

**PAPERLESS RECORDER TR30 SERIES /
PC RECORDER
VIEWER SOFTWARE**

Model: TRViewer

USERS MANUAL

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1. INTRODUCTION

Thank you for your choosing us.

Before use, please check contents of the package you received.

1.1 CORRESPONDING VERSION

This users manual supports the TRViewer since Version 1.1.

The symbol is indicated for the different part by the version.

Refer to the OTHER OPERATIONS for confirming the version. → 3.7.3 VERSION INFORMATION

| | |
|------|------------------------|
| V1.3 | : TRViewer version 1.3 |
|------|------------------------|

| | |
|------|------------------------|
| V1.5 | : TRViewer version 1.5 |
|------|------------------------|

■ TRViewer compatible PC Recorder

Use TRViewer version 1.6.21 or later.

2. INSTALLATION

2.1 HOW TO INSTALL TRViewer

Download the TRViewer at our web site. The program is provided as compressed archive. Decompress the archive and execute 'setup.exe' to start up the TRViewer installer program. Follow instructions on the Windows.

NOTE

- It is required to log on as administrator to start installation.
- If you already have the TRViewer program installed on your PC, uninstall (remove) entirely before newly installing.

2.2 HOW TO UNINSTALL TRViewer

If you already have the TRViewer program installed on your PC, uninstall (remove) entirely before newly installing.

Uninstall the program in Control Panel on your PC. Uninstallation procedure depends on the OS. Refer to the manuals of each OS. Following uninstallation procedure is that for Windows 11.

- 1) Select All apps from the Start menu > Windows tool > Control Panel.
- 2) With view by Category, select Uninstall a program. (With view by Large icons or Small icons, select Programs and Features.)
- 3) Select the TRViewer in the list shown in Uninstall or change a program, click on Uninstall.

3. OPERATION


3.1 START UP & EXIT

3.1.1 HOW TO START UP

Click Start menu > M-SYSTEM > TRViewer to start the TRViewer.
Initial screen will appear.

3.1.2 HOW TO EXIT

Terminate the TRViewer in the following procedure.


- 1) Select Exit from File on the menu bar. Or click on  in the upper right corner.
- 2) The confirmation dialog box will appear in changing settings or editing comments. Save as necessary.
- 3) The program will be terminated.

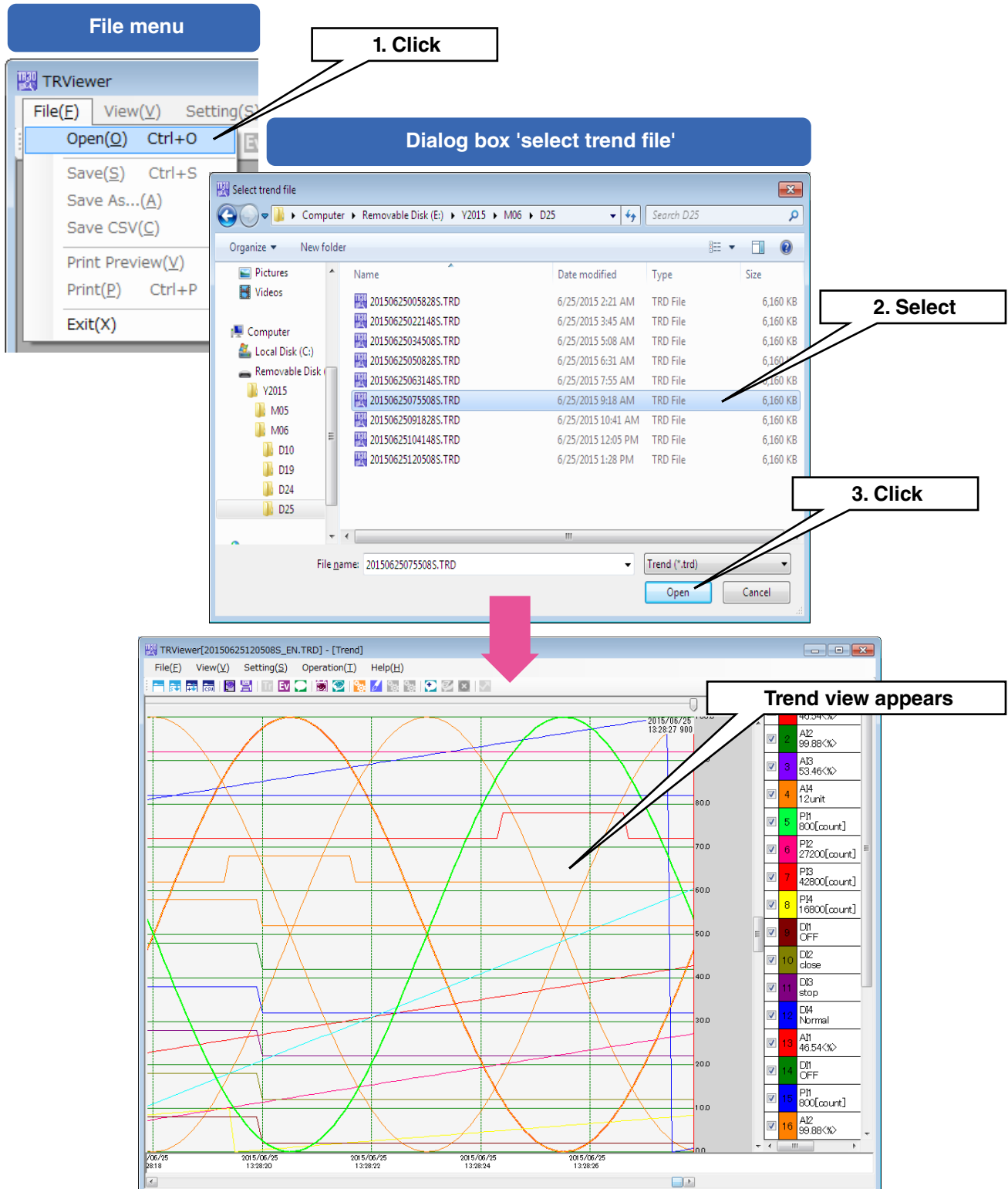
3.2 FILE OPERATION

3.2.1 OPENING FILE

The TRViewer reads data the Tablet Recorder transferred to a SD card.

Copy data files to a PC with the FTP connection to the Tablet Recorder, or use a SD card reader connected to a PC to read files in a SD card.

- 1) Select Open from File on the menu bar. Or click on  on the tool bar.
- 2) The dialog box 'Select trend file' will appear. Select a data file (*.TRD) and click on Open.
- 3) The Trend view will appear.



File menu

1. Click

Dialog box 'select trend file'

2. Select

3. Click

Trend view appears

The screenshot illustrates the process of opening a trend file in TRViewer. It shows the File menu with 'Open' selected, the 'Select trend file' dialog box with a file selected, and the resulting Trend view displaying a graph and a parameter list.

| Name | Date modified | Type | Size |
|---------------------|--------------------|----------|----------|
| 20150625005828S.TRD | 6/25/2015 2:21 AM | TRD File | 6,160 KB |
| 20150625022148S.TRD | 6/25/2015 3:45 AM | TRD File | 6,160 KB |
| 20150625034508S.TRD | 6/25/2015 5:08 AM | TRD File | 6,160 KB |
| 20150625050828S.TRD | 6/25/2015 6:31 AM | TRD File | 6,160 KB |
| 20150625063148S.TRD | 6/25/2015 7:55 AM | TRD File | 6,160 KB |
| 20150625075508S.TRD | 6/25/2015 9:18 AM | TRD File | 6,160 KB |
| 20150625091828S.TRD | 6/25/2015 10:41 AM | TRD File | 6,160 KB |
| 20150625104148S.TRD | 6/25/2015 12:05 PM | TRD File | 6,160 KB |
| 20150625120508S.TRD | 6/25/2015 1:28 PM | TRD File | 6,160 KB |

| Parameter | Value |
|-----------|--------------|
| A12 | 99.88<% |
| A13 | 53.46<% |
| A14 | 12unit |
| P11 | 800[count] |
| P12 | 27200[count] |
| P13 | 42800[count] |
| P14 | 16800[count] |
| D11 | OFF |
| D12 | close |
| D13 | stop |
| D14 | Normal |
| A11 | 46.54<% |
| D11 | OFF |
| P11 | 800[count] |
| A12 | 99.88<% |

NOTICE


- In opening a new data file, the existing open file will be automatically closed. To open multiple data files, start multiple TRViewers.
- A file cannot be opened simultaneously with multiple TRViewers.
- Use Explorer or an application such like FFFTP for the FTP connection. The TRViewer does not have a FTP client function.

3.2.2 SAVING FILE

You can save changes added to TRViewer data.


■ Saving

You can save changes to an open file.

- 1) Select Save from File on the menu bar. Or click on  on the tool bar.
- 2) The dialog box 'Completed' will pop up after saving the data. Click on OK.

■ Saving as

You can save changes to a new file.

