



KOGANEI

X904393

**Monitor for Electrostatic Potential Sensor
(DTY-EPU01)
Support Software**

Operating Instructions (Ver. 1.0)



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* For details about the electrostatic potential sensor/monitor, refer to the Electrostatic Potential Sensor Instruction Manual (X904366) and Monitor for Electrostatic Potential Sensor Instruction Manual (X904391).

1. Support Software Overview

1-1 Overview

This support software communicates with the monitor for electrostatic potential sensor (DTY-EPU01), and displays the static charge potential and sets the various settings for the monitor/sensor.

- Monitoring function

Acquire and display the static charge potential, input/output, and LED status. (display interval is approximately 100 [ms] per unit.)

- Monitor/sensor settings

Monitor: Display cycle, display mode, error output, auto scan key-protect, display ON/OFF

Sensor: Send and receive the settings required for measurement mode, output cycle, workpiece size, and measurement distance.

- Output settings

Send and receive the threshold and judgment mode for the measurement potential judgment output.

1-2 System Requirements

- Target device

DTY-EPU01

- Compute operating environment

- OS

Windows XP (Pro/SP3) Windows Vista Business, Windows 7 Pro, Windows 8.1 Pro, Windows 10 Pro

- Computer system

Computer: Personal computer with processor recommended by Microsoft

Memory: Memory capacity recommended by Microsoft

Free space on hard disk: At least 500 MB

Display: At least 900x600 resolution (at least 1024x768 recommended)

Other: .NET Framework 4.0 installed

2. Before You Begin

- ☆ Before using the support software, confirm the following.

The support software cannot be installed if following software necessary to install the support software is not installed on the PC.

<Software necessary to install>

- Microsoft .NET Framework Version 4.0
- USB-RS485 convertor driver

<Install software note 2)>

- Microsoft .NET Framework Version 4.0
“dotNetFx40_Full_x86_x64.exe”
- USB-RS485 convertor driver
“CDM21228_Setup.exe”

Note 1: Login with an administrator privilege to install. Also, use single-width alphanumeric for the login name.

Note 2: These can be downloaded from KOGANEI webpage.

2-1 Installing Microsoft .NET Framework Version 4.0

- 1) Confirm that it is a supported OS, and download “dotNetFx40_Full_x86_x64.zip” (Microsoft .NET Framework Version 4.0).
- 2) After the download is complete, decompress the file and execute the “dotNetFx40_Full_x86_x64.exe” file.
- 3) Installation of Microsoft .NET Framework Version 4.0 will start.

2-2 Connecting PC and USB-RS485 Convertor

- 1) Download “CDM21228_Setup.zip” (USB-RS485 convertor driver).

After the download is complete, decompress the file.

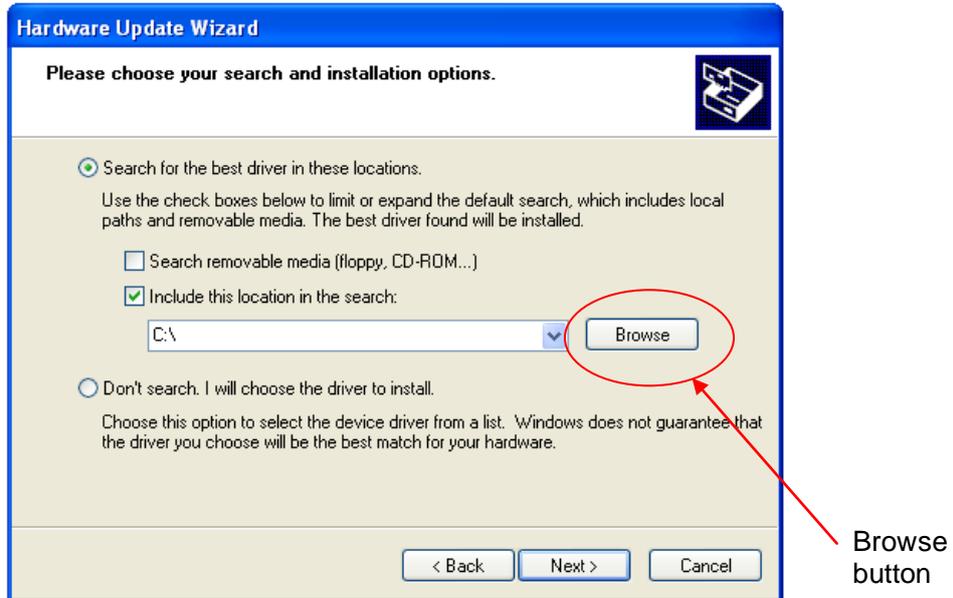
- 1) Connect the USB-RS485 convertor (IBM2A-H1-□) and the PC with the USB cable.

Following is displayed after connected.

Select “Install from a list or specific location”, and click the “Next” button.



2) Select “Search for the best driver in these locations”, and click “Browse”.



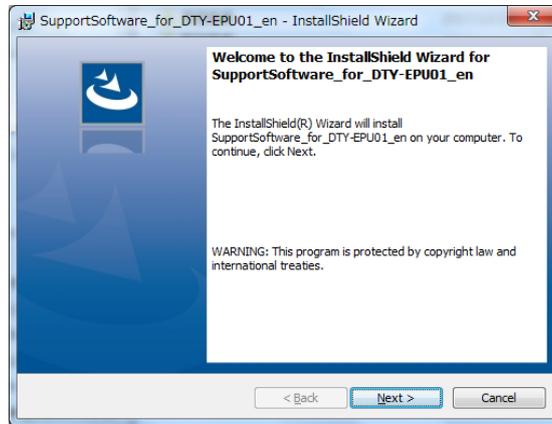
3) Select the “CDM21228_Setup” folder inside the decompressed file.

