

OMRON

Vision sensor

Vision System FH Series

Simulation Software User's Guide



S2D-203035S

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1-1 Introduction

The simulation software included on the Vision System FH Series software CD-ROM allows you to try out the operation of the Vision System FH/FZ5 series on a Windows PC. In addition to the sample images stored in the software, you can also operate with images you have taken with a digital camera or other images or images saved by FZ · FZ2 · FZ3 · FZ4 · FZ5 · FH series controllers.

(Please refer to "Supported Image Formats" in this manual for the image formats that can be used.)

1-1-1 Safety Precautions Regarding Security

- Apply the latest security updates on your computer's OS to avoid security risks caused by a vulnerability in the OS.
- Always use the highest version of this software to add new features, increase operability, and enhance security.
- Manage usernames and passwords for this software carefully to protect them from unauthorized uses.
- Set up a firewall (E.g., disabling unused communication ports, limiting communication hosts, etc.) on a network for a control system and devices to separate them from other IT networks. Make sure to connect to the control system inside the firewall.

1-2 Recommended Operating Environment

Name	Description
CPU	Intel Pentium Processor (SSE2 or higher)
OS	Windows 7 Professional (32/64bit) or Enterprise (32/64bit) or Ultimate (32/64bit) Windows 10 Pro (32/64bit) or Enterprise (32/64bit) Windows 11 Pro (64bit) or Enterprise (64bit)
Memory	At least 2GB (3GB or more recommended)
Available disk space	At least 2GB
Display	Resolution: 1280×1024 dots or higher Scale and layout: 100% Display color: True Color (32 bit)
Network	10BASE-T (100BASE-TX recommended)

To use the software, Microsoft .NET Framework 3.5 must be installed.

1-3 Supported Image Formats

The simulation software supports the following image file formats. Please use it after first saving to USB flash, or other memory and copying to a folder created in a specified location.

(For details on how to create folders, please see the chapter on *Using the simulation software* in this manual)

- File formats: bmp, jpg, ifz (format supported by FZ2 / FZ3 / FZ4 / FZ5 / FH controllers specifically for logging image functions), byr (format supported by FZ controller specifically for its logging image functions), bfz (a logging image file format supported in FH software version 5.50 or later, in which bitmap format image files are organized as folders within the image file) , jfz (a logging image file format supported in FH software version 5.60 or later, in which bitmap format image files are organized as folders within the image file)
- Color : 256 colors (Monochrome) or 24bit (Color)
- File names : Half-width alphanumeric characters

1-4 Precautions for Correct Use

This simulation software is software for the purpose of trying out FH/FZ5 controller functions on a personal computer. Please note that there are operations different from the actual FH/FZ5 series.

1-4-1 Operations that are not supported in simulation software

- Image capture or measurement by connecting cameras
- Using and checking the I/O monitor
- Data output using the Result output processing item
- The use of a DI conditional branch as in input to the Conditional Branch processing item
- Saving data in the Controller
- Using error management tools

1-4-2 Operation differences from Vision System FH/FZ5 series controllers

- Measurement
Only measurement from a file image and not measurement through a camera connection can be done.
(For details on file image measurement, please refer to "Using the Simulation Software (Inspecting Images)" in this manual.)
- Camera Image Input Settings
It is only possible to change the set values.
- Saving data to the controller memory
When [Data Save] is used for saving Scene data, Scene group data, or [System] setting data, the data is saved in the following folder.
C:\Documents and Settings\\My Documents\OMRON FZ\SettingData

1-4-3 Other Precautions

- This simulation software allows you to set the *Operation Mode*, but this function cannot be used with the models FZ5-6 □□ (-10) and L3 □□ (-10).
- This simulation software can load scene data and system data created by FH/FZ 5 series controllers. Similarly, Scene data and System data created with this simulation software can be used in the FH/FZ5 series controllers.
However, since the *path name* on the FH/FZ5 series controller may be different in a setting (such as Logging setting and capture settings) that includes *path name*, resetting may be necessary.
- Due to the difference in memory capacity, you may not be able to load the data created with this simulation software to the FH/FZ5 series controller.
Consider the settings and scene content, reduce the amount of memory required and try loading again.
- Similarly, due to the difference in memory capacity, scene data containing many registered image processing or conversion related processing units may load to the FH/FZ5 series controller, but during operation may cause a *NG (Insufficient memory)* condition and may not be able to measure correctly.

In this case also, consider the settings and scene content, reduce the amount of memory required and try loading again.

1-5 Starting the Simulation Software

The simulation software are possible to download with free by doing the member registration after purchasing the Smart Camera. For details, refer to the membership registration sheet packed with the Smart Camera.

- 1** Decompress the FH/FHV Launcher to an appropriate folder and click setup.exe. Install it according to the instructions displayed on the screen.
- 2** Then decompress the PC software (simulation software and Remote Operation tool) to an appropriate folder and click setup.exe. Install it according to the instructions displayed on the screen.