- 1) Select Save as... from File on the menu bar. Or click on  on the tool bar.
- 2) The dialog box 'Save as' will appear. Enter any name you like in the File name field, and click on Save.
- 3) The dialog box 'Completed' will pop up after saving the data. Click on OK.

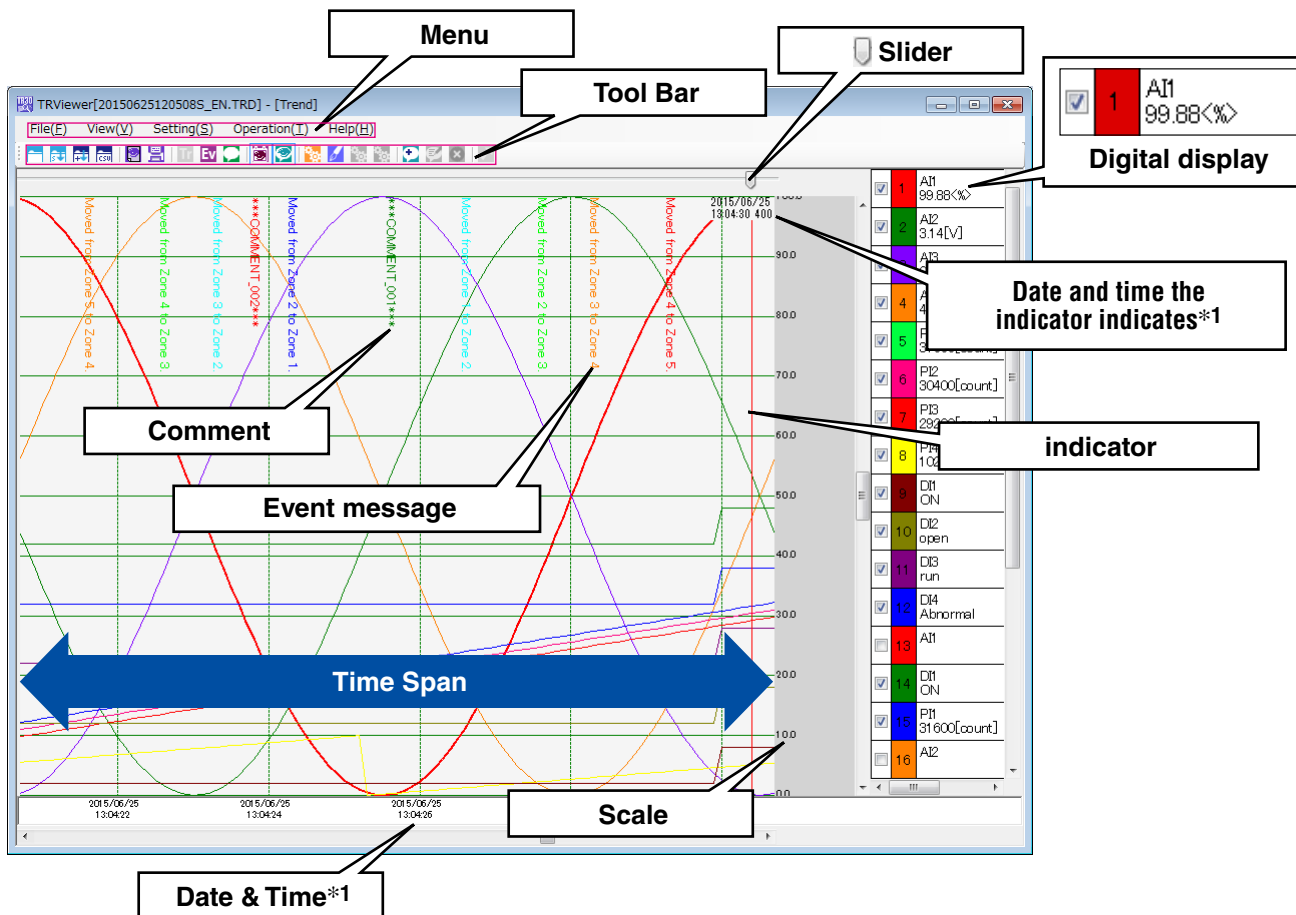
3.3 TREND VIEW

Open a file and the Trend view will appear.

Or from View on the menu bar, select Trend (or click on **Tr** on the tool bar), the Trend view will appear.

3.3.1 DISPLAY

In opening a file with 32 pens or more, the first 32 pens will be shown initially.



*1. Daylight saving time: 'DT' on the top of date (e.g. DT2015/05/21)

■ Digital display

Values the indicator indicates are shown.

Click on one of the digital displays, and the pen will be selected with the background gray.

To remove the selected pen, click on the scale area.

NOTICE

- In opening a data file first, event messages and comments are hidden.

3.3.2 OPERATION



The Trend view allows the following operations.

■ Showing event message

Event messages can be shown on the Trend view.

The event message icon on the tool bar is surrounded with a blue frame when a message is shown.

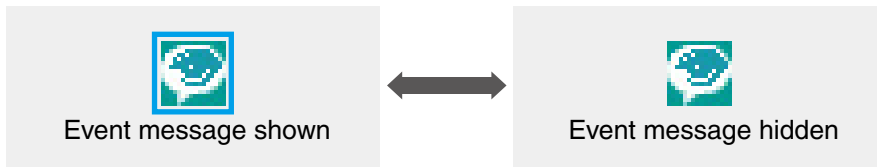




- 1) From Setting on the menu bar, select Trend Setting. Or click on  on the tool bar.
- 2) The dialog box 'Trend Setting' will appear. Select the checkbox 'Show events' and then click on OK.
- 3) Event messages will be shown on the Trend view. Or click on  on the tool bar to show or hide messages.

■ Showing comment

Comments can be shown on the Trend view.

The comment icon on the tool bar is surrounded with a blue frame when a comment is shown.



- 1) From Setting on the menu bar, select Trend Setting. Or click on  on the tool bar.
- 2) The dialog box 'Trend Setting' will appear. Select the checkbox 'Show comments' and then click on OK.
- 2) Comments will be shown on the Trend view. Or click on  on the tool bar to show or hide comments.

■ Showing / hiding pens


There are two methods to show or hide pens.

Max. 32 pens can be selected and shown on the screen at the same time.

■ Method 1

You can show or hide a pen by switching on or off the checkbox in the digital display.

■ Method 2

- 1) From Setting on the menu bar, select Pen Setting. Or click on  on the tool bar.
- 2) The dialog box 'Pen Setting' will appear. Switch on or off the checkbox 'Show' of a pen to change. Then click on OK.
- 3) The pen will be shown or hidden on the Trend view.


■ Switching scale (% , scaling value)

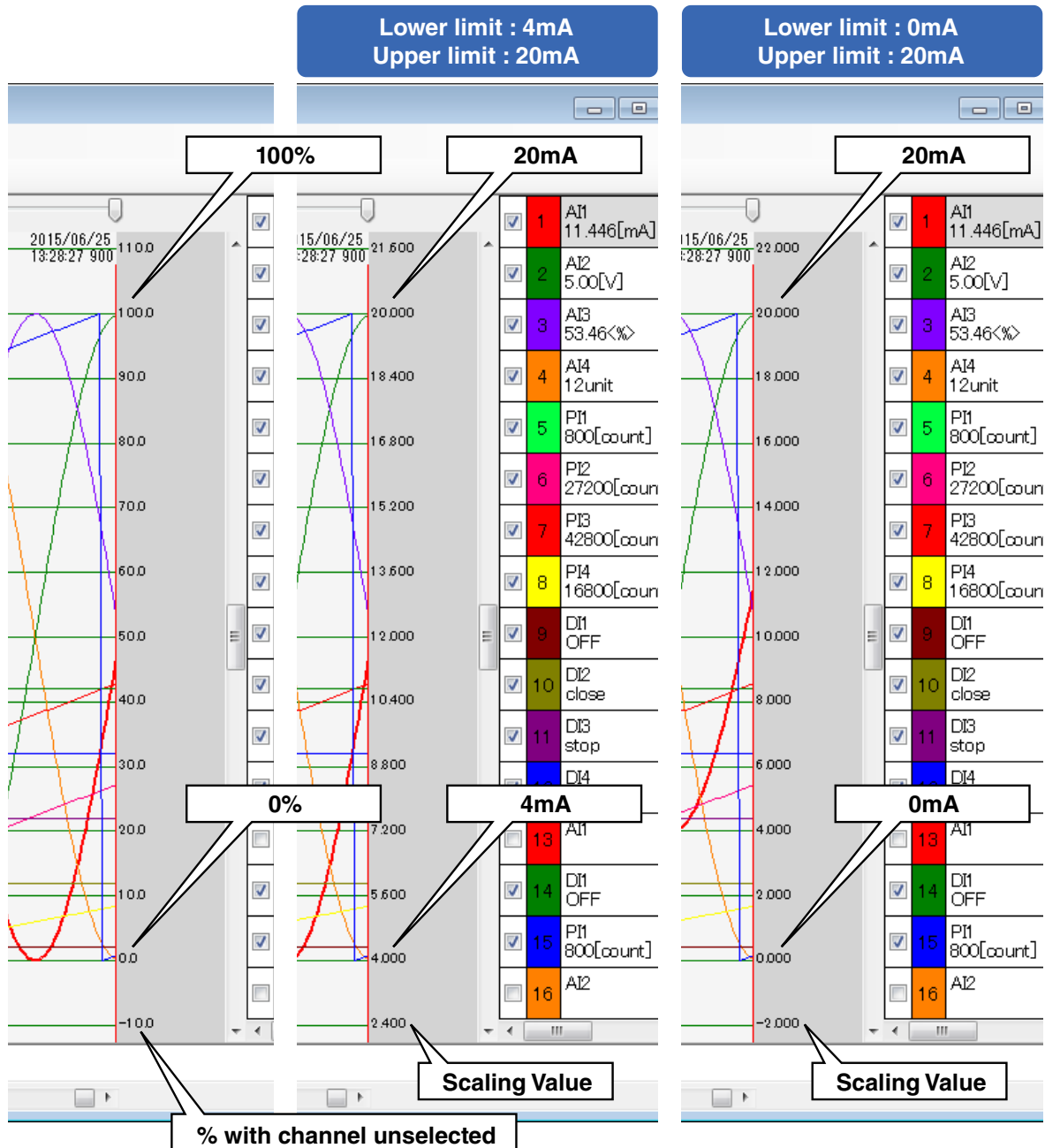
You can switch the scale between percentage and scaling value.

