| 3 | Data Display | Displays the code of alarm history being generated. |
| 4 | Data Display | Displays the date and time of alarm history occurred. |
| 5 | Data Display | Displays the message of alarm history being generated. |
| 6 | Switch | Saves alarm history information stored in the touch panel in USB memory in the CSV file format.  The file name is created based on the data saved date.  Ex)  When a file is saved on January 1st, the file name should be as follows:  \ALARM\Z300101.csv |
| 7 | Switch | Scrolls to display the whole alarm history. (Max 1024) |
| 8 | Numeric Display | Displays the alarm count of the alarm history. |
| 9 | Switch | Switches the screen to the initial screen. |

Table ７‑9 Alarm History Monitor screen

Alarm history reset window(W0202)

Display the alarm history reset window.

Clears the alarm currently history on the robot controller.

3

1

2

Figure ７‑13 Alarm History Monitor Screen and alarm history reset window

|  |  |  |
| --- | --- | --- |
| No. | Item | Description |
| 1 | Switch | Performs an alarm history reset and close window.  Clears the alarm history on the robot controller. |
| 2 | Switch | Close the window without alarm history reset. |
| 3 | Switch | Close the window. |

Table ７‑ 10　Alarm History reset window

### D-script

* ID00000　Scroll Up

Scroll alarm history to the next page.

* ID00001　Scroll Down

Scroll alarm history to the previous page.

* ID00002　TOP

Display the latest alarm history data.

* ID00003　Bottom

Display the first alarm history data.

* ID00004　Alarm number store

Store Alarm History number.

* ID00005　Setting

Settings when the alarm history screen is displayed.

### Global D-Script (ID: 8000)

Global D-Script is used to acquire the date for the file name when the CSV file of the alarm history is saved.

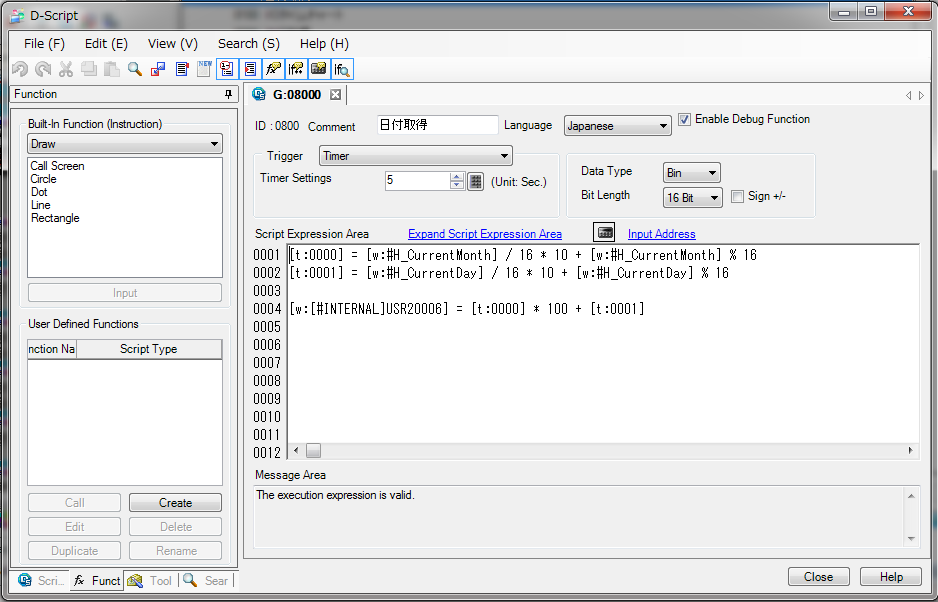


Figure ７‑14 Date Acquisition Screen

## Reset operation screen (B8643)

### Overview

The instructions of "Alarm Reset", "Program Reset", and "Signal Reset" are output to the controller. Three switches of this screen are set to the momentary operation.

When time in which the switch is pressed is short, the controller may not receive each reset instruction.

### Screen Image

2

1

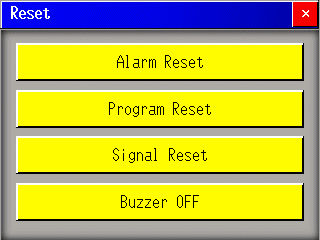


Figure ７‑15 Reset Screen

| No. | Item | Description |
| --- | --- | --- |
| 1 | Switch | Outputs instructions of "Alarm Reset", "Program Reset", and "Signal Reset" to the controller. |
| 2 | Switch | Switches the screen to the alarm monitor screen. |

Table ７‑11 Reset Screen



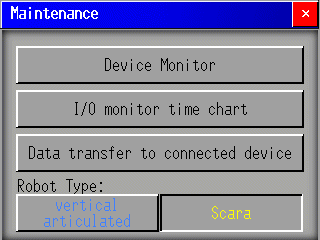
## Maintenance Screen (B8650)

### Overview

The Maintenance Screen is used for selecting a maintenance function.