4) Installation will start when the “Next” button is selected, and the installing of the driver will be completed.

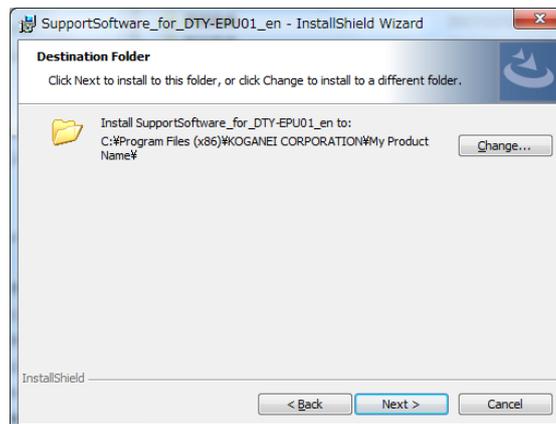
2-3 Installing Support Software

Use the following procedure to install the support software.

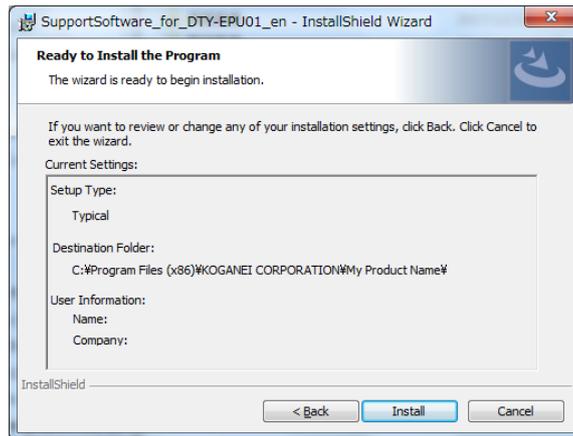
1) The following screen appears after executing the installer. Click “Next”.



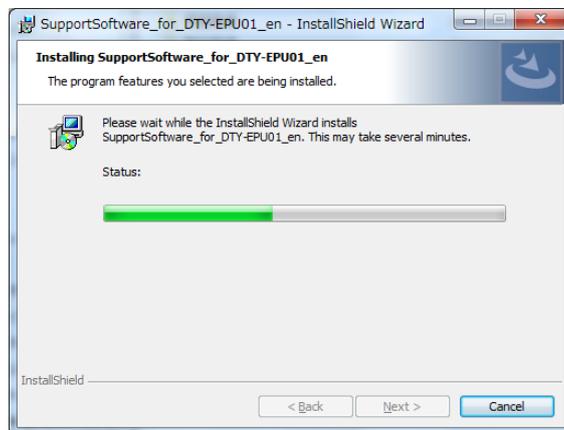
2) A screen for setting the installation location is appears. To change the location of the installation, click “Change”, and change the location of the installation.



3) The following screen appears. Click “Install”.

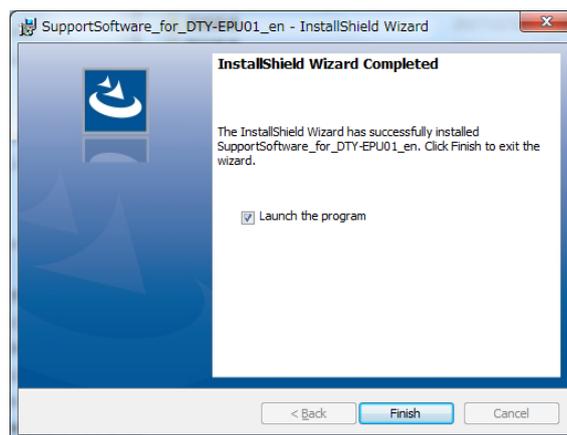


4) The installation status is shown.



5) The following screen appears when the installation is complete. If you want to start the support software, select “Launch the program”, and then click “Finish”.

After the installation is complete, shortcuts are created in the “KOGANEI” folder inside “All Programs” (“All Apps” for Windows 8 and Windows 10) and on the desktop.



2-4 Uninstallation

1) Select “SupportSoftware_for_DTY-EPU01” from the list of software in the [Settings - Control Panel] - [Uninstall or change a program], and click the [Add/Remove] button.

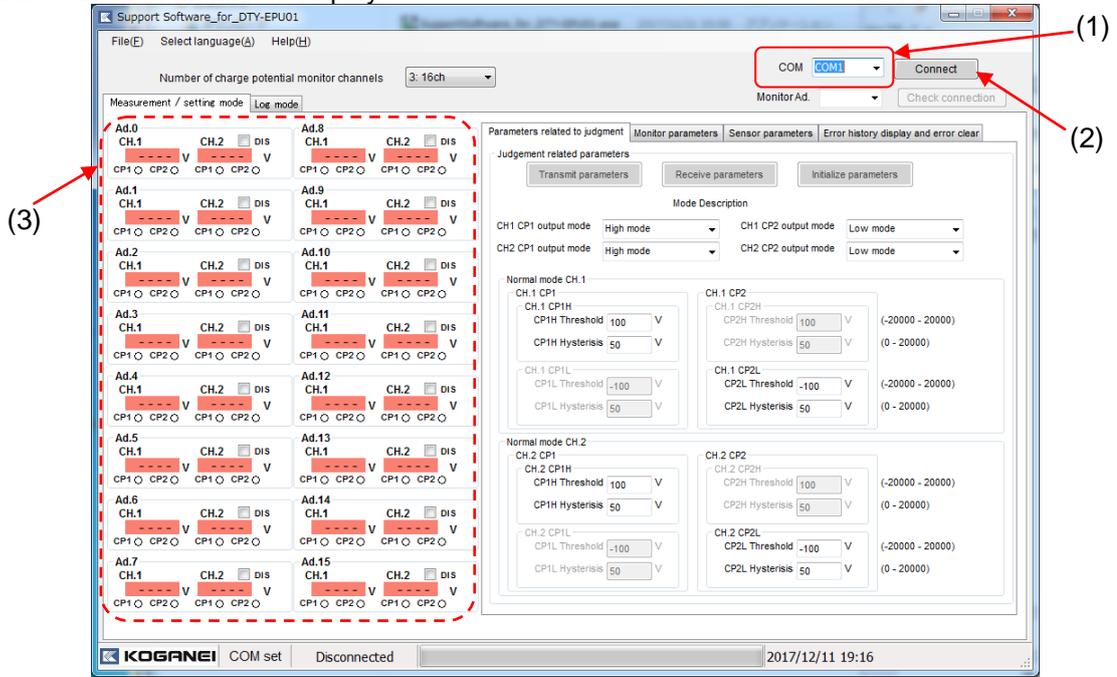
2) Uninstallation program will start. Following the instructions on the screen to uninstall.