Precautions for Correct Use

- A license number registration is required when using them beyond 30 days. For details, refer to *1-8 Registering the License* on page 1-20
 - There is both a 32bit and 64bit version of the simulation software. Some functions and processing items are not supported in the 32bit version. Therefore, as much as possible, use simulation software (64bit version) on a 64bit PC to ensure full functionality.
 - 32bit and 64bit versions of the same Simulation software revision cannot coexist on the same PC.
-

1-6 Using the Simulation Software

1-6-1 Loading Inspection Images

Specify the image you wish to inspect. To measure images saved from a digital camera etc. or images saved by the FZ, FZ2, FZ3, FZ4, FZ5, FH controller, store the images in any folder created in advance.

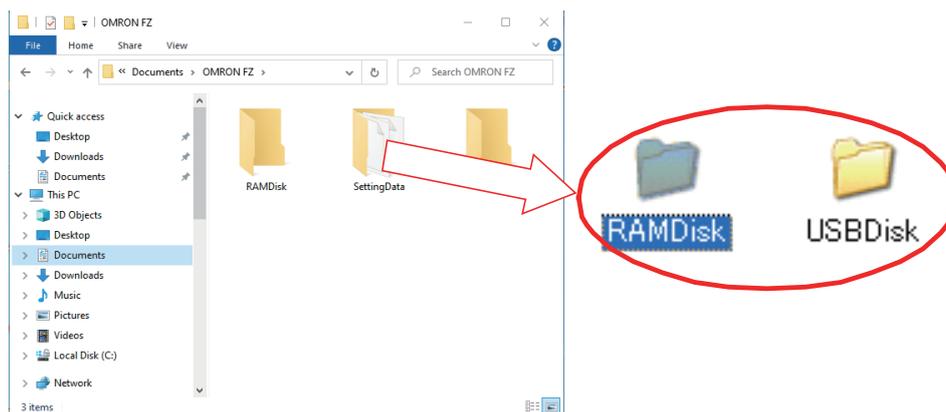
- 1 When you start the simulation software, the *OMRON FZ* folder is automatically created in "My Documents".

Store the image to be measured in the following two folders directly under *OMRON FZ*

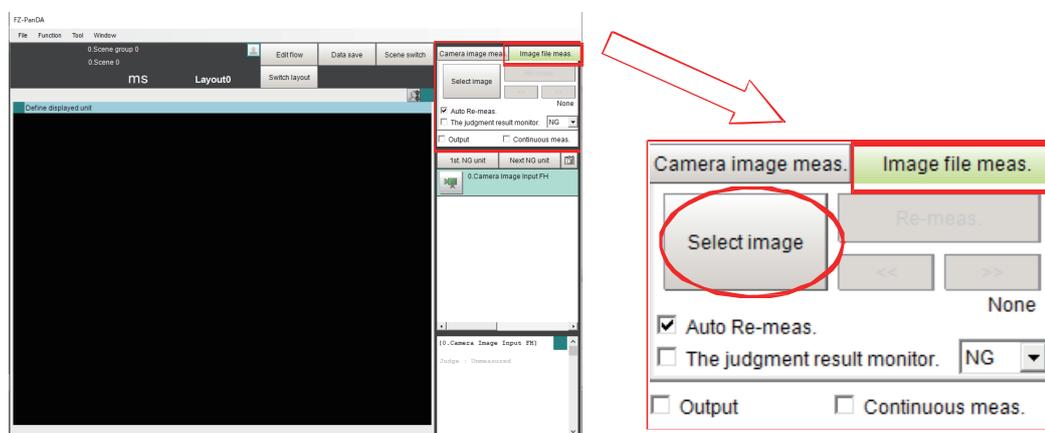
C:/Users/<User name>/Documents/OMRON FZ\RAMDisk

C:/Users/<User name>/Documents/OMRON FZ\USBDisk

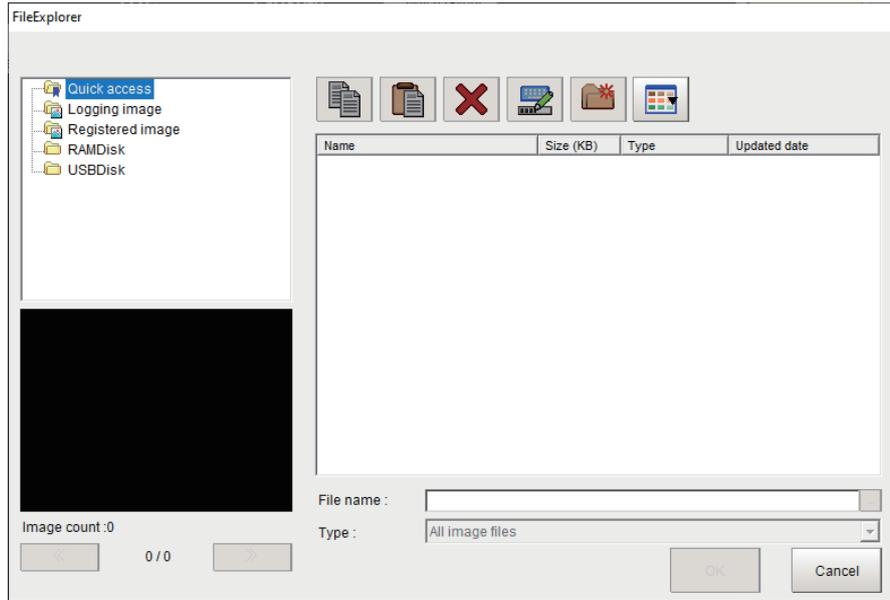
(For Windows versions prior Windows7, it will be Documents and Settings\<User name>\My Documents\OMRON FZ)



