

Shibaura Machine Co., Ltd.
Robot Controller
TS3000/TSL3000/TS3100
Sample Project File
Technical Guide

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- Regarding the detailed settings and operation of TS3000/TSL3000/TS3100, refer to the instruction manual for TS3000/TSL3000/TS3100.

1. Outline

This Sample Project File is used for connection with Shibaura Machine's controllers S3000/TSL3000/TS3100.

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 exchange status (Interface relay status) between a robot and Tcmini is available. Bit can be forcibly set/reset.
- The present location of the robot can be acquired via Tcmini 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", and "Signal Reset" can be given to the controller.
- Device Monitor, I/O Monitor, Time Chart, Connection Device Data Transfer screens are prepared as the maintenance functions.

2. Restrictions

1) Limitations

This screen data is taken from screenshots showing the representative features and functions of the SP5000 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.

2) Notes

- Operation using the following models has been checked with this screen project file: GP4301TW (QVGA:320×240 65,536 colors).
- The intellectual property rights for the files provided by Schneider Electronics HD belong to us.
- Downloaded files and the data extracted from those files do not guarantee our product specifications.
- 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.
- Use this service on your own responsibility. (Including modification, alteration, and diversion)
- Any modifications made to this service by a customer are entirely at the responsibility of the customer. Please be aware that we cannot respond to any inquiries in the event these files have been modified.
- This Sample Project File is manufactured for explaining the function and usage of the communication driver. Therefore, safety on the operation including the general usage is not considered.
- Since safety is not considered, contradiction may be found in the system and prohibition operation can be performed. Therefore, irreparable damages may be caused to connection devices, related devices, and related facility. There is a possibility that a serious accident and damage including death may occur to a human body.
- The content and information in the data on these screens and documentation are subject to change without prior notification.
- If there are differences between the Sample Project File and the related document such as a manual, the Sample Project File has a priority.

3. 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 networking cables, refer to sections "5.5 Communication Cable" of this Manual
For communication settings, refer to "5.6 Communication Settings" of this Manual.
- 2) How to combine with other files
In GP-Pro EX, select [Project] → [Utilities] → [Copy from Another Project].
For further details, refer to "Chapter 5 from 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.
- 3) 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.
- 4) 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.
- 5) Alarm settings when connecting files
This file uses the alarm function.
When alarm 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 3: Word Monitoring Nos. 1-702."
- 6) 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."
- 7) 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.

4. System Configuration

4.1. Target Model

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

Series	Model	Target	Note
		QVGA	
GP41** Series	GP-4104		
	GP-4105		
	GP-4106		
	GP-4107		
	GP-4114T		
	GP-4115T		
	GP-4115T3		
	GP-4116T		
GP-42** Series	GP-4201T	○	*1
	GP-4201TM (Modular Type)	○	*1
	GP-4201TW	○	*1
	GP-4203T	○	*1
GP-43** Series	GP-4301T	○	
	GP-4301TM (Modular Type)	○	*1
	GP-4301TW	○	*1
	GP-4303T	○	*1
	GP-4311HT		
GP-44** Series	GP-4401T		
	GP-4401WW		
GP-45** Series	GP-4501T (Analog Touch Panel)		
	GP-4501T (Matrix Touch Panel)		
	GP-4501TW		
	GP-4503T		
	GP-4521T		
GP-46** Series	GP-4601T (Analog touch panel)		
	GP-4601T (Matrix Touch Panel)		
	GP-4603T		
	GP-4621T		
GP-4G** Series	GP-4G01 VGA (640*480)		
	GP-4G01 SVGA (800*600)		
	GP-4G01 WVGA (800*480)		
GP-Rear Module Series	GP-4000M (Rear Modular Type)	○	*1
LT-42** Series	LT-4201TM (Modular Type DIO)	○	*1
	LT-4201TM (Modular Type Analog)	○	*1
LT-43** Series	LT-4301TM (Modular Type DIO)	○	*1
	LT-4301TM (Modular Type Analog)	○	*1
LT-Rear Module Series	LT-4000M (Rear Module DIO)	○	*1
	LT-4000M (Rear Module Analog)	○	*1
SP-5B00	SP-5400WA WVGA (800*480)		

Series	SP-5500TP VGA (640*480)		
	SP-5500TP SVGA (800*600)		
	SP-5500WA WXGA (1280*800)		
	SP-5600TA XGA (1024*768)		
	SP-5600TP VGA (640*480)		
	SP-5600TP SVGA (800*600)		
	SP-5600TP XGA (1024*768)		
	SP-5600WA WXGA (1280*800)		
	SP-5660TP VGA (640*480)		
	SP-5660TP SVGA (800*600)		
	SP-5660TP XGA (1024*768)		
	SP-5700TP VGA (640*480)		
	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)		
SP-5B10 Series	SP-5400WA WVGA (800*480)		
	SP-5500TP VGA (640*480)		
	SP-5500TP SVGA (800*600)		
	SP-5500WA WXGA (1280*800)		
	SP-5600TA XGA (1024*768)		
	SP-5600TP VGA (640*480)		
	SP-5600TP SVGA (800*600)		
	SP-5600TP XGA (1024*768)		
	SP-5600WA WXGA (1280*800)		
	SP-5660TP VGA (640*480)		
	SP-5660TP SVGA (800*600)		
	SP-5660TP XGA (1024*768)		
	SP-5700TP VGA (640*480)		
	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)		
SP-5B40 Series	SP-5400WA WVGA (800*480)		
	SP-5500TP SVGA (800*600)		
	SP-5500WA WXGA (1280*800)		
	SP-5600TA XGA (1024*768)		
	SP-5600TP SVGA (800*600)		
	SP-5600WA WXGA (1280*800)		
	SP-5660TP SVGA (800*600)		
	SP-5660TP XGA (1024*768)		
	SP-5700TP SVGA (800*600)		
	SP-5700TP XGA (1024*768)		

	DC Power Supply Adapter SVGA (800*600)		
	DC Power Supply Adapter XGA (1024*768)		
SP-5B41 Series	SP-5400WA WVGA (800*480)		
	SP-5500TP SVGA (800*600)		
	SP-5500WA WXGA (1280*800)		
	SP-5600TA XGA (1024*768)		
	SP-5600TP SVGA (800*600)		
	SP-5600TP XGA (1024*768)		
	SP-5600WA WXGA (1280*800)		
	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)		
	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 Series	SP-5490WA WVGA (800*480)		
	SP-5690WA WXGA (1280*800)		
	SP-5790WA FWXGA (1366*768)		
ST-6000 Series	ST-6200WA (480*272)		
	ST-6400WA WVGA (800*480)		
	ST-6500WA WSVGA (1024*600)		
	ST-6600WA WXGA (1280*800)		
	ST-6700WA FWXGA (1366*768)		

Table 4-1 Target Display Model with Touch Panel

*1. Usable by making changes to the device type in the project file. But change layout or connection device settings if necessary.