3. Basic Operations for PC Software Startup

3-1 Software Startup Flowchart

The operation window appears when the software starts running.

- (1) Select the COM port that you want to use.
- (2) After selecting a COM port, click the "Connect" button.
- (3) The address of the connected monitor is automatically detected, and the static charge potential of the connected monitor is displayed.

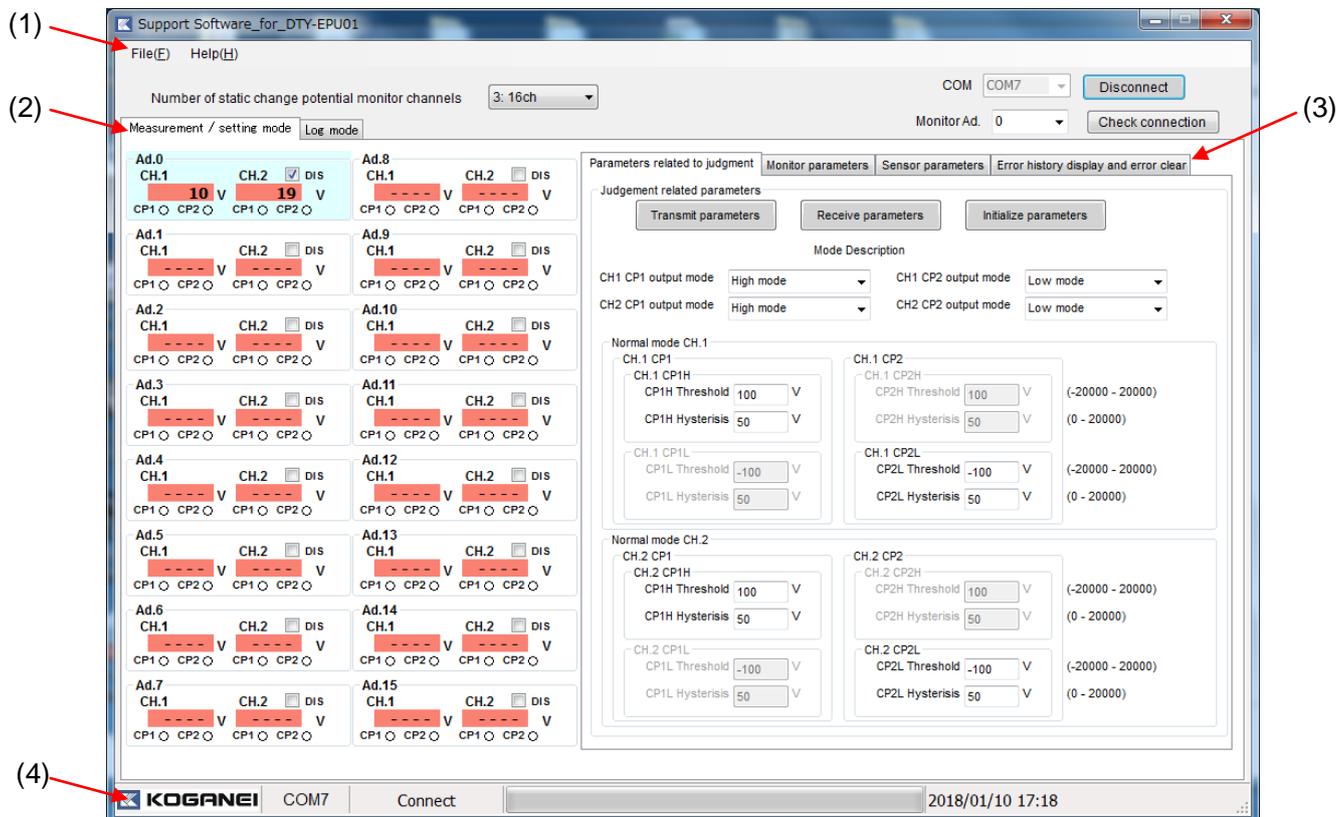


Operation window

- Note 1: Note that if monitor for electrostatic potential sensor is not connected, a communication timeout error occurs when you boot the software in Online mode.
- Note 2: Note that an error occurs if you select a COM port that is being used, such as by another application.
- Note 3: Do not disconnect/connect the power supply/signal cables while connected to the support software.