- 1) Click the digital display of a pen to switch the scale.
- 2) The scale will be switched according to the selected pen. When the digital display of the pen indicates the scaling value, the scale will be given in the scaling value, and when it indicates the percentage, the scale will be also in the percentage.
- 3) Click the digital display again, and the scale will be switched between scaling value and percentage.

■ Changing max. and min. values of the scale (AI, PI, and OI)

You can change max. and min. values of the scale per channel.

- 1) From Setting on the menu bar, select Pen Setting. Or click on  on the tool bar.
- 2) The dialog box 'Pen Setting' will appear. Enter lower and upper limits in the fields Lower limit and Upper limit, and then click on OK.
- 3) The max. and min. values will be changed on the Trend view.




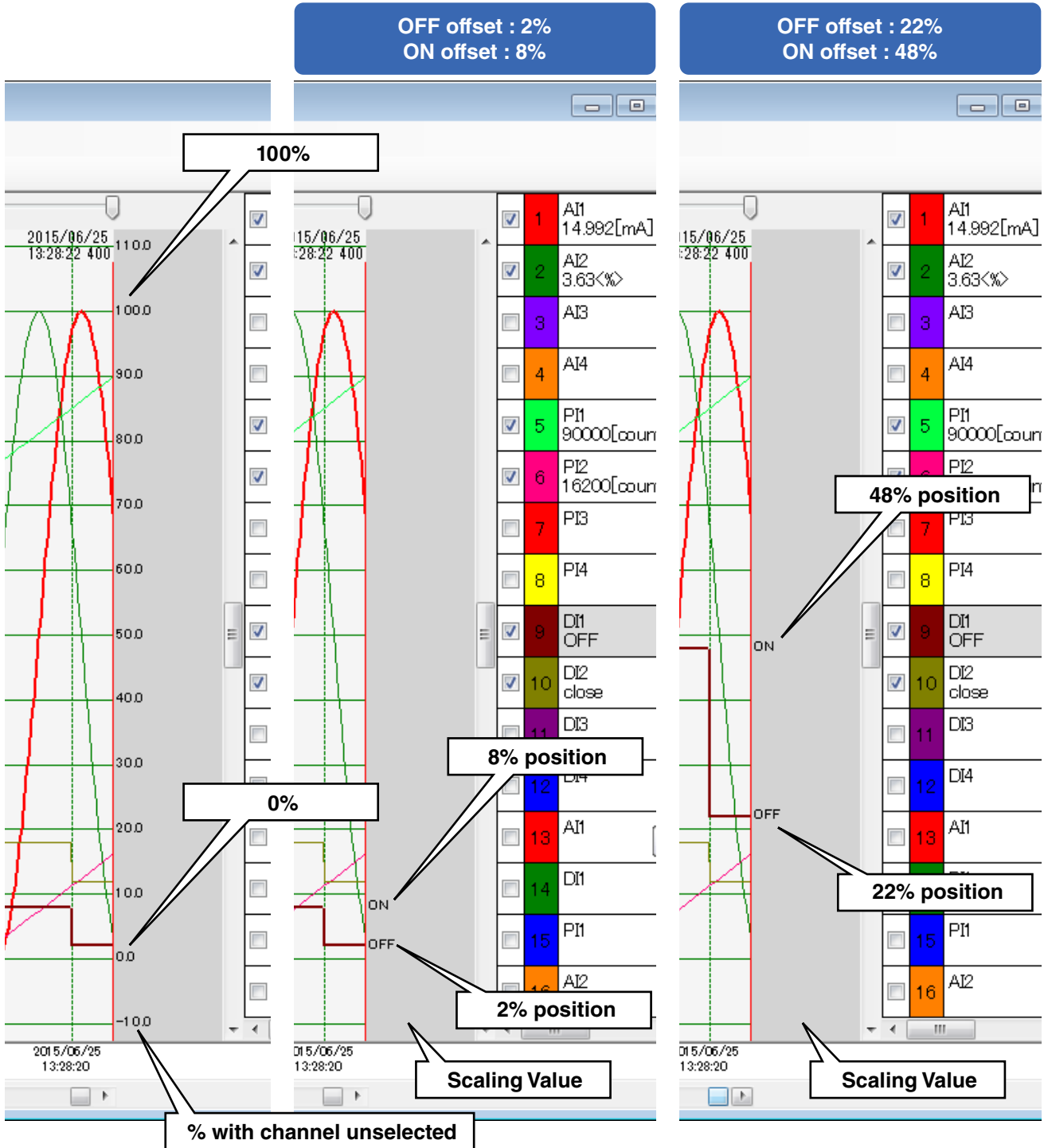
NOTICE

- OI is supported since Ver. 1.1.
- For the I/O channel available for exponent notation, the scale for Upper limit and Lower limit of the dialog box 'Pen Setting' and Trend view are indicated with exponential form.
- For the pen available for logarithmic expression, Upper limit and Lower limit of the dialog box 'Pen Setting' is indicated with integer. Setting range is -10 to +10.
- The scale with number of digits that cannot be indicated in Scaling Value is indicated with exponential form.

■ Changing display position of chart (DI, DO)


You can change the display position of a chart per channel.

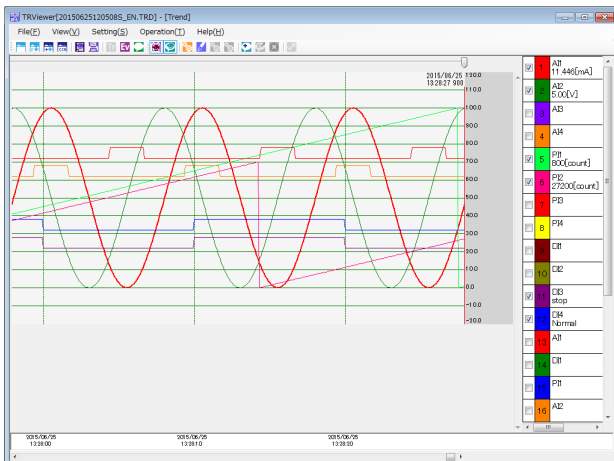
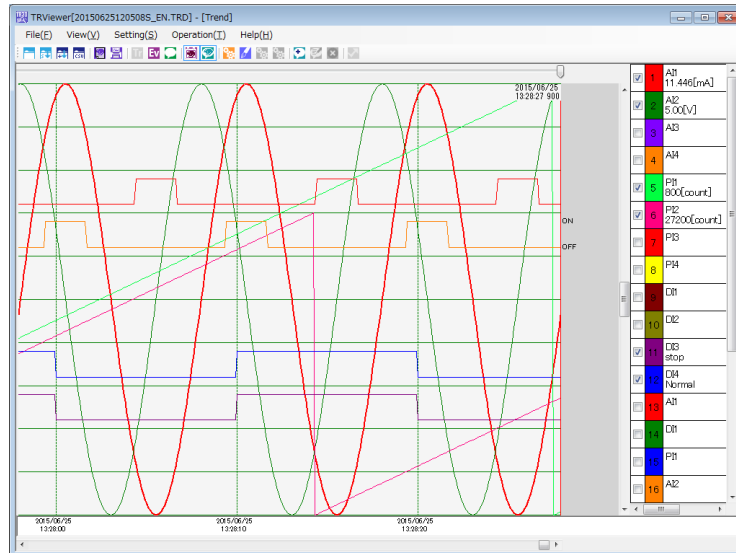
- 1) From Setting on the menu bar, select Pen Setting. Or click on  on the tool bar.
- 2) The dialog box 'Pen Setting' will appear. Enter percentage of a pen in the fields 'OFF offset' and 'ON offset', and click on OK.
- 3) The chart of the selected pen will be changed.