5. System Device

5.1. System Configuration

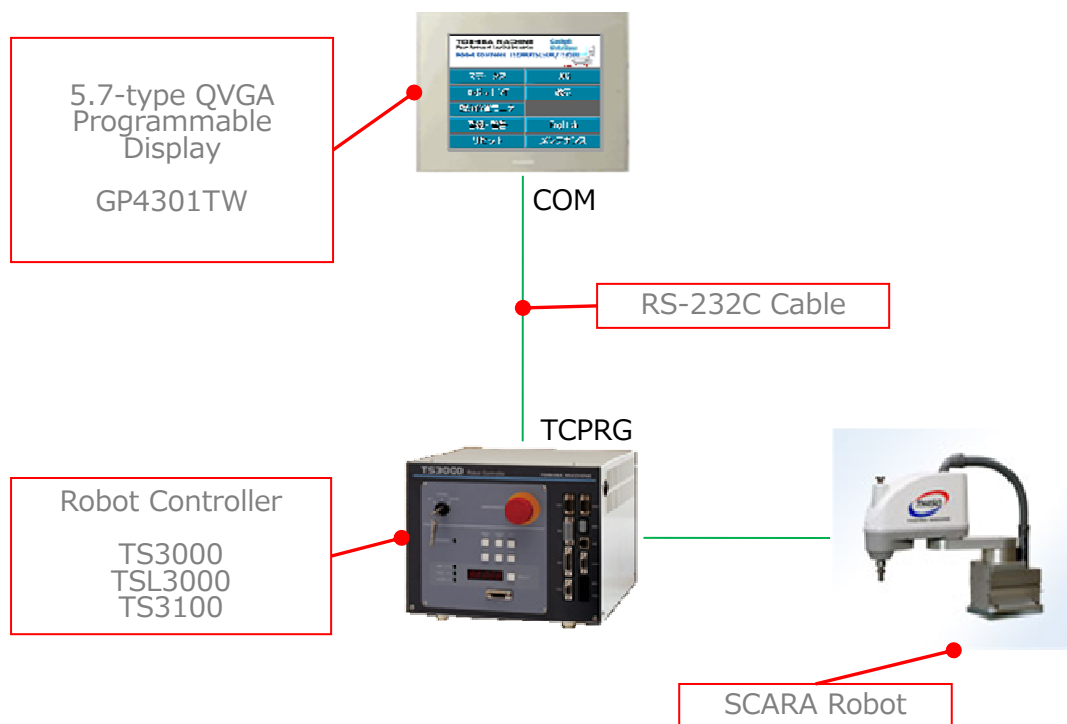


Figure 5-1 System Configuration

- The power supply specifications of GP vary depending on the model.
For details on the system configuration, refer to the catalog and the hardware manual.

5.2. Touch Panel

No	Manufacturer	Name	Series	Model	Remarks
1	Schneider Electronics HD	Programmable Display	GP	GP-4301TW	QVGA 65,536 colors (color)

Table 5-1 Touch Panel

5.3. Connection Devices

No	Manufacturer	Name	Series	Model	Remarks
1	Shibaura Machine Co., Ltd	Robot controller		TS3000	
2	Shibaura Machine Co., Ltd	Robot controller		TSL3000	
3	Shibaura Machine Co., Ltd	Robot controller		TS3100	

Table 5-2 Connection Devices

5.4. Software

No	Manufacturer	Name	Series	Model	Remarks
1	Schneider Electronics HD	GP-PRO EX		PFXEXEDV35	Ver4.03.000
2	Shibaura Machine Co., Ltd	Programming tool		TCPRGOS	

Table 5-3 Software

The sample project file is created using GP-Pro EX (Ver4.03.000).
If the version you use is lower than Ver4.03.000, update is required.

5.5. Communication Cable

Cable connection diagram in which GP4301TW are connected with TS3000/TSL3000/TS3100 is shown below.

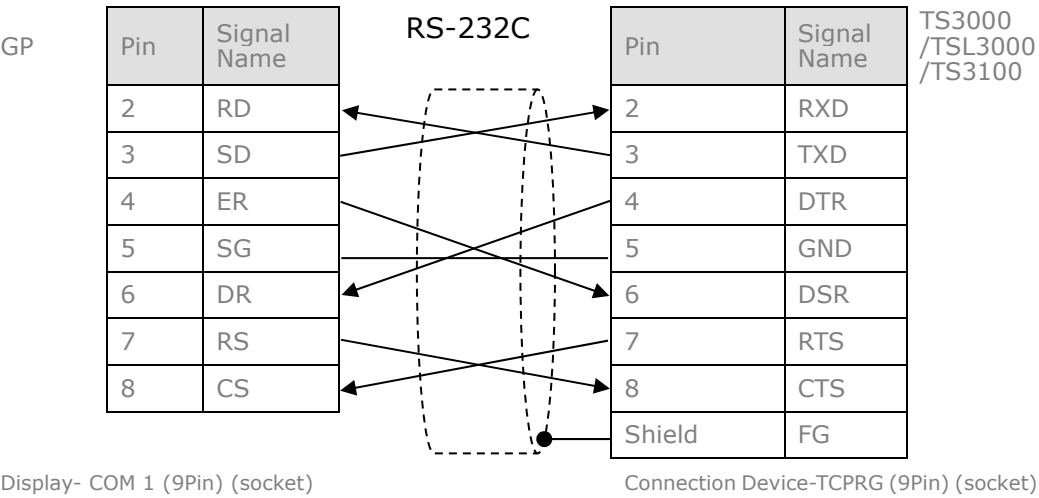


Figure 5-2 Cable Connection

5.6. Communication Settings

5.6.1. Pro-EX Communication Settings

Device/PLC 1

Summary [Change Device/PLC](#)

Manufacturer Series Port

Text Data Mode [Change](#)

Communication Settings

SIO Type ☒ RS232C ☐ RS422/485(2wire) ☐ RS422/485(4wire)

Speed

Data Length ☐ 7 ☒ 8

Parity ☒ NONE ☐ EVEN ☐ ODD

Stop Bit ☐ 1 ☒ 2

Flow Control ☐ NONE ☒ ER(DTR/CTS) ☐ XON/XOFF

Timeout (sec)

Retry

Wait To Send (ms)

RI / VCC ☒ RI ☐ VCC

In the case of RS232C, you can select the 9th pin to RI (Input) or VCC (5V Power Supply). If you use the Digital's RS232C Isolation Unit, please select it to VCC.

[Default](#)

Device-Specific Settings

Allowable Number of Devices/PLCs [Add Device](#)

No.	Device Name	Settings	Add Indirect Device
1	PLC1	Series=TC200S Series, PC No.=0	Add

Figure 5-3 Pro-EX Communication Settings

Name	Range	Default
	Japanese	Japanese
SIO Type	RS232C	RS232C
Speed	19,200	9,600
Data length	8	8
Parity	None	None
Stop Bit	2	2
Flow Control	ER (DTR/CTS)	ER (DTR/CTS)
Timeout	3	3
Retry	2	2
Wait To Send	0	0

Table 5-4 Communication Settings

5.6.2. Communication Settings for Connection Devices


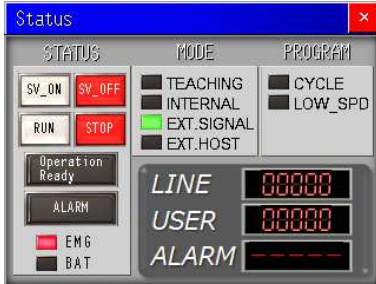
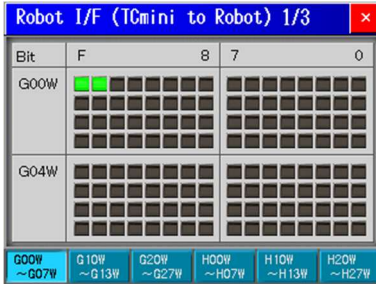
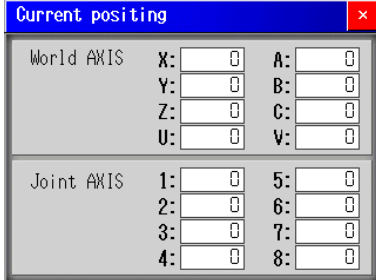
Communication setting is not required for TS3000/TSL3000/TS3100, because settings for them are automatically detected.

6. Screen Composition

The following content is explained on the basis of the " connection_robot_con_ts_rev03_ml.prx " project data. (Items on the screens to be displayed are the same regardless of the models of the GP series.)

6.1. Screens

This Sample Project File provides the following 9 function screens.