4. Basic Operations

4-1 Terms and Functions on the Operation Window (Common Items)

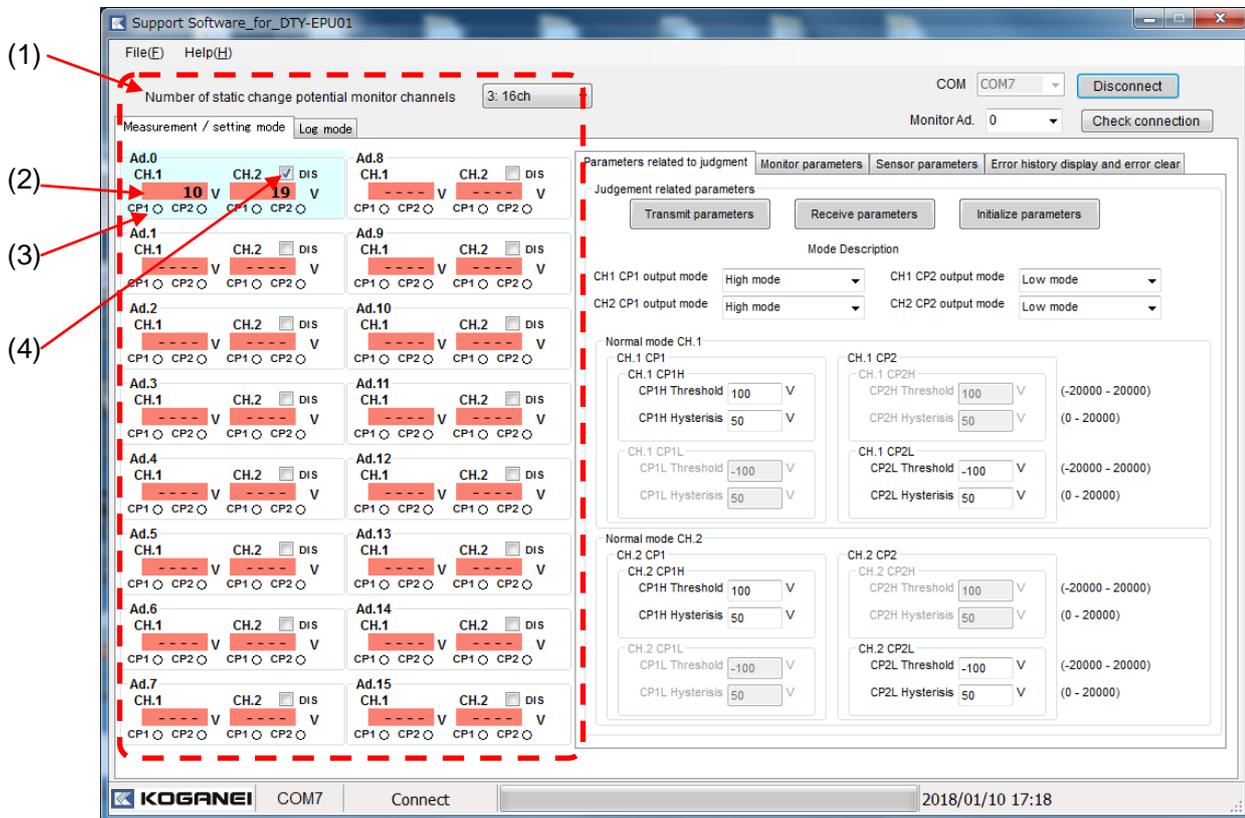


No.	Name	Meaning
(1)	Menu bar	<p>Displays pulldown menu layer 1. Four pulldown menus for different functions are shown on the menu bar.</p> <ul style="list-style-type: none"> ■ File (F) <p>*Refer to chapter 8 in this manual for details.</p> <ul style="list-style-type: none"> • New: The setting values on the screen are deleted, and sets to initial status. • Open: Reads a saved .csv setting file and reflects it to the support software. • Save: Saves the monitor/potential sensor setting and output setting to an external file (.csv). • Close: Closes the support software. <ul style="list-style-type: none"> ■ Help (H) <p>Displays version information for the monitor, potential sensor, and support software.</p>
(2)	Tab 1	<ul style="list-style-type: none"> • Switches between the screens for Measurement/setting mode tab and Log mode tab.
(3)	Tab 2	<ul style="list-style-type: none"> • Switches between the screens for Parameters related to judgment, Monitor parameters, Sensor parameters, and Error history display and error clear.
(4)	Status bar	<ul style="list-style-type: none"> • Displays the currently connected COM port. • Displays Connect/Disconnected.

5. Static Charge Potential Monitoring Operation

5-1 Terms and Functions of the Static Charge Potential Monitor Operation Window

Select Measurement/setting mode tab in tab 1.

