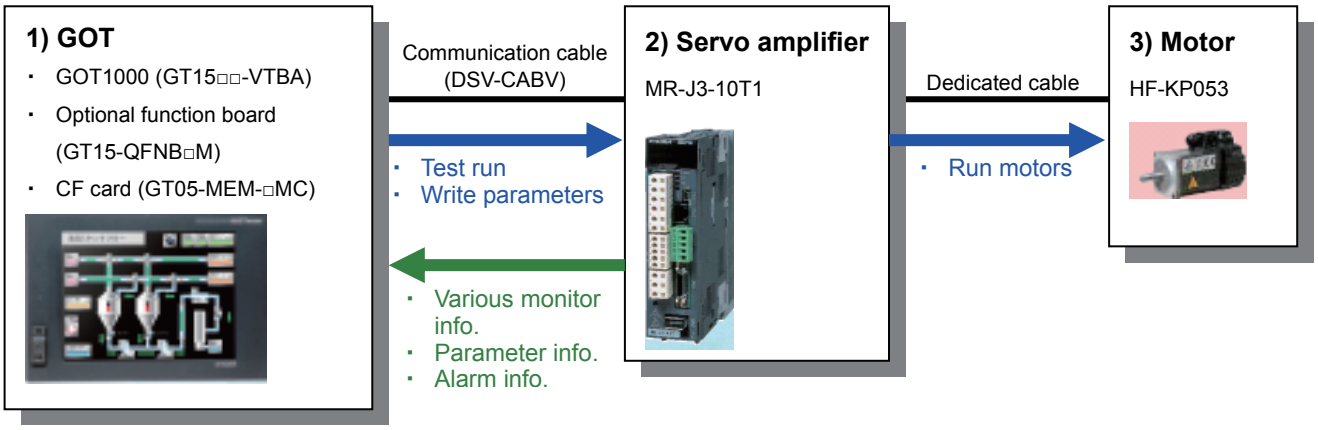
Servo Amplifier (MR-J3-T/-D01 series) VGA Sample Screen Instructions Ver.1a

1. Overview

This document explains how to use the sample screens to perform various operations and set parameters by connecting GOT1000 and the servo amplifier (MR-J3-T/-D01).

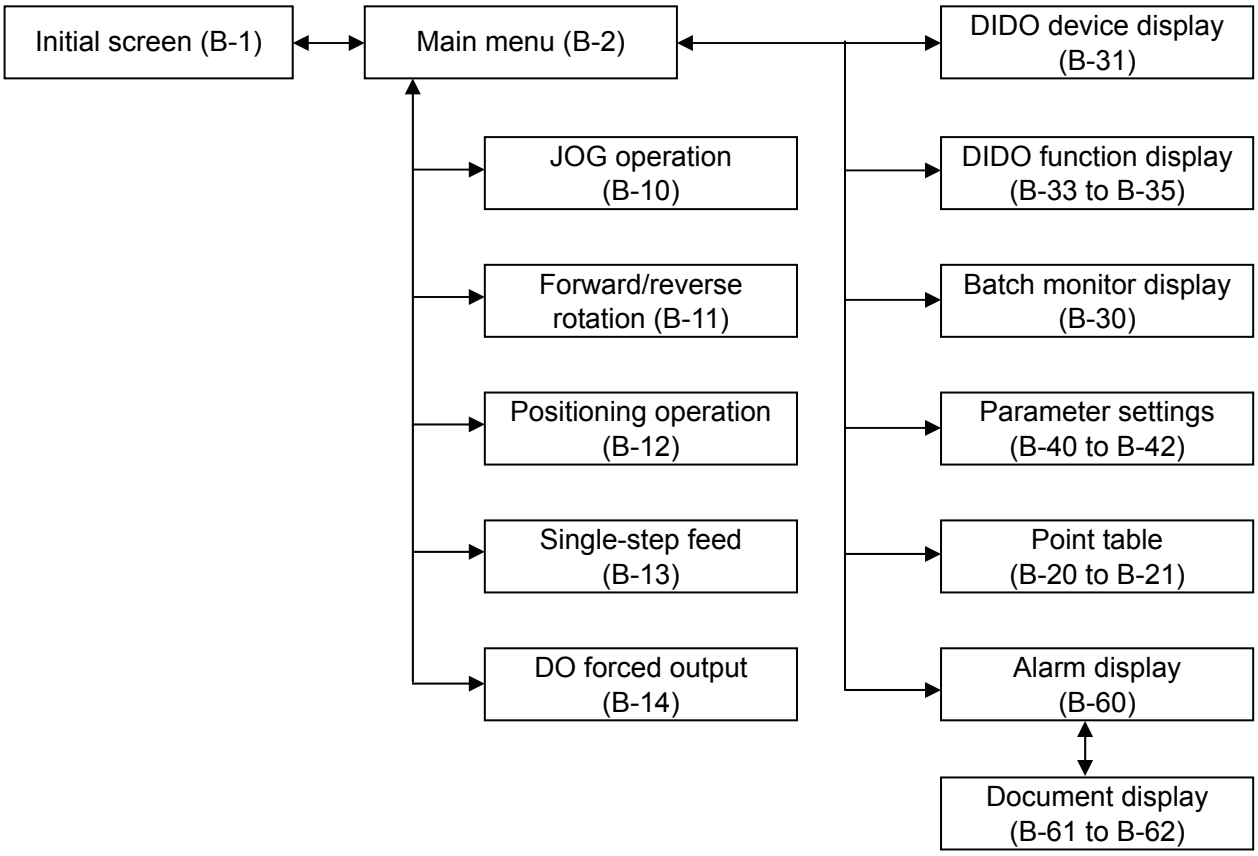
2. System configurations (1:1 connection)



*System configurations of this sample data are described above.

3. Screen descriptions

3.1. Screen flow (Screen No.)



3.2. Function description

No	Screen	Function description
1	Initial screen	Select a language to go to the main menu.
2	Main menu	・ Press a button to move to each function screen. ・ Enter the station No. to monitor. ・ The alarm display switch blinks when alarms occur on amplifiers.
3	JOG operation	・ JOG operation can be performed by momentary actions. ・ Batch monitor display window displays the status of servo amplifiers and motors. ・ Point tables can be set by teaching operations. ・ The alarm lamp lights when alarms occur on servo amplifiers.
4	Forward/backward rotation	・ Forward/reverse operation can be performed. (The operation continues after releasing the operation button.) (The motor stops when switching screens for safety reasons.) ・ Batch monitor display window displays the status of servo amplifiers and motors. ・ The alarm lamp lights when alarms occur on servo amplifiers.
5	Positioning operation	・ Positioning operation can be performed according to the specified move distance. (The motor stops when switching screens for safety reasons.) ・ Batch monitor display window displays the status of servo amplifiers and motors. ・ The alarm lamp lights when alarms occur on servo amplifiers.
6	Single-step feed	・ Select a point table to perform the operation step by step. (The motor stops when switching screens for safety reasons.) ・ Batch monitor display window displays the status of servo amplifiers and motors. ・ The alarm lamp lights when alarms occur on servo amplifiers.
7	DO forced output	・ The output signal pins can be turned ON and OFF regardless of the status of the servo amplifier. ・ The alarm lamp lights when alarms occur on servo amplifiers.
8	DIDO device display	Displays the statuses of external I/O pints of servo amplifiers.
9	DIDO function display	Displays the statuses of input devices and output devices of servo amplifiers.
10	Batch monitor display	Displays the status of servo amplifiers and servo motors. <Displayed data> Current position, command position, command remaining distance, point table No., cumulative feedback pulses, servo motor speed, droop pulses, override, torque limit voltage, regenerative load ratio, effective load ratio, peak load ratio, instantaneous torque, one-revolution position, ABS counter, load inertia moment ratio, bus voltage)
11	Parameter settings	Basic setting parameter values can be set and displayed. The parameter writing destination can be changed by pressing a button. (If the data is written in RAM, the data disappears when the power is turned off.)
12	Point table	Set the data of point tables. (Up to 255 point tables can be set. The multiplication ratio is 1 in this sample screen data.)
13	Alarm display	・ The current alarm and the previous 6 alarms are displayed. ・ Status display window displays the status of servo amplifier when the alarm occurs.
14	Document display	Displays the troubleshooting manual of the servo amplifier. The manual can be used to check the details of the alarm by referring to the alarm code. (Document files must be saved in a CF card to use this function. For details, refer to Section 4.)