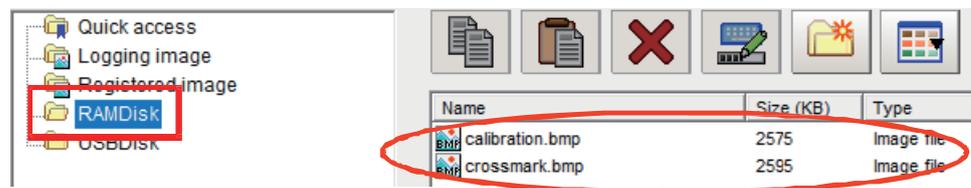
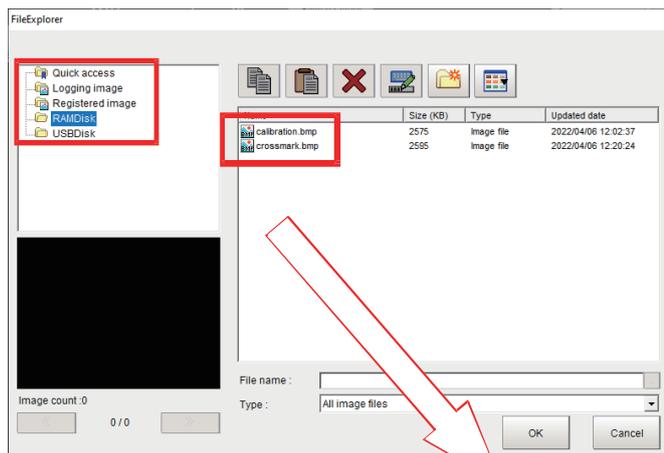
- 2 Click the **Image file meas.** tab on the right side of the main screen, and Click the **Select image.**



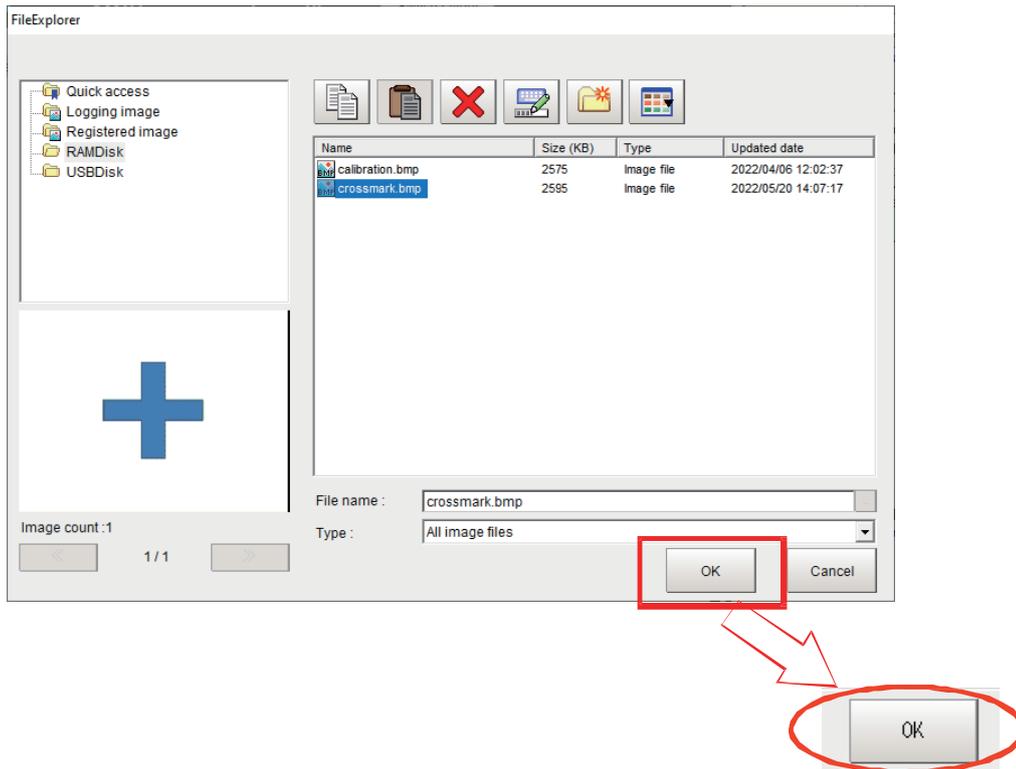
The **FileExplorer** is displayed.



