

# TTM-339 Loader Soft Instruction Manual

# Contents

1. Overview.....	1
1.1 Operating environment.....	1
2. Implementation .....	1
3. Operation Method .....	2
3.1 Startup .....	2
3.2 Exit.....	3
4. Function Description.....	4
4.1 Overviewing the functions .....	4
4.2 Communication setting .....	7
4.3 Program setting .....	9
4.4 Input setting for respective screens .....	10
4.5 Trend .....	12

## 1. Overview

This instruction manual overviews TTM-339 Loader Software and describes its operation.

### 1.1 Operating environment

#### 1.1.1 Operating system

Microsoft Windows XP

Microsoft Windows Vista

Microsoft Windows 7

## 2. Implementation

Refer to the TOHO Loader Software Setup Procedure.

### 3. Operation Method

#### 3.1 Startup

The following screen appears immediately after this application software is properly started.



Fig. 3-1 Initial screen

### 3.2 Exit

To exit this application software, click the “×” button on the upper right corner of the window or “Exit” of the menu.

\* In case another startup is tried while a startup is already in process, the message shown in Fig. 3.2 appears. A “double startup” is not possible.



Fig.3.2 “Double startup” error

## 4. Function Description

### 4.1 Overviewing the functions

This application software provides two functions: Parameter Setting and Trend.

Click the “Select” button of the menu for using the Trend function.

To return to the Parameter Setting screen from Trend, exit each function.



Fig. 4-1 “Select” display

\* For details of Trend, see Section 4.5 “Trend.”

#### 4.1.1 Menu bar

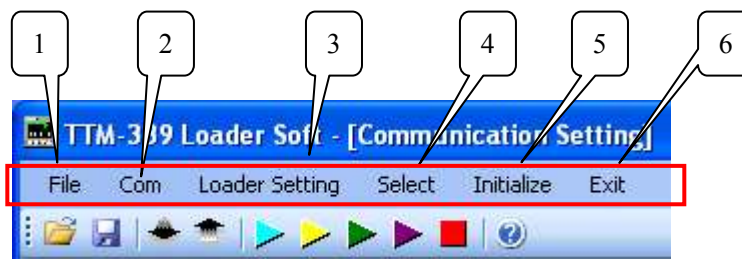


Fig. 4-2 Menu bar

1. File  
“File” is for newly saving or overwrite-saving data. “Open” is for reading in saved data.
2. Com (Communication Setting)  
“Com” is for opening the Communication Setting screen.
3. Loader Setting  
“Loader Setting” is for displaying each of the selected screens of SEt01 to SEt13.  
On respective screens, set the setting items for whether to be displayed or not to be displayed.
4. Select  
See Section 4.1 “Overviewing the functions.”
5. Initialize  
“Initialize” is for initializing set data to the original setting directly after startup.
6. Exit  
“Exit” is for exiting this application software.

#### 4.1.2 Tool bar

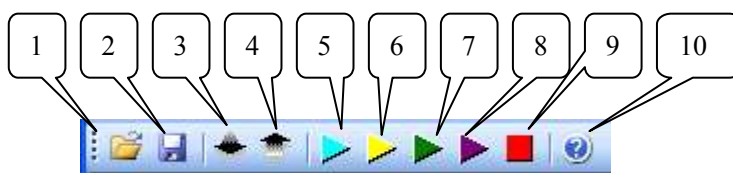


Fig. 4-3 Tool bar

1. Open (file read)  
“Open” is for reading in parameters from files.
2. Overwrite save (file save)  
“Overwrite save” is for saving parameters to files.
3. Read  
“Read” is for reading in selected parameters (displayed in yellow) from the temperature controller.
4. Write  
“Write” is for writing selected parameters (displayed in yellow) in the temperature controller.
5. AT startup of PID No. 1 (low temperature)  
This tool is for starting auto-tuning of PID No. 1.
6. AT startup of PID No. 2 (medium temperature)  
This tool is for starting auto-tuning of PID No. 2.
7. AT startup of PID No. 1 (high temperature)  
This tool is for starting auto-tuning of PID No. 3.
8. AT startup of PID Nos. 1 to 3  
This tool is for starting auto-tuning of PID Nos. 1 to 3.
9. AT stop  
“AT stop” is for stopping auto-tuning.
10. Help  
“Help” is for displaying the Help screen.

### 4.1.3 Screen Select buttons

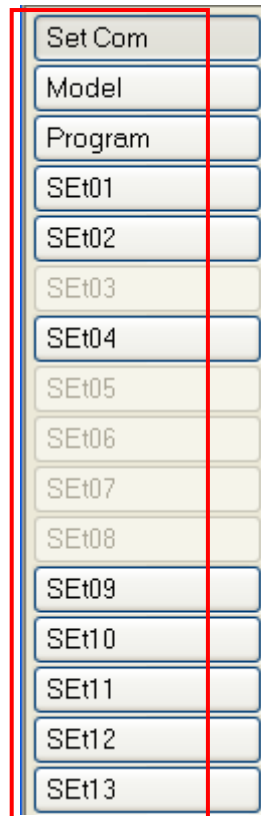


Fig. 4-4 Selecting screens

1. Screen Select buttons

Use the Select buttons shown in Figure 4-4 for selecting setting screens.