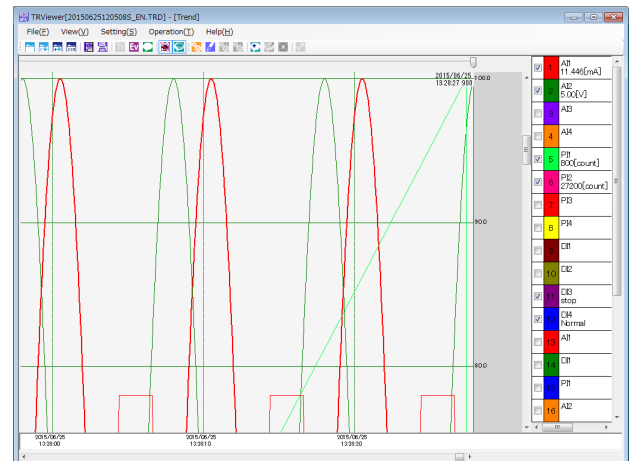
■ Changing display magnification (scaling)

You can change the display magnification on the Trend view. The default value 100% can be adjusted between 50 and 400%.

- 1) From Setting on the menu bar, select Trend Setting. Or click on  on the tool bar.
- 2) The dialog box 'Trend Setting' will appear. Enter the scale ratio directly in the field 'Scale' or select one from the pull-down menu, and then click on OK.
- 3) The magnification will be changed.



50%




400%

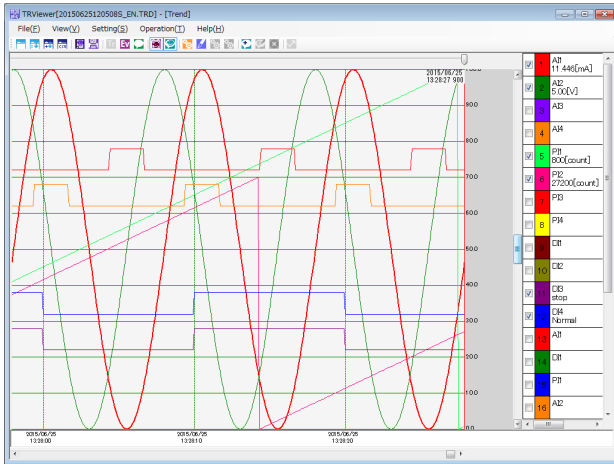
NOTICE

- The display magnification can be specified between 50 and 400% in increments of 1%

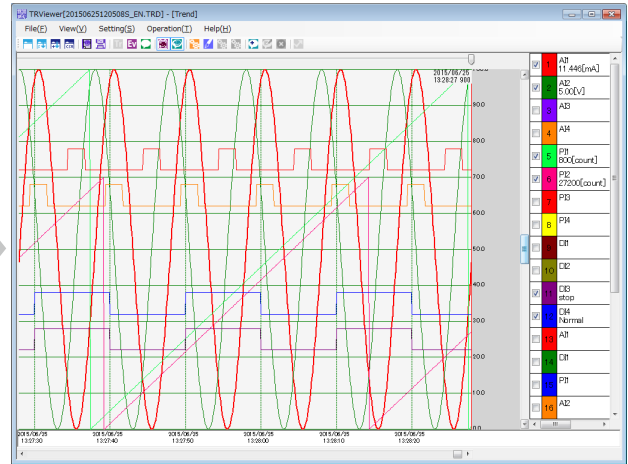
■ Changing time span

You can change the time span on the Trend view.

- 1) From Setting on the menu bar, select Trend Setting. Or click on  on the tool bar.
- 2) The dialog box 'Trend Setting' will appear. Select a preferred time span from the pull-down menu, and then click on OK.
- 3) The time span will be changed.



4 minutes




10 minutes

NOTICE

- Selectable time spans depend on the logging rate. → 4.2 LOGGING RATE AND TIME SPAN.

■ Writing comments

Comments can be entered on the Trend view.


- 1) Move the slider to the position to enter a comment.
- 2) From Operation on the menu bar, select Enter Comment. Or click on  on the tool bar.
- 3) The dialog box 'Enter Comment' will appear. Select a text color, enter a comment, and then click on OK.
- 3) The comment will be given on the Trend view.

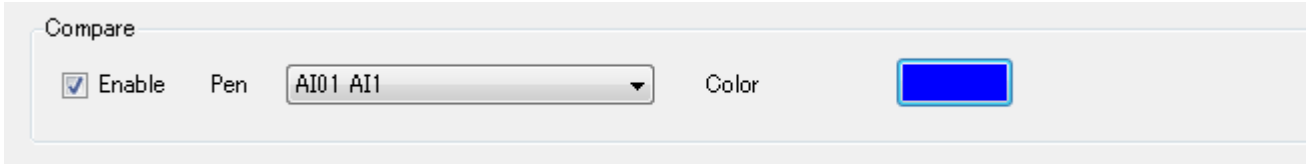
NOTICE

- Entering a comment with 'Show comments' off in the dialog box 'Trend Setting' will automatically switch to on.

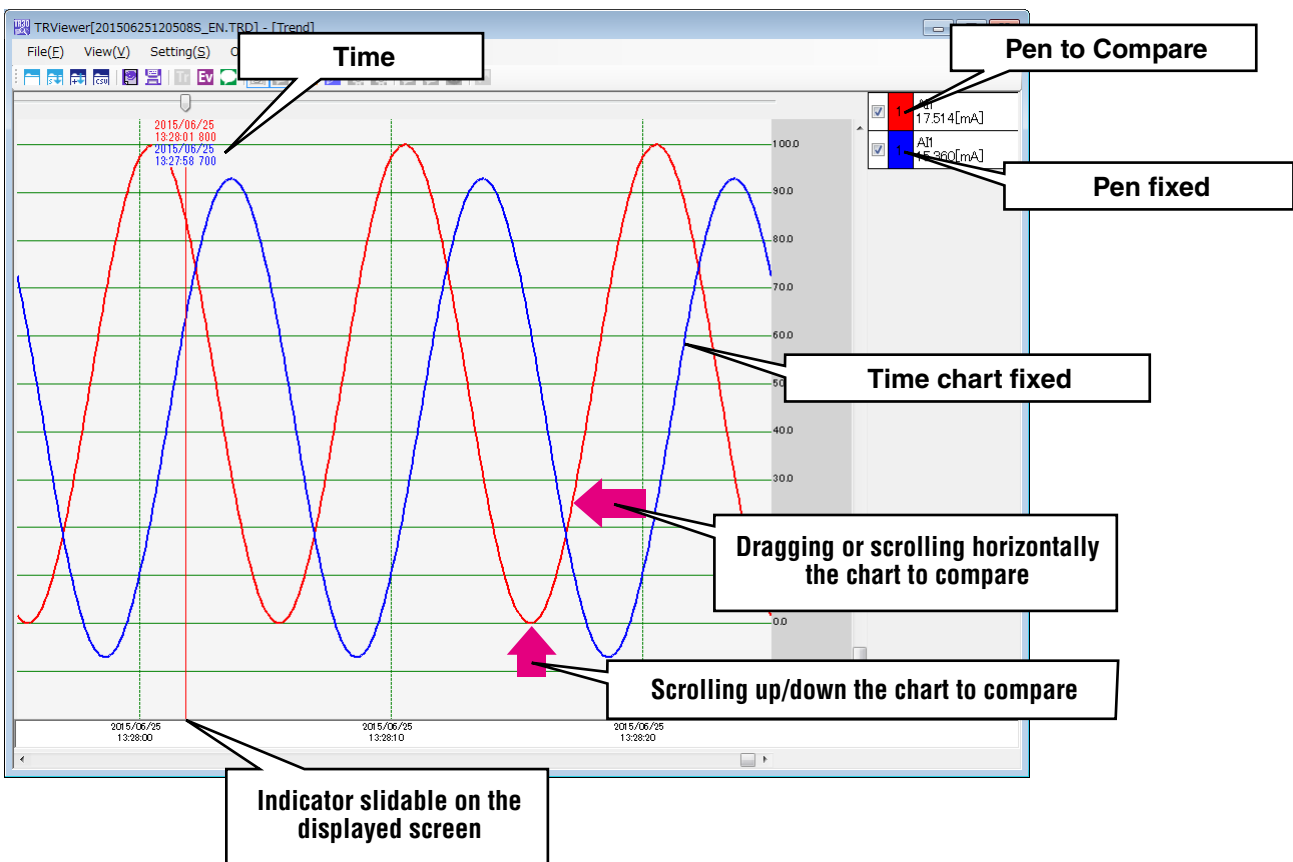
■ Comparing pen

You can compare data of a pen with that of the same pen at different time.

- 1) Display a chart of the data to compare. Set the display magnification and time span, and show or hide event messages and comments first, which cannot be changed while comparing.
- 2) From Setting on the menu bar, select Pen Setting. Or click on  on the tool bar.
- 3) The dialog box 'Pen Setting' will appear. Select the checkbox 'Enable' under 'Compare'.
- 4) Select a pen to compare and color.