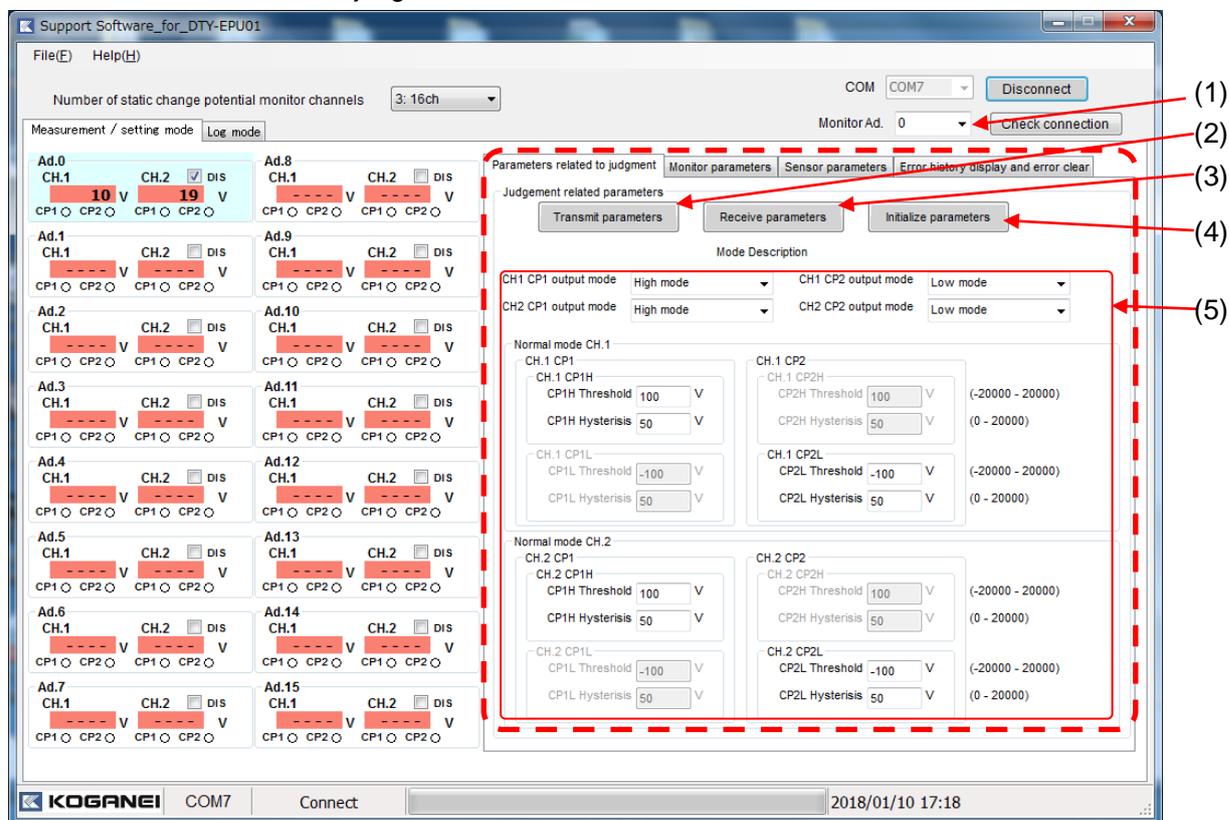


No.	Name	Meaning
(1)	Number of static charge potential monitor channels	<ul style="list-style-type: none"> Selects the number of monitors to display in the Support Software. Select from 4ch, 8ch, and 16ch. Note: When set to 4ch display when five monitors are connected, the monitor with smallest address is prioritized to display. The fifth monitor with largest address is not displayed. If it needs to be displayed, select 8ch display.
(2)	Static charge potential display field (Error display)	<ul style="list-style-type: none"> Displays the static charge potential received in approximately 100 [ms] frequency per each monitor. Note: The update frequency will become slower with more number of monitors displayed. The whole address for it will be displayed in red when an error has occurred in the monitor. The display field will be displayed in red when a potential sensor error has occurred.
(3)	Judgment LED	<ul style="list-style-type: none"> Acquires and displays the status of the judgment output LED.
(4)	Static charge potential display Enable/Disable	<ul style="list-style-type: none"> Remove the check to disable the display of the connected monitor. Place a check to enable the display.

6. Parameter Setting/Error History Display Operation

6-1 Terms and Functions on the Parameters Related to Judgment Tab Operation Windows

Select Parameters related to judgment tab in tab 2.



No.	Name	Meaning
(1)	Monitor address	• Select the address of the monitor to set from the connected monitors.
(2)	Send parameters button	• Send parameters related to judgment to the currently connected monitor.
(3)	Receive parameters button	• Receive the setting values from the currently connected monitor, and reflects to the parameters related to judgment setting item fields.
(4)	Initialize parameters button	• Return the parameters related to judgment to the initial value. Note: The monitor parameters other than the parameters related to judgment are also initialized. For details, refer to operating instructions of the electrostatic potential sensor monitor.
(5)	Output setting items	Items for output setting. *For details of each item, refer to operating instructions of the electrostatic potential sensor monitor. ■ Judgment mode Select the judgment mode for judgment output from following. <ul style="list-style-type: none"> • High mode The judgment output is turned ON when the measured potential exceeds the High threshold value. • Low mode The judgment output is turned ON when the measured potential falls below the Low threshold value. • Inside mode The judgment output is turned ON when the measured potential is inside the High threshold value and the Low threshold value.

		<ul style="list-style-type: none"> • Outside mode The judgment output is turned ON when the measured potential is outside the High threshold value and the Low threshold value. • OFF mode The judgment output is not output. • Easy.High.Low mode CP1 is turned ON when the measured potential exceeds the High threshold value, and CP2 is turned ON when the measured potential falls below the Low threshold value. • Easy.Inside mode The CP1 is turned ON when the measured potential is inside the High threshold value and the Low threshold value, and CP2 will be in OFF mode, and it is not output. • Easy.Outside mode The CP1 is turned ON when the measured potential is outside the High threshold value and the Low threshold value, and CP2 will be in OFF mode, and it is not output. ■ Threshold Set the threshold to be used for output of judgment output between -20000 [V] and 20000 [V]. Two thresholds for High threshold value and Low threshold value are set in the Inside mode/Outside mode, but the High threshold value needs to be higher than the Low threshold value. Entering one threshold value for the Easy.High.Low mode, Easy.Inside mode, and Easy.Outside mode will set the High threshold value and the Low threshold value symmetrically in positive charge side and negative charge side with 0 V as a reference. ■ Hysteresis The hysteresis against the threshold is set between 0 [V] to 20000 [V]. Entering one hysteresis for the Easy.High.Low mode, Easy.Inside mode, and Easy.Outside mode will set the hysteresis to both High threshold value and the Low threshold value.
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6-2 Terms and Functions on the Monitor Parameters Tab Operation Window