4. Operating environment

The following preparation is required to use this sample screen.

4.1. Required equipment

- GT15 (VGA)
- Optional function board: GT15-QFNB□M or GT15-MESB48M must be used.
  (The document display function does not work when using GT15-FNB.)
- CF card: GT05-MEM-□MC
- Communication cable: DSV-CABV (The RS422/RS232 conversion cable)
  For connection configurations, refer to the GOT1000 Series Connection Manual.

*For the equipment related to the servo amplifier, refer to the MR-J3-T/-D01 Servo Amplifier Instruction Manual.

4.2. Required OS

No.	Category	OS	Application
1	Communication driver	MELSERVO-J3, J2S/M	To connect to MR-J3-T/-D01
2	Extended function OS	Stroke standard font (Japanese)	To use fonts
3	Option function OS	Document display	To display alarm documents

4.3. Communication configuration

The following settings are required to use this sample screen data. When changing the station No. and communication baud rate, be sure to use the same settings for both servo amplifier and GOT.

No.	Parameter type	Item (contents of amplifier)	Parameter No.	Set value	GOT set value
1	Extended settings	RS-422 communication function selection	PC21	0040	115200bps
2	I/O settings	I/O signal automatic ON selection 1	PD01	1000	
3	All the parameters other than the above are set to default values.				

4.4. Other settings

1) Alarm document files

To display documents on the GOT, the document files must be saved in the specified folder in a CF card.

For procedures to save documents in a CF card, refer to the following instructions.

1-1) Decompress the sample screen data and the DOCIMG folder will be created.

1-2) Copy the DOCIMG folder (including all the files in the DOCIMG folder) to the root directory of a CF card.
(The CF card must be formatted in a FAT format.)

- File structure in the CF card for Alarm Document Display screen

```
A:¥ DOCIMG¥001¥L¥IMG00001.jpg
                IMG00002.jpg
                IMG00003.jpg
A:¥ DOCIMG¥001¥M¥IMG00001.jpg
                IMG00002.jpg
                IMG00003.jpg
A:¥ DOCIMG¥001¥S¥IMG00001.jpg
                IMG00002.jpg
                IMG00003.jpg
A:¥ DOCIMG¥001¥001.ini
```

Document files cannot be displayed correctly if the folder and file structure is different from the structure on the left. Be sure to use the correct structure.

2) Others

- To set the clock data on the GOT, be sure to use a battery. (Servo amplifiers do not have the clock data.)
- To use this sample screen, use the GT Designer2 Version2 Ver.2.63R or later.

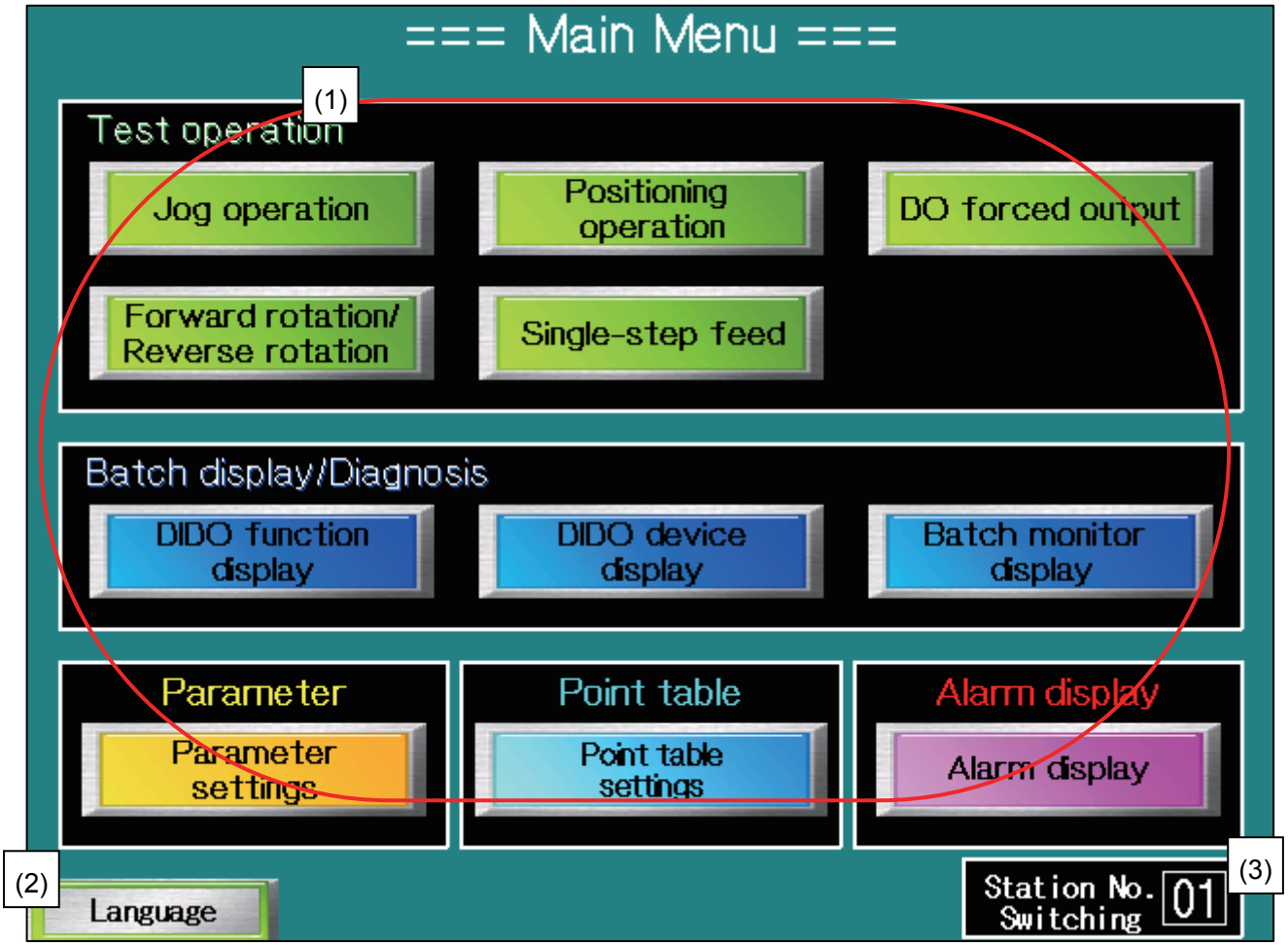
5. Screen description

5.1. Initial screen

Above is the initial screen of this sample screen data.
Select a language on this screen.

(1) Touch the button to move to the Japanese main menu.
(2) Touch the button to move to the English main menu.

5.2. Main menu



The main menu displays the buttons to move to each function screen. The station No. to monitor can be set on this screen.

(1) Touch a button to move to the corresponding function screen.
The alarm display button blinks when alarms occur on servo amplifiers.

(2) Touch this button to move to the initial screen (to switch languages).