- 5) Click on OK to return to the Trend view. The charts of the selected pen will be shown. Shift the chart to compare by use of the scroll bars.



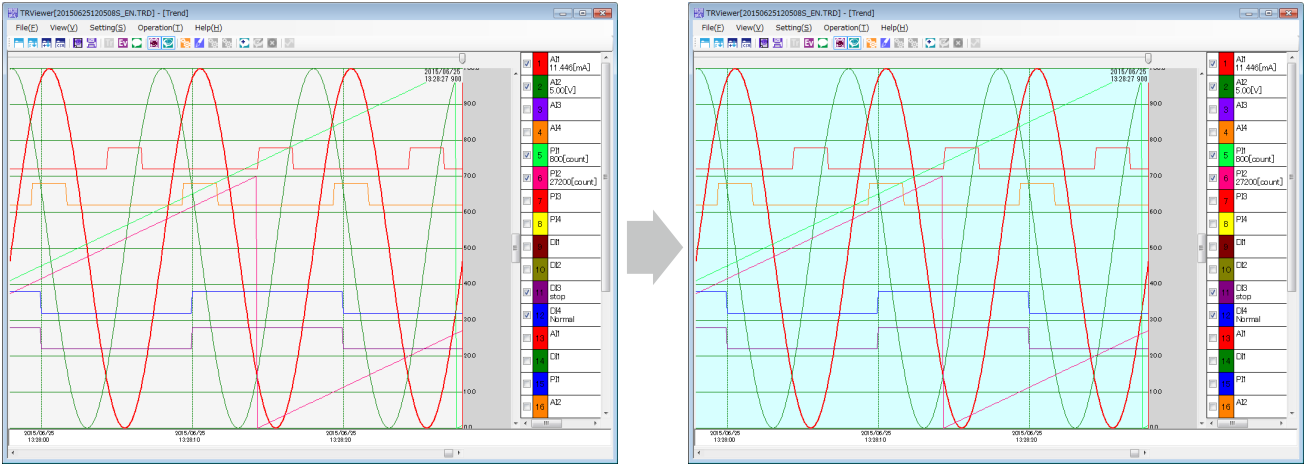
NOTICE

- While comparing a pen, the trend setting is not available.
- Print or print preview is available only for 'Current page' as print range.


■ Changing background color

You can change the background color on the Trend view. Or click on  on the tool bar.

- 1) From Setting on the menu bar, select Trend Setting.
- 2) The dialog box 'Trend Setting' will appear. Click on a rectangle next to 'Background color'.
- 3) The Color window will appear. Select your preferred color by clicking on it. Then click on OK.
- 4) Click on OK in the dialog box 'Trend Setting'.
- 5) The background color will be changed



3.4 EVENT SUMMARY

Select Event Summary from View on the menu bar, or click on  on the tool bar, and the Event Summary view will appear.

3.4.1 DISPLAY

The events are listed.

| | Date | Time | CH name | CH comment | Event | No. | Status |
|----|------------|----------|---------|-------------|------------------------------|-----|--------|
| 1 | 2015/06/25 | 13:06:06 | A11 | A11_comment | Moved from Zone 1 to Zone 2. | 2 | |
| 2 | 2015/06/25 | 13:06:04 | A11 | A11_comment | Moved from Zone 2 to Zone 1. | 1 | |
| 3 | 2015/06/25 | 13:06:03 | A11 | A11_comment | Moved from Zone 3 to Zone 2. | 2 | |
| 4 | 2015/06/25 | 13:06:02 | A11 | A11_comment | Moved from Zone 4 to Zone 3. | 3 | |
| 5 | 2015/06/25 | 13:06:01 | A11 | A11_comment | Moved from Zone 5 to Zone 4. | 4 | |
| 6 | 2015/06/25 | 13:05:59 | A11 | A11_comment | Moved from Zone 4 to Zone 5. | 5 | |
| 7 | 2015/06/25 | 13:05:58 | A11 | A11_comment | Moved from Zone 3 to Zone 4. | 4 | |
| 8 | 2015/06/25 | 13:05:57 | A11 | A11_comment | Moved from Zone 2 to Zone 3. | 3 | |
| 9 | 2015/06/25 | 13:05:56 | A11 | A11_comment | Moved from Zone 1 to Zone 2. | 2 | |
| 10 | 2015/06/25 | 13:05:54 | PI1 | PI1 | PI reached to Zone B | 1 | |
| 11 | 2015/06/25 | 13:05:54 | A11 | A11_comment | Moved from Zone 2 to Zone 1. | 1 | |
| 12 | 2015/06/25 | 13:05:53 | A11 | A11_comment | Moved from Zone 3 to Zone 2. | 2 | |
| 13 | 2015/06/25 | 13:05:52 | A11 | A11_comment | Moved from Zone 4 to Zone 3. | 3 | |
| 14 | 2015/06/25 | 13:05:51 | A11 | A11_comment | Moved from Zone 5 to Zone 4. | 4 | |
| 15 | 2015/06/25 | 13:05:49 | A11 | A11_comment | Moved from Zone 4 to Zone 5. | 5 | |
| 16 | 2015/06/25 | 13:05:48 | A11 | A11_comment | Moved from Zone 3 to Zone 4. | 4 | |
| 17 | 2015/06/25 | 13:05:47 | A11 | A11_comment | Moved from Zone 2 to Zone 3. | 3 | |
| 18 | 2015/06/25 | 13:05:46 | A11 | A11_comment | Moved from Zone 1 to Zone 2. | 2 | |
| 19 | 2015/06/25 | 13:05:44 | A11 | A11_comment | Moved from Zone 2 to Zone 1. | 1 | |
| 20 | 2015/06/25 | 13:05:43 | A11 | A11_comment | Moved from Zone 3 to Zone 2. | 2 | |

*1. Daylight saving time: 'DT' on the top of date (e.g. DT2015/05/21)

3.4.2 OPERATION

The Event Summary view allows the following operations.


■ Sorting

Click on title Date, CH name, CH comment, Event or No., and the data will be rearranged in the order of data of the column.

▼ will be indicated in the title cell.


■ Going to Trend

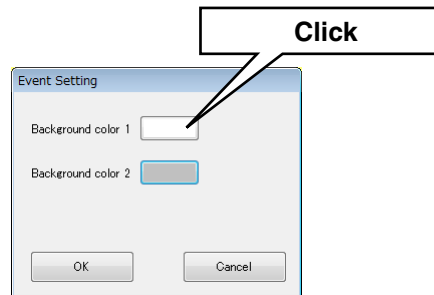
You can jump to the Trend view at the time when the selected event occurred.

- 1) Click on an event. The selected row will be blue.
- 2) From Operation on the menu bar, select Go to Trend. Or click on  on the tool bar.
- 3) The screen will be switched to the Trend view at the time when the specified event occurred.

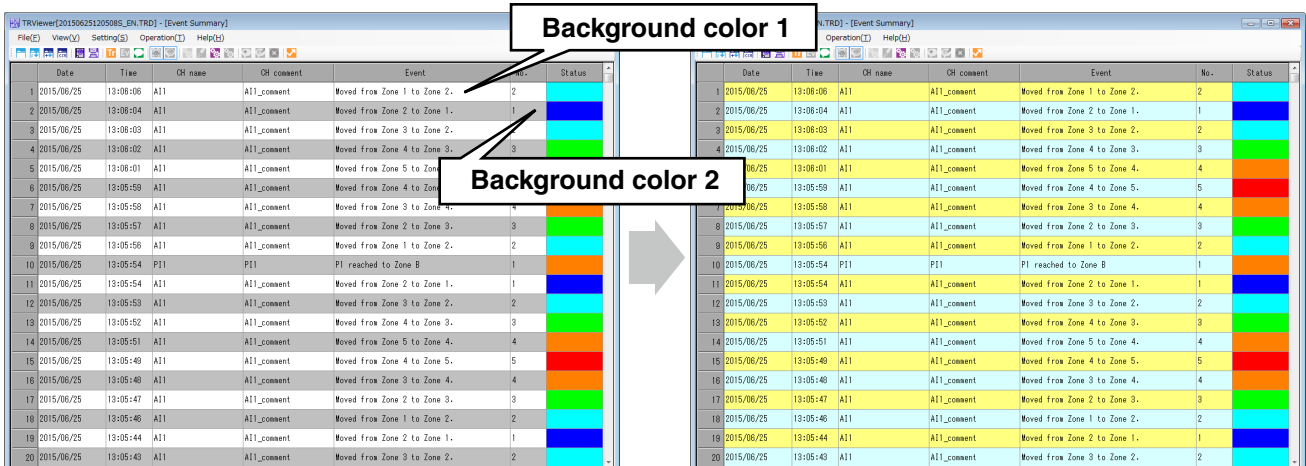
■ Changing background color

You can change the background colors on the Event Summary view.