Screen Title	Screen Image	Function
Initial screen		- Sample Project initial screen
Status screen		- Status monitor of TS3000
Robot I/F screen		- Signal exchanges between a robot (Main) and TCmini
Current position monitoring screen		- Monitor screen for the current position (SCARA and Vertical Articulated Robots)

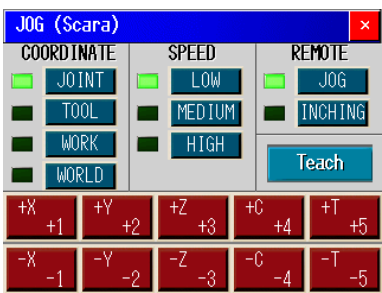
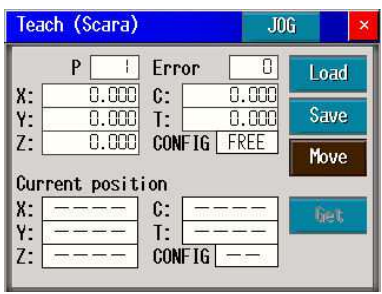
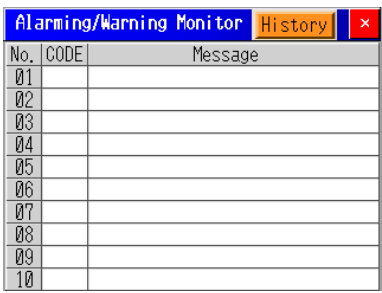
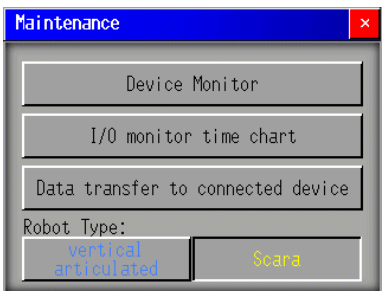
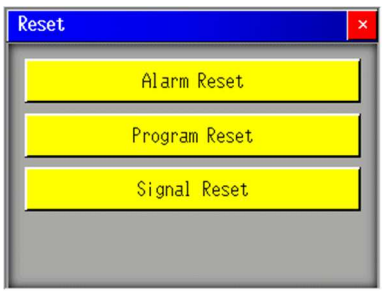
JOG screen		<ul style="list-style-type: none"> - JOG operation of Robot (SCARA and Vertical Articulated Robots)
Teach screen		<ul style="list-style-type: none"> - Teach operation of Robot (SCARA and Vertical Articulated Robots) Reading/Writing P data from/to TS3000 Loading the current position and setting arbitrary data
Alarm/Warning screen		<ul style="list-style-type: none"> - 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		<ul style="list-style-type: none"> - Device Monitor - I/O Monitor Time Chart - Device/PLC Data Transfer function - Robot Type
Reset screen		<ul style="list-style-type: none"> - Alarm Reset - Program Reset - Signal Reset