## 4.2 Communication setting

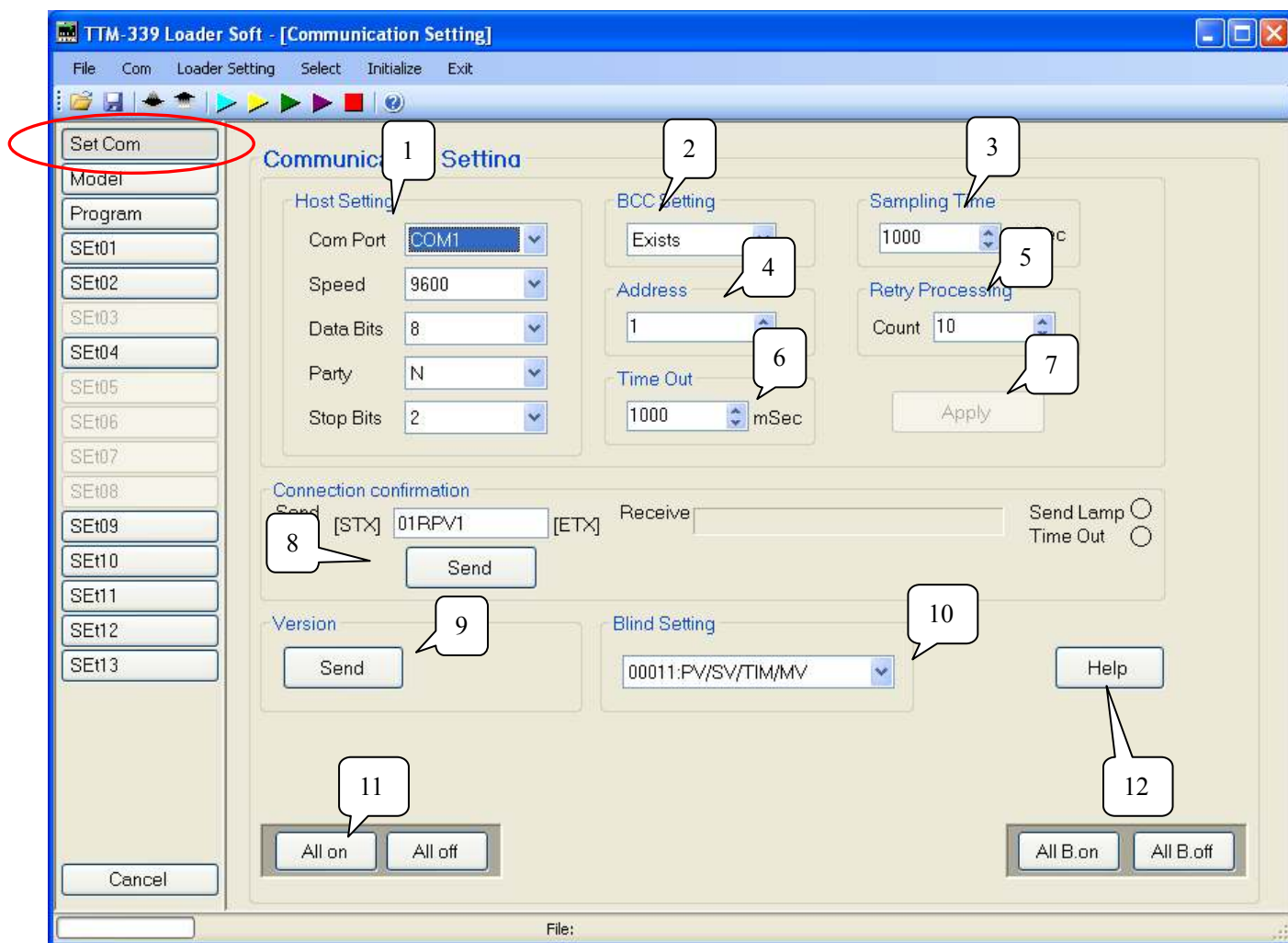


Fig. 4-5 Communication Setting screen

1. Host Setting

“Host Setting” is for setting RS232C communication.

Match the setting with the communication setting for the temperature controller.

\* Communication with the temperature controller responds only to the TOHO protocol (not to MODBUS).

2. BCC Setting

Match “BCC Setting” with the communication setting for the temperature controller.

The setting is for whether communication error check code (BCC) should be used or not.

If “Exists” is selected, a BCC code is automatically attached to the message being sent.

3. Sampling Time

“Sampling Time” indicates the sampling time of Trend.

4. Address

“Address” is for setting an address of the temperature controller with which communication is to be established.

5. Retry Processing  
“Retry Processing” is for setting a count and interval of resending the message in case a communication error is received from the temperature controller.  
The error is finalized when the number of times the communication error returns is the same times as the set count or more. A timeout is also counted as an error.
6. Time Out  
“Time Out” is for timeout setting of communication. Use it for setting a period of time of waiting for a response from the temperature controller.
7. Apply  
“Apply” is for applying set values.
8. Connection confirmation  
“Connection confirmation” is for sending set messages.
9. Version  
“Version” is for reading the version of the temperature controller.
10. Display (Blind Setting)  
Displaying the setting mode (blind function) is valid only with selected (yellow) parameters.
11. “All on” and “All off” buttons  
The buttons are for collectively selecting or non-selecting all settable parameters.
12. “Help” button  
The button is for opening the Help screen.

