KOGANEI

X435178 Ver2.0

EW SERIES
SUPPORT SOFTWARE

(FOR EW2C-H-NP, EW2C-H-PN, EW2C-H-CC)

OWNER'S MANUAL (Ver. 2.0)

Contents

※ For more information on the main unit and controller, see the Elewave Series Electric Hand Flat Type Owner's Manuals (X435177).

1. Software

1-1 Overview

This software communicates with controller for the Elewave Series Electric Hand Flat Type and allows you to do operation settings and display the operating status of the actuator.

■ Setting of operation data

You can enter and edit operation data for operation position, speed, etc., and save files.

■ Operation

Starts/stops operation and executes return to origin based on the data you set.

■ Display

Displays current position, current I/O input, and errors.

1-2 System Requirements

■ Actuator

EW2H□□

■ Operating System

• OS

Windows XP (SP3), Windows Vista, Windows 7, Windows 8, Windows 8.1, Windows 10

• Computer System

- Main unit:
  Processor recommended by Microsoft
- Memory:
  Memory capacity recommended by Microsoft (At least 1 GB)
- Hard disk space:
  At least 100 MB available
- Video monitor:
  800 × 600 or better (1024 × 768 or better recommended)
- Serial port:
  USB port available
  * To use RS-485 serial communication, a USB port (with a USB-RS485 converter (IBM2A-H1)) is required.
- Other:
  “Microsoft .NET Framework Version 4” must be installed
  * If not installed yet, download "dotNetFx40_Client_x86_x64.exe" from our homepage and install it.
  "USB-RS485 converter" for IBM2A-H1 must be installed
  * If not installed yet, download "CDM21228_Setup.exe" from our homepage and install it. If a different version of "CDM2****_Setup.exe" is installed, the software may experience malfunction with an older version (with a lower version number). "CDM21228_Setup.exe" or a newer version (with a higher version number) is recommended.

2. Before You Begin

2-1 Preparation

■ Installing the support software

Extract the EW2C_SupportSoft_Ver****.zip file ("****" indicates the version), and select and run the setup.exe. The installer program starts.

Follow the instruction displayed on the screen to install the software.

Remark 1: If an older version is installed, ensure to uninstall the older version before installing the software.

Remark 2: Log in as an administrator to install the software.
Also, use single-byte alphanumeric characters for the login name.

■ Uninstalling the support software

(1) From Windows [Setting] - [Control Panel] - [Add or remove programs], select "EW2C_SupportSoftware" in the list and click [Uninstall or change a program].

(2) The uninstaller program starts. Follow the instructions on the screen to uninstall the software.

■ Additional parts for communication (sold separately)

Name	Model	Specification	Product description
USB−RS485 converter	IBM2A−H1	A USB cable included (mini−B)	Used to connect the EW2C controller and a PC with a USB port. (To use this part, download the USB−RS485 converter driver and install it.)
	IBM2A−H1−N	No USB cable included	
Communication cable	EW2KD-008L	Length: 80 mm	Used to connect EW2C controllers.
	EW2KD-1L	Length: 1000 mm	
	EW2KD-3L	Length: 3000 mm	
	EW2KN-1L	Length: 1000 mm	Used to connect the EW2C controller and PLC's RS485 serial communication unit.
	EW2KN-3L	Length: 3000 mm	
Terminating resistor connector	EW2FR		Connect to the terminating EW2C controllers.

2-2 Connecting Controller to a PC

• Connect the cable connector from the USB-RS485 converter to the controller "S1" connector.
Up to 16 controllers can be connected to one USB-RS485 converter. (Daisy chain connection) For daisy chain connection, assign the address settings to 0 - F, using the rotary switch on the front side of the controller. Ensure that there is no duplicated address.
If there are duplicated addresses in the daisy chain, response data collides, preventing proper communication.
(The address can be changed through parameters without using the switches. In that case, connect the USB-RS485 converter and the controller in a 1:1 configuration, and change the address. Also note that the displayed switch does not match the address.)

3. Basic Operations for Selection of Controller Type

3-1 Software Startup Procedure

This support software acquires a COM port when it is started.

Select the COM port to use. (Available COM port numbers are within **100**.)

Then, select a language.

■ Online connection (support software is in communication with the controller)

1) After software startup, automatically starts communication with 16 controllers.
2) Among the available controllers, the smallest RS485 address is selected, and the main window is displayed.

■ Online status (only support software is communicating)

1) After software startup, automatically starts communication with 16 controllers.
2) Confirms that no response has come from the controller, and then moves to the operation window by the controller.
3) Select the main unit type to be used, USB 485 address, and press the Set button.
4) Moves to the main window.