Table 6-1 Screens

6.2. Screen Transition

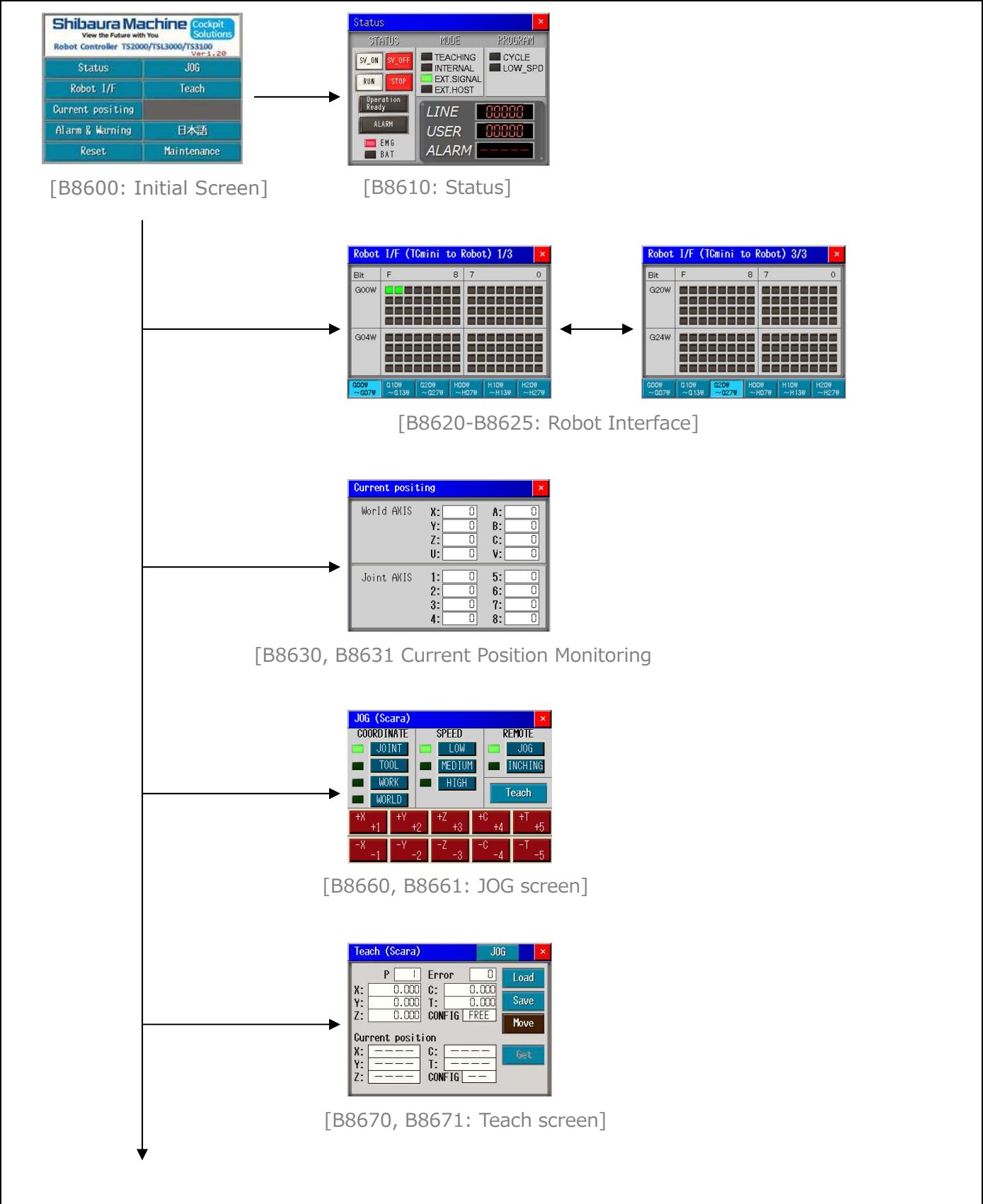


Figure 6-1 Screen Transition 1

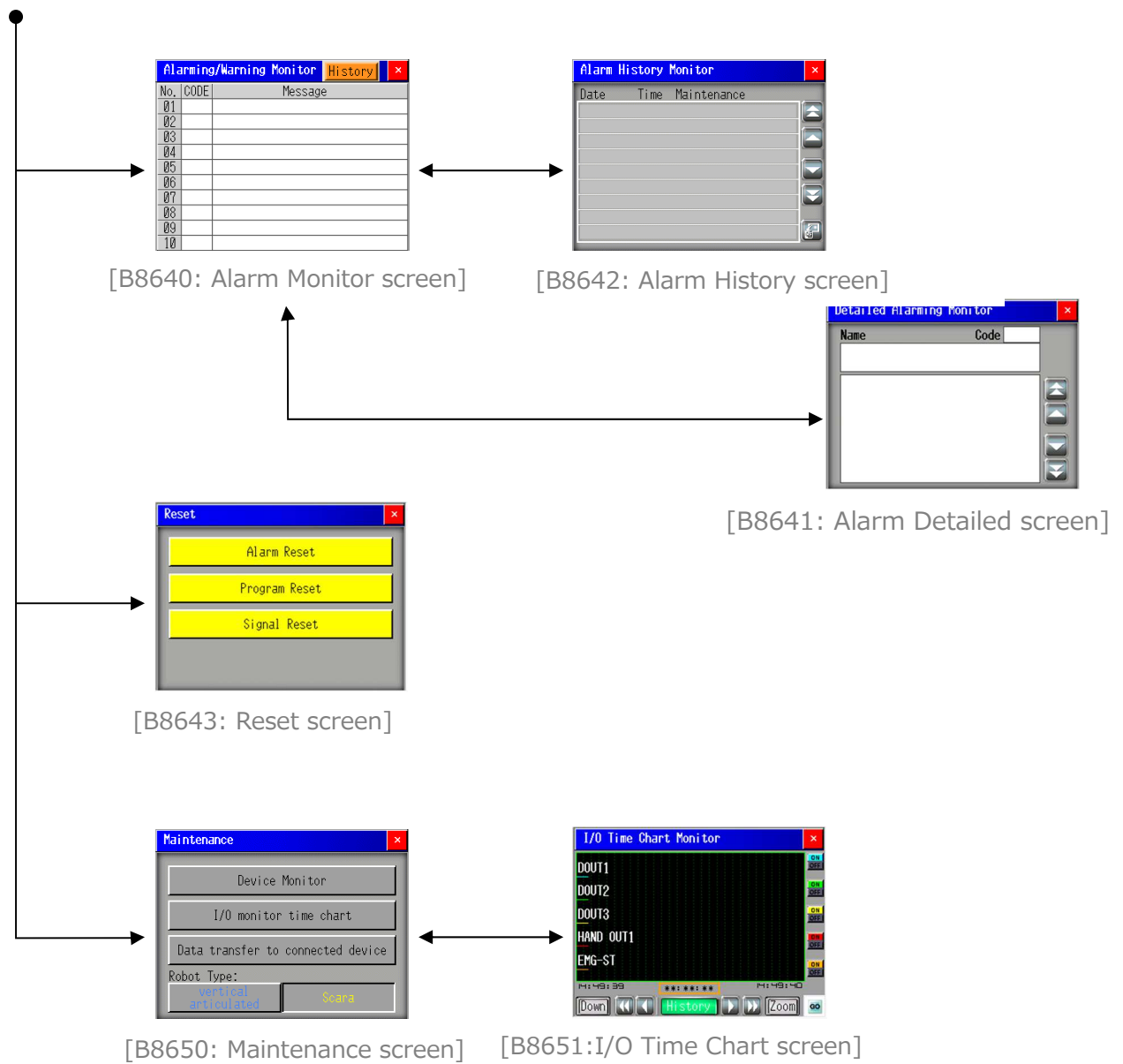


Figure 6-2 Screen Transition 2

7. Screen Details

7.1. Initial Screen (B8600)

7.1.1. Overview

The initial screen of the Sample Project File

7.1.2. Screen Image



Figure 7-1 Initial Screen

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

Table7-1 Initial Screen

7.2. Status Screen (B8610)

7.2.1. Overview

The status is monitored in this screen. This is almost equal to the control panel of TS3000. However, confirmation and instruction for servo ON/OFF and RUN/STOP are available in this screen.

7.2.2. Screen Image

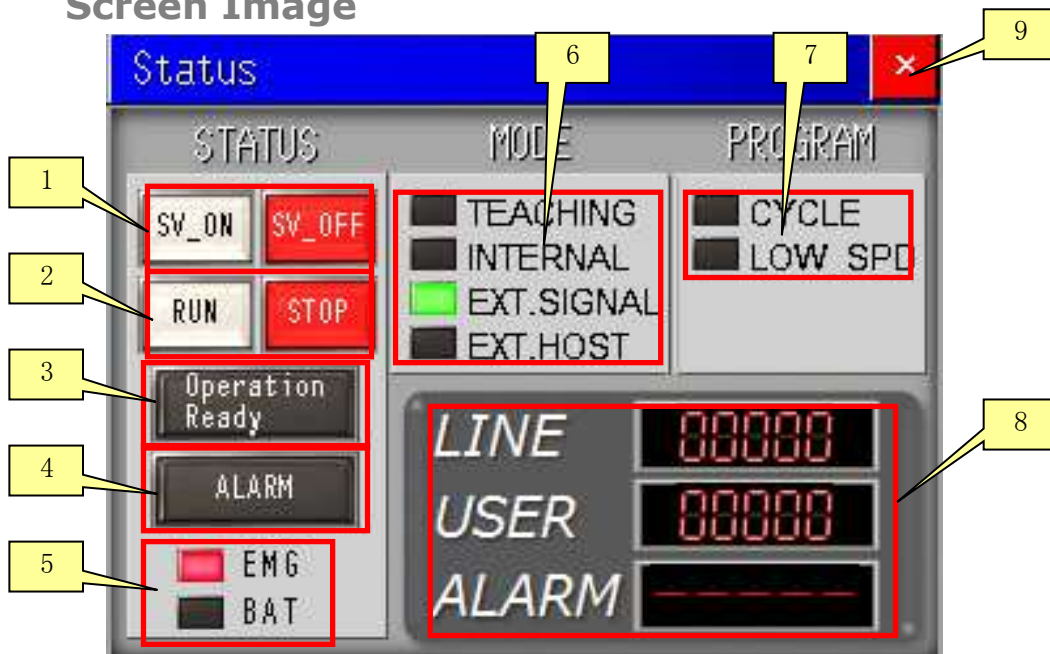


Figure 7-2 Status Screen

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

7.3. Robot I/F Screen (B8620-B8625)

7.3.1. Overview

The interface relay state of the signal exchanges between the robot (Main) and TCmini is monitored in this screen.

7.3.2. Screen Image

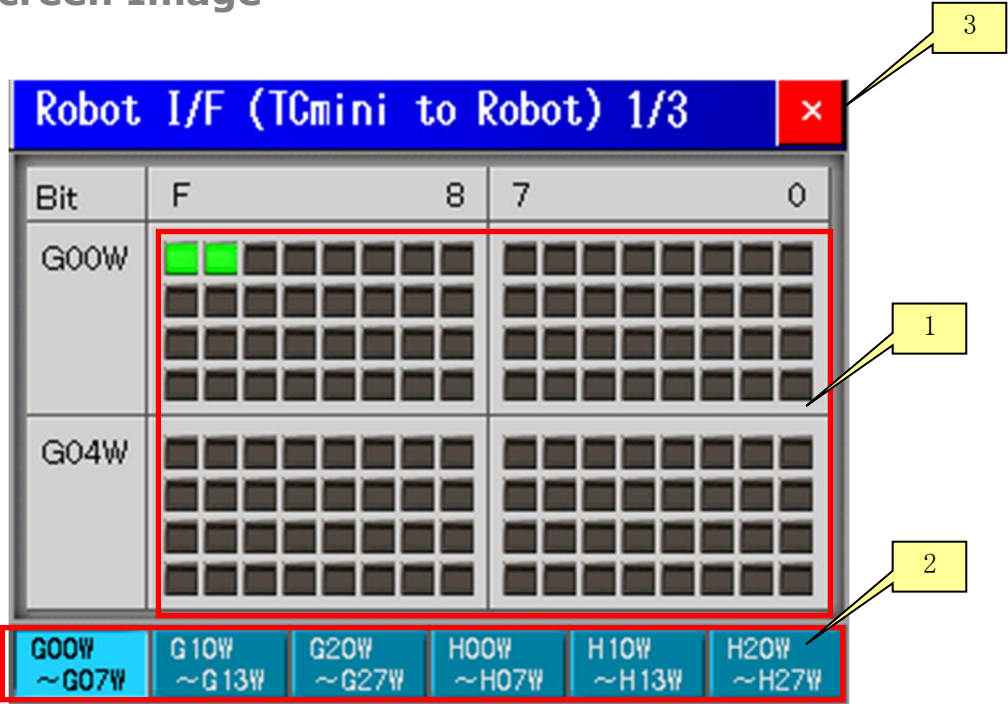


Figure 7-3 Robot Interface Screen

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

7.4. Current Position Monitor Screen (B8630, B8631)

7.4.1. Overview

The current position of the robot is acquired by way of TCmini in this screen.
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.