### 4.3 Program setting

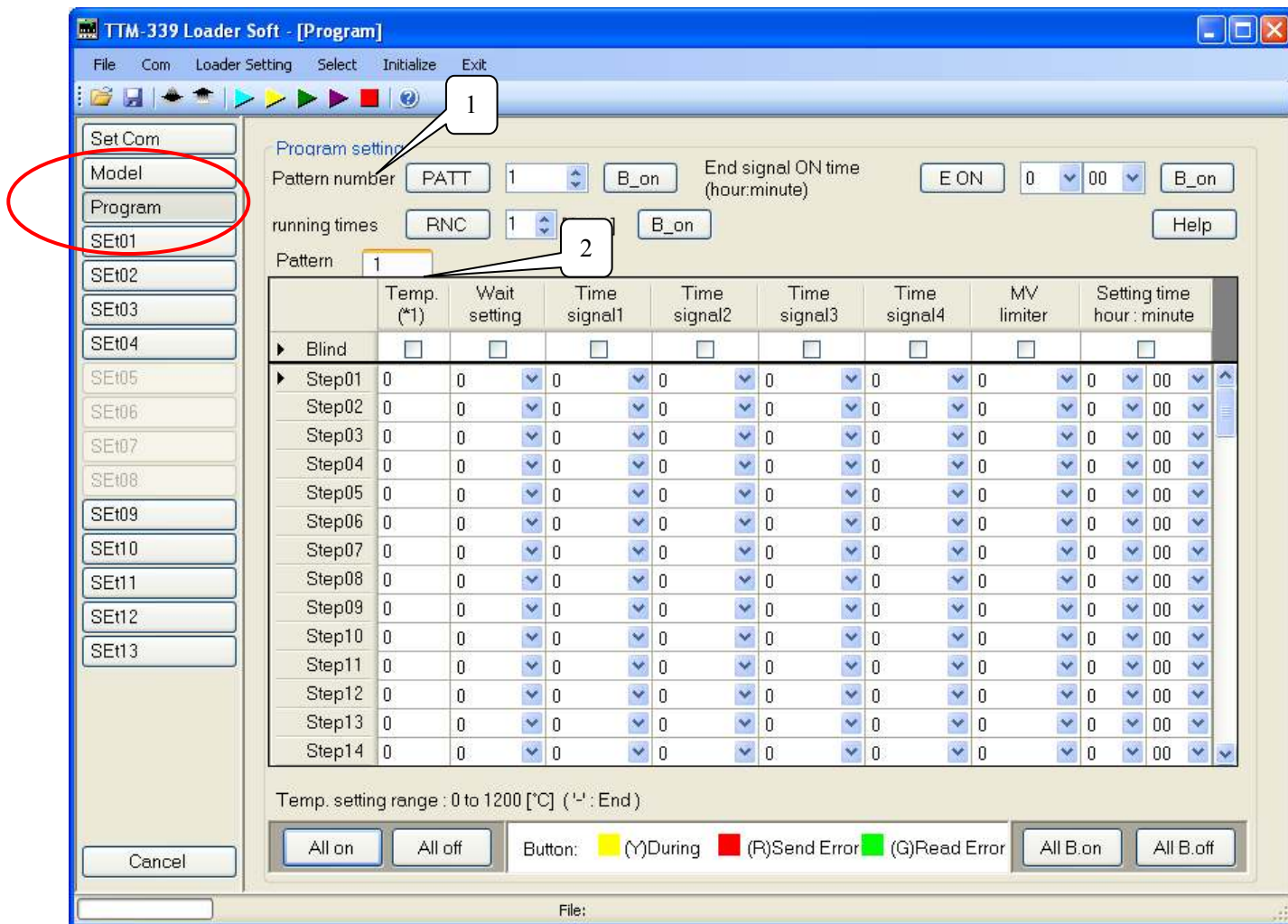


Fig. 4-6 Program Setting screen

1. “Pattern number”  
“Pattern number” is for setting a pattern number.
2. “Pattern”  
“Pattern” is for setting numerical numbers for respective items.

### 4.4 Input setting for respective screens

The following is an example of the Input 1 Setting Mode (SEt01) screen.

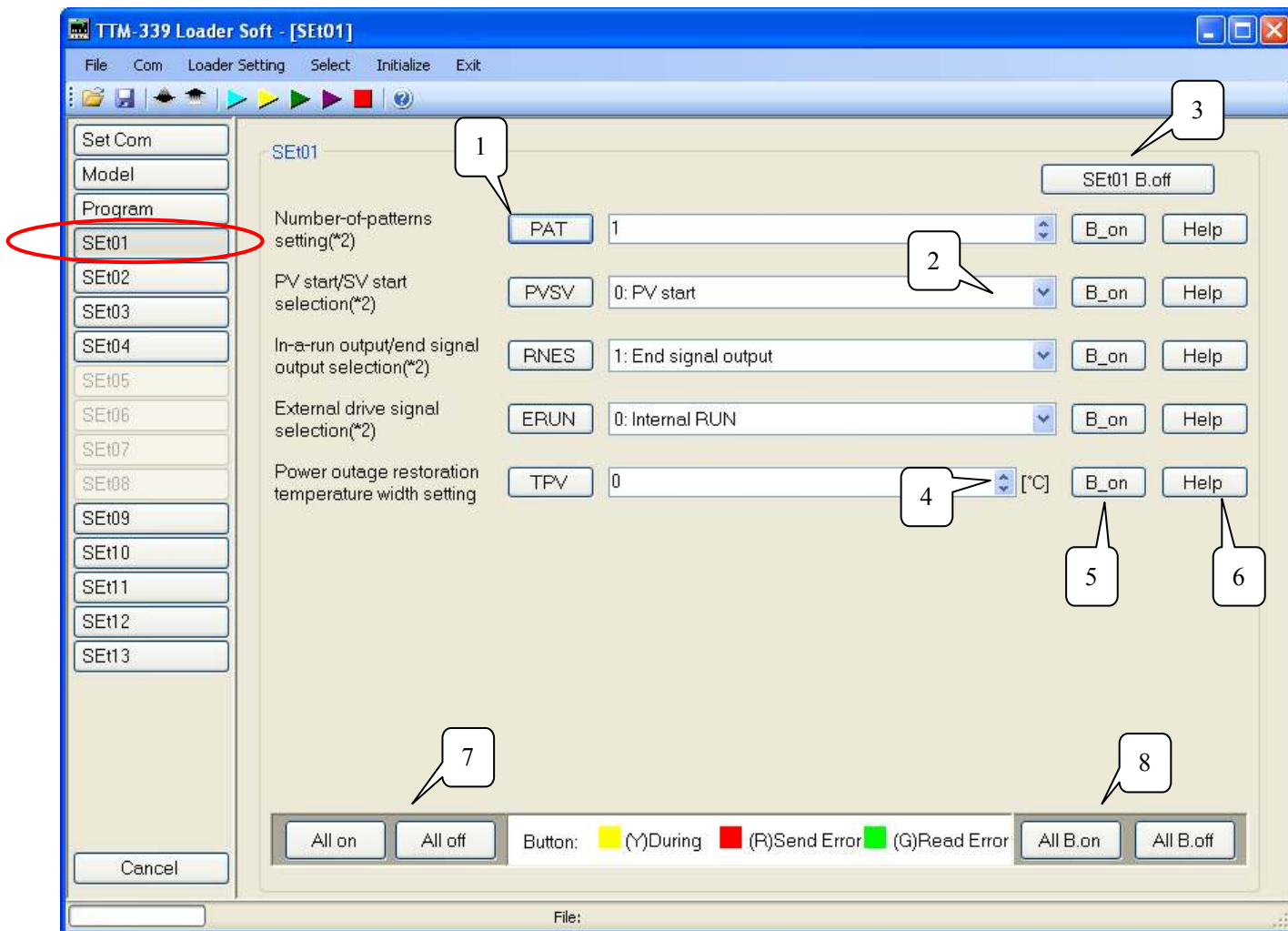


Fig. 4-7 Input 1 Setting Mode screen

1. Select button

Set the parameters to be read or written in as shown in Figure 4-8, which indicates midway of a selection process, by pressing the respective Select buttons.



Fig. 4-8 Select display

For writing the set parameters in the temperature controller, press the Select button corresponding to the set item in order to establish the state of being selected and then press the Write button.

The selected (yellow) parameters are communicated with the temperature controller and written therein.

\* If a different setting is written in after set parameters are written in, the parameters previously written in are deleted.

\* If reading in set parameters from the temperature controller, press the Select button corresponding to the set item in order to establish the state of being selected and then press the Read button. Communication with the temperature controller is established and the setting written therein is reflected in the item being selected.

\* Reading and writing in parameters are executed for those selected (yellow) on all screens.

2. Command Select button

The button is for selecting a command from commands already set for respective items. In addition, no input can be made from the keyboard.