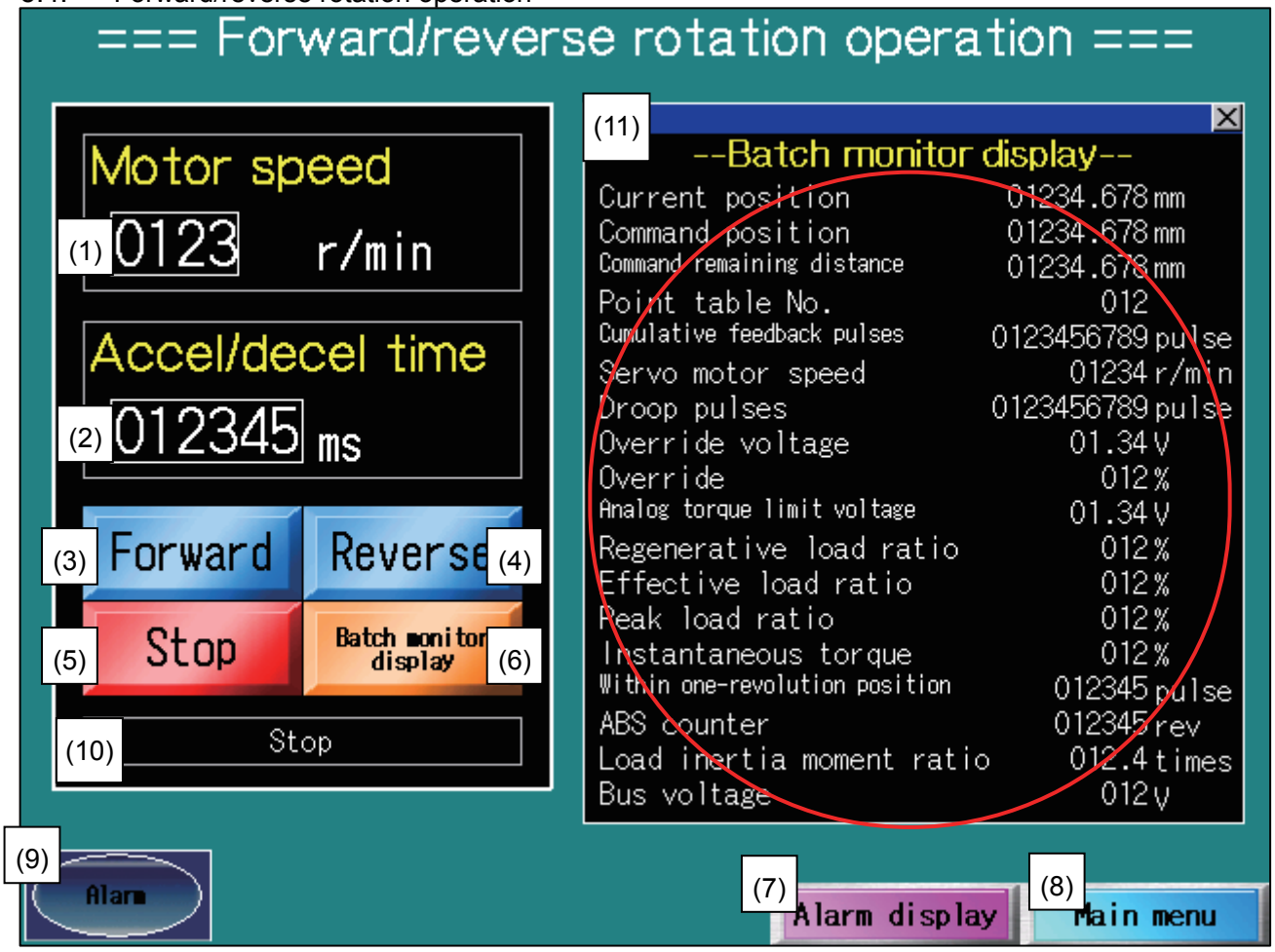
(3) Enter the station number to monitor.

5.3. Jog operation

The JOG operation can be performed by momentary actions.
Scripts and the status observation function are used in this screen (including the teaching function window.)

(1) Set the motor rotation speed by using the numerical input object.
(2) Set the acceleration/deceleration time constant by using the numerical input object.
(3) Touch this button to rotate the motor forward using the values (1) and (2). (The motor rotates while the button is pressed; the motor stops when the button is released.)
(4) Touch this button to rotate the motor backward using the values (1) and (2). (The motor rotates while the button is pressed; the motor stops when the button is released.)
(5) Touch this button to display the teaching function window.
(6) Touch this button to display the batch monitor display window.
(7) Touch this button to move to the alarm display screen.
(8) Touch this button to move to the main menu.
(9) The lamp blinks when alarms occur on the servo amplifier.
Touching this lamp while the lamp is blinking will move to the alarm display screen.
(10) The lamp to display the status of motor (forward rotation, reverse rotation, stop).
(11) The area to display the teaching function window or the batch monitor display window. The teaching function window is shown in the above image. See the next page for the items displayed in the batch monitor display window.
(12) Set the point table No. to write the current position to the target position.
(13) Press this button more than 3 seconds to write the current position to the target position of the specified point table. (The multiplication ratio is 1 in this sample screen data. If the current position is outside the range of writing the target position data, then the current position cannot be written to the target position.)

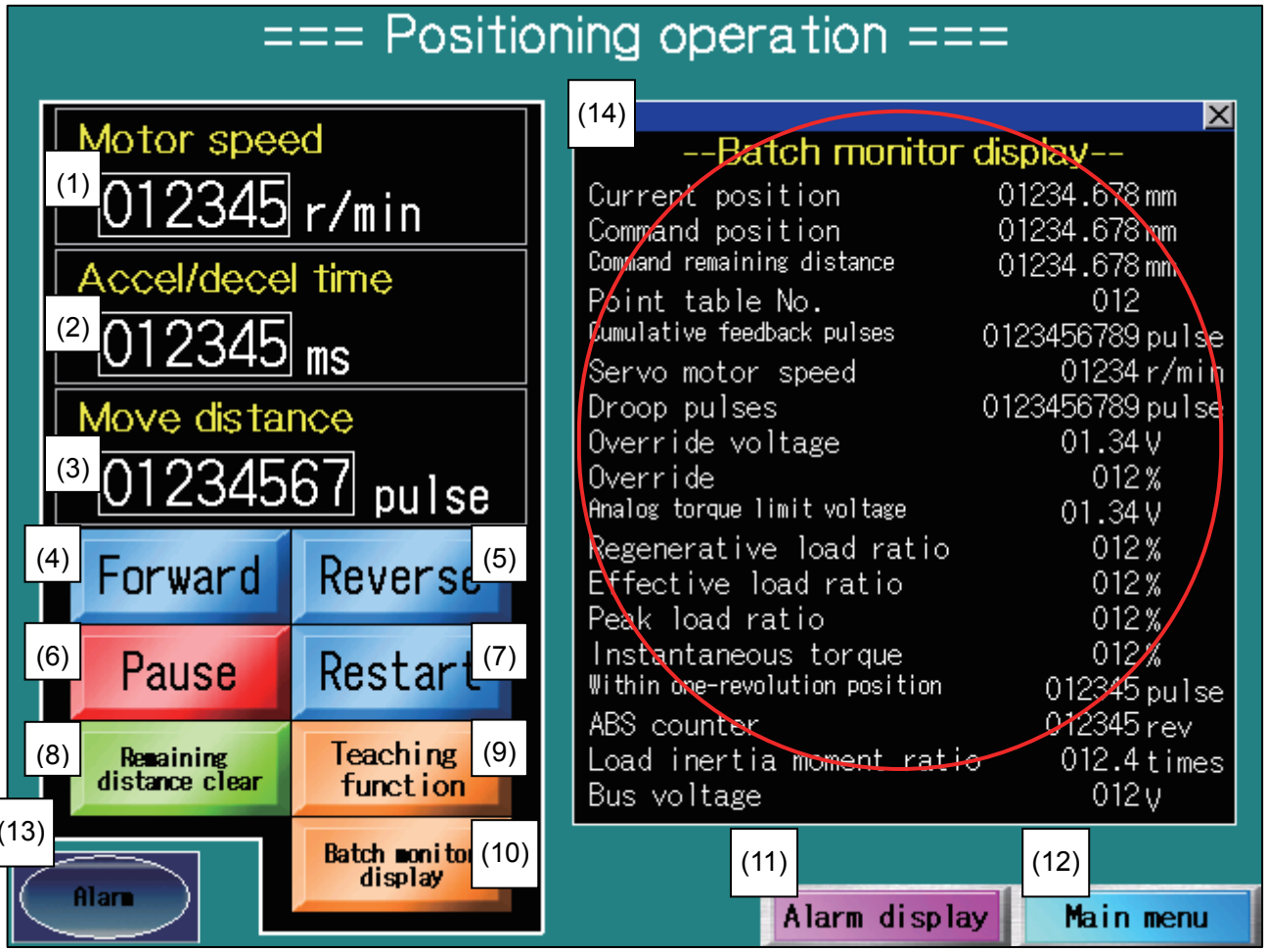
5.4. Forward/reverse rotation operation



Forward rotation/reverse rotation can be performed. (Once the button is pressed, the operation continues after releasing the button.) Scripts and the status observation function are used in this screen.