7.4.2. Screen Image

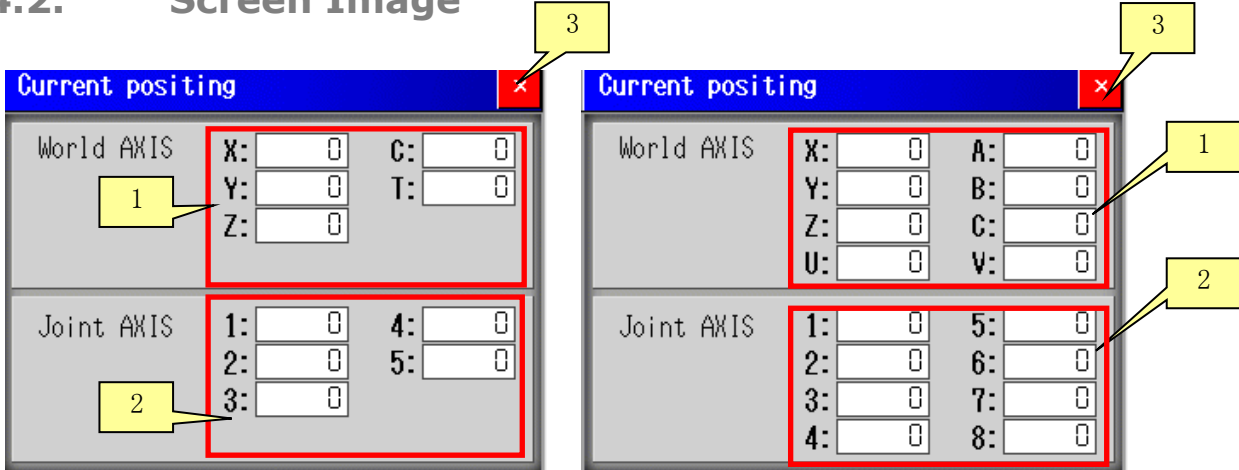


Figure 7-4 Current Value Monitor Screen (SCARA)

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

7.5. JOG Screen (B8660, B8661)

7.5.1. Overview

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

7.5.2. Screen Image

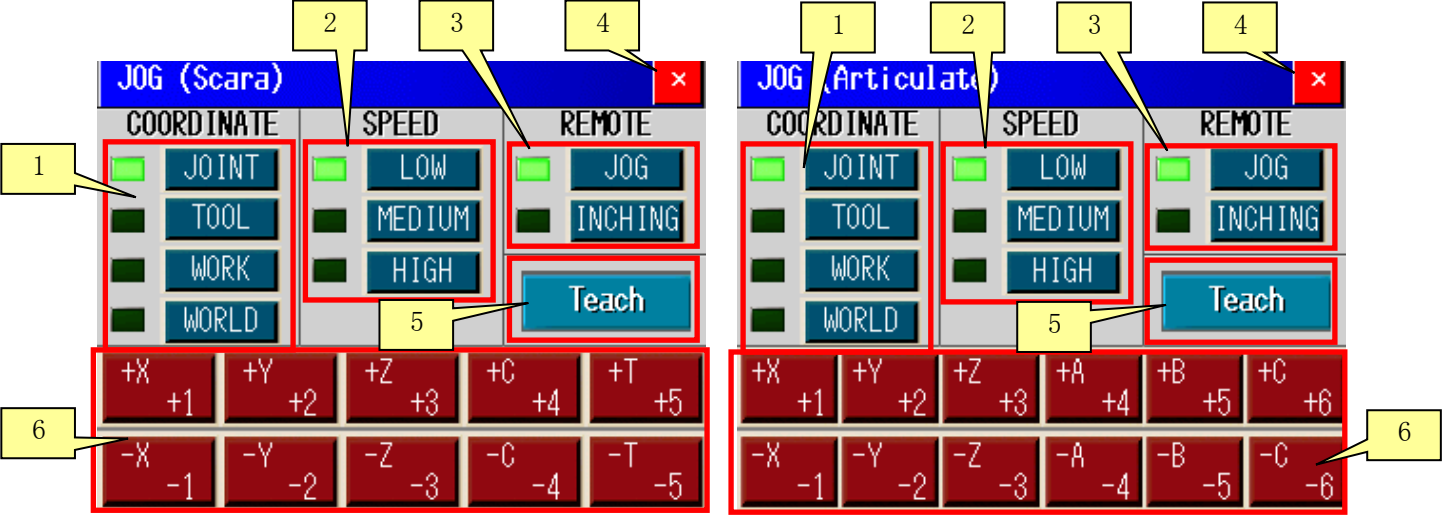


Figure 7-6 JOG Screen (SCARA)

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

7.6. Teach Screen (B8670, B6871)

7.6.1. 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.

7.6.2. Screen Image

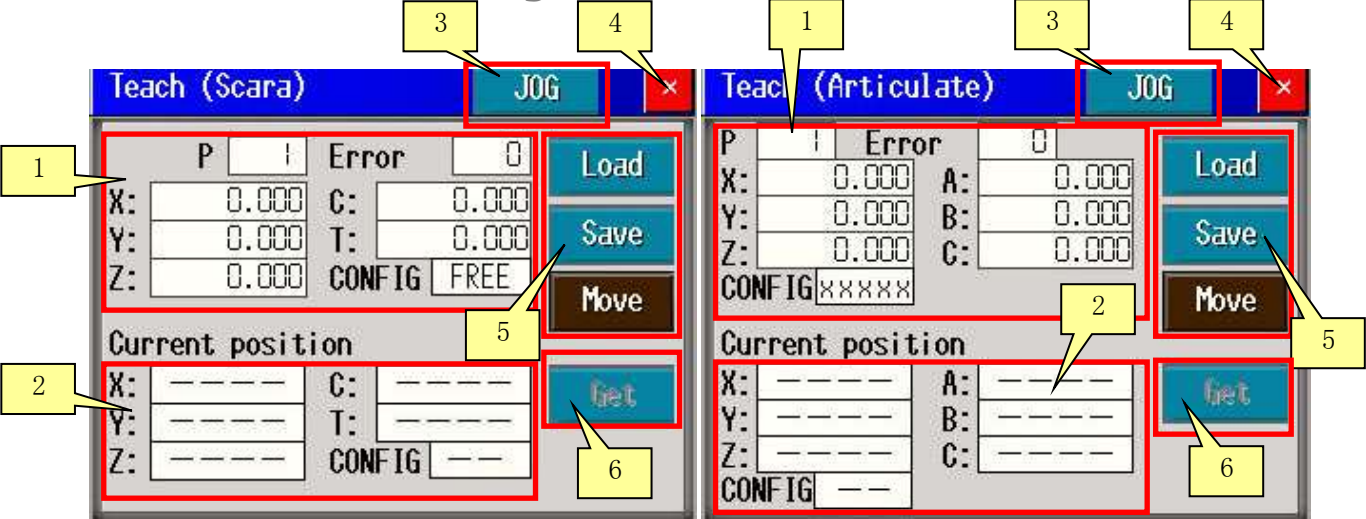


Figure 7-8 Teach Screen (SCARA)

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

7.7. Alarm/Warning Screen (B8640)

7.7.1. Overview

The alarm/warning being generated is displayed in this screen.
All the alarms being generated are displayed in the alarm monitor screen.
Touching each of the alarm sections displays the details of the alarm.