3. SEt display/non-display button

By selecting the button and pressing the Write button with “SEt \_” in non-display, the SEt screen of the temperature controller is blinded to disappear.

4. Up/Down button

The button is for changing a set value. A value continuously changes by holding the button pressed for one second or more.

Key input of a value is also possible.

5. “Display” (blind) button

By selecting the button, setting it for non-display and pressing the Write button, the corresponding parameter on the temperature controller is blinded to disappear.

\* This function is valid only with parameters in selection (yellow).

6. “Help” button

The button is for opening the Help screen.

7. SEt “All on” and “All off” buttons

The buttons are for collectively setting the Select buttons in “SEt\_” for “All on” or “All off.”

8. SEt “All B.on” and “All B.off” buttons

The buttons are for collectively setting the Display (or Blind) buttons in “SEt\_” for display or non-display.

### 4.5 Trend

“Trend” is for continuously acquiring set values (identifiers) from the temperature controller, displaying them in a graph and saving the data to files.

#### 4.5.1 Trend starting procedure



Fig. 4-9 Trend selection

Click “Select” of the menu bar and then click “Trend” of the sub-menu.

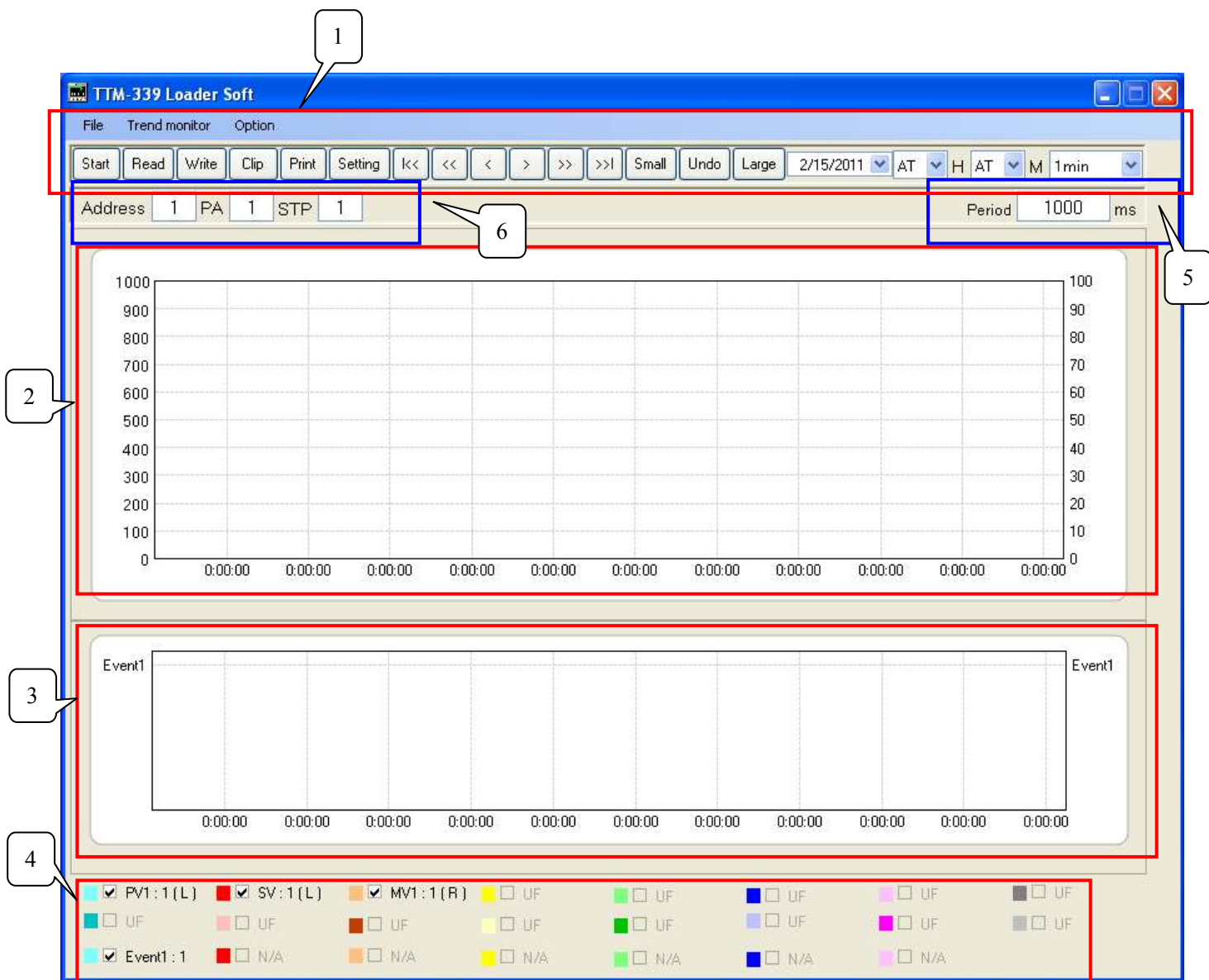


Fig. 4-10 Trend screen

1. Menu and buttons  
There are the menu bar and the tool bar (buttons) on the Trend screen.  
(See Section 4.5.2 “Menu and buttons.”)
2. Trend monitor graph chart  
The graph chart is for displaying a trend monitor graph.
3. Digital trend graph chart  
The graph chart is for displaying a digital trend graph of output, DI, etc.
4. Selecting identifiers  
Checkboxes for respective identifiers of the trend monitor and the digital trend are located in this area.  
For checked identifiers, the data is acquired and the screen is displayed.  
For non-checked identifiers, neither data is acquired nor screen is displayed.
5. Sampling period  
The period set on the Graph Setting screen is displayed in the unit of millisecond (only display).
- \* Note: Trend data equivalent to 60,000 counts can be acquired.  
Regarding data acquired for over 60,000 counts, the new data overwrites the previous one for continuing the operation.  
To exit Trend, first stop its operation, as it cannot exit while in operation.
6. Address, PA and STP settings  
These items are for setting address, pattern and step, respectively.