(1) Set the motor rotation speed by using the numerical input object.
(2) Set the acceleration/deceleration time constant by using the numerical input object.
(3) Touch this button to rotate the motor forward using the values (1) and (2).
(4) Touch this button to rotate the motor backward using the values (1) and (2).
(5) Touch this button to stop the operation.
(6) Touch this button to display the batch monitor display window.
(7) Touch this button to move to the alarm display window.
(8) Touch this button to move to the main menu.
(9) The lamp blinks when alarms occur on the servo amplifier.
Touching this lamp while the lamp is blinking will move to the alarm display screen.
(10) The lamp to display the status of the motor (forward rotation, reverse rotation, stop).
(11) The batch monitor display window appears when the button (6) is pressed.

5.5. Positioning operation

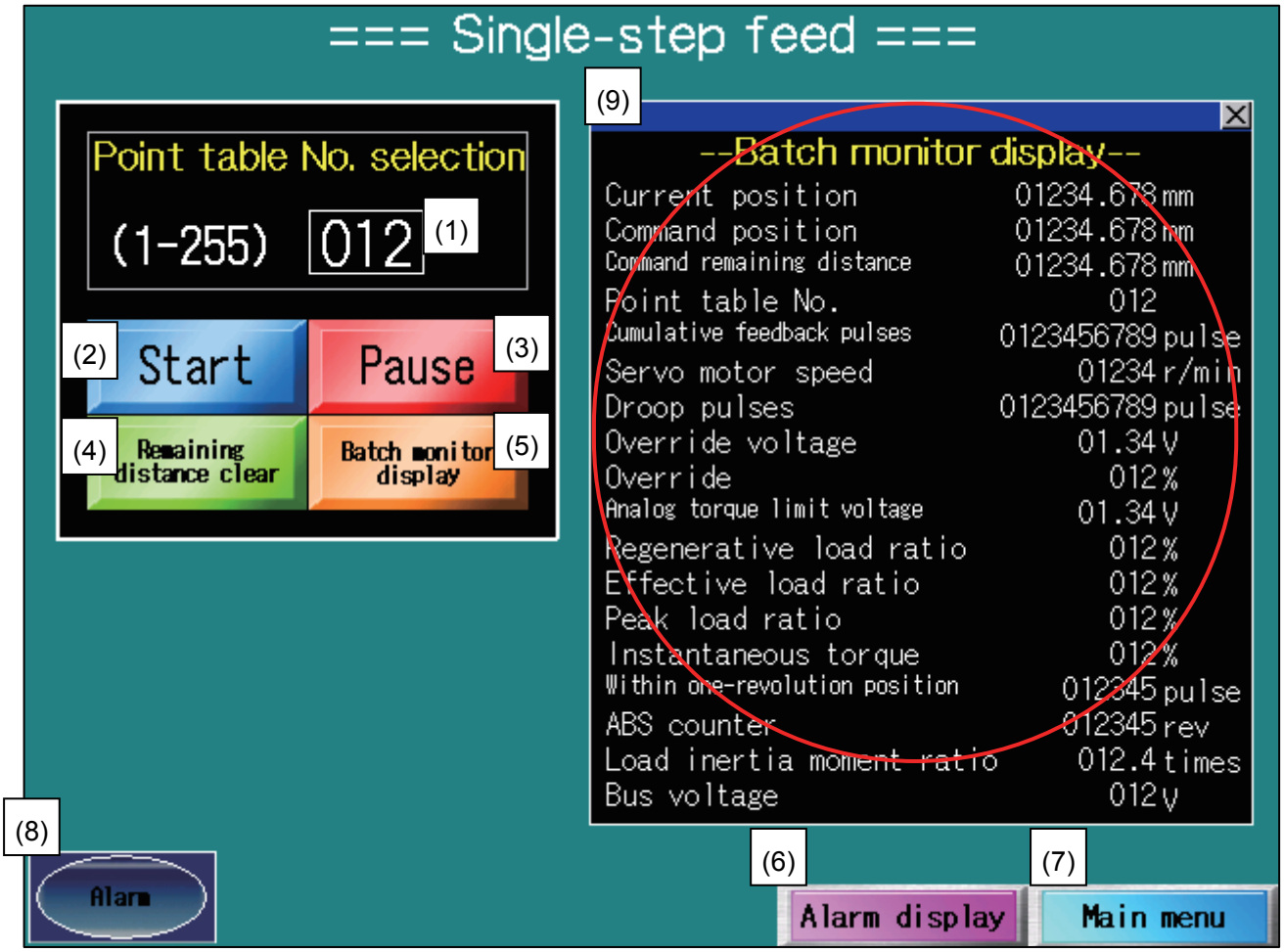


Positioning operations can be performed in this screen.

Scripts are used in this screen (including the teaching function window).

(1) Set the motor rotation speed by using the numerical input object.
(2) Set the acceleration/deceleration time constant by using the numerical input object.
(3) Set the move distance by using the numerical input object.
(4) Touch this button to rotate the motor forward using the values (1) to (3).
(5) Touch this button to rotate the motor backward using the values (1) to (3).
(6) Touch this button to pause the motor.
(7) Touch this button to restart the motor.
(8) Touch this button to clear the remaining distance of the motor movement.
(9) Touch this button to display the teaching function window. (See Section 5.3. (12), (13) for the displayed contents.
(10) Touch this button to display the batch monitor display window.
(11) Touch this button to move to the alarm display screen.
(12) Touch this button to move to the main menu.
(13) The lamp blinks when alarms occur on the servo amplifiers.
Touching this lamp while the lamp is blinking will move to the alarm display screen.
(14) The teaching function window or the batch monitor display window is displayed in this area.

5.6. Single-step feed



Perform the operation of the specified point table No.

Scripts are used in this screen.

(1) Specify the point table No. by using the numerical input object.

(2) Touch this button to start the point table.

(3) Touch this button to perform the following operation. (“Restart” is displayed while pausing.)

While the motor is running: pause the operation.

While the motor is pausing: restart the operation from where it is stopped.

(4) Touch this button to clear the remaining distance of the point table.

(5) Touch this button to display the batch monitor display window.

(6) Touch this button to move to the alarm display screen.

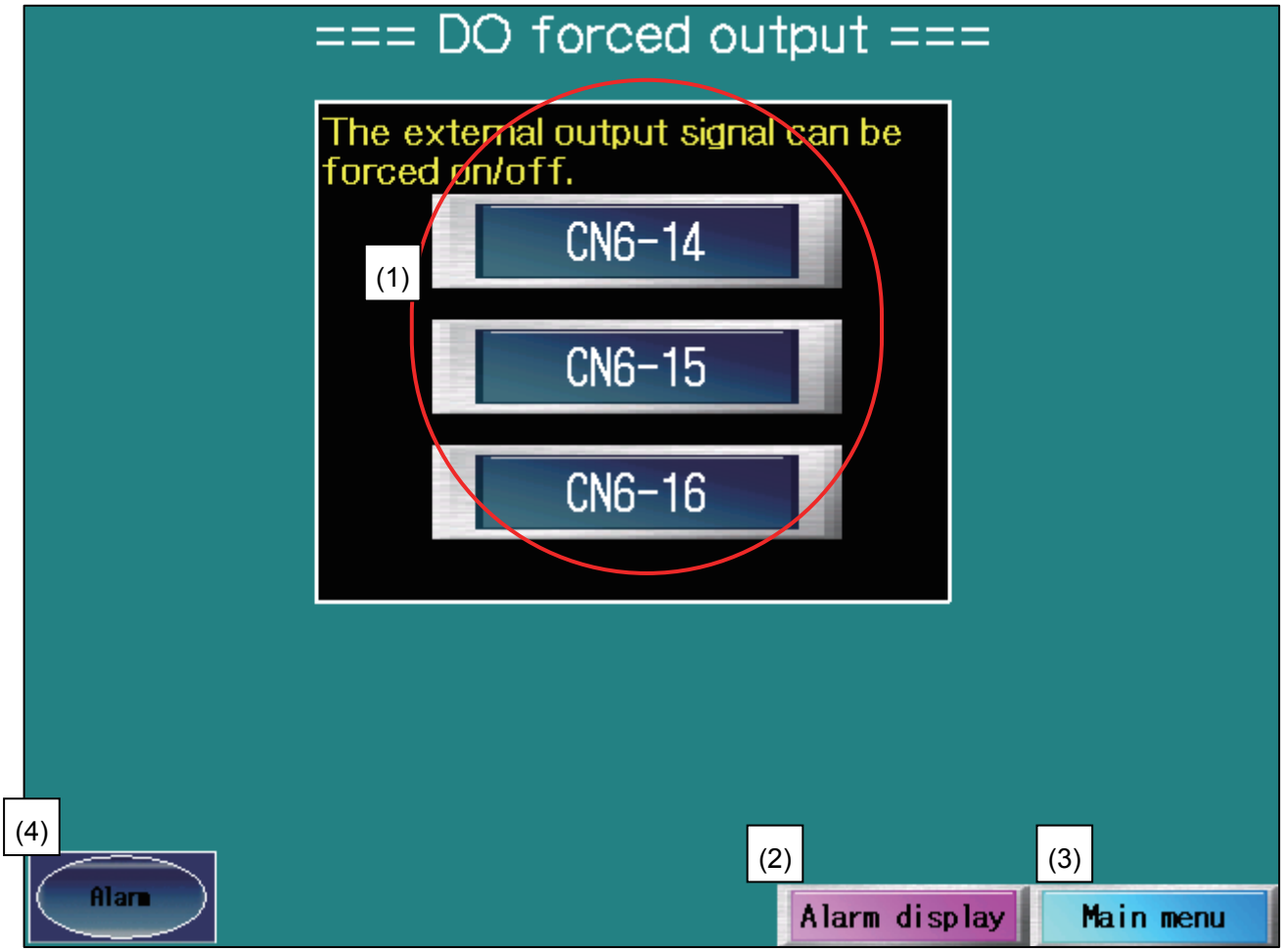
(7) Touch this button to move to the main menu.