7.7.2. Screen Image

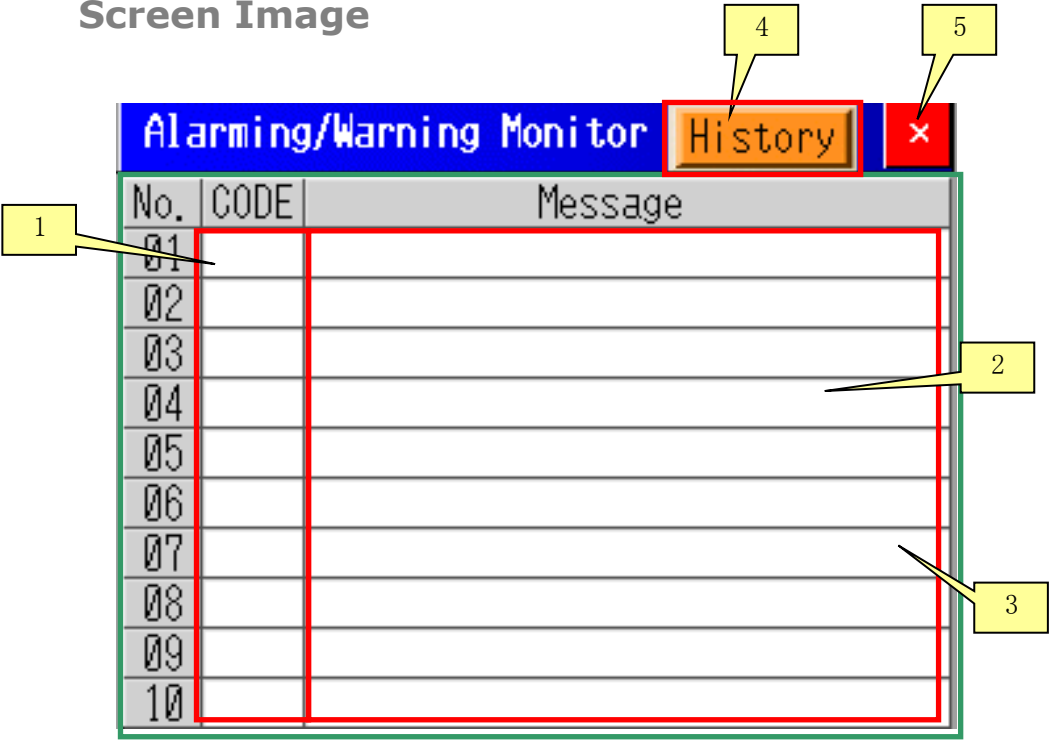


Figure 7-10 Alarm/Warning Monitor Screen

No.	Item	Description
1	Numeric Display	Displays the cord of the alarm being generated.
2	Message Display	Displays the content of the alarm being generated.
3	Switch	Pressing the lines (01 to 10) each switches the current screen to the screen displaying the details of the alarm.
4	Switch	Switches the screen to the alarm reset screen.
5	Switch	Switches the screen to the alarm history screen.
6	Switch	Switches the screen to the initial screen.

Table 7-7 Alarm/Warning Monitor Screen

7.8. Detailed Alarming Monitor Screen (B8641)

7.8.1. Overview

Details of the alarm are displayed in this screen.

7.8.2. Screen Image

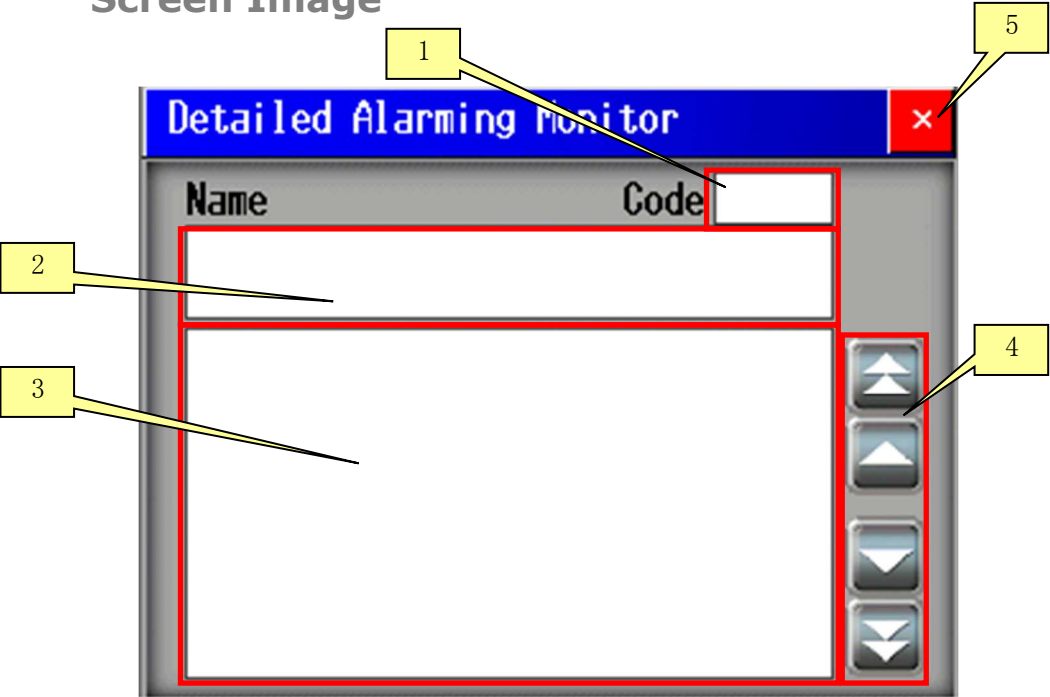


Figure 7-11 Detailed Alarming Monitor Screen

No.	Item	Description
1	Numerical Display	Displays the cord of the alarm being generated.
2	Message Display	Displays the content of the alarm being generated.
3	Message Display	Displays details (content, cause, measures, and remarks).
4	Switch	Scrolls the screen to the detailed display.
5	Switch	Switches the screen to the alarm monitor screen.

Table 7-8 Detailed Alarming Monitor Screen

7.9. Alarm History Monitor Screen (B8642)

7.9.1. Overview

The Alarm History Monitor screen displays an alarm history monitored by the display device. The history display is specified in the common setting and the alarm settings screens. Pressing the message filed displays the registered text content in details.

7.9.2. Screen Image

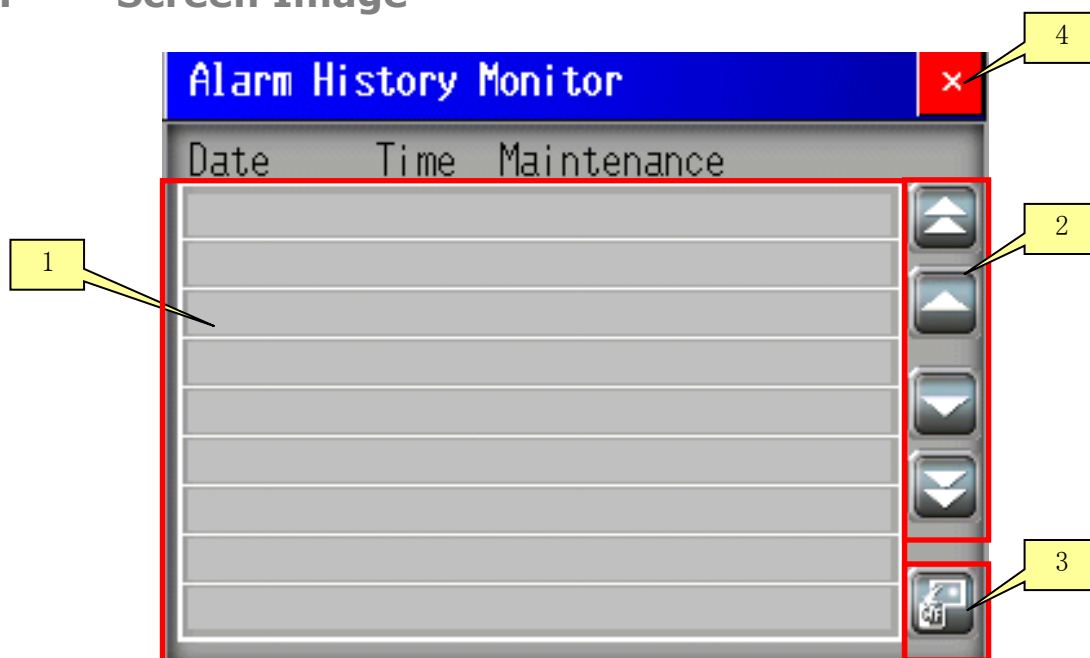


Figure 7-12 Alarm History Monitor Screen

No.	Item	Description
1	Alarm Parts	Displays the history of the generated alarms. When two or more alarms are generated at the same time, up to the third alarms are acquired. * Registration is made so that up to third alarms can be acquired for Block 3 of the alarm settings. Please add registration when you want to acquire the fourth alarm or more.
2	Alarm History Scroll Switch	Scrolls to display the whole alarm generated.
3	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. Example When a file is saved on January 1 st , the file name should be as follows: ¥ALARM¥Z300101.csv
4	Switch	Switches the screen to the alarm monitor screen.

Table 7-9

7.9.3. 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.