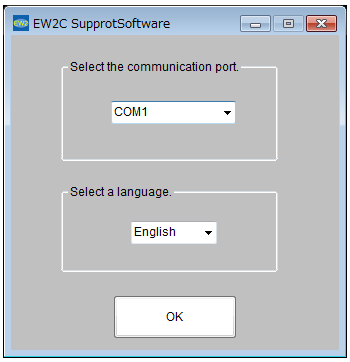
■ Offline status (Not connected selected)

1) Confirms that no response has come from the controller, and then moves to the operation window by the controller.
2) Select the main unit type to be used, USB 485 address, and press the Set button.
3) Moves to the main window.

Note: For Online, a move to the Controller window means that the support software and controller are not in communication. Check the controller power supply, connection, and connector.

■ Select language

select English



select Japanese

To describe the functions, this operating instructions uses the windows displayed when English is selected.

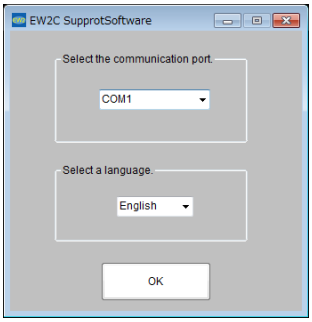
If Japanese is selected, the displayed texts and messages are different but the functions and flows are the same.

3-2 Software Startup Flowchart

When you start the software the communication port selection window opens.

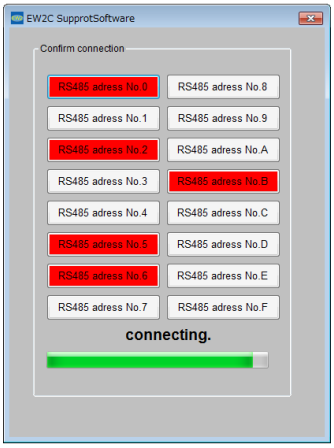
<Online connection (support software is in communication with the controller)>

Communication port and language selection window (Initial window in the software)



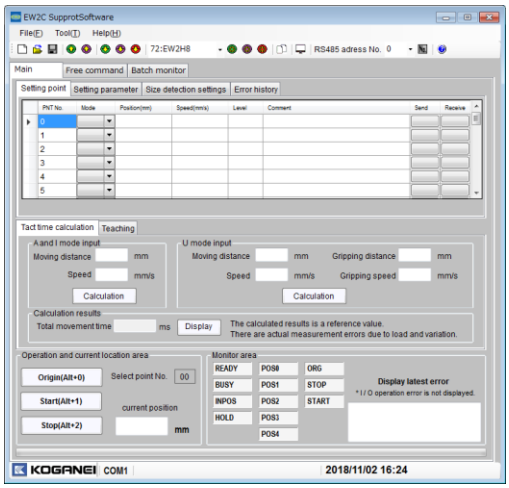
Select the communication port and language. When communication with the controller is successful, the color is red in color.

Confirm connection screen (software default screen)
Red: connected
White: not connected



Among the available controllers, the smallest RS485 address is selected, and operation screen of the support software is automatically displayed.

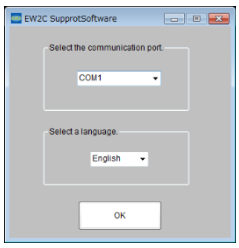
Main Window



※If you purchase a standalone EW2C-H, it is set to PRM0=72.
When purchasing other formats, initialize the parameters before using.

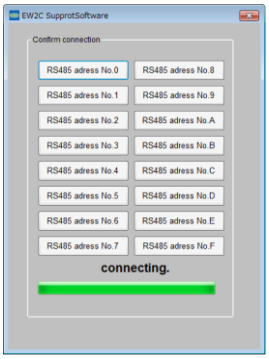
<Online status (Only support software is in communication)>

Communication port and language selection window (Initial window in the software)

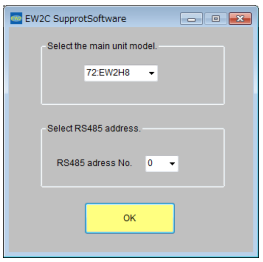


Select the communication port and language. When communication with the controller is successful, the color is red in color.

Confirm connection screen
Red: connected
White: not connected

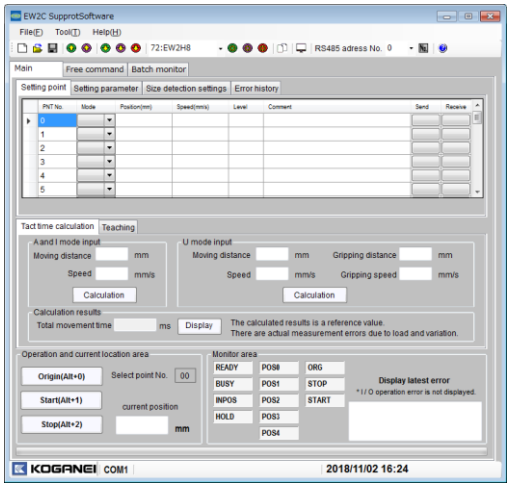


Model Selection Window
Select the main unit type to be used, RS485 address.