- 1) From Setting on the menu bar, select Event Setting. Or click on  on the tool bar.
- 2) The dialog box 'Event Setting' will appear. Click on a rectangle next to 'Background color 1' or 'Background color 2'.



- 3) The Color window will appear. Select your preferred color by clicking on it. Then click on OK.
- 4) Click on OK in the dialog box 'Event Setting'.
- 5) The background color will be changed.

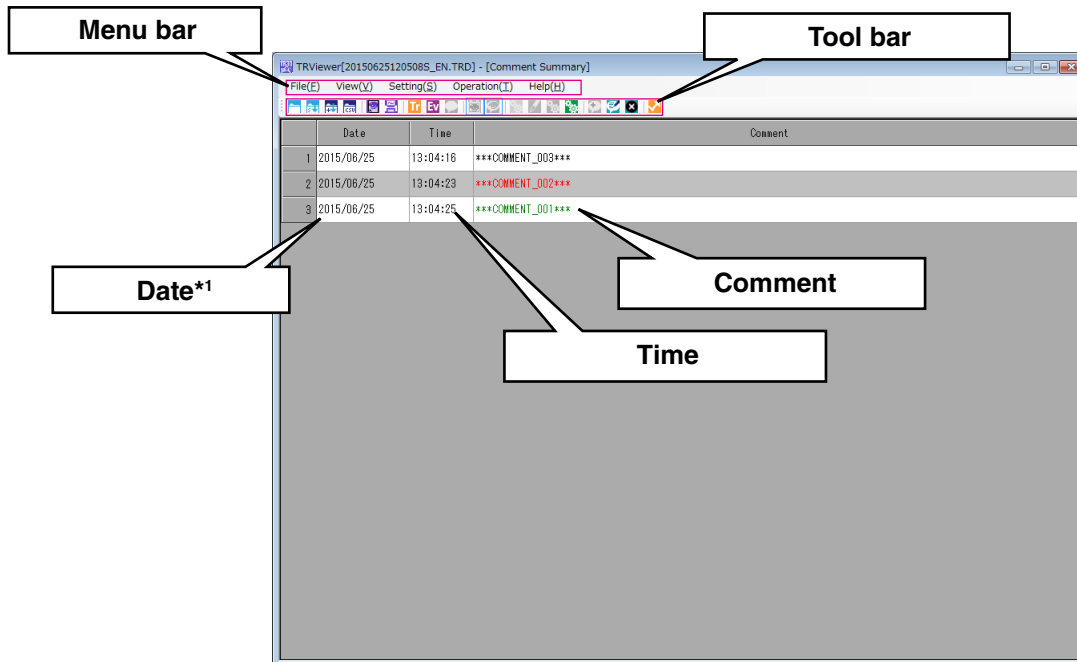


3.5 COMMENT SUMMARY

Select Comment Summary from View on the menu bar, or click on  on the tool bar, and the Comment Summary view will appear.

3.5.1 DISPLAY

The comments are listed with the text colors in entering the comments.




*1) Daylight saving time: 'DT' on the top of date (e.g. DT2015/05/21)

3.5.2 OPERATION


■ Editing comment

You can edit a comment.

- 1) Click on a comment to edit. The selected row will be blue.
- 2) From Operation on the menu bar, select Edit Comment. Or click on  on the tool bar.
- 3) The dialog box 'Edit Comment' will appear. Edit the comment and click on OK.
- 4) The comment will be changed.

■ Deleting comment

You can delete a comment.


- 1) Click on a comment to delete. The selected row will be blue.
- 2) From Operation on the menu bar, select Delete Comment. Or click on  on the tool bar.
- 3) The dialog box 'Are you sure you want to delete this comment?' will appear. Click on Yes (Y).
- 4) The comment will be deleted.

■ Sorting

Click on title Date or Comment, and the data will be rearranged in the order of data of the column. ▼ will be indicated in the title cell.


■ Going to Trend

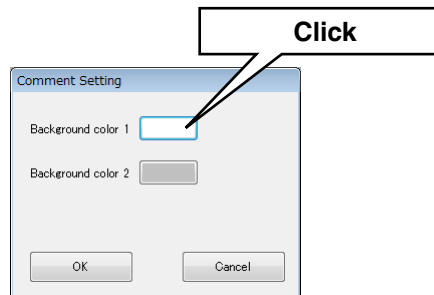
You can jump to the Trend view at the time of the selected comment.

- 1) Click on a comment. The selected row will be blue.
- 2) From Operation on the menu bar, select Go to Trend. Or click on  on the tool bar.
- 3) The screen will be switched to the Trend view at the time of the specified comment.

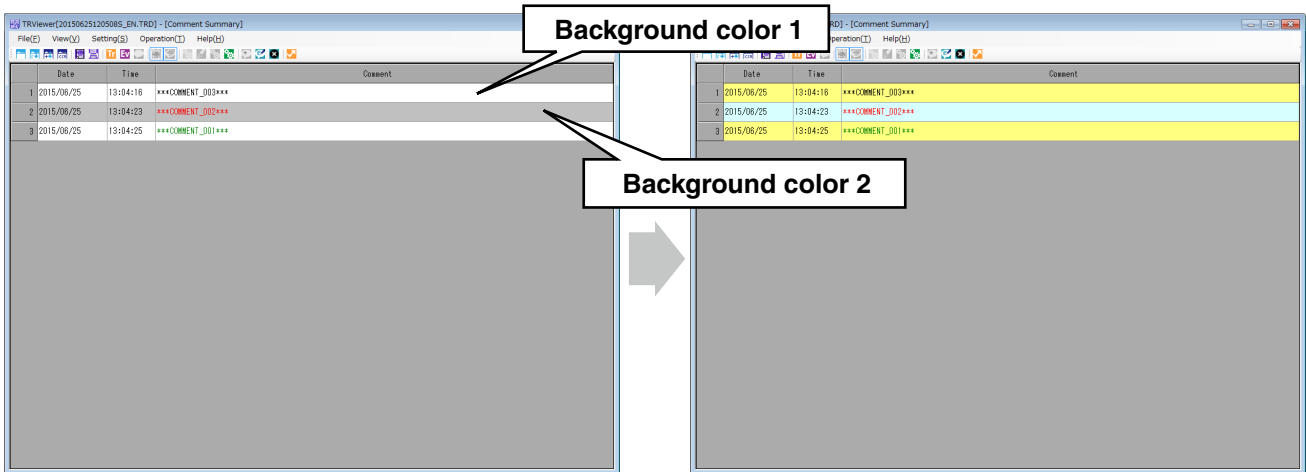
■ Changing background color

You can change the background colors on the Comment Summary view.

- 1) From Setting on the menu bar, select Comment Setting. Or click on  on the tool bar.
- 2) The dialog box 'Comment Setting' will appear. Click on a rectangle next to 'Background color 1' or 'Background color 2'.



- 3) The Color window will appear. Select your preferred color by clicking on it. Then click on OK.
- 4) Click on OK in the dialog box 'Comment Setting'.
- 5) The background color will be changed.




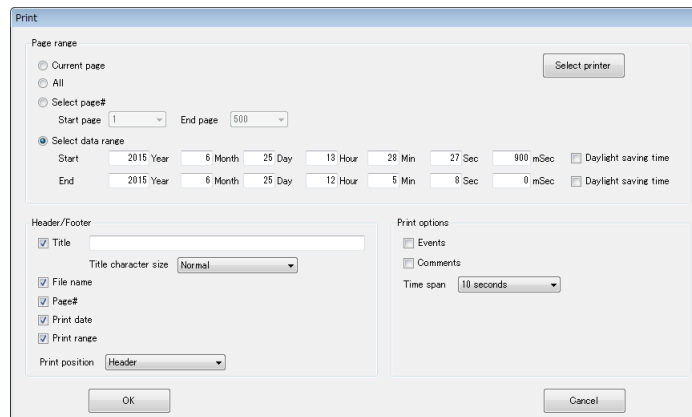
3.6 PRINT

You can print the trend, event summary and comment summary.

3.6.1 PRINT

You can print the screen being displayed or a specified range. The TRViewer rescales the image automatically according to the paper size.

- 1) From File on the menu bar, select Print. Or click on  on the tool bar.
- 2) The dialog box 'Print' will appear.



- 3) Refer to the following items for the settings. Click on OK to start printing.