(8) The lamp blinks when alarms occur on the servo amplifier.

Touching this lamp while the lamp is blinking will move to the alarm display screen.

(9) The teaching function window or the batch monitor display window is displayed in this area.

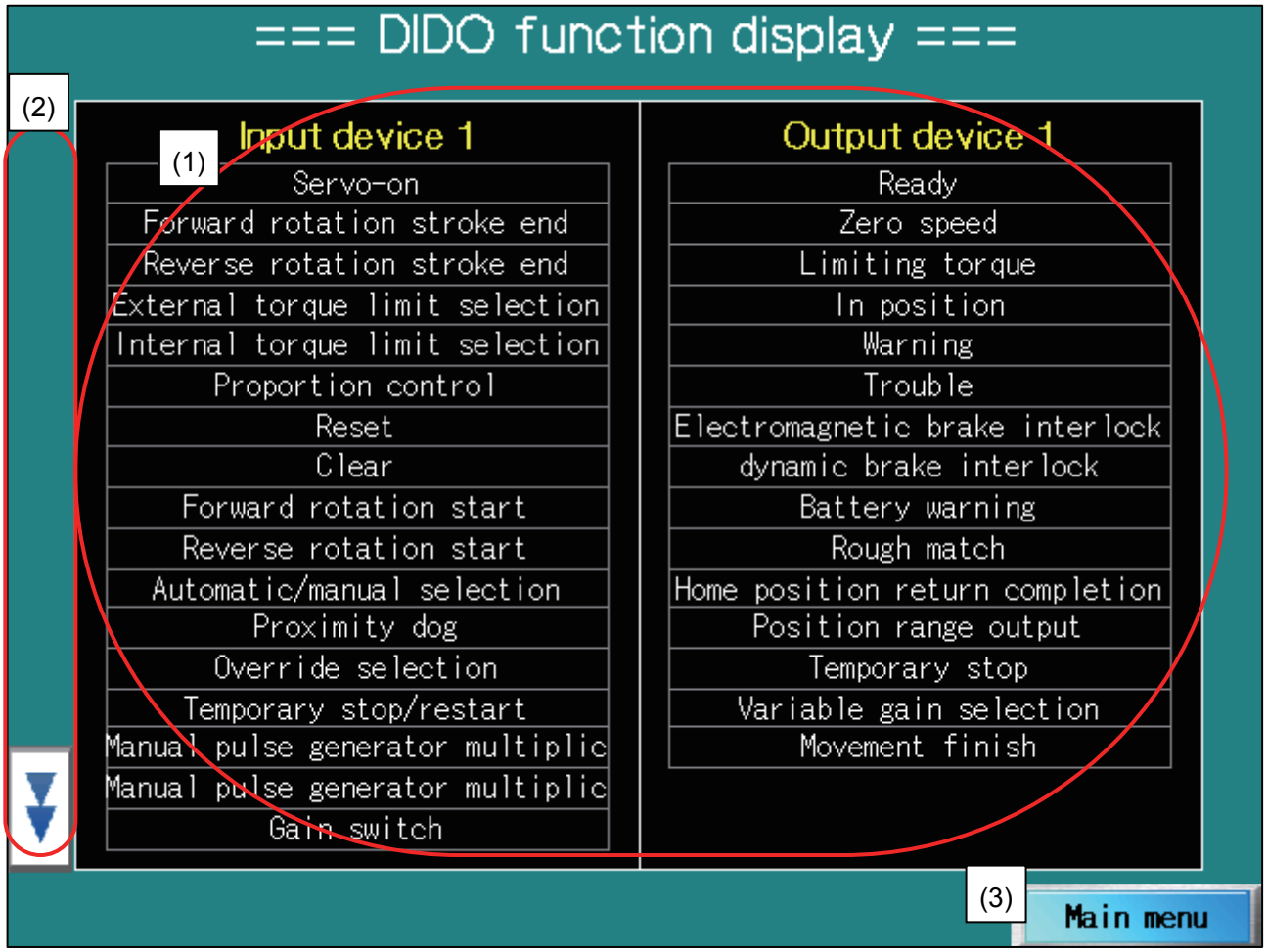
5.7. DO forced output



The output signal pins can be turned ON and OFF regardless of the status of the servo amplifier.
The status observation function is used in this screen.

(1) Touch a button to turn ON/OFF the corresponding signal.
(2) Touch this button to move to the alarm display screen.
(3) Touch this button to move to the main menu.
(4) The lamp blinks when alarms occur on the servo amplifier.
Touching this lamp while the lamp is blinking will move to the alarm display screen.

5.8. DIDO function display



The status of DIDO devices in servo amplifier is shown in this screen.