4.5.2 Menu and buttons

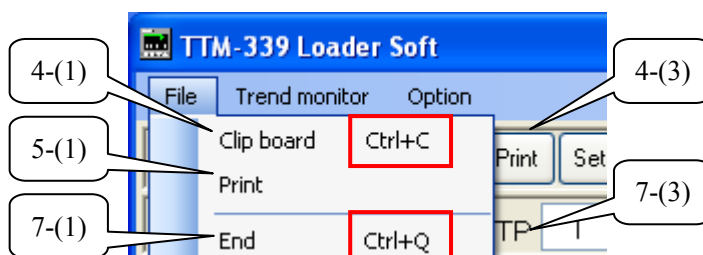


Fig. 4-11 “File” menu

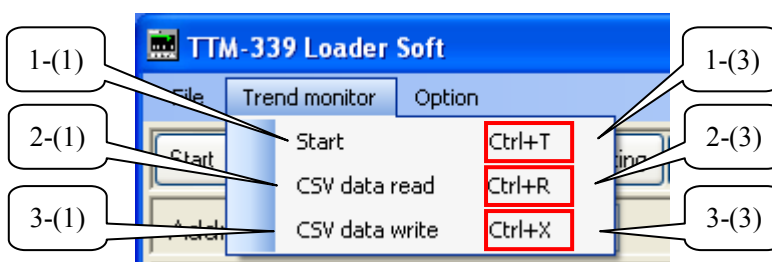


Fig. 4-12 “Trend monitor” menu

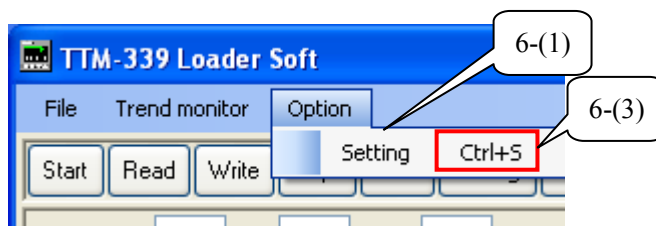


Fig. 4-13 “Option” menu

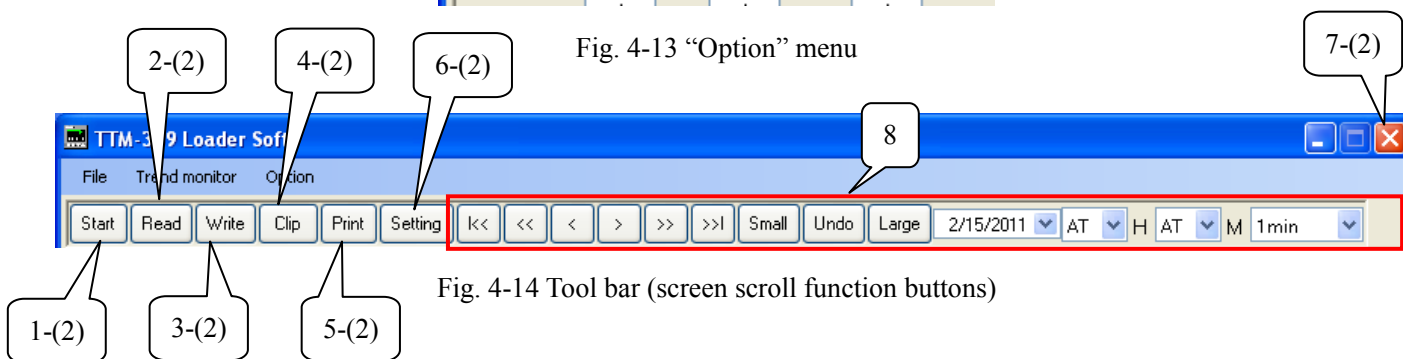


Fig. 4-14 Tool bar (screen scroll function buttons)

1. “Start”

Trend can be started with any of the following three methods.

- (1) Clicking the sub-menu “Start” of the “Trend monitor” menu
- (2) Clicking the “Start” button
- (3) Using the short cut key “Ctrl” + “T”

\* While the Trend is in operation, “Start” buttons of the menu and tool bars turn to “Stop.”

## 2. “Read”

Data can be read in from CSV files with any of the following three methods.

- (1) Clicking the sub-menu “CSV data read” of the “Trend monitor” menu
- (2) Clicking the “Read” button
- (3) Using the short cut key “Ctrl” + “R”

\* While the Trend is in operation, the “Read” button and the “CSV data read” menu are invalid.

## 3. “Write”

Data can be saved to CSV files with any of the following three methods.

- (1) Clicking the sub-menu “CSV data write” of the “Trend monitor” menu
- (2) Clicking the “Write” button
- (3) Using the short cut key “Ctrl” + “X”

## 4. “Clip”

The Trend screen can be copied on the system clipboard with any of the following three methods.

- (1) Clicking the sub-menu “Clipboard graph output” of the “File” menu
- (2) Clicking the “Clip” button
- (3) Using the short cut key “Ctrl” + “C”

## 5. “Print”

The Trend screen can be printed with either of the following two methods.

- (1) Clicking the sub-menu “Print” of the “File” menu.
- (2) Clicking the “Print” button

\* The Print Setting screen shown in Figure 4-15 appears by pressing “Print” menu button.

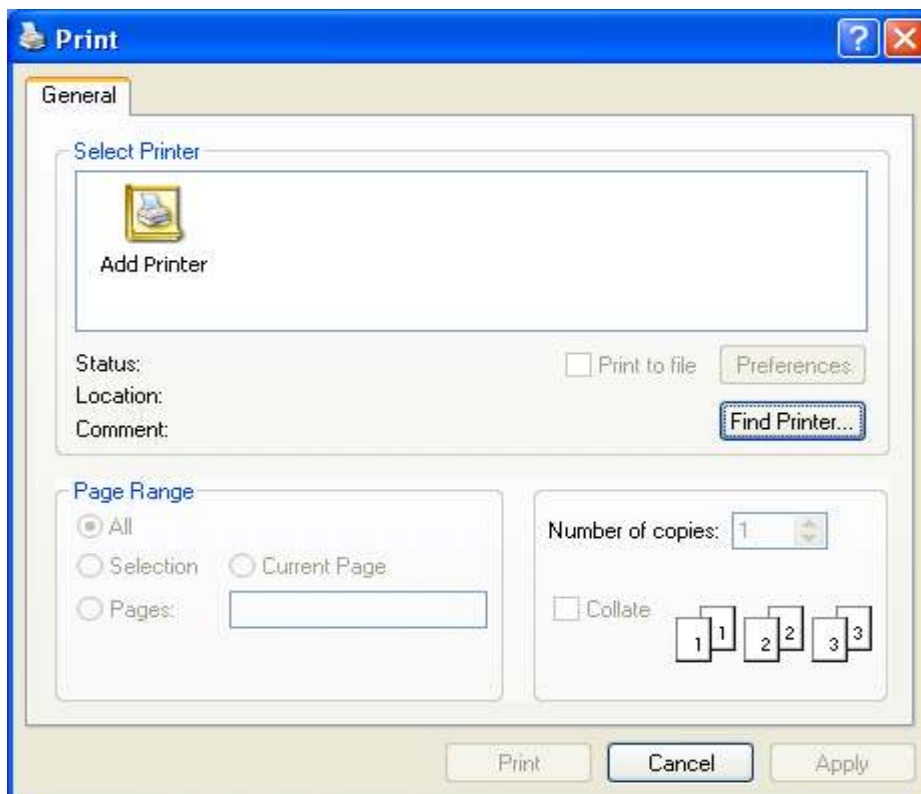


Fig. 4-15 Print Setting screen

## 6. “Setting”

The “Setting” button is for displaying the Graph Setting screen. For details, see Section 4.5.3.