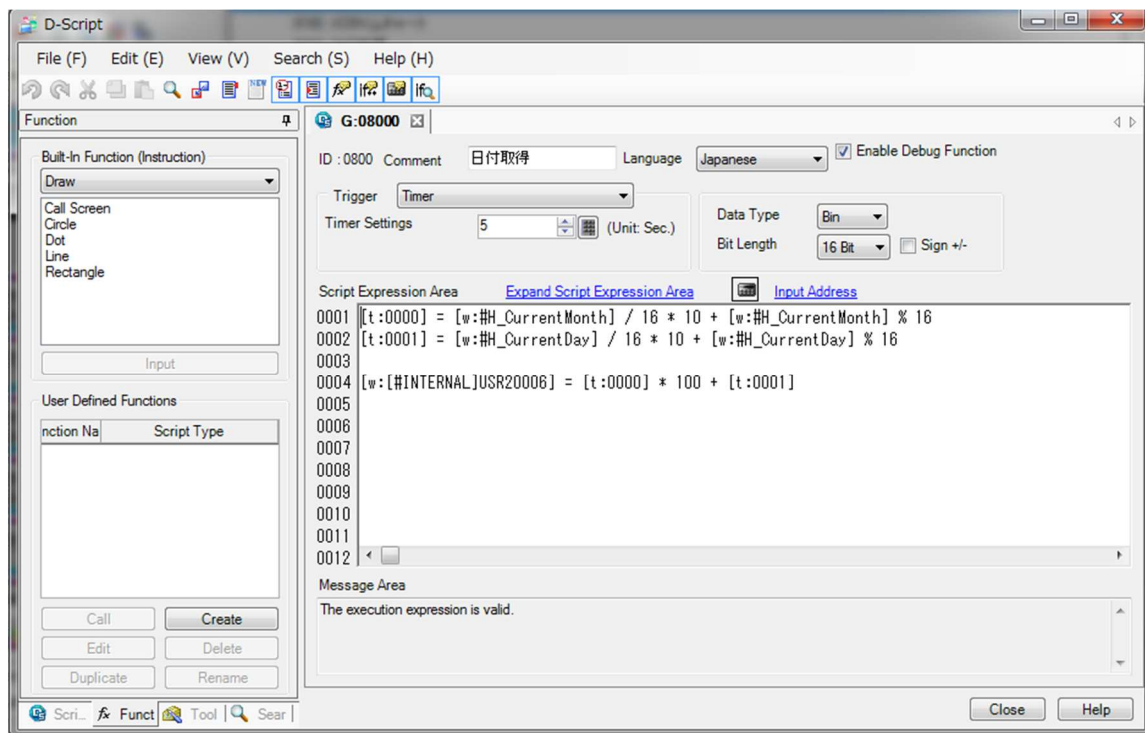


Figure 7-13 Date Acquisition Screen

7.10. Reset operation screen (B8643)

7.10.1. 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.

7.10.2. Screen Image

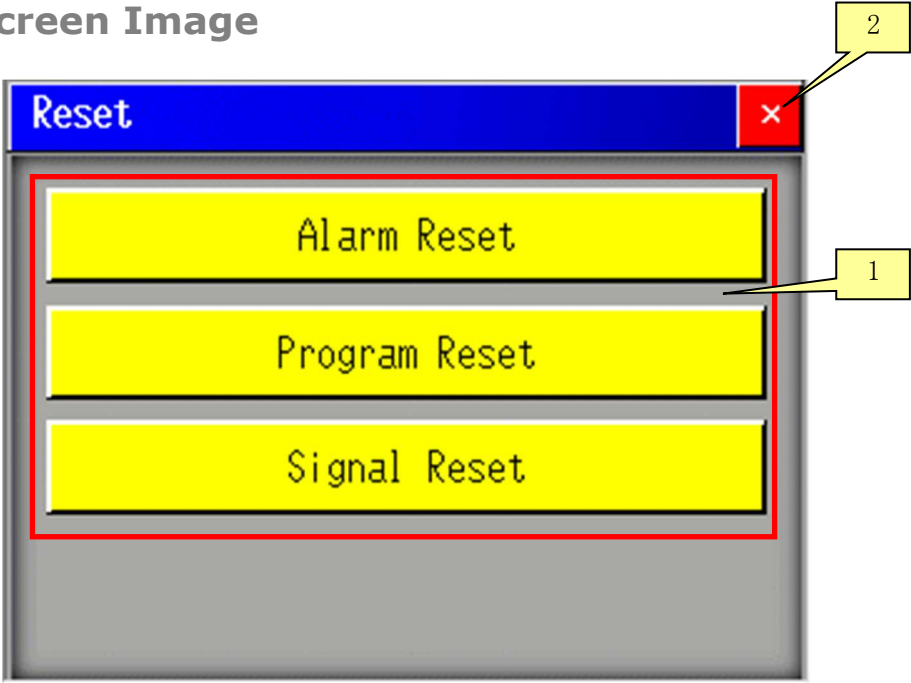


Figure 7-14 Reset Screen

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 7-10 Reset Screen

7.11. Maintenance Screen (B8650)

7.11.1. 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.

7.11.2. Screen Image

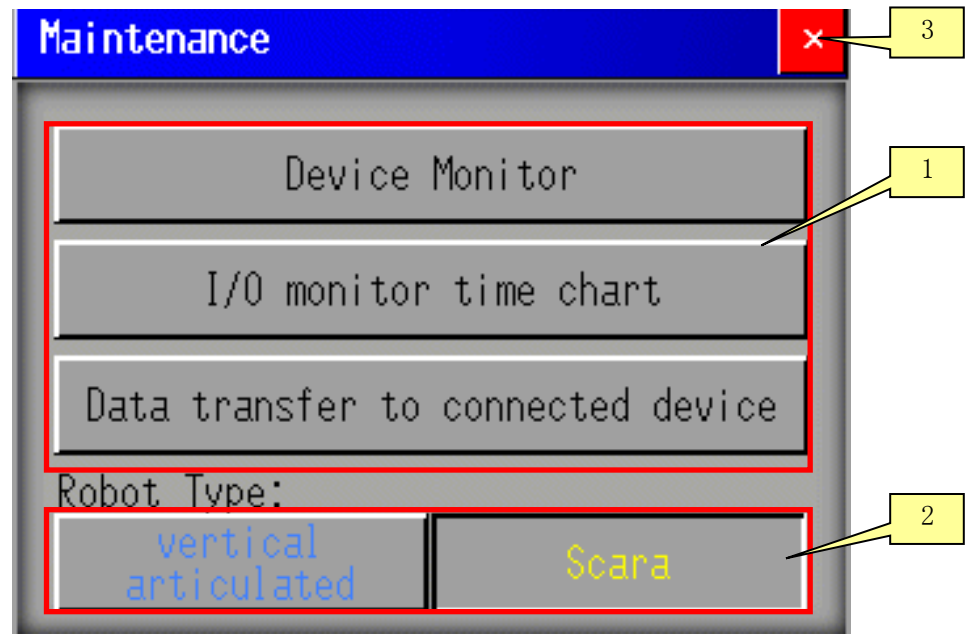


Figure 7-15 Maintenance Screen

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 7-11 Maintenance Screen

* For the "Device Monitor" and "Data transfer to connected device" functions, the standard function of the connection driver (Shibaura Machine TC Series) is used. Refer to the reference manual of GP-Pro EX for details.

7.12. I/O Time Chart Monitor Screen (B8651)

7.12.1. 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.