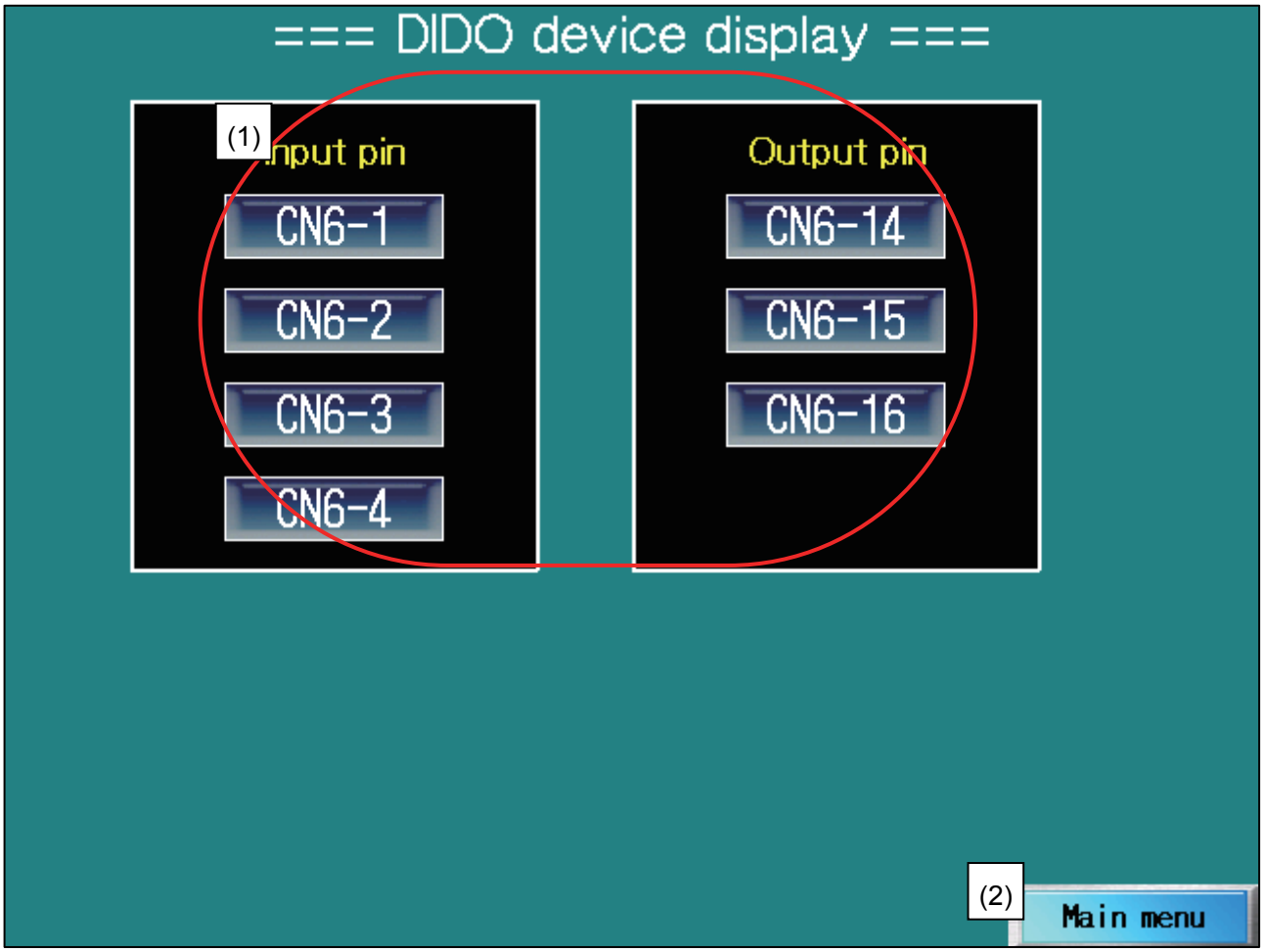
The status observation function is used in this screen.

(1) The status of DIDO devices in servo amplifier is displayed.
The signals in use are lit in yellow.

(2) Touch this button to switch the display items.

(3) Touch this button to move to the main menu.

5.9. DIDO device display



The status of the external I/O pins of the servo amplifier is shown in this screen.

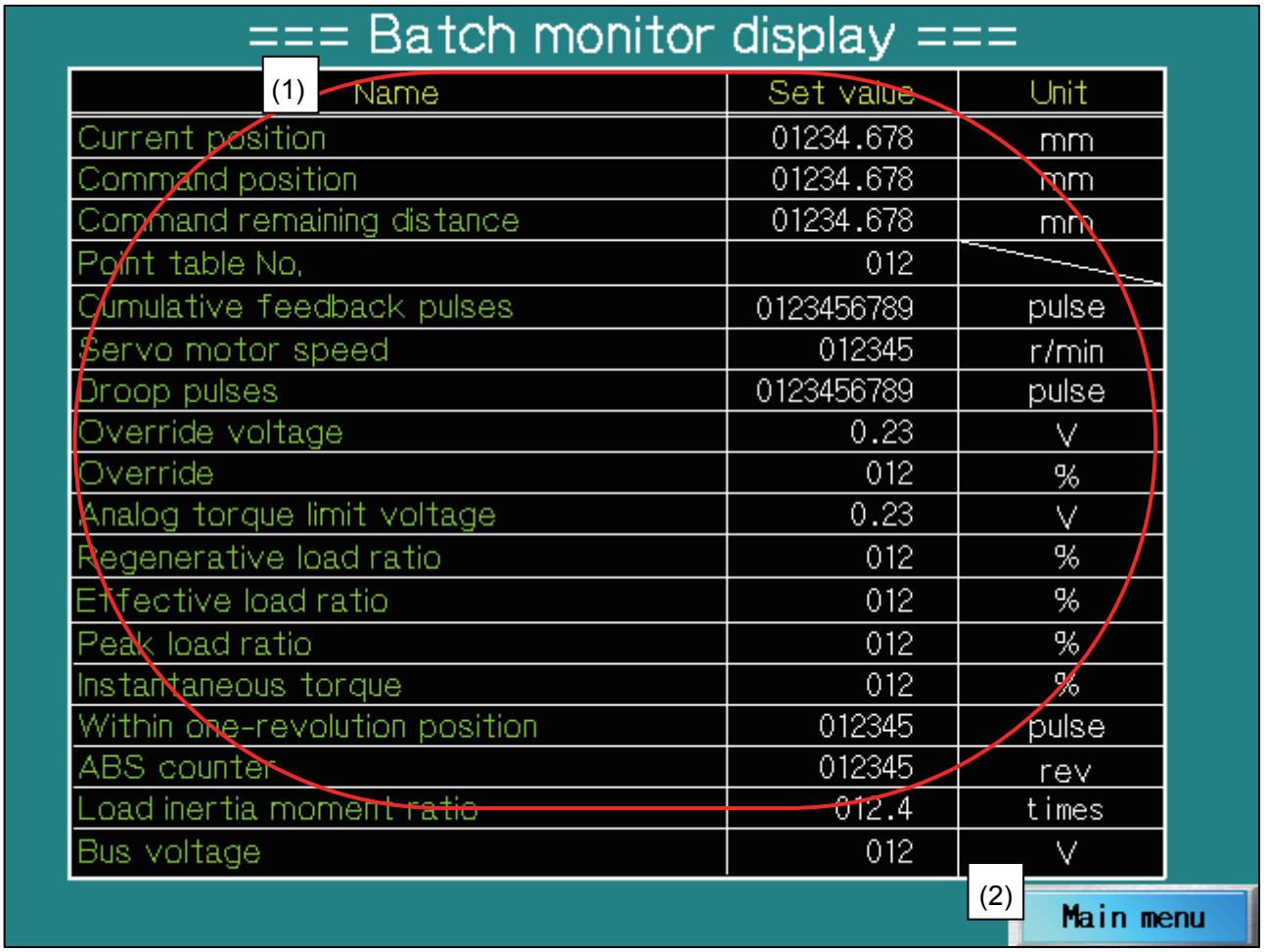
The status observation function is used in this screen.

(1) The status of the external I/O pins of the servo amplifier is displayed.

The signals in use are lit in yellow.

(2) Touch this button to move to the main menu.