■ Page range

| | |
|--------------------|--|
| Current page: | In printing the trend, the current page is printed including the indicator. When the window size is changed, its aspect ratio is reflected in printing. In printing the event or the comment summary, a page from the upper row being displayed on the screen is printed. |
| All: | All data is printed. With the Trend view, all data is printed in the fixed format. Sorting and the column width depend on the screen being displayed in printing the event or comment summary. |
| Select page #: | Can be specified only in printing the Trend view. |
| Select data range: | Time of the data to print can be specified. Specify later time in 'Start'. Select the checkbox 'Daylight saving time' if necessary. |

NOTICE

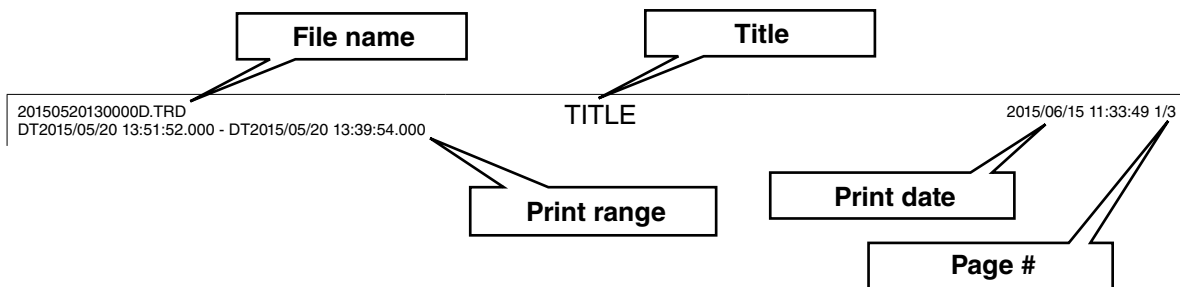
- When 'Current page' is selected, the trend will be printed according to the window aspect ratio with the window size changed. The event or comment summary will be printed for the number of rows depending on the paper size, regardless of the displayed rows.
- Specify A4 or A3 paper. We do not warrant the operation for other paper sizes.

■ Additional information

Additional information can be printed in the header or footer.

| | |
|-----------------|---|
| Title: | Any title is printed. Select 'Title character size' among Normal, Large or Max. |
| File name: | The file name is printed. |
| Page #: | The page number and the total page numbers are printed. |
| Print date: | The date and time are printed in the order of 'year/month/date hour:minute:second'. |
| Print range: | The date and time of the print range are printed. Daylight saving time : 'DT' on the top of date (e.g. DT2015/05/21) |
| Print position: | Select the position to print the additional information, Header or Footer. |

■ Example



■ Print options

Can be set only in printing the Trend view. When 'Current page' is selected as print range, the options cannot be set.


| | |
|------------|--|
| Events: | Event messages are printed on the trend chart. |
| Comments: | Comments are printed on the trend chart. |
| Time span: | The time span to print in a page can be set. |

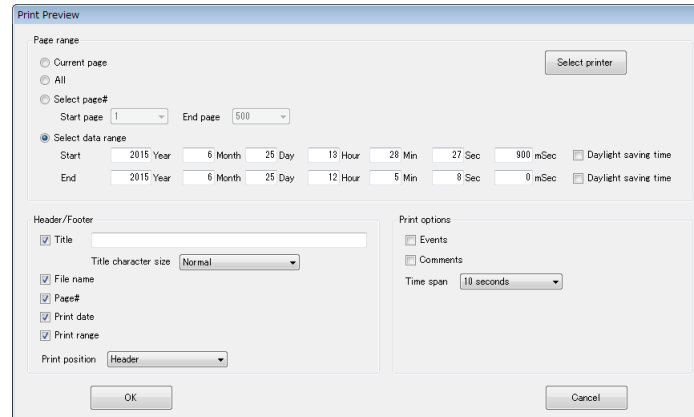
NOTE

- The settings except for 'Select printer' will return to default when the dialog box is closed.
- In selecting other than 'Current page' to print the Trend view, the pens being displayed will be printed in the digital displays.

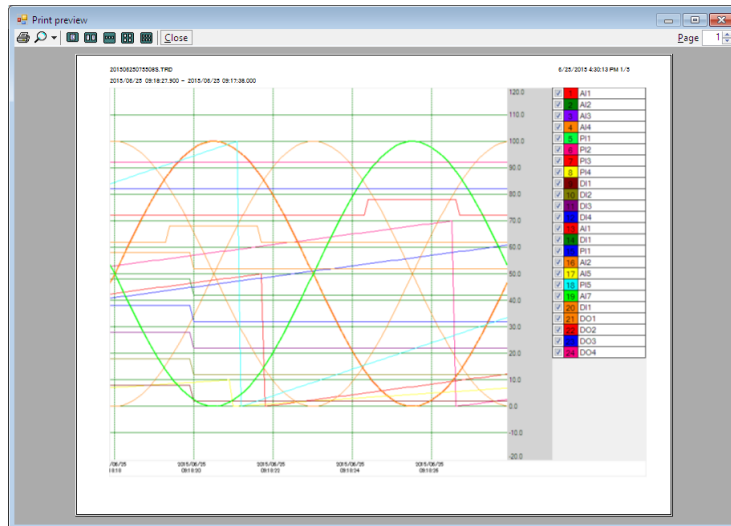
3.6.2 PRINT PREVIEW


You can check print image before printing.

- 1) From File on the menu bar, select Print Preview. Or click on  on the tool bar.
- 2) The dialog box 'Print Preview' will appear.



- 3) The setting items are the same as those in the dialog box 'Print'. Click on OK and the print preview will appear.



- 4) Click on  on the tool bar to start printing.


NOTE

- The settings except for 'Select printer' will return to default when the dialog box is closed.

3.7 OTHER OPERATIONS

3.7.1 SAVING AS CSV FILE

You can save data being displayed on the screen as a CSV file. The contents to save depend on the views.

- 1) From File on the menu bar, select Save CSV. Or click on  on the tool bar.
- 2) The dialog box 'Save as' will appear. Enter any name you like in the File name field, and click on Save.
- 3) The dialog box 'Completed' will pop up after saving data. Click on OK.

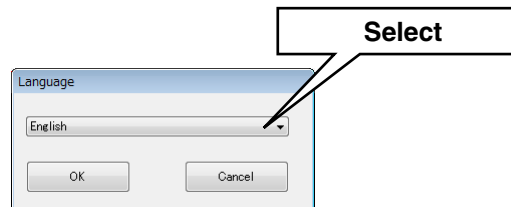
NOTICE

- Refer to 4.3 CSV FILE FORMAT for the items to save in a CSV file.

3.7.2 SWITCHING LANGUAGE

You can change the language of the TRViewer.

- 1) From Help on the menu bar, select Language.
- 2) The dialog box 'Language' will appear. Select a language and click on OK.



3.7.3 VERSION INFORMATION

You can confirm the version information of the TRViewer.

- 1) From Help on the menu bar, select Version Information.
- 2) The version information as shown in the figure below will pop up.



4. APPENDIX

4.1 COMPATIBLE TERMINAL

Compatible terminal: PC pre-loaded with Windows 10 or 11.

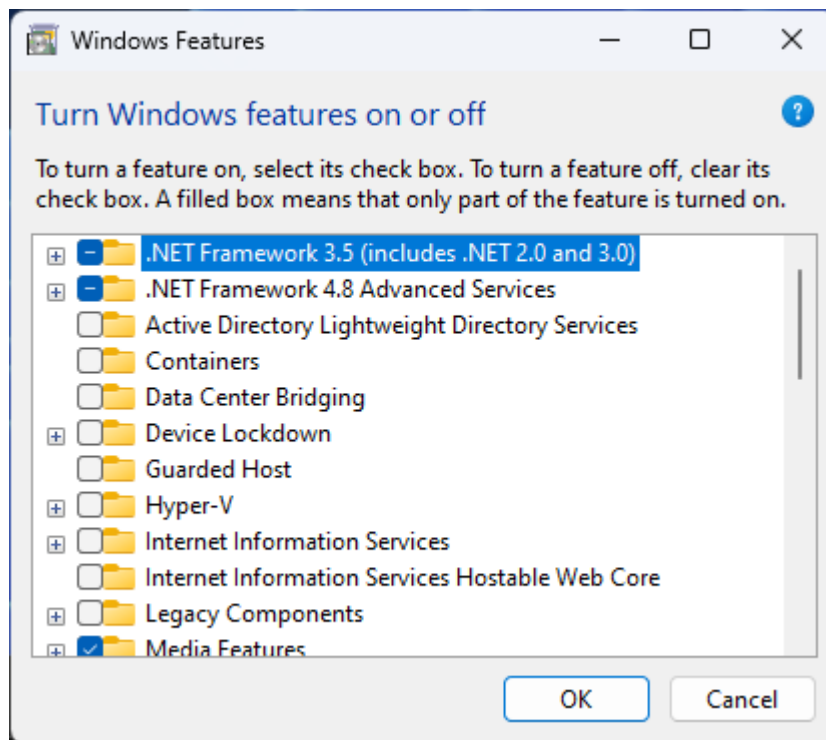
HDD: 10 MB or more disk space necessary in installing

SD card reader: necessary to read data recorded in a SD card directly

Display resolution: XGA (1024 × 768) or more

NOTE

- .NET Framework 3.5 is necessary to be preinstalled.
- How to install .NET Framework 3.5.
Go to Control Panel > Programs > Turn Windows features on or off, and select the checkbox .NET Framework 3.5.
(For Windows 10 and 11, PC must be connected to the Internet.)



NOTICE

- Supporting both 32- and 64-bit versions of Windows.

4.2 LOGGING RATE AND TIME SPAN

The time spans selectable in the Trend view depend on the logging rate.