It is set to the selected RS485 address, main unit format.

Main Window

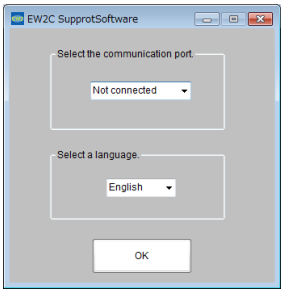


Communication between the support software and the controller is not established.

If this situation occurs unexpectedly, check the controller power, connection, and connectors.

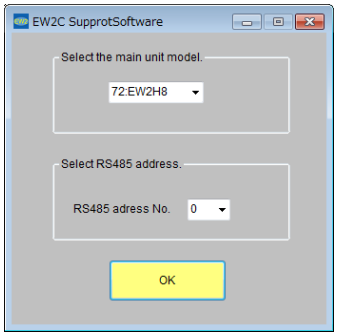
<Offline status (Not connected is selected)>

Communication port and language selection window (Initial window in the software)



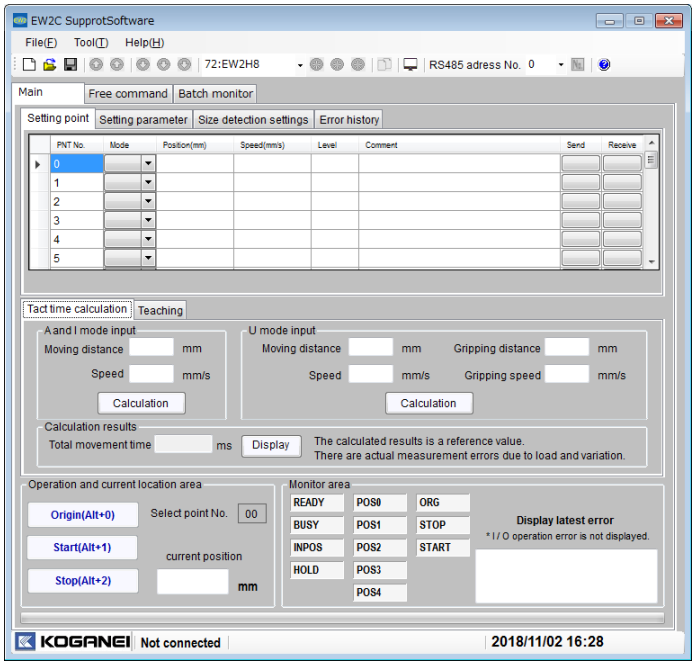
Model Selection Window

Select the main unit type to be used, RS485 address.



It is set to the selected RS485 address, main unit format.

Main Window



This window only allows to display data and support software version information.

4. Basic Operations

4-1 Operation Procedure

This section describes the operation procedure.

1) Align with the specified actuator number and initialize the parameters.

(Be sure to do this if you purchased a standalone controller.)

2) Set the use conditions and so on using the parameters in the Data area.

3) In the Data area, set the virtual origin point shift.

(This setting is unnecessary if it is the same as the normal origin.)

4) In the Data area, enter point data.

5) Send the point data and parameter data.

6) In the Operation area, perform the return to origin operation.

7) In the Setting area, select the line of the point number that you want to operate.

8) In the Operation area, start operation by clicking Start.