Currently, three functions (“Device Monitor”, “I/O monitor time chart”, and “Data transfer to connected device”) are available.

### Screen Image



1

3

2

Figure ７‑16 Maintenance Screen

| No. | Item | Description |
| --- | --- | --- |
| 1 | Switch | Switches the screen to each of the “Device Monitor”, “I/O monitor time chart”, and “Data transfer to connected device” screen. |
| 2 | Switch/Lamp | Switches the robot types.  Default: “Scara” |
| 3 | Switch | Switches the screen to the initial screen. |

Table ７‑12 Maintenance Screen

\* For the “Device Monitor” and “Data transfer to connected device” functions, the standard function of the connection driver (Toshiba Machine TC Series) is used.

Refer to the reference manual of GP-Pro EX for details.

## I/O Time Chart Monitor Screen (B8651)

### Overview

The I/O Time Chart Monitor screen displays the ON/OFF timing of each signal.

Note) The sampling time is 100ms. ON/OFF of less than 100ms cannot be acquired.

### Screen Image

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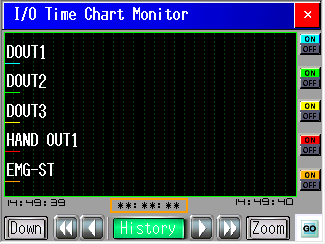


Figure ７‑17 I/O Time Chart Monitor Screen

| No. | Item | Description |
| --- | --- | --- |
| 1 | Graph | Displays the ON/OFF status of each signal in the graph. |
| 2 | Switch | Changes the display of the data in the past. |
| 3 | Switch | Switches display/non-display of each channel. |
| 4 | Switch | Starts/Stops acquiring the data.  The history display button will be enabled when it is pressed for 1 or longer seconds. |
| 5 | Switch | Switches the screen to the initial screen. |

Table ７‑13 I/O Time Chart Monitor Screen

### Global D-Script (ID: 8100)

Bit data is converted to Word data in order to display the bit data in the graph.

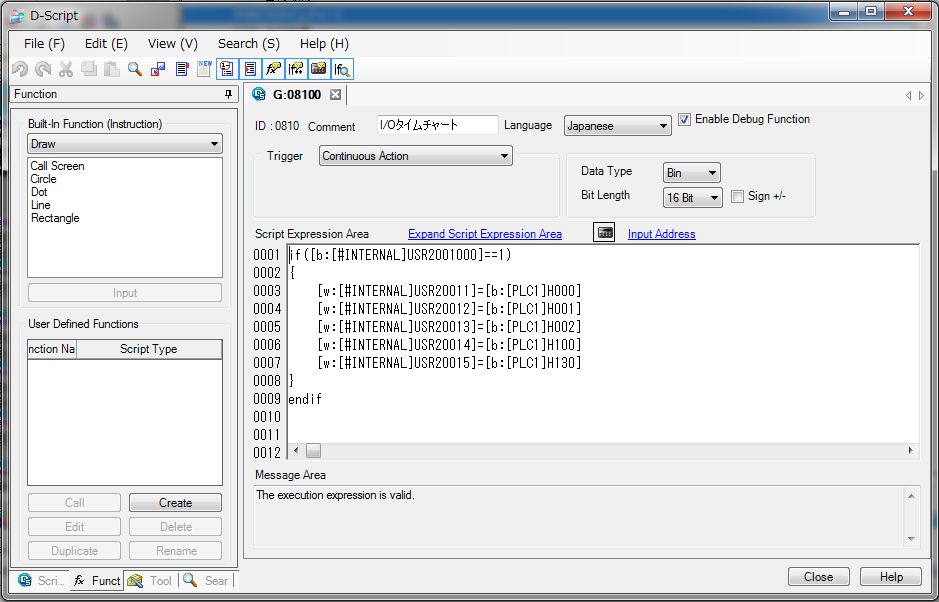


Figure ７‑18 Global D-Script

### Sampling Setting (Group 1)

Sampling is used to acquire the data.