In addition, the Graph Setting screen can be opened with any of the following three methods.

- (1) Clicking the sub-menu “Setting” of the “Option” menu
- (2) Clicking the “Setting” button
- (3) Using the short cut key “Ctrl” + “S”

## 7. “End”

The Trend screen can be closed with any of the following three methods.

- (1) Clicking the sub-menu “End” of the “File” menu
- (2) Pressing the “×” button on the Trend window
- (3) Using the short cut key “Ctrl” + “Q”

- \* While Trend is in operation, the “End” menu and “×” button are invalid and the Trend screen cannot be exited.

## 8. "Screen Scroll"

By using the screen scroll function buttons shown in Figure 4-14, a displayed graph can be scrolled, magnified or reduced

Name	Operation description
<< (Button)	Moves the graph backward to the one corresponding to the time when data was first acquired. In case the Trend is in operation, it is continuously displayed with "Undo."
<< (Button)	Moves the graph backward by an amount equivalent to a half of the screen. In case the Trend is in operation, it is continuously displayed with "Undo."
< (Button)	Moves the graph backward by an amount equivalent to a quarter of the screen. In case the Trend is in operation, it is continuously displayed with "Undo."
> (Button)	Moves the graph forward by an amount equivalent to a quarter of the screen. In case the Trend is in operation, it is continuously displayed with "Undo."
>> (Button)	Moves the graph forward by an amount equivalent to a half of the screen. In case the Trend is in operation, it is continuously displayed with "Undo."
>>  (Button)	Moves the graph forward to the one corresponding to the current time. In case the Trend is in operation, it is continuously displayed with "Undo."
Small (Button)	Reduce the size of the graph by 0.8 x.
Undo (Button)	Scales back the graph to its original size. In case the Trend is in operation, it is continuously displayed.
Large (Button)	Magnifies the graph by 1.25 x.
Display starting date and time (Combo box)	The graph is displayed starting from the set date and time. In case the Trend is in operation, it is continuously displayed with "Undo." * If "AT" is assigned for either hour or minute, it invalidates the display starting date and time and returns the graph to the original state
Display interval (Combo box)	Sets display time interval of one screen.
Shift + mouse pointer	The graph display is magnified up by moving the mouse pointer with Shift being held pressed.
Ctrl + mouse pointer	The graph time series is displaced by moving the mouse pointer while pressing the Ctrl key.

### 4.5.3 Graph Setting screen

The screen is for setting various items of the Trend function.

1. "Trend monitor"

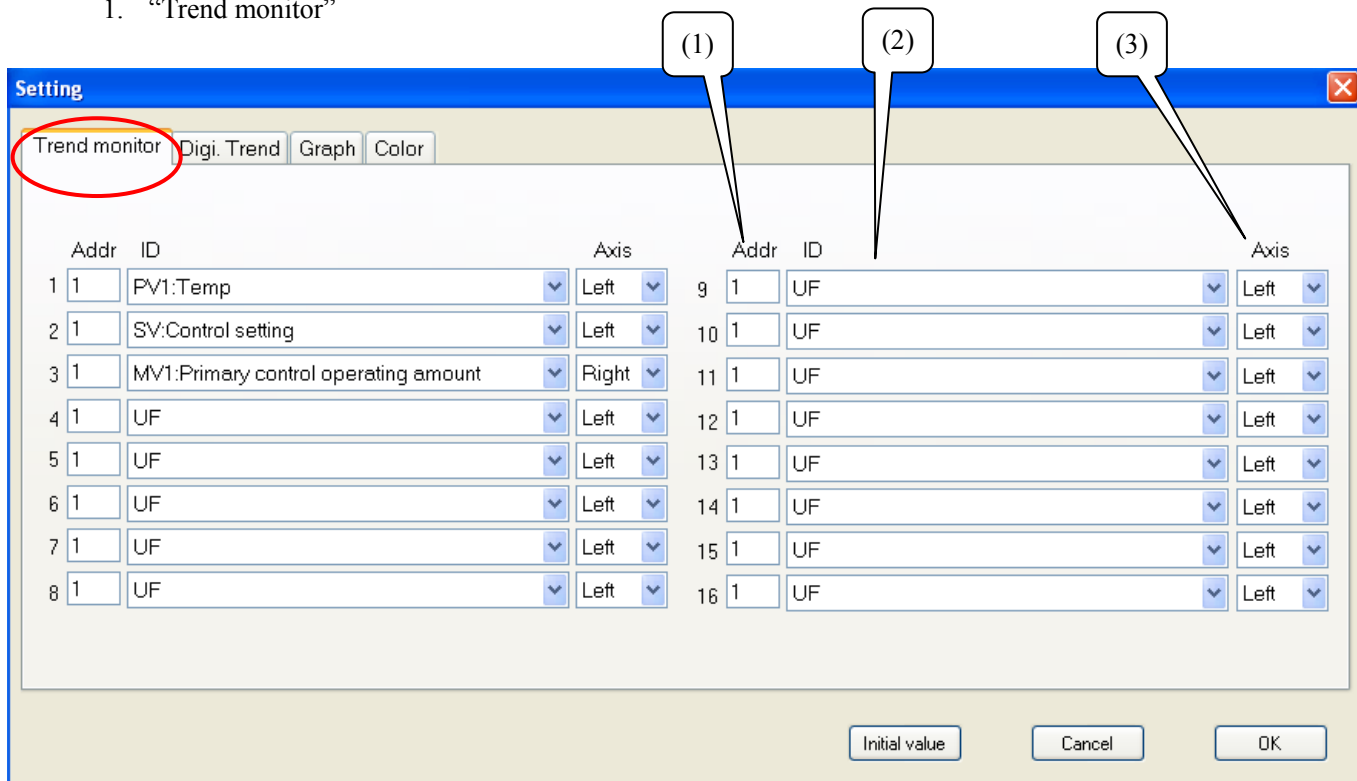


Fig. 4-16 Trend monitor setting of the Graph Setting screen

- (1) Address  
"Address" is for setting an address of communication destination.
- (2) Identifier  
Identifiers of Trend monitor to be displayed in the Trend monitor graph chart (Area 2) shown in Figure 4-10 can be set.
- (3) Axis  
Vertical axes of a graph for displaying the set identifiers can be selected.  
\* While Trend being in operation, addresses and identifiers cannot be changed.