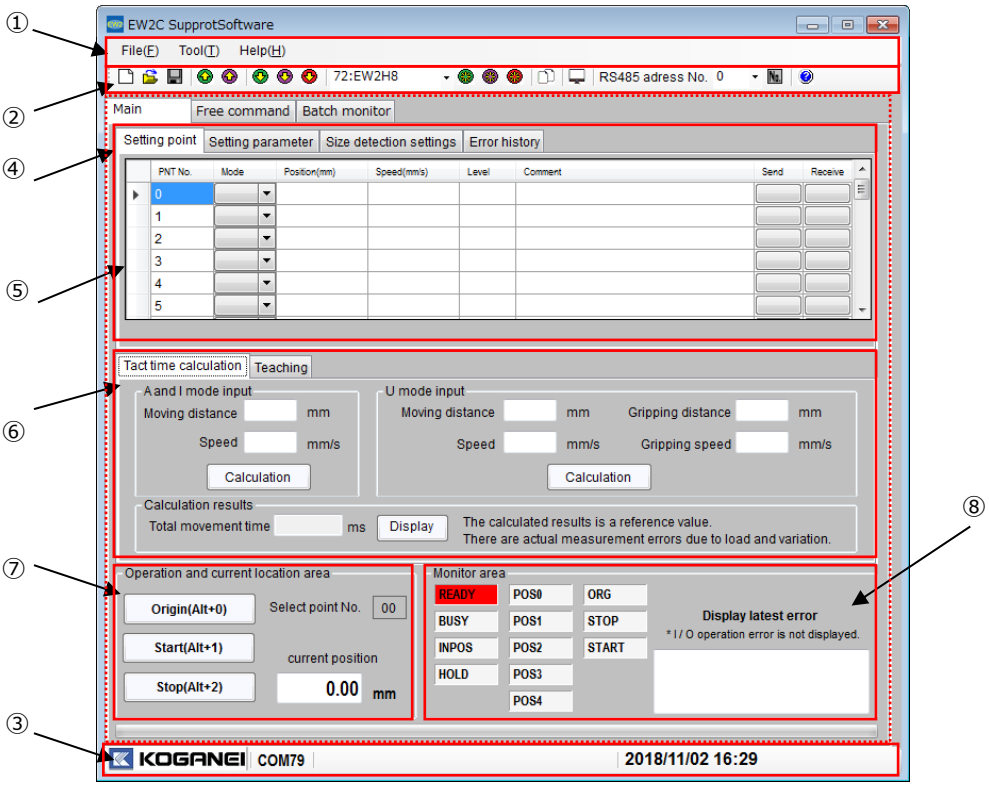
※ To operate another point data number, repeat steps 6 and 7 above.

Caution:

When operating the main unit in an operation mode, always provide an emergency stop or stop function externally.

The program's own stop function may not work if a communication error or some other problem occurs.

4-2 Support Software Operation Window



①: Menu bar
②: Tool bar
③: Status bar
④: Function toggle tab
⑤: Data area
(Data toggle tab)
⑥: Special function area
(Special function tab)
⑦: Operation and current location tab
⑧: Monitoring area

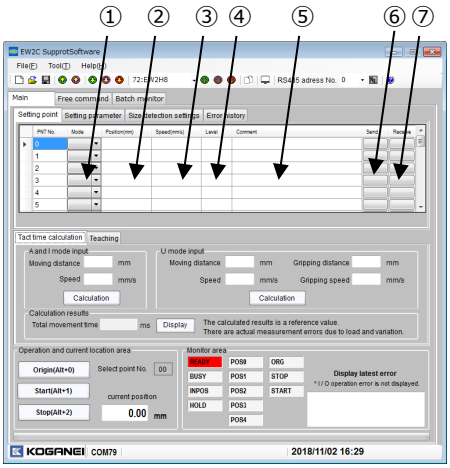
No.	Name	Description
①	Menu bar	Displays the names of top-level menus. There are 3 pull-down menus organized by function. ■ File • New: Deletes existing settings then initializes new file settings in the window. • Open: Reads settings from a saved file and displays them on screen. • Save: Saves settings. • Exit: Quits the program. ※ Comments can be written in the files, but they will not be stored on the controller.
		■ Tool • Batch send (point): Sends point data to the controller. • Batch send (parameters): Sends parameter data to the controller. • Batch receive (point): Receives point data from the controller. • Batch receive (parameters): Receives parameter data from the controller. • Initialize (point): Initializes point data. • Initialize (parameters): Initializes parameter data. Select an actuator number before initializing parameter data. • Initialization (error history): Initializes error history data. • Error history display: Displays the last 16 errors. • Size detection settings: The size detection window opens and you can search for sizes. • Compare: Compares the setting values (point data and parameter data) on the support software with the data on the controller. • Change COM port: The COM port settings window opens and you can set the COM port. • RS485 address acquisition number: Acquires the RS485 address of the connected controller.
		■ Help • Version Information: Displays version information of support software.