7.12.2. Screen Image

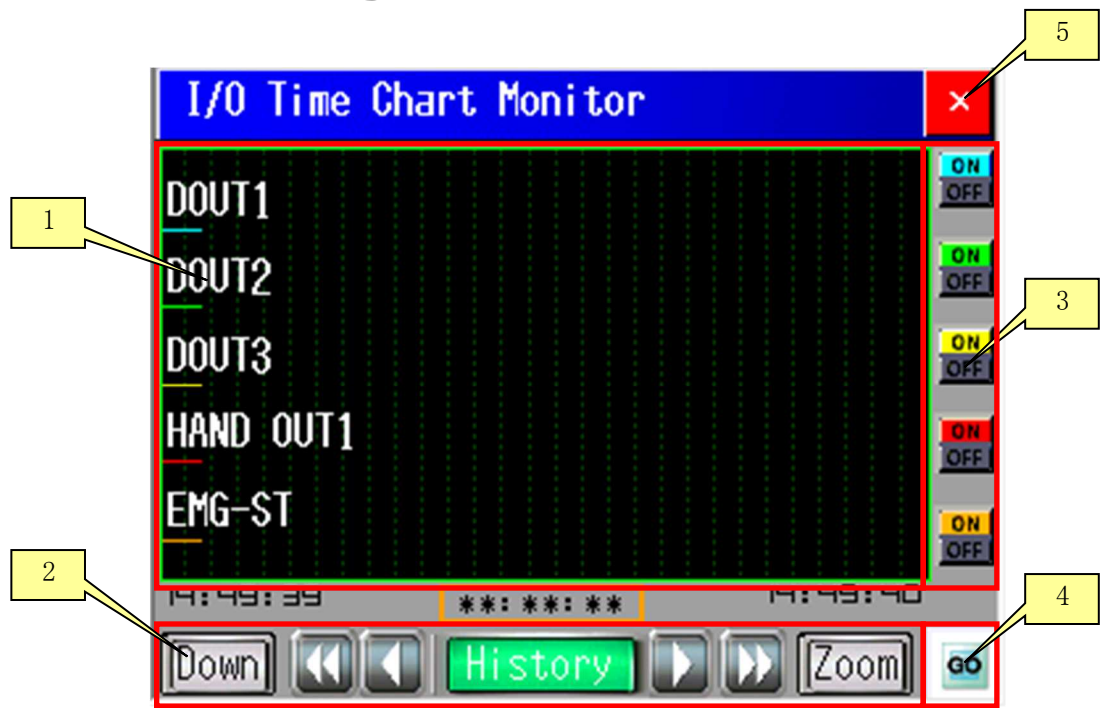


Figure 7-16 I/O Time Chart Monitor Screen

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 7-12 I/O Time Chart Monitor Screen

7.12.3. Global D-Script (ID: 8100)

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

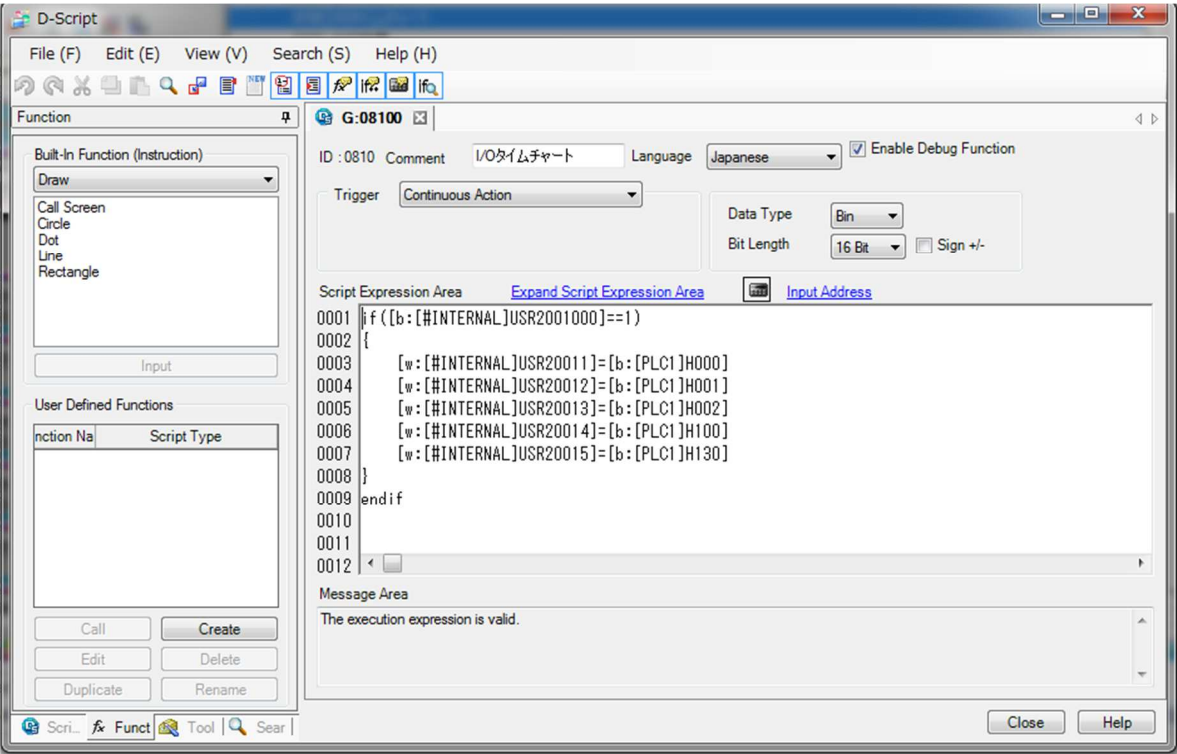


Figure 7-17 Global D-Script

7.12.4.Sampling Setting (Group 1)

Sampling is used to acquire the data.

Sampling1(IOタイムチャート)

Address Mode Display/Save in CSV Print Write Data

Address ☒ Sequential ☐ Random

Sampling Start Address [#INTERNAL]USR2011

Bit Length ☒ 16 Bit ☐ 32 Bit

Sampling Words 5

Number	Address
1	[#INTERNAL]USR20011
2	[#INTERNAL]USR20012
3	[#INTERNAL]USR20013
4	[#INTERNAL]USR20014
5	[#INTERNAL]USR20015

Figure 7-18 Address Setting

Sampling1(IOタイムチャート)

Address Mode Display/Save in CSV Print Write Data

Condition

Execution Condition Constant Cycle while Bit is ON

Sampling Permit Bit Address [#INTERNAL]USR2001000

Sampling Frequency

Frequency Constant

1 1 sec 100 ms

Occurrences 4000

☐ Data Full Bit Address

Data Clear Bit Address [#INTERNAL]USR2001001

[Extended](#)

☒ Retain Sampling Data (SRAM)

☒ Back Up Sampling Data

Save in ☐ SD Card ☒ USB Storage

Backup Count 144 Maximum Historical Data 576000

When Exceeding Backup Count Overwrite oldest data

Status Address

To maximize backup performance, make sure there are 5 seconds or more between samples.

Figure 7-19 Mode Setting

Sampling1(IOタイムチャート)

Address Mode Display/Save in CSV Print Write Data

☒ Display/Save in CSV

☒ Basic Settings ☐ Custom Settings

CSV

CSV Control Word Address

Save in ☒ SD Card ☐ USB Storage [Destination Folder](#)

CSV Date Format

Condition for Reading Alarm Values

☒ Always ☐ Bit Change

Trigger Bit Address

Search

☐ Refine Search / Sort

Status Address

Format

Date yy/mm/dd Time hh:mm

Data Display [Data Type](#)

☐ Add Total Totals Format

Item Name Characters 14

Display Color 7 Blink None

Background Color 0 Blink None

	1	2	3	4	5	6	7
	Item Name (Vertical)	Date	Time	Data1	Data2	Data3	Data4
1	Item Name (Horizontal)	Date	Time	[#INT]USR20011	[#INT]USR20012	[#INT]USR20013	[#INT]USR20014
2	Show Data	yy/mm/dd	hh:mm	---	---	---	---

Figure 7-20 Display/Save in CSV

8. Address Map

8.1. List of Internal Addresses

- B: Bit device
- W: Word device

Table 8-1: Address Map (ST and GP)

Address	Type	Description
USR20000	W	Alarm details display AL01 (D676) - AL10 (D67F) selection offset value
USR20001	W	Alarm details display, Alarm code
USR20002	W	Detailed content display start line
USR2000300	B	Detailed content display 4-line UP scroll trigger
USR2000301	B	Detailed content display 1-line UP scroll trigger
USR2000302	B	Detailed content display 1-line DOWN scroll trigger
USR2000303	B	Detailed content display 4-line DOWN scroll trigger
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
USR29999	W	For robot type recognition

9. Appendix

9.1. About version Up

Please update the version, following the procedure below.

If not, the following phenomenon will occur,

- Disable communication.
- Not working
- Some language problems.
- Display incorrect values.

9.2. Contact

Please contact us from the below,

SHIBAURA Machine CO., LTD Inquiry form

https://www.shibaura-machine.co.jp/form/en_inquiry.php?i=i10