2. “Digital Trend”

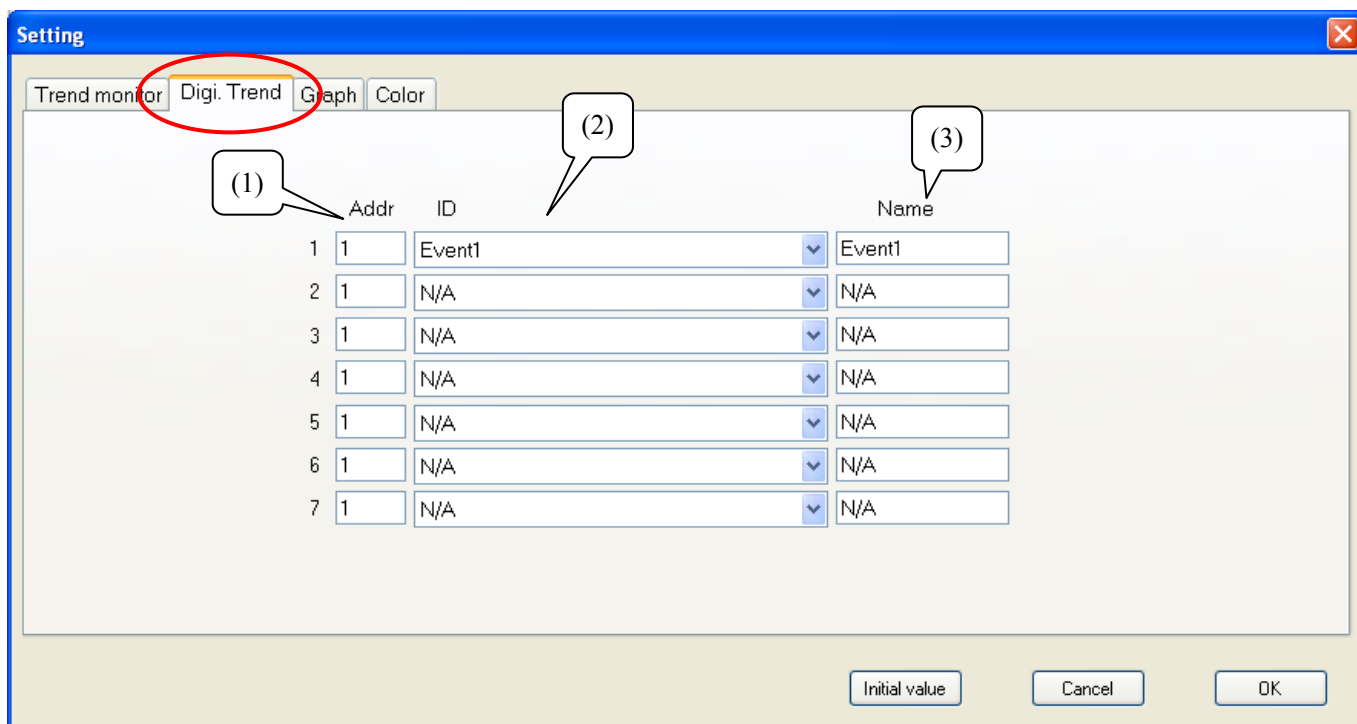


Fig. 4-17 Digital Trend Setting of the Graph Setting screen

(1) Address

“Address” is for setting an address of communication destination.

(2) Identifier

Identifiers of Trend monitor to be displayed in the Trend monitor graph chart (Area 3) shown in Figure 4-10 can be set.

(3) Name

The names of identifiers can be set or changed.

\* 1: Avoid using long texts, as the set identifier names apply for the titles of the check box names in Area 4 and the chart axes in Area 3 of Figure 4-10.

\* 2: While the Trend is in operation, addresses and identifiers cannot be changed.

3. “Graph”