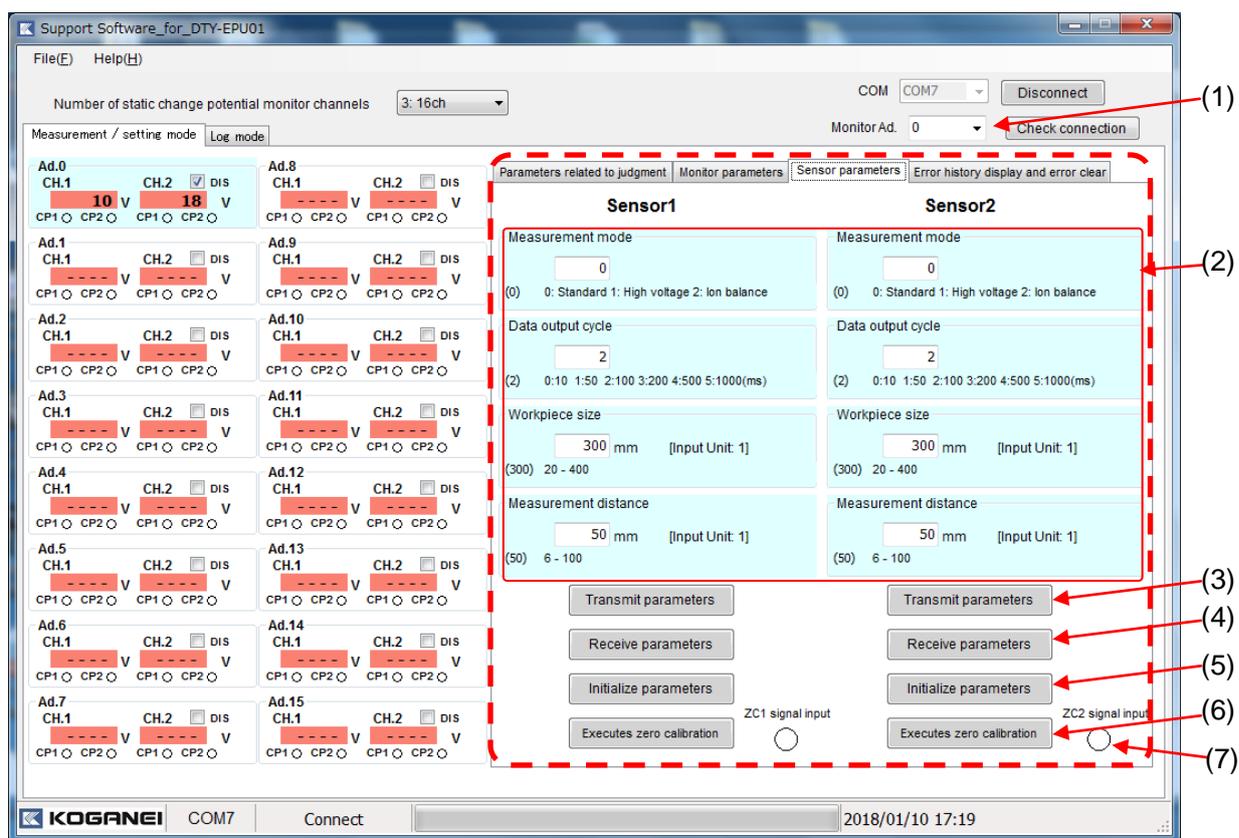
Select Monitor parameters tab in tab 2.



No.	Name	Meaning
(1)	Monitor address	<ul style="list-style-type: none"> Select the address of the monitor to set from the connected monitors.
(2)	Setting items	<p>Items for monitor setting.</p> <p>*For details of each item, refer to operating instructions of the electrostatic potential sensor monitor.</p> <ul style="list-style-type: none"> ■ Cycle for monitor display Sets the update cycle to display in the Monitor LCD screen. Select the cycle from 100, 200, 500, or 1000 ms. ■ Display hold Select from normal display, peak hold display, bottom hold display, or absolute value hold display. ■ Error output Select the error output signal (ERR1/ERR2/ERR3) from normal close or normal open. Normal close: Transistor output is ON during normal, and transistor is OFF during error. Normal open: Transistor output is OFF during normal, and transistor is ON during error. ■ Auto scan and key-protect Select from normal display, protect 1ch, protect 2ch, auto scan only, or protect auto scan. ■ Display ON/OFF Select the ON/OFF of the monitor LCD screen/LED display.
(3)	Transmit parameters button	<ul style="list-style-type: none"> Transmits the parameter settings to the currently connected monitor.
(4)	Receive parameters button	<ul style="list-style-type: none"> Receives the setting values from the currently connected monitor, and reflects to the parameter setting item fields.
(5)	Initialize parameter button	<ul style="list-style-type: none"> Returns the parameter setting items to the initial value. <p>Note: The parameters related to judgment other than the monitor parameters are also initialized. For details, refer to operating instructions of the electrostatic potential sensor monitor.</p>

6-3 Terms and Functions on the Sensor Parameters Tab Operation Window

Select Sensor parameters tab in tab 2.