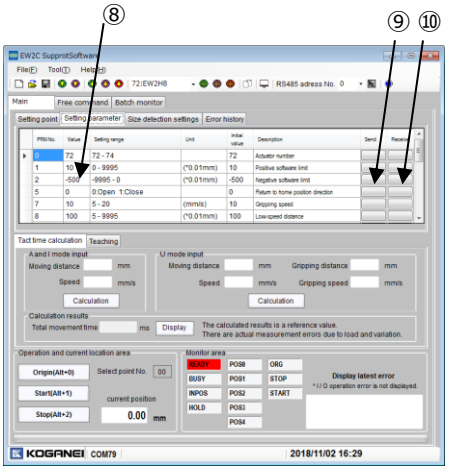
No.	Name	Description
②	Tool bar	Provides buttons that function as shortcuts for frequently used commands.  New  Open(Note 1)  Save  Send (point)  Send (parameter)  Receive (point)  Receive (parameter) Note 2)  Receive (error history)  Initialize (points)  Initialize (parameters) Note 3) <Actuator type selection field Note 4)>  Initialize (error history)  Match  COM setting  RS485 address acquisition Note 5) <Address No. field>  Acquire version information Note 1) The actuator type selection field is updated according to the file opened. Also, the parameter initial value and input range changes according to the actuator type. Note 2) The actuator type selection field changes to the received actuator type. Also, the parameter initial value and input range changes according to the actuator type. Note 3) Select the actuator type to initialize from the actuator type selection field on the right of  button. Note 4) When the actuator type selection field is modified, the parameter initial value and input range changes according to the actuator type. Note 5) The acquired RS485 address number is displayed in "RS485 Address No." field on the left of the  button. From "RS485 Address No" field, choose the RS485 address of the controller to select.
③	Status bar	• Connected port name • Date • Time
④	Function toggle tab	• By switching the tabs, the functions of the main window are toggled. • Main window tab: Use this tab for the basic functions, including data submission/reception, operation, and error check. • Free command transmission/reception window tab: Submits and receives the commands freely. • All monitor window tab: Monitors all connected controllers.
⑤	Data area	• By switching the tabs, the functions of the data area are toggled. • Point configuration tab: Configures the point data. Point data can also be sent and received in this tab. • Parameter configuration tab: Configures the parameter data. Point data can also be sent and received in this tab. • Size detection configuration tab: Configures the settings related to size detection. • Error history acquisition tab: Obtains the error history.
⑥	Special function area	• By switching the tabs, the functions of the special function area are toggled. • Tact time calculation tab: Calculates a tact for the entered travel distance and/or speed. Note that the value is a reference value. • Teaching configuration tab: Configures the point position and virtual origin position through teaching.
⑦	Operation and current position area	• Starts/stops operation and executes return to origin based on the data you set. In addition, the current position will be displayed in the current position display box.
⑧	Monitoring area	• Displays the output status of the READY, BUSY, INPOS, and HOLD signals. • Displays the input state of the ORG, STOP, and START signals.

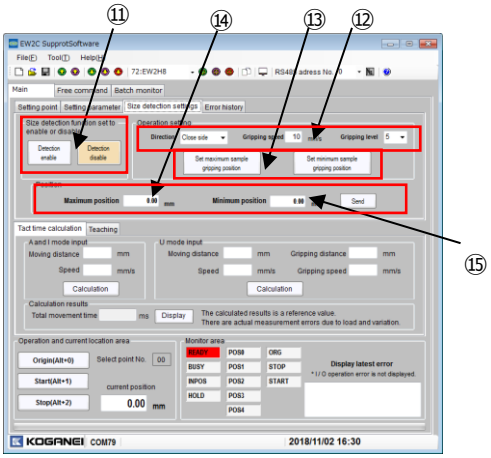
		• POS 0 to 4: Displays the input status of point setting input POS 0 to 4. • Displays the errors that have occurred in the Latest error display box. It is overwritten when a new error occurs.