■ Logging rate and time span

| Logging rate *1 | Time span (1 scale unit in the time span in parentheses) | | | | | | | | | |
|-----------------|--|-----------------|-----------------|-----------------|------------------|-------------------|------------------|-----------------|------------------|-------------------|
| | 500 ms (100 ms) | 1 sec. (200 ms) | 3 sec. (500 ms) | 6 sec. (1 sec.) | 10 sec. (2 sec.) | 30 sec. (10 sec.) | 1 min. (10 sec.) | 4 min. (1 min.) | 10 min. (2 min.) | 30 min. (10 min.) |
| 5 ms | ✓ 100 | ✓ 200 | ✓ 600 | - | - | - | - | - | - | - |
| 10 ms | - | ✓ 100 | ✓ 300 | ✓ 600 | - | - | - | - | - | - |
| 50 ms | - | - | ✓ 60 | ✓ 120 | ✓ 200 | ✓ 600 | - | - | - | - |
| 100 ms | - | - | - | - | ✓ 100 | ✓ 300 | ✓ 600 | - | - | - |
| 500 ms | - | - | - | - | - | ✓ 60 | ✓ 120 | ✓ 480 | - | - |
| 1 sec. | - | - | - | - | - | - | - | ✓ 240 | ✓ 600 | - |
| 2 sec. | - | - | - | - | - | - | - | ✓ 120 | ✓ 300 | - |
| 5 sec. | - | - | - | - | - | - | - | ✓ 48 | ✓ 120 | ✓ 360 |
| 10 sec. | - | - | - | - | - | - | - | - | ✓ 60 | ✓ 180 |

| Logging rate | Time span (1 scale unit in the time span in parentheses) | | | | | | | |
|---------------|--|-------------------|------------------|--------------------|-----------------|-------------------|------------------|------------------|
| | 1 hour (10 min.) | 2 hours (30 min.) | 6 hours (1 hour) | 12 hours (2 hours) | 1 day (4 hours) | 5 days*2 (1 days) | 10 days (2 days) | 30 days (5 days) |
| 5 sec. | ✓ 720 | - | - | - | - | - | - | - |
| 10 sec. | ✓ 360 | ✓ 720 | - | - | - | - | - | - |
| 1 min. | ✓ 60 | ✓ 120 | ✓ 360 | ✓ 720 | - | - | - | - |
| 2 min. | - | ✓ 60 | ✓ 180 | ✓ 360 | ✓ 720 | - | - | - |
| 5 min. | - | - | ✓ 72 | ✓ 144 | ✓ 288 | - | - | - |
| 10 min. | - | - | - | ✓ 72 | ✓ 144 | - | - | - |
| 15 min.*1, *2 | - | - | - | ✓ 48 | ✓ 96 | ✓ 480 | - | - |
| 30 min. | - | - | - | - | ✓ 48 | ✓ 240 | ✓ 480 | - |
| 1 hour | - | - | - | - | - | - | ✓ 240 | ✓ 720 |

✓ : available to display, -: not available to display

Lower row : number of samples

*1. Logging rate is different depending on the model.

*2. The time span 5 days and logging rate 15 min. are available with version 1.3. V1.3

4.3 CSV FILE FORMAT

■ Trend

| Item | Data item | Format |
|------------------|------------------------------|---|
| Header | Name 1 | 1 st column : data item |
| | Name 2 | 2 nd column : data |
| | Name 3 | |
| | Number of pens | |
| | Logging rate | |
| | Number of records | |
| Pen information | Pen | 1 st row: data item |
| | Color | 2 nd and succeeding rows: channel data |
| | I/O type | — Display comment (ON/OFF) |
| | CH | DI : display comment of status (ON/OFF) |
| | CH name | DO : display comment ON/OFF |
| | Display comment (ON) | — Scaling |
| | Display comment (OFF) | |
| | scaling (0%)* ¹ | AI : int scaling, unsigned int scaling [V1.5] |
| | scaling (100%)* ¹ | PI : scaling |
| | scaling* ¹ | |
| | Number of decimal place | |
| Engineering unit | | |
| Data | Daylight saving time | 1 st & 2 nd rows: data item |
| | Date | Blank in item daylight saving time |
| | Time | CH comment in the 2 nd row |
| | Millisecond | 3 rd and succeeding rows: data |
| | CH name | Daylight saving time: 'DT' indicated |
| | CH comment | AI, PI,OI: value in engineering unit* ¹ DI, DO: display comment |

*1. For the I/O channel available for exponent notation, it is exponential form. [V1.3]

■ Event summary







































| Item | Data item | Content |
|--------|----------------------|---|
| Header | Name 1 | 1 st column : data item |
| | Name 2 | 2 nd column : data |
| | Name 3 | |
| | Number of events | |
| Data | Daylight saving time | 1 st row: data item |
| | Date | Blank in item daylight saving time |
| | Time | 2 nd and succeeding rows: data |
| | CH name | Daylight saving time: 'DT' indicated |
| | CH comment | |
| | Event | |
| | Event No. | |
| | Status | |

■ Comment summary

| Item | Data item | Content |
|--------|----------------------|---|
| Header | Name 1 | 1 st column : data item |
| | Name 2 | 2 nd column : data |
| | Name 3 | |
| | Number of comments | |
| Data | Daylight saving time | 1 st row: data item |
| | Date | Blank in item daylight saving time |
| | Time | 2 nd and succeeding rows: data |
| | Comment | Daylight saving time: 'DT' indicated |
| | Text color | Text color: indicated in hexadecimal RGB color format (0x[R] [G][B]) |

4.4 QUICK REFERENCE

■ Tool list

| Icon | Content | Corresponding menu | Applicable view | Description | Page |
|---|-----------------|--------------------------------------|---|---|-----------------|
|  | Open | File > Open |  | Opening a TRD file. | 6 |
|  | Save | File > Save |  | Saving a file. | 7 |
|  | Save as | File > Save As... |  | Saving as a new file. | 7 |
|  | Save CSV | File > Save CSV |  | Saving as a CSV file. | 22 |
|  | Print preview | File > Print preview |  | Showing a print image. | 21 |
|  | Print | File > Print |  | Printing. | 19 |
|  | Trend | View > Trend |  | Showing Trend view. | 8 |
|  | Event summary | View > Event summary |  | Listing events. | 15 |
|  | Comment Summary | View > Comment Summary |  | Listing comments. | 17 |
|  | Show event | Setting > Trend Setting > dialog box |  | Showing/hiding events in trend chart. | 9 |
|  | Show comment | Setting > Trend Setting > dialog box |  | Showing/hiding comments in trend chart. | 9 |
|  | Trend setting | Setting > Trend Setting |  | Setting scale, time span, background color. | 12, 13, 15 |
|  | Pen setting | Setting > Pen setting |  | Setting indication per pen, comparing pen. | 9, 10 11, 14 |
|  | Event setting | Setting > Event setting |  | Setting background colors in Event Summary view. | 16 |
|  | Comment setting | Setting > Comment setting |  | Setting background colors in Comment Summary view. | 18 |
|  | Enter comment | Operation > Enter Comment |  | Adding a comment. | 13 |
|  | Edit comment | Operation > Edit comment |  | Editing a selected comment. | 17 |
|  | Delete comment | Operation > Delete comment |  | Deleting a selected comment. | 17 |
|  | Go to Trend | Operation > Go to Trend |  | Going to Trend view at the time of selected event or comment. | 16, 17 |

4.5 REVISION HISTORY

4.5.1 CHANGES IN TRVIEWER VERSION 1.1

- Supported the trend format of TR30-G.
- Supported switching between Japanese/English display.

4.5.2 CHANGES IN TRVIEWER VERSION 1.2

- Addressed the issue where garbled characters may appear in the first cell when displaying the TRViewer in English and saving the trend data as a CSV file and displaying it in Excel. Additionally, corrected the heading of the calculation pen from AO to OI.

4.5.3 CHANGES IN TRVIEWER VERSION 1.3

- Supported exponential recording and logarithms added in TR30-G version 1.3.
- Supported a 15-minute trend cycle and added 5-minute span for trend display.

4.5.4 CHANGES IN TRVIEWER VERSION 1.4

- Addressed the issue where the upper and lower limits were not displayed correctly when the AI actual value channel was shown on pen settings.
- Addressed the issue where TRViewer may crash when scrolling the graph to the left edge (oldest data) on the trend screen.

4.5.5 CHANGES IN TRVIEWER VERSION 1.5

- Supported the UINT introduced in TR30-G version 2.0.

4.5.6 CHANGES IN TRVIEWER VERSION 1.6

- Addressed the issue where TRViewer may crash when displaying the TR30-N trend file on the trend screen and setting the event display to "on".
- Addressed the issue where the date might be appended with "DT" that indicates summer time when displaying the TR30-N trend file on the trend screen.
- Addressed the issue where the correct position might not be jumped to when displaying the TR30-N trend file on event summary or comment summary screen, selecting an item and performing a "Go to Trend".