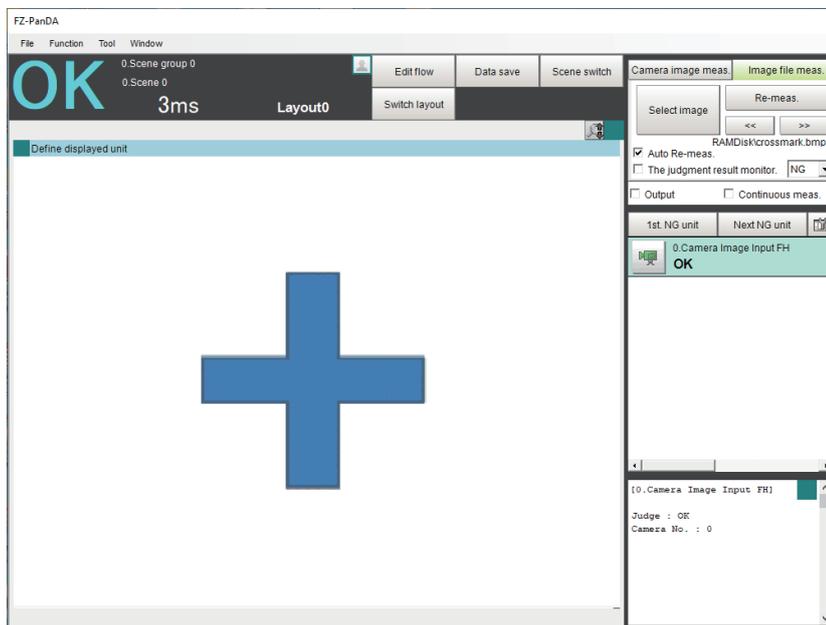
3 Click on any folder in the left window and select the image to measure.



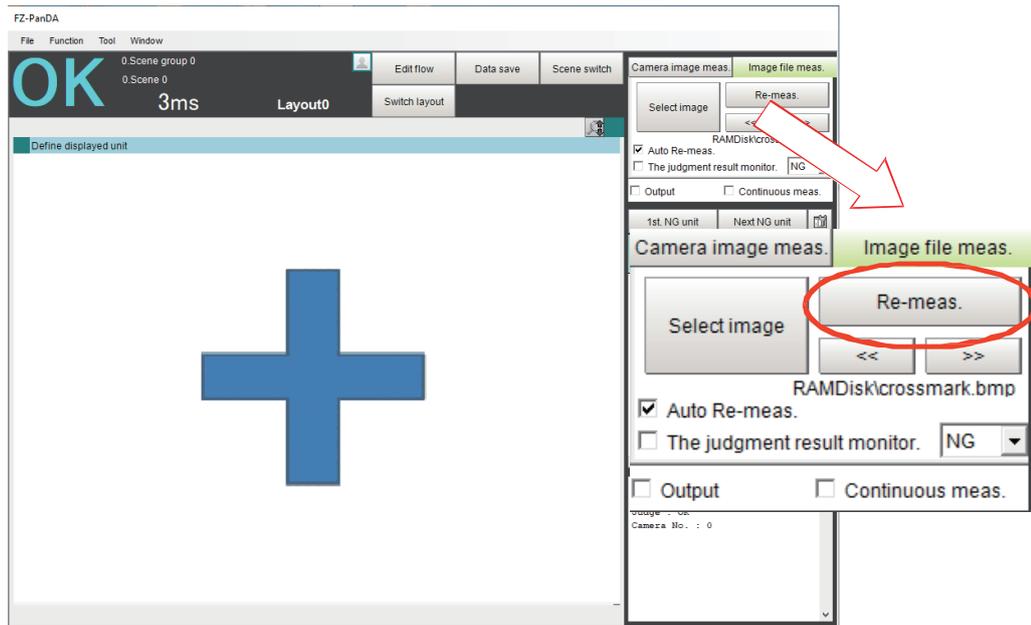
4 Confirm the file name and click **OK**.



The image is selected. Returns to the main screen.



- 5 Click the **Re-meas.**
Measurement is started on selected image.