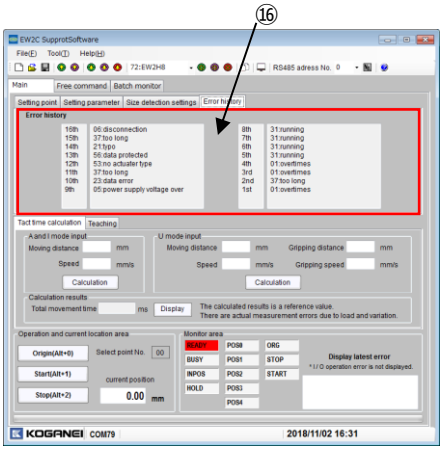
4-3 Operations in Main Window

4-3-1 Operations in Data Area





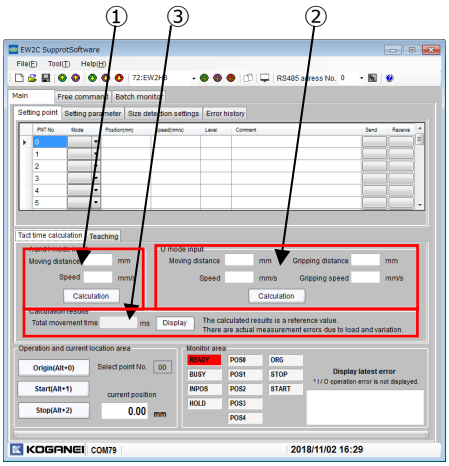


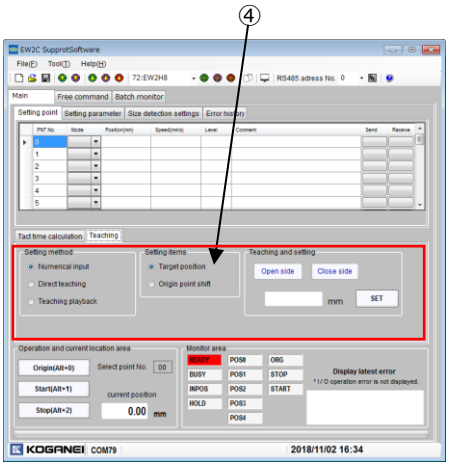


①: Operation mode
②: Position
③: Speed
④: Gripping level
⑤: Note
⑥: Send one point data
⑦: Receive one point data
⑧: Parameters
⑨: Send one parameter data
⑩: Receive one parameter data
⑪: Size detection function enable / disable setting
⑫: Size detection operation setting
⑬: Maximum (minimum) setting operation start
⑭: Maximum (minimum) position input
⑮: Maximum (minimum) position setting
⑯: Error history display acquisition screen

No.	Name	Operation method	Remark
①	Operation mode	• Select the point data mode.	• Refer to "5-2 Range of Point Data Input for Each Model" regarding the input range for point data of each model.
②	Position	• Input the positions of the point data.	
③	Speed	• Input the speeds of the point data.	
④	Gripping level	• Input the gripping levels of the point data.	
⑤	Note	• Enter a comment for point data.	• Comments are not sent to the controllers. • Comments are deleted when the points are initialized. • Do not use single-byte commas.
⑥	Send one point data	• Only the specified point is sent. If the mode is empty, the point data is deleted.	
⑦	Receive one point data	• Only the specified point is received.	• The comments are left and not deleted.
⑧	Parameters	• Input parameter data.	
⑨	Send one parameter data	• Only the specified parameters are sent.	
⑩	Receive one parameter data	• Only the specified parameters are received.	
⑪	Size detection function enable / disable setting	• Choose if size detection is performed.	• The set values correspond to the parameter window.
⑫	Size detection operation setting	• Input the settings for the size detection. (Detection direction, gripping speed, gripping force)	• For the input range of the gripping speed, refer to "5-2 Range of Point Data Input for Each Model".
⑬	Maximum (minimum) setting	• Start the maximum (minimum) setting behavior.	• After the maximum (minimum) setting behavior, the value is automatically recorded.
⑭	Maximum (minimum) position input	• Inputs the size detection position.	
⑮	Maximum (minimum) position setting	• Sends the size detection position.	
⑯	Error history display acquisition screen	• Displays the error history.	• The 1st represents the latest error: the larger error number indicates the older error.

4-3-2 Operations in Special Function Area





①: Calculations for A and I modes

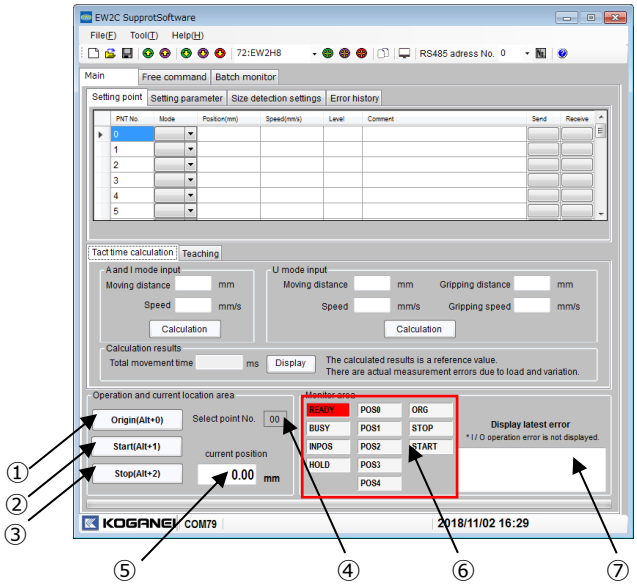
②: U mode calculations

③: Calculation results

④: Teaching

No.	Name	Operation method	Remark
①	Calculations for A and I modes	• Input the distance moved, speed moved, and then press the Calculate button to display the total time in motion in the calculation results field.	• There is no input range limit. • The selected model becomes the model that is displayed at the top of the support software interface.
②	U mode calculations	• Input the distance moved, speed moved, gripping movement distance, and gripping movement speed, and then press the Calculate button to display the total time in motion in the calculation results field.	• There is no input range limit. However, if a value that prevents the speed to decelerate to the gripping speed is entered, an error is returned. • The selected model becomes the model that is displayed at the top of the support software interface.
③	Calculation results	• Pressing the Calculation button for A and I modes calculations or U mode calculation, displays the total time in motion. Pressing the Display Details button displays detailed information, such as period of deceleration/ acceleration, distance.	• The data from when the Calculation button was pressed for A and I modes calculations and U mode calculation remains unchanged. If you change the model and want to check the calculation results, press the Calculation button for A and I mode calculation and U mode calculation again.
④	Teaching	Conducts teaching.	For teaching, refer to Section 4-6.