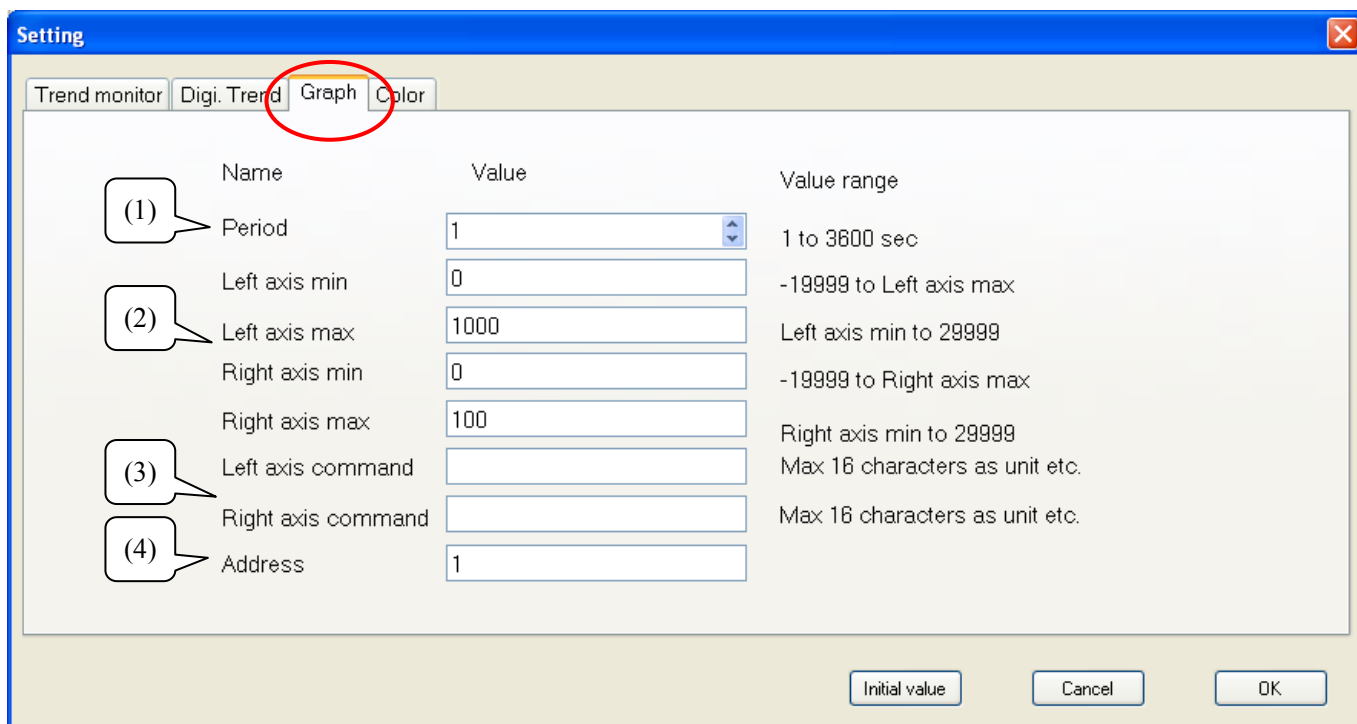


Fig. 4-18 Graph setting of the Graph Setting screen

- (1) Period  
“Period” is for setting the Trend data acquisition time interval.
- (2) Trend monitor vertical axes upper and lower limits  
This field is for setting ranges (upper and lower limits) of the left and right axes of the chart in Area 2 of Figure 4-10.
- (3) Left and right axis commands  
These fields are for setting the displays such as the units for the left and right axes of the chart in Area 2 of Figure 4-10.
- (4) Monitor address  
A monitor address is set.

4. "Color"

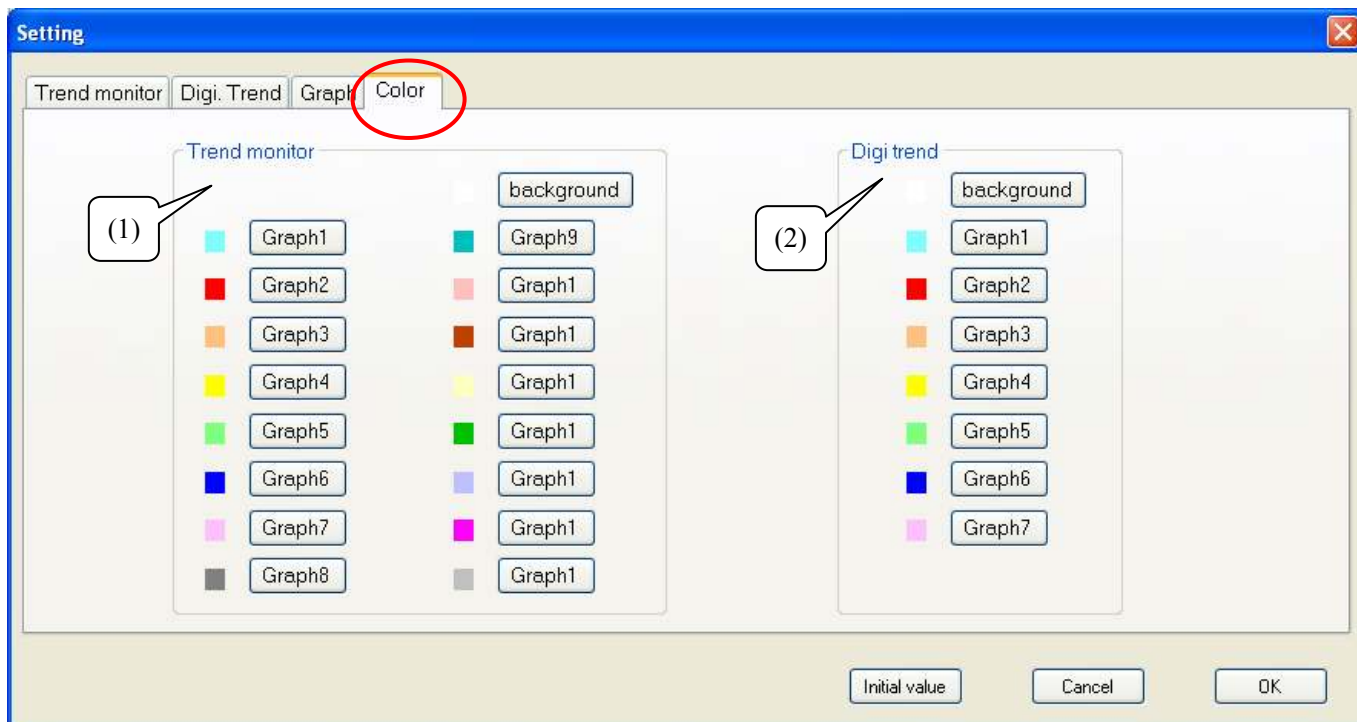


Fig. 4-19 Color setting of the Graph Setting screen

- (1) Trend monitor section  
By clicking respective buttons, a dialog box shown in Figure 4-20 appears.  
Use the dialog box for setting colors of the graph and graph chart background for each identifier of Trend monitor.
- (2) Digital trend section  
By clicking respective buttons, a dialog box shown in Figure 4-20 appears.  
Use the dialog box for setting colors of the graph and graph chart background for each identifier of Digital Trend.

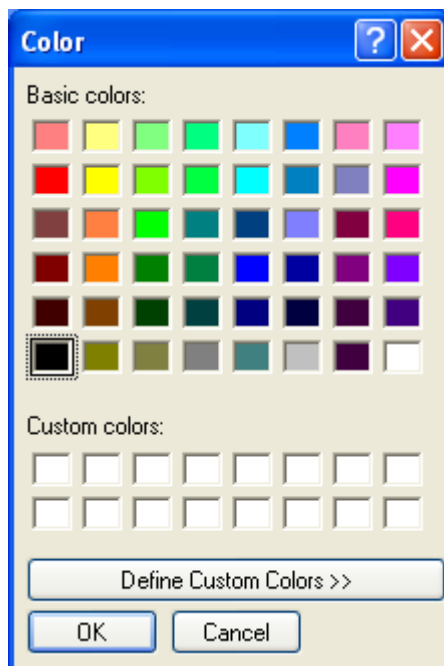


Fig. 4-20 Setting colors

## 5. Button operation

### (1) “OK” button

By clicking the “OK” button, changed setting values apply.

### (2) “Cancel” button

By clicking the “Cancel” button, changed setting values are cancelled.

### (3) “Initial value” button

By clicking the “Initial value” button, values return to the default settings.



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