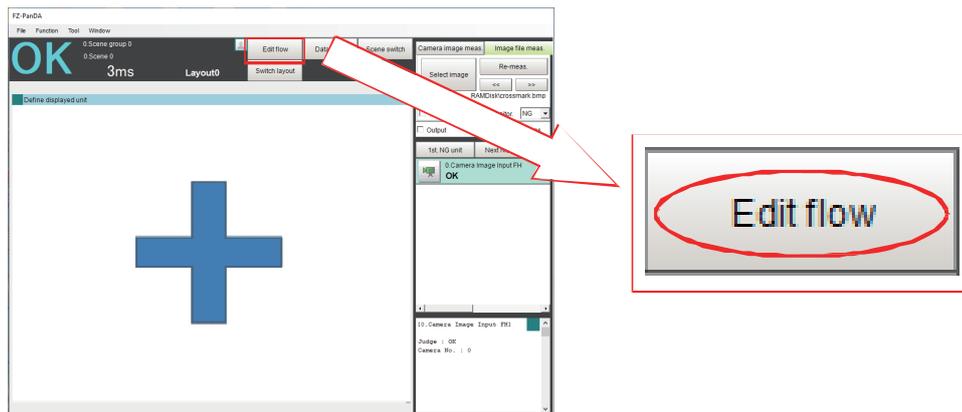
1-6-2 Editing Scenes (Flow)

Here, we will explain by using the **Search** measurement as an example.

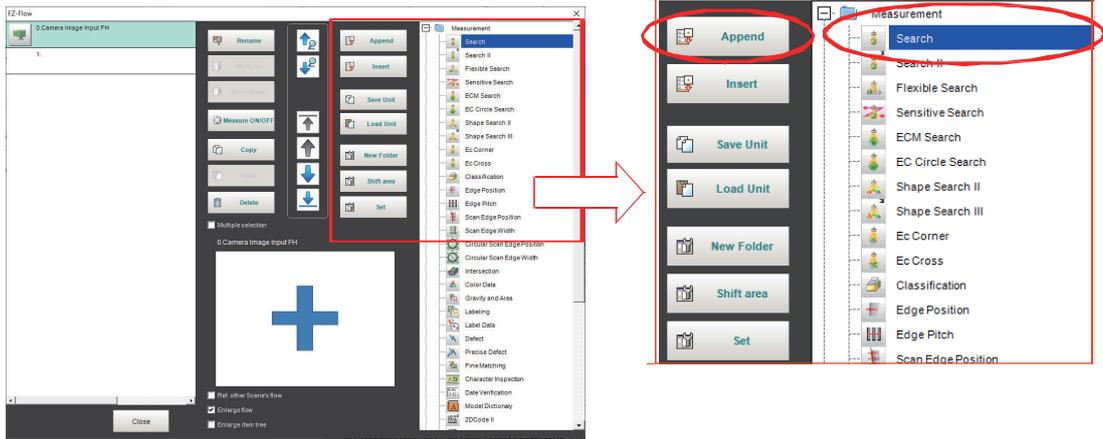
For detailed information on other Edit flow settings, measurement parameters etc., please refer to the User's Manual or Processing Item Function Reference Manual.

The latest manual can be downloaded from the OMRON Control Equipment Download Center. (Limited to I-Web members)

- 1 Click the **Edit flow** button.
The **Flow** screen is displayed.



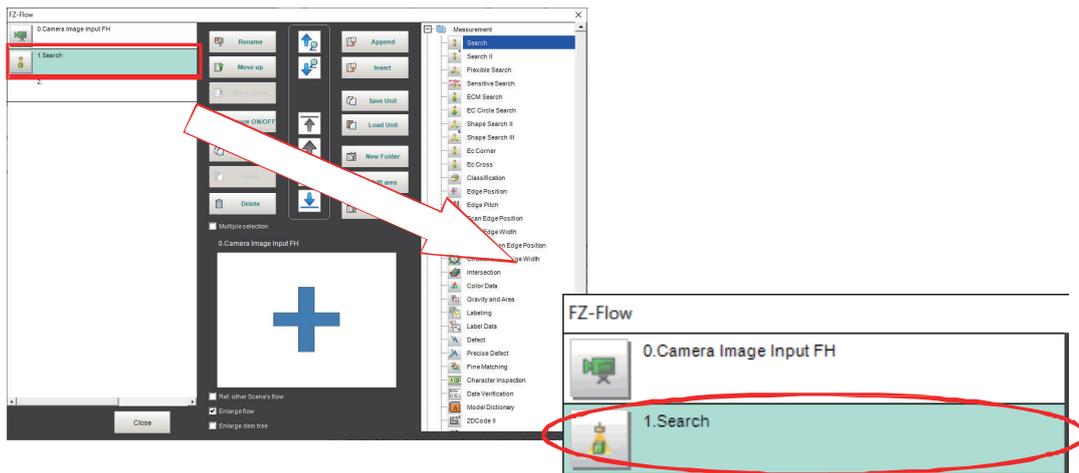
- 2 From the Processing item tree menu on the right side of the **Flow** screen, select **Search**. Click **Append**.
The selected processing item is added at the bottom of the unit list (Flow) on the left side of the screen.