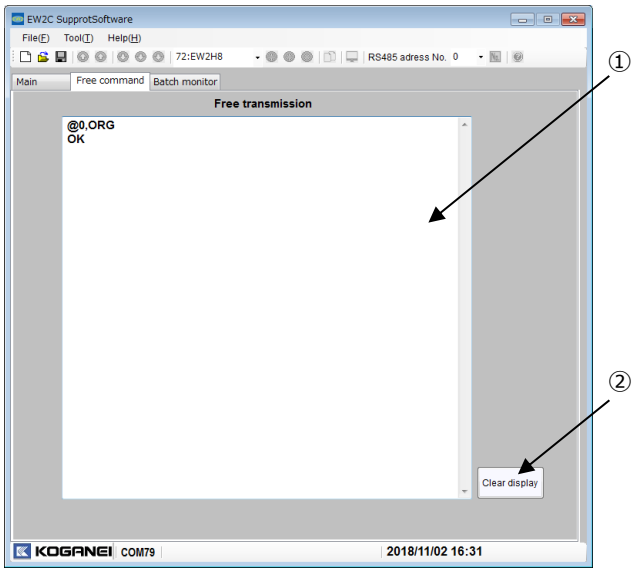
4-3-3 Operations in Operation & Current Position Monitor Area



①: Origin (Origin return)
②: Start
③: Stop
④: Selected point display
⑤: Current position display
⑥: I/O monitor
⑦: Display latest error details

No.	Name	Operation method	Remark
①	Origin (Origin return)	• Executes return to origin.	
②	Start	• Move points. The point numbers are the point numbers selected in the setting areas.	• The No. is displayed in the selection point display.
③	Stop	• Stops operations.	
④	Selected point display	• The selected point data is displayed in the selection point display. It is enabled while setting teaching.	
⑤	Current position display	• Shows the current position.	
⑥	I/O monitor	• Indicates the I/O states. Red: Signal on Gray: Signal off Orange: Communications off, update off, or communication error	• The monitor display is for reference because it is not a real time display, as it has an update cycle that is about 0.5 seconds. • However, the monitor display is updated in a shorter cycle when returning to the origin from the support software and starting up.
⑦	Display latest error details	• If an error or alarm occurs, and if stop is input or a stop command is input, this information and the time on the computer that it occurred are displayed.	• Information is not displayed if it occurs while offline.

4-4 Operations in Command Transmission Operation Window

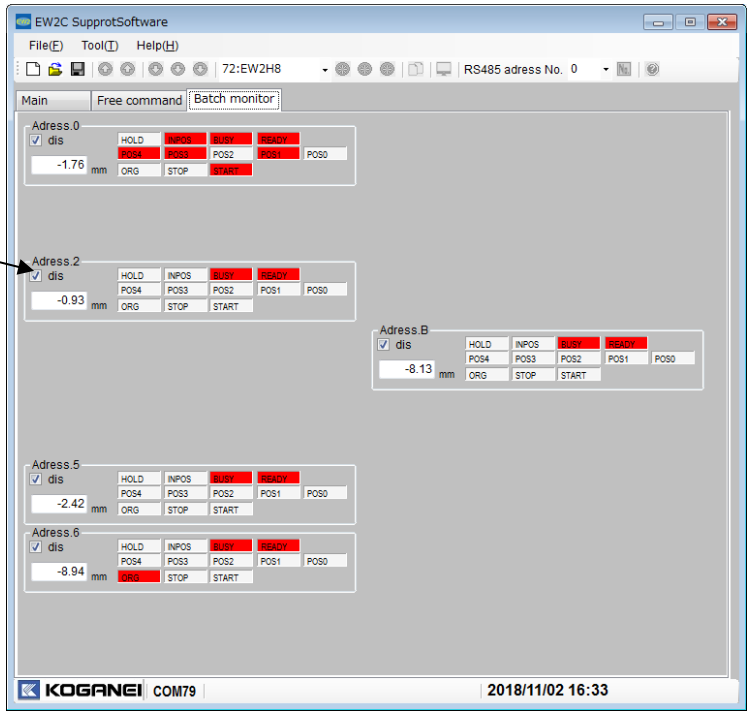


①: Free transmission area

②: Display clear

No.	Name	Operation method	Remark
①	Free transmission area	• You can input commands directly, similar to hyper terminals. For details about the commands, refer to the instruction manuals for each controller. ※ Free transmission area is a maximum of 27 lines. The oldest lines are deleted if the number exceeds 27.	
②	Display clear	• Clear the free transmit / receive area.	