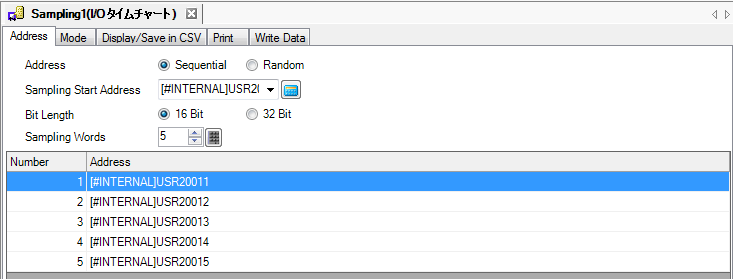


Figure ７‑19 Address Setting

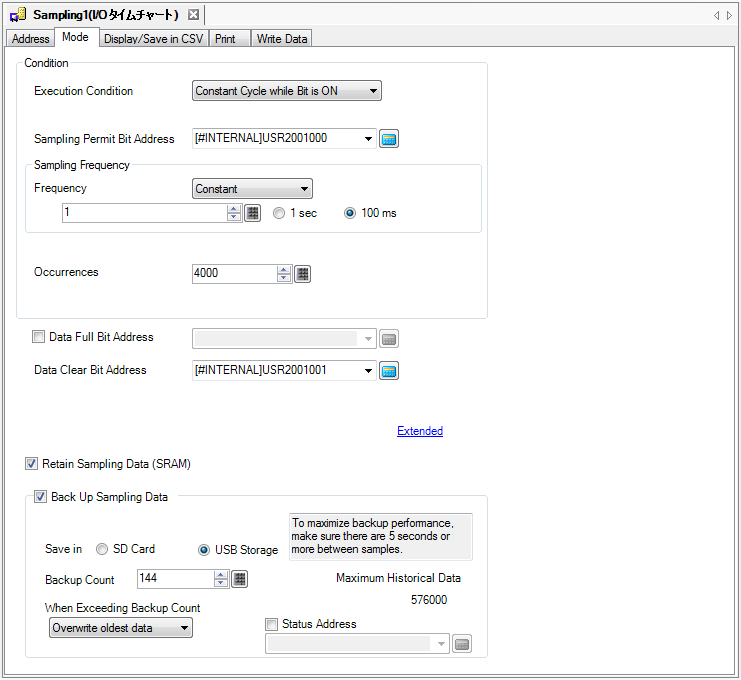


Figure ７‑20 Mode Setting

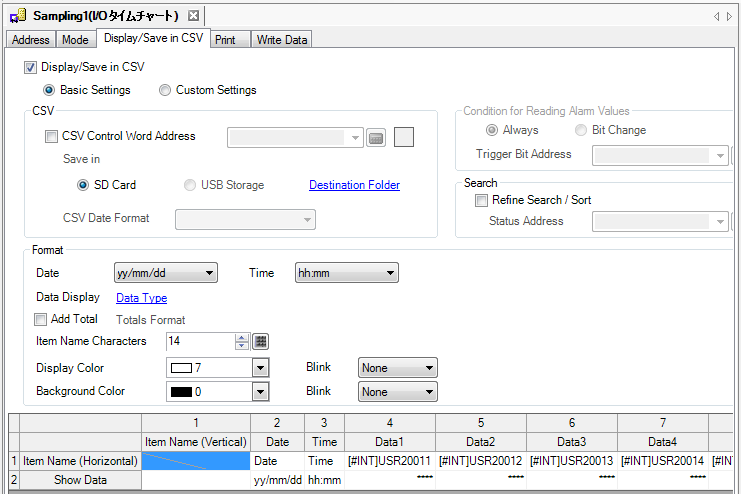


Figure ７‑21 Display/Save in CSV

# Address Map

## List of Internal Addresses

* + B: Bit device / W: Word device

Table ８‑1: Address Map

| Address | Type | Description |
| --- | --- | --- |
| USR2000300 | B | Current Alarm Monitor Scroll Up |
| USR2000301 | B | Current Alarm Monitor Scroll Down |
| USR2000302 | B | Alarm History Scroll Up |
| USR2000303 | B | Alarm History Scroll Down |
| USR2000304 | B | Alarm History Scroll Top |
| USR2000305 | B | Alarm History Scroll Bottom |
| USR20004 | W | Alarm history CSV save, Command/Status address |
| USR20005 | W | Alarm history CSV save, File number specification address |
| USR20006 | W | Alarm history CSV save, Date storage address |
| USR2001000 | B | Sampling permission bit address |
| USR2001001 | B | Data clear bit address |
| USR2001003 | B | Start disabled when past data is displayed |
| USR20011 | W | Channel No1 |
| USR20012 | W | Channel No2 |
| USR20013 | W | Channel No3 |
| USR20014 | W | Channel No4 |
| USR20015 | W | Channel No5 |
| USR2001900 | B | Channel No1 Graph display ON/OFF |
| USR2001901 | B | Channel No2 Graph display ON/OFF |
| USR2001902 | B | Channel No3 Graph display ON/OFF |
| USR2001903 | B | Channel No4 Graph display ON/OFF |
| USR2001904 | B | Channel No5 Graph display ON/OFF |
| USR20020 | W | Cursor information storage address, Time data (Year) |
| USR20021 | W | Cursor information storage address, Time data (Month, Day) |
| USR20022 | W | Cursor information storage address, Time data (Hour, Minute) |
| USR20023 | W | Cursor information storage address, Time data (Second) |
| USR20029 | W | Cursor display status address |
| USR20050 | W | Current alarm offset address |
| USR20100 | W | Current alarm offset address |
| USR20600 | W | Alarm History number display |
| USR21000 | W | Alarm History store number |
| USR22000 | W | Alarm History alarm code (ANH) |
| USR22100 | W | Alarm History alarm date (ADH) |
| USR22200 | W | Alarm History alarm time (ATH) |
| USR22300 | W | Alarm History alarm message (AMH) |
| USR23000 | W | Alarm History Alarm count |
| USR29999 | W | For robot type recognition |