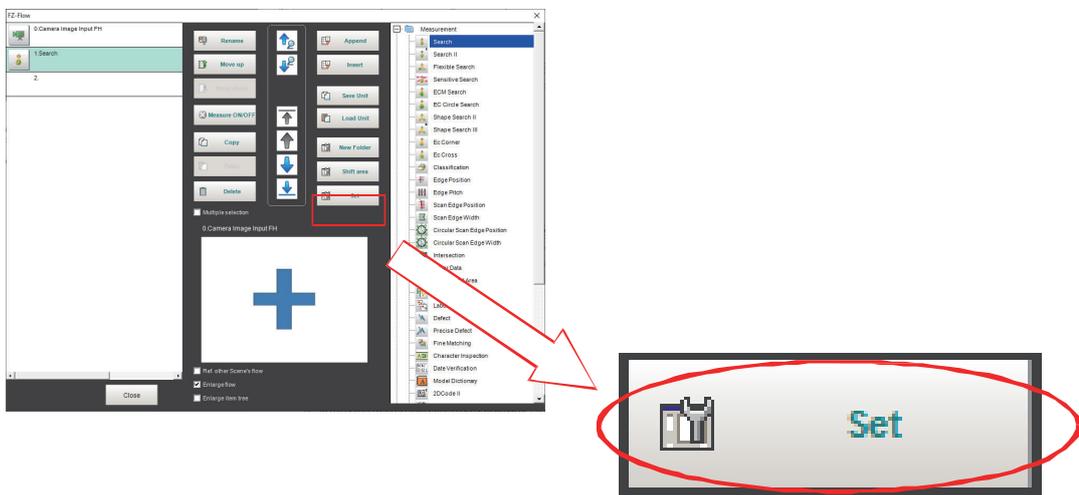
Repeat the above steps to add more processing items.

Processing items can also be moved by clicking and dragging them.

3 In the Unit list (Flow), click on **Search**.
Search is selected.



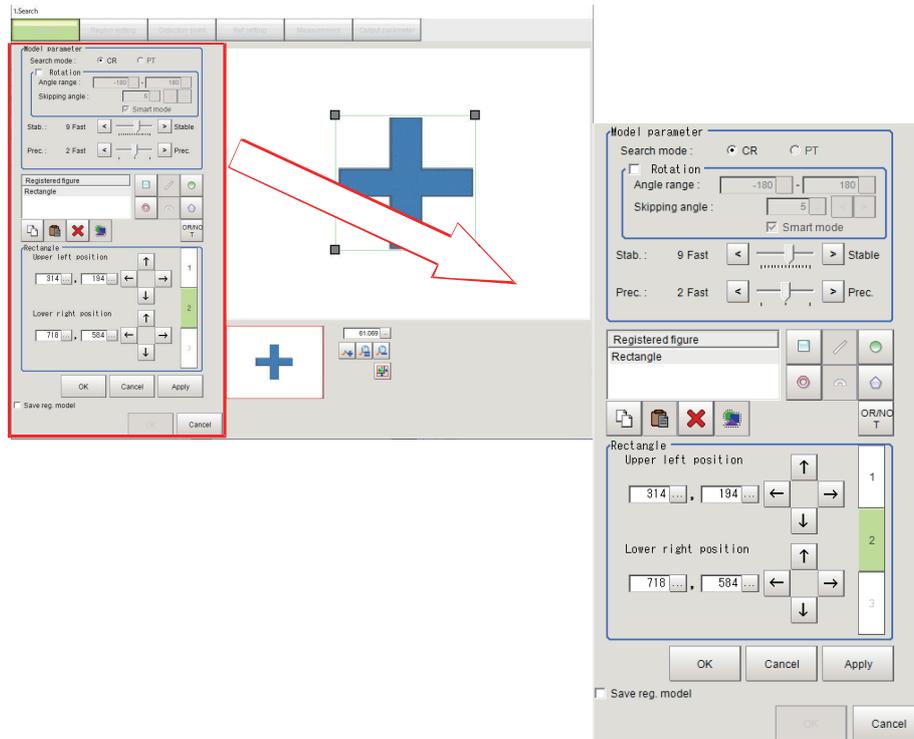
4 Click on **Settings**.
 The property dialog box for the unit is displayed.



Similarly, you can display the processing item property setting screen by clicking the processing item icon on the unit list.

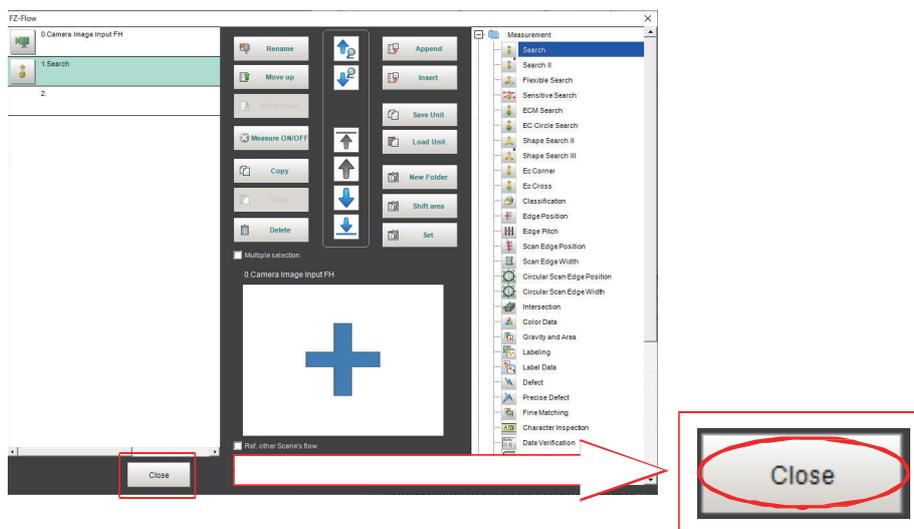
5 Set the properties for the processing item.