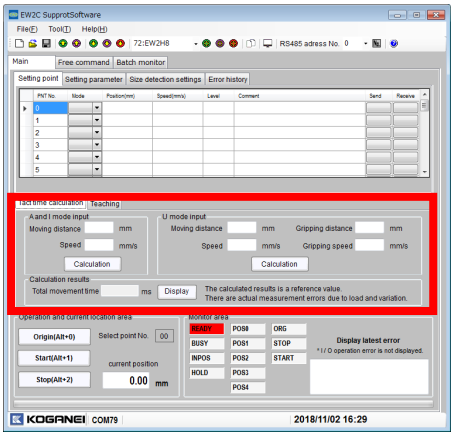
4-5 Operations in All Monitors Window



①: Check box for selecting acquisition

No.	Name	Operation method	Remark
	All Monitors Window	• Acquires all current positions and I/O states of the connected controllers. Red: Signal on Gray: Signal off Orange: Communications off, update off, or communication error	• The display on the monitor is an update cycle of about 1 seconds.
①	Acquisition selection check	• Select if acquisition is enabled or not. Only the selected addresses are acquired.	Controllers that are turned off affect the monitor frequency because they wait for responses. Use this option to exclude controllers from acquisition, for example, a controller is disconnected after its address is acquired

4-6 Operations in Teaching Setting Window



Teaching Window

1) Select the item to set for teaching from "Target position" and "Virtual origin".
The configuration items can be selected after determining the configuration method.

Target position: Determine the point position. The point No. is "the selection point No." of the operation and current position areas. To change the point No., select a point grid using the mouse.

Virtual origin: Determines the virtual origin.

2) Select the teaching setting method from "Numerical input", "Direct teaching", and "Teaching playback".

Numerical input : This method is to set the position by entering the value directly.

Direct teaching : This method turns excitation to the main unit off, and then you set the position manually.

Teaching playback : This method sets the positions by moving each distance that was set to be moved.

(You can also do teach movements while the button is pressed.)

■ For numerical input

3) Enter a position to "Teaching and setting" and select the SET button.
In that case, the unit of the data is in 0.05 mm.
Also, add a negative sign (-) to indicate a negative direction.

■ For direct teaching

3) Does return to origin according to the messages.

4) After return to origin is complete, align the position manually, and press the SET button.

■ For teaching playback

3) After return to origin is complete, align the position by pressing the teach position button.
Select "Close side" button to move the close side. Select "Open side" button to move to the open side.
Select and hold the button to continue moving for the unit specified by PRM25. If the button is press and hold after three repetitions of the movement, the movement continues until reaching the limit or hitting an object. Release the mouse over the button to stop.

4) Align the position and select the SET button.

For the target position, when selecting the SET button, the point grid of the selection point No. is propagated.

For the virtual origin, the parameter is written.

For direct teach and teaching playback, the actuator returns to the origin after completion.

5. Appendix

5-1 Actuator and Actuator Numbers for Each Controller

Actuator model	Actuator number
EW2H8	72
EW2H18	73
EW2H28	74
EW2HL8	82
EW2HL18	83
EW2HL28	84

5-2 Range of Point Data Input for Each Model

Mode	Actuator Model	Position (mm) ※Possible in PRM21			Speed (mm/s)			Gripping level (Only for U mode)		
A, I, U	EW2H8	-5	～	5	5	～	50	1	～	5
	EW2H18	-7	～	7	5	～	50	1	～	5
	EW2H28	-9	～	9	5	～	50	1	～	5
	EW2HL8	-16	～	16	5	～	50	1	～	5
	EW2HL18	-21	～	21	5	～	50	1	～	5
	EW2HL28	-26	～	26	5	～	50	1	～	5

※ Input for gripping force level is not required in A and I modes.

Mode	Actuator Model	Speed (mm/s)			Gripping level		
O, C	EW2H8 EW2HL8	5	～	20	1	～	5
	EW2H18 EW2HL18	5	～	30	1	～	5
	EW2H28 EW2HL28	5	～	20	1	～	5

※ Input for position is not required for O and C modes.

Relationship of Speed and Gripping Level Input Range in O and C Mode

Gripping level	EW2H8 EW2HL8 Speed (mm/s)			EW2H18 EW2HL18 Speed (mm/s)			EW2H28 EW2HL28 Speed (mm/s)		
1	5	～	6	5	～	6	5	～	6
2	5	～	8	5	～	10	5	～	8
3	5	～	10	5	～	15	5	～	10
4	5	～	15	5	～	20	5	～	15
5	5	～	20	5	～	30	5	～	20

* Size detection shares the same input range as the O and C modes.

5-3 Revision history

Ver.1.0

Create New

Ver.2.0

Added cover page and appendix data by adding actuator model and controller model.

If you have any problems with the content of this publication or technical questions, please contact the Koganei Overseas Department below.

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