5.10. Batch monitor display



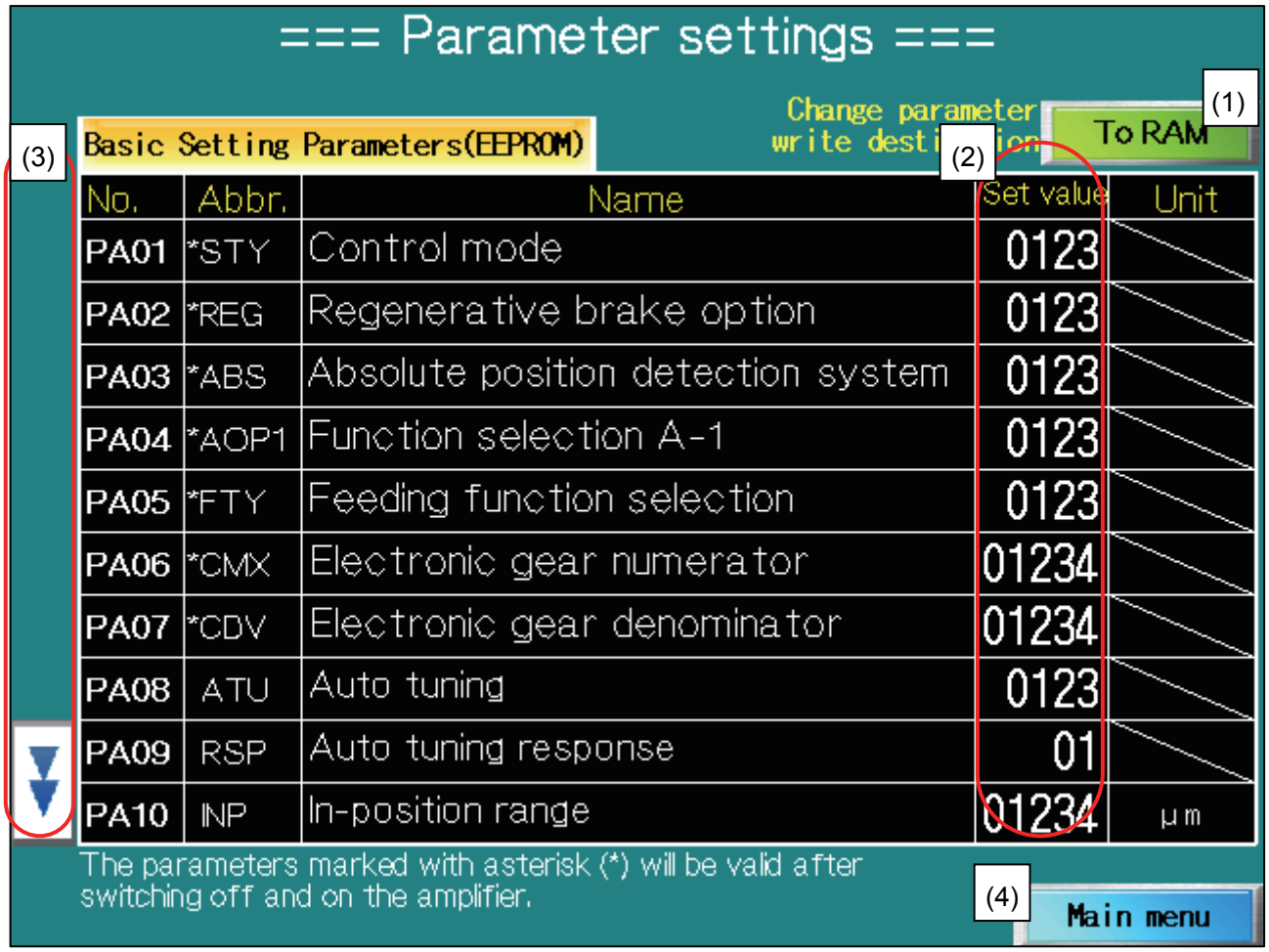
Name	Set value	Unit
Current position	01234.678	mm
Command position	01234.678	mm
Command remaining distance	01234.678	mm
Point table No.	012	
Cumulative feedback pulses	0123456789	pulse
Servo motor speed	012345	r/min
Droop pulses	0123456789	pulse
Override voltage	0.23	V
Override	012	%
Analog torque limit voltage	0.23	V
Regenerative load ratio	012	%
Effective load ratio	012	%
Peak load ratio	012	%
Instantaneous torque	012	%
Within one-revolution position	012345	pulse
ABS counter	012345	rev
Load inertia moment ratio	012.4	times
Bus voltage	012	V

The status of the servo amplifier and the motor is shown in this screen.

(1) Displays the status of the servo amplifier and the motor.

(2) Touch this button to move to the main menu.

5.11. Parameter settings



Basic setting parameter values can be set and displayed in this screen. (The above image is the EEPROM screen.) Note that only basic parameters are listed in the screen. When using this sample screen for an existing system, add parameters to monitor depending on the system.

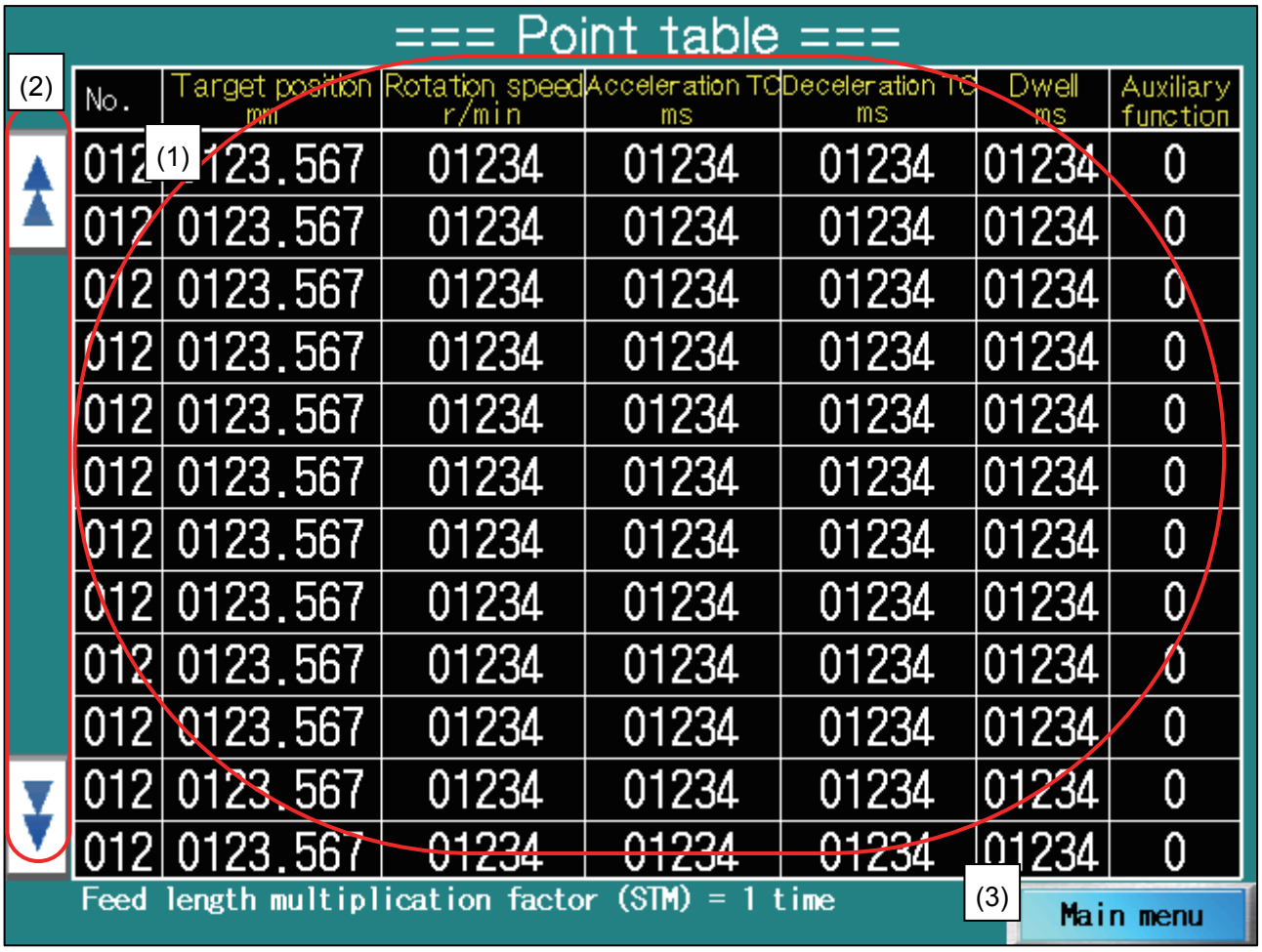
(1) Touch this button to change the destination to write parameters.
Be sure to confirm the destination before writing parameters.
The parameter values written in RAM will be deleted when turning off the servo amplifier power.

(2) Set values by using the numerical input objects.
The input value range is set to each numerical input object.

(3) Touch this button to switch the displayed items.

(4) Touch this button to move to the main menu.

5.12. Point table



Set the values required to operate the servo amplifier to point tables.
The multiplication ratio is 1 in this sample screen data. If the multiplication ratio is changed, the settings of numerical input objects must be changed as well to set and display the correct values. (For example changing digits and decimal point of the target position value)

(1) Set data with the numerical input objects.
The input value range is set to each numerical input object.
(2) Touch these buttons to switch the point tables to display.
Point tables from No.1 to No.255 can be set for MR-J3-T/-D01.
(3) Touch this button to move to the main menu.