For details of processing items, refer to the *Vision System FH/FHV Series Processing Item Function Reference Manual (Cat. No. Z341)*.



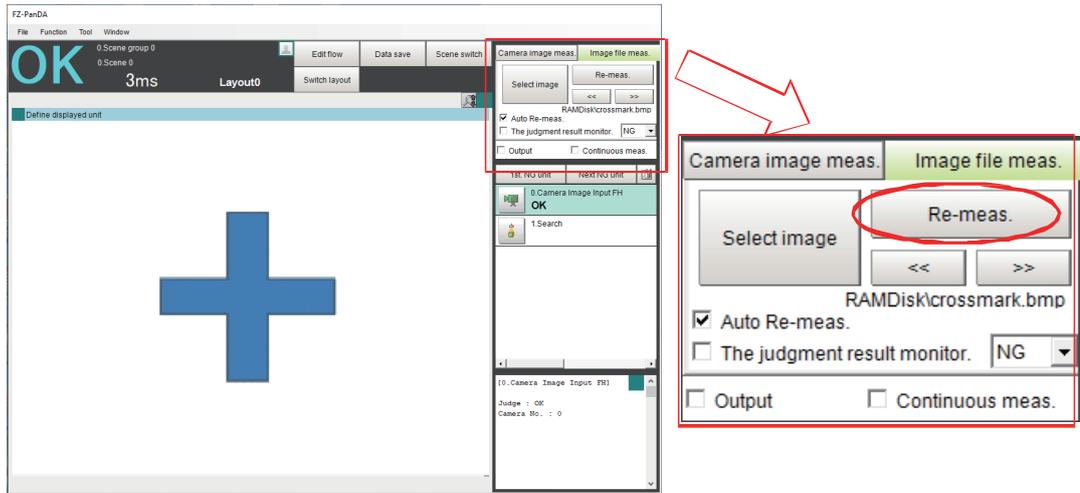
6 When you complete settings, click **Close**.

Returns to the Main screen.

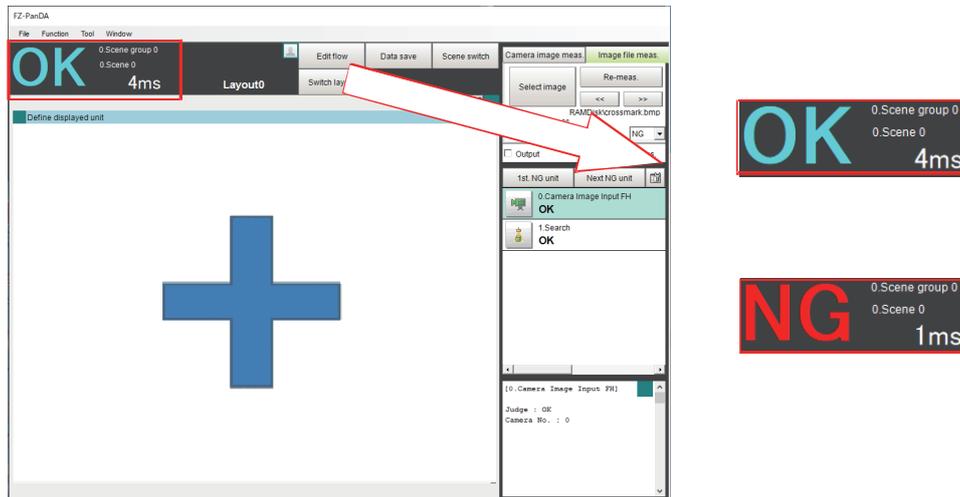


1-6-3 Measuring Images

1 Click the **Re-meas.**.

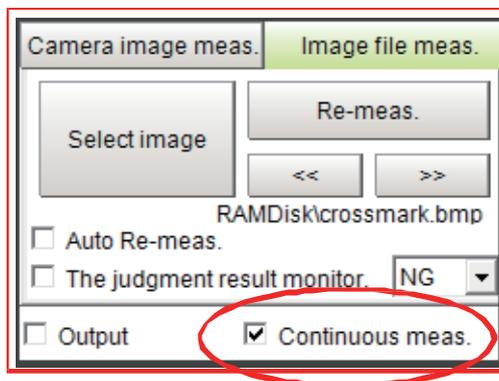


The measurement results and processing time are displayed on the upper left of the screen.