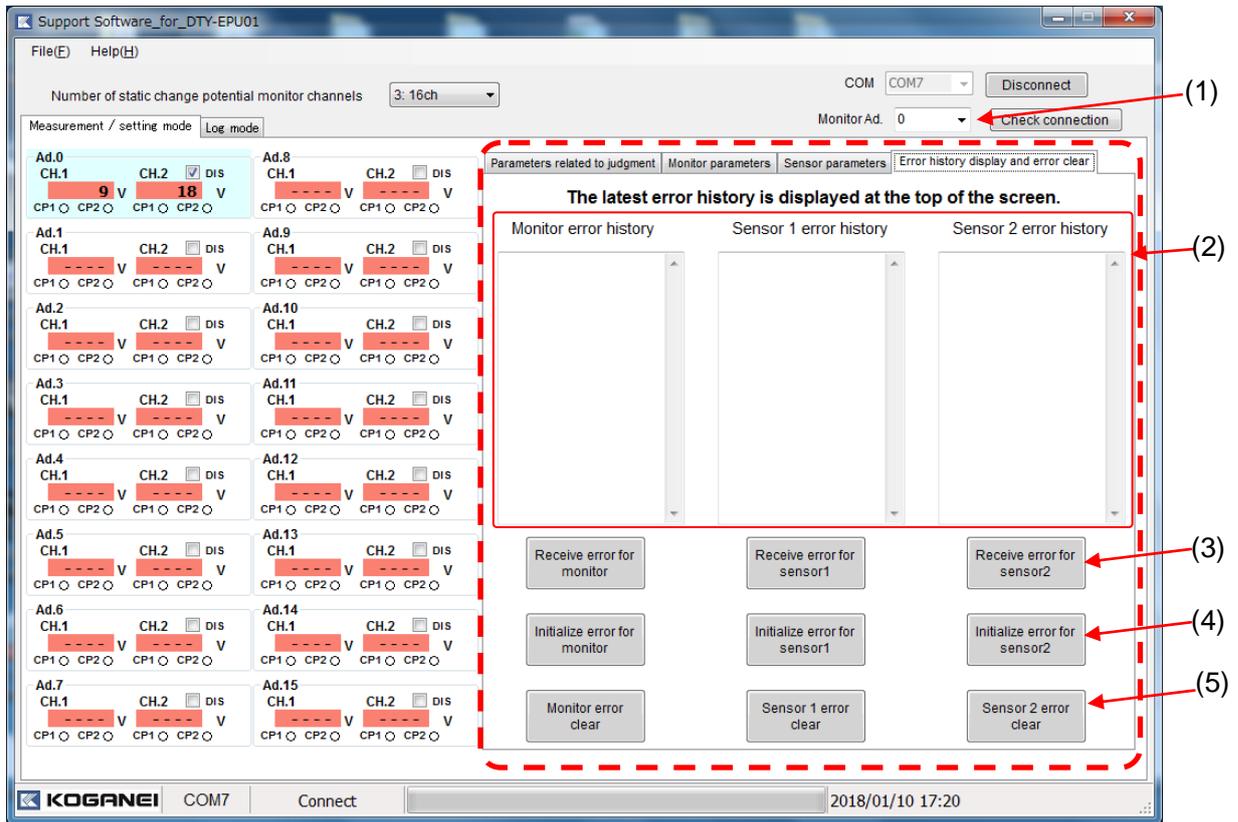


No.	Name	Meaning
(1)	Monitor Ad.	• Select the address of the monitor to set from the connected monitors.
(2)	Setting items	<p>Items for sensor setting. *For details of each item, refer to operating instructions of the electrostatic potential sensor.</p> <ul style="list-style-type: none"> ■ Measurement mode Set the measurement mode (standard mode/high voltage mode/ion balance mode) to match the charged amount of the measurement target, or the measurement target. ■ Data output cycle Select the data output cycle from 10 ms (without averaging), 50, 100, 200, 500, or 1000 ms. The data output cycle is fixed to 100 ms when the ion balance mode is selected. ■ Workpiece size Set the diameter of the diagonal line of the measurement target between $\Phi 20$ mm and $\Phi 400$ mm. ■ Measurement distance Set the distance from the measurement target to the potential sensor between 6 mm and 100 mm. This is not required to be set when used in the ion balance mode.
(3)	Transmit parameters button	• Transmits the sensor parameter settings to the currently connected monitor (potential sensor).
(4)	Receive parameters button	• Receives the setting values from the currently connected monitor (potential sensor), and reflects to the sensor parameter setting item fields.
(5)	Initialize parameter button	<p>• Returns the sensor parameter setting items to the initial value.</p> <p>Note: Only the sensor parameters will be initialized. For details, refer to operating instructions of the electrostatic potential sensor monitor.</p>

(6)	Execute zero calibration button	• Executes the zero calibration to the sensor. The static charge potential will be set to 0 V.
(7)	ZC signal input	This illuminates with the input/output zero calibration signal (ZC) is input.

6-4 Terms and Functions on the Error History Display and Error Clear Tab Operation Window

Select Error history display and error clear tab in tab 2.



No.	Name	Meaning
(1)	Monitor Ad.	• Select the address of the monitor to set from the connected monitors.
(2)	Error history display	• Last 10 communication error histories recorded in the monitor/potential sensor are displayed. This error history will display the error previous to starting up the Support Software.
(3)	Receive error button	• Receives the error history from the currently connected monitor (potential sensor), and reflects in the error history display field.
(4)	Initialize error button	• Deletes the error history.
(5)	Error clear button	Clears the error history display.

7. Operation Procedures

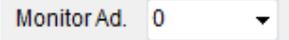
This describes about the operation procedures.

- 1) If setting of the monitor/potential sensor is necessary after starting up the Support Software, set each parameter as necessary from tab 2.
- 2) If zero calibration is necessary before measurement, execute zero calibration by orienting the potential sensor toward an earthed metal plate or a space without any charged object, and using the "Sensor parameters" tab, ZC signal of the I/O signal of the monitor main unit, or the measurement range switching/zero calibration switch at the side of the potential sensor main unit. Confirm that the displayed static charge potential is 0 [V].
- 3) The charge can be confirmed in the static charge potential display field.

8. Operations to Save and Read Setting Value

■ Set Value Save

Select the monitor to save the set value from the monitor address selection.