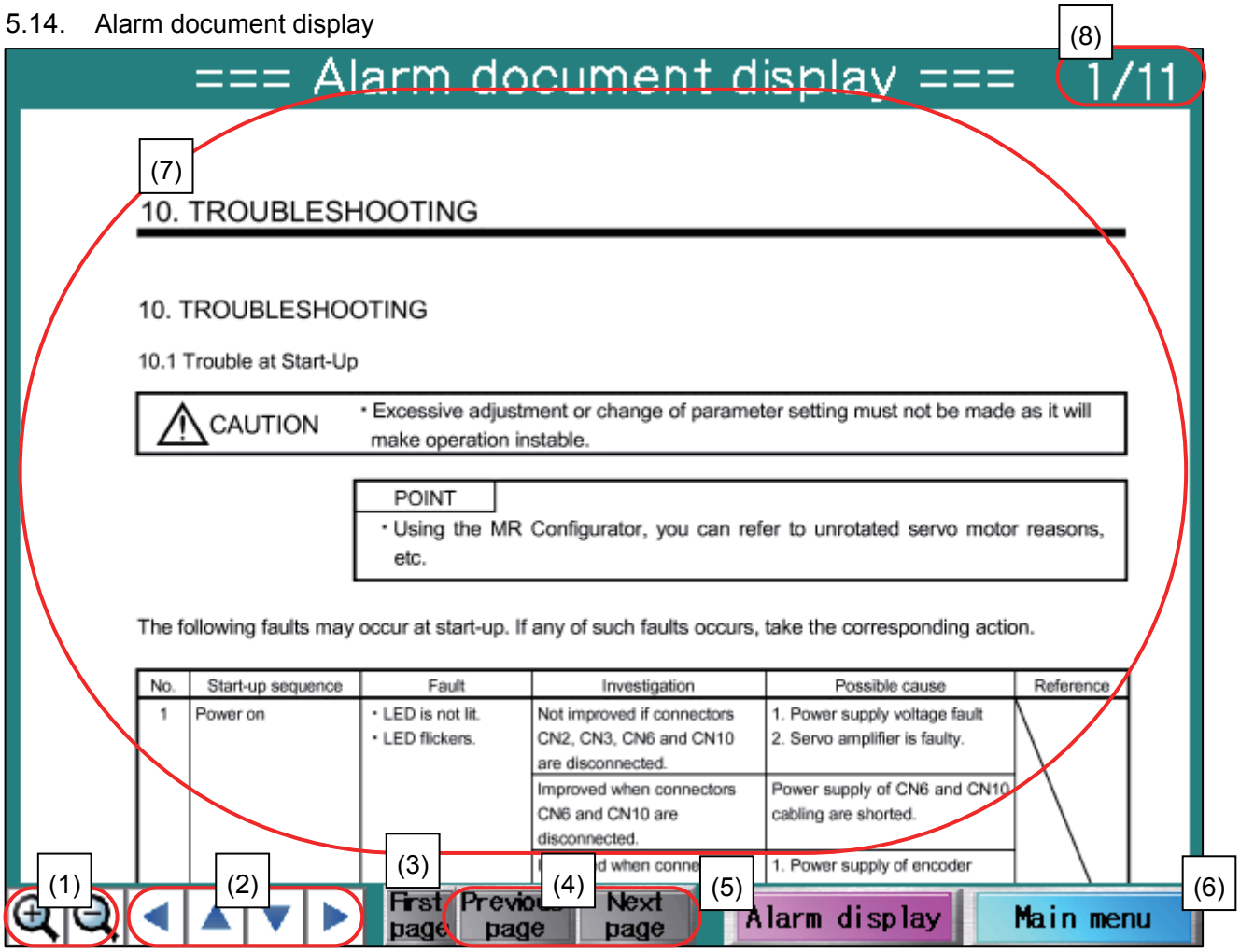
5.13. Alarm display

The current alarm, the status of various values when the current alarm occurred, and the alarm history are displayed in this screen.

(1) Touch this button to reset the current alarm.
(2) Touch this button to display the status display at alarm occurrence window.
(3) Touch this button to clear the alarm history data.
(4) Touch this button to move to the alarm document display screen.
(5) Touch this button to move to the main menu.

(6) The current alarm is displayed. Note that “A” is added before the alarm number in the numerical display objects (6) and (7). If the alarm number is 888 then it is displayed as A888 on the GOT.
(7) The alarm history of the servo amplifier is displayed.
(8) The status display at alarm occurrence window appears when the button (2) is pressed.

5.14. Alarm document display



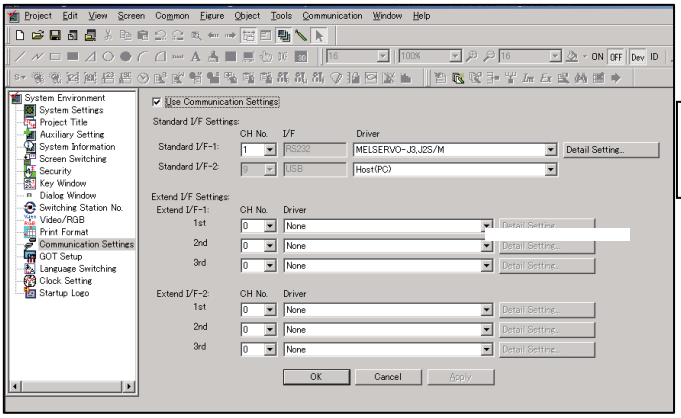
The troubleshooting manual of the MR-J3-T/-D01 servo amplifier is displayed in this screen.

(1) Touch these buttons to enlarge/reduce the display size (large, middle, small).
(2) Touch these buttons to move the display position (up, down, left, right).
(3) Touch this button to move to the first page of the document.
(4) Touch these buttons to display the pervious or next page.
(5) Touch this button to move to the alarm display screen.
(6) Touch this button to move to the main menu.
(7) The alarm document (troubleshooting manual) is displayed in this area.
(8) The page number of the document is displayed.

6. Caution when customizing the data

6.1. Change communication interface

The standard I/F (Ch No.1) is used in this sample data. To change the extended I/F, configure the CH No., communication driver and the communication settings in the GT Designer2 or in the utility menu on the GOT.

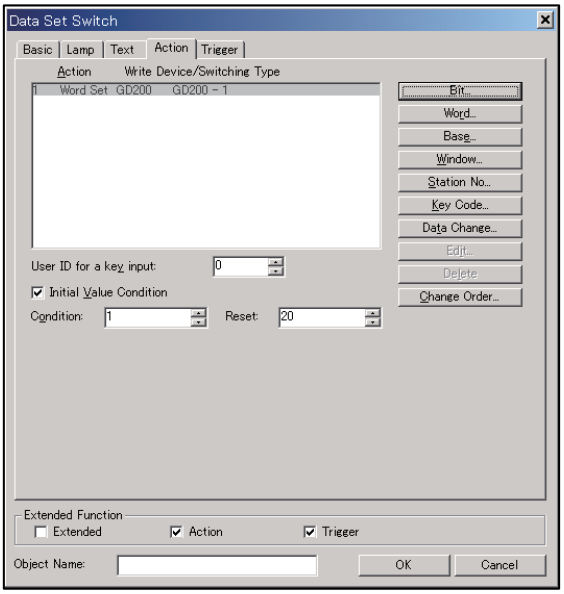


The left image shows the standard I/F settings.

6.2. Changing the document data

To change the documents that are displayed in the alarm document screen, convert the new document data into the format that can be displayed on the GOT by using DocumentConverter.
For how to use the DocumentConverter, refer to the GT Degigner2 Version2 Screen Design Manual.
To save the document data in a CF card, be sure to use the folder structure written in Section 4.4 (1).
When changing the total page number, it is necessary to change the Condition and Reset values (in Action tab) of the Previous page and Next page buttons.

The value in the Section 5.14 (8) must be changes as well.



The left image shows the settings when the total page number is 20.

6.3. Changing the servo amplifier capacity

When changing the servo motor to connect to the GOT, the servo motor speed that is entered from the GOT must be within the instantaneous acceptable rotation speed.

6.4. Caution when designing screens

During the test operation of the servo amplifier, if the communication between the GOT and servo amplifier is disconnected more than 0.5 [ms] then the servo amplifier slows down and stops, resulting in the servo lock status. If a test operation screen is created by the users, it is recommended to monitor the status of servo amplifier on the GOT to confirm that the communication is being established.