A screenshot of a software interface showing a dropdown menu. The text 'Monitor Ad.' is on the left, followed by a box containing the number '0' and a downward-pointing arrow on the right.

The save window for set value is displayed by selecting “File (F)” → “Save” in the menu bar.

The setting file in CSV format is created by clicking on the “Yes” button, enter an arbitrary name, and clicking on the “Save” button.

The values of the monitor/sensor settings currently set with the software is recorded in the setting file.

■ Reading Set Value

The read window for set value is displayed by selecting “File (F)” → “Open” in the menu bar.

The content of the setting file saved in the set value save is reflected to the Support Software when it is opened.

Note 1: There is possibility that the set value may not be able to read when the setting file is edited directly with an editor, etc.

An error is generated when a corrupted setting file is read.

Note 2: An error is generated when a setting file used by other user or application is read.

Read the setting file after taking a measure such as closing the setting file, end the application using the setting file, etc.

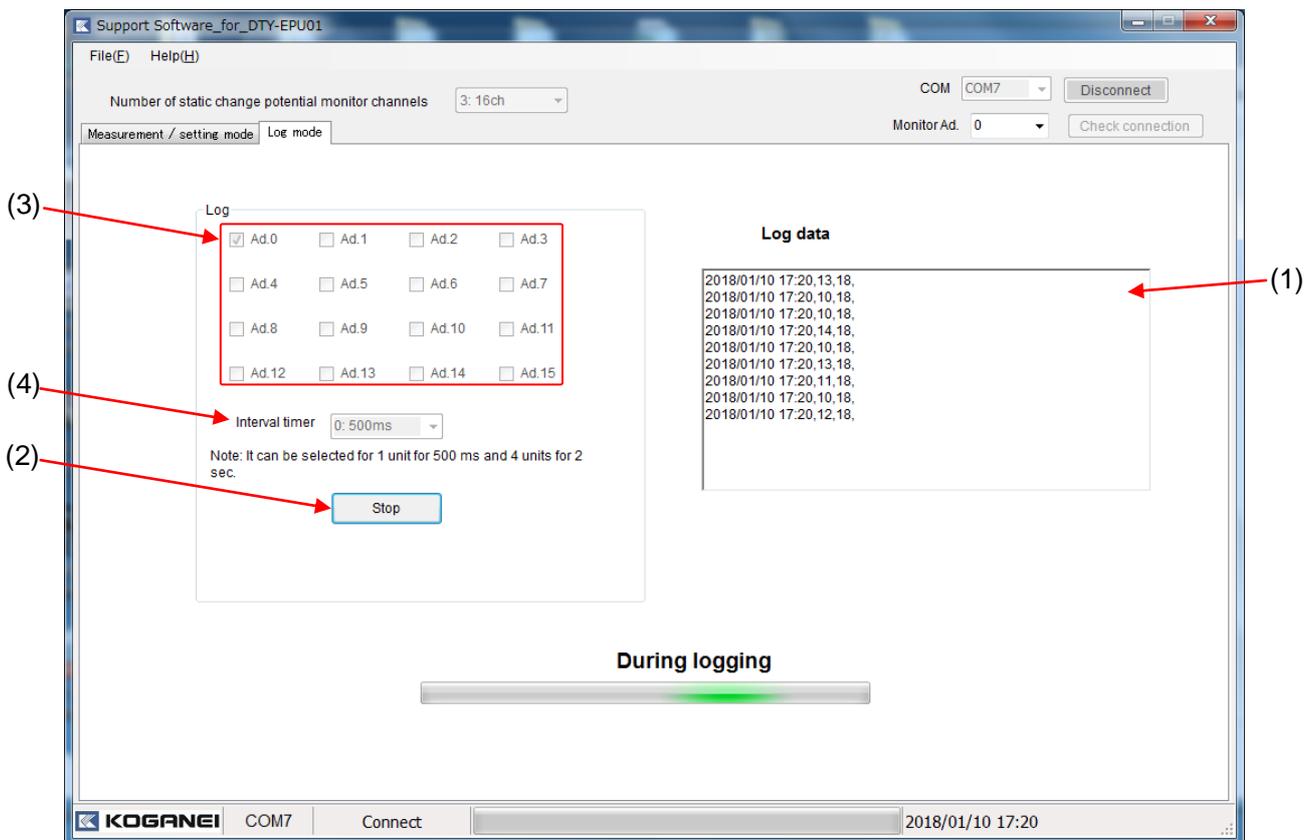
Note 3: Make sure to save the setting file with file extension of “.csv”.

An error is generated when a file with other file extension is read.

9. Operations to Display and Output Logs

■ Log display

Select Log mode from tab 1.



No.	Name	Meaning
(1)	Log display field	<ul style="list-style-type: none"> The logs acquired after starting the log display are displayed. Number of displayed lines is ten lines.
(2)	Log Start/ Stop button	<ul style="list-style-type: none"> Switches the start/stop of the log display. The log start window is displayed when the log Start button is pressed. The log file in CSV format is created by clicking on the “Yes” button, enter an arbitrary name, and clicking on the “Save” button. Acquiring of log is stopped by pressing the log Stop button.
(3)	Content of the log Selection	<ul style="list-style-type: none"> Place a check on the address of the monitor to log from the connected monitor. Remove the check if there is a monitor that does not require acquisition of the log.
(4)	Interval timer	<ul style="list-style-type: none"> Select the interval time. Select from 500 ms, 2 s, 5 s, 10 s, 30 s, 1 min, 5 min, 10 min, or 30 min.

Note 1: Do not open the log file during logging.

If there is any unclear point regarding the content, or technological question, contact the Technical Service Center described below.

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