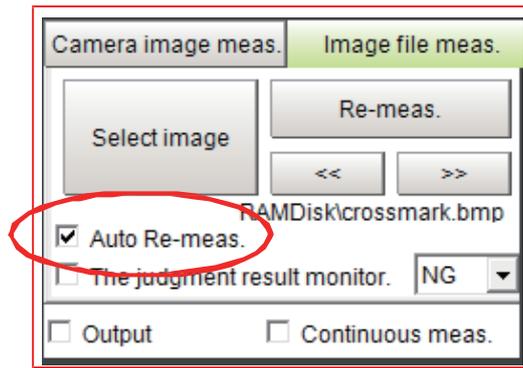


The displayed processing time is only an approximate time. It will vary depending on the PC environment.

When **Continuous meas.** is checked, continuous measurement is performed automatically for all images in the specified folder.



When **Auto Re-meas.** is checked, clicking >> will automatically remeasure the next image, and clicking << will automatically remeasure the previous image.

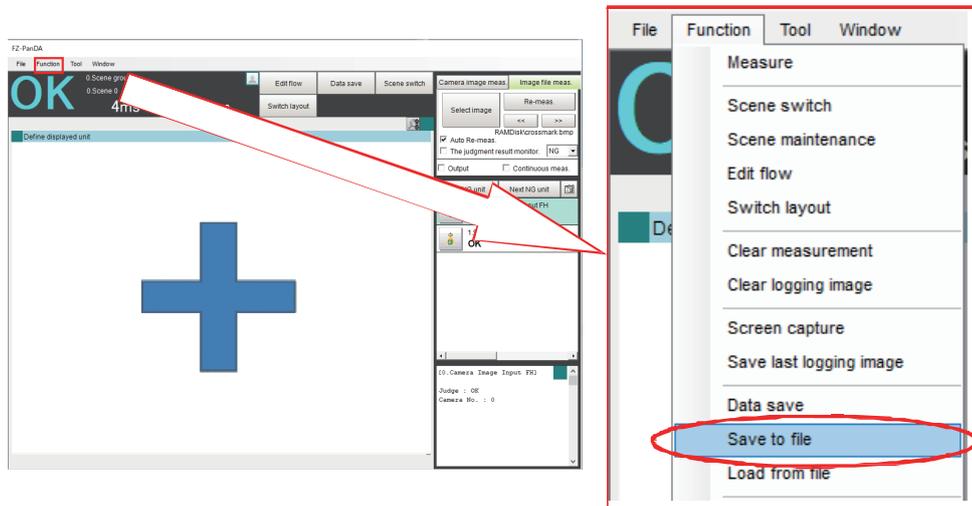


1-6-4 Saving Scene and Scene Group Data (Save)

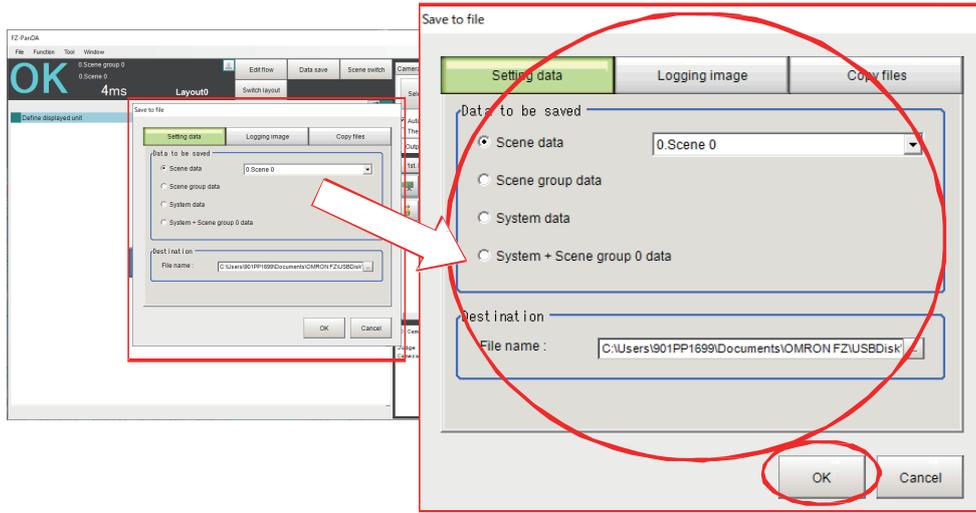
It is possible to save conditions you have set to USB flash drive, etc. The saved Scene group and Scene data can be loaded in to either the Vision System FH/FZ5 series controller, or simulation software.

Since the amount of memory that can be used depends on the environment of the personal computer, depending on the size of the created data, it may not be possible to use it on the Vision System FH/FZ5 series controller.

- 1 Click on **Function - Save to file**.
The **Save to file** dialog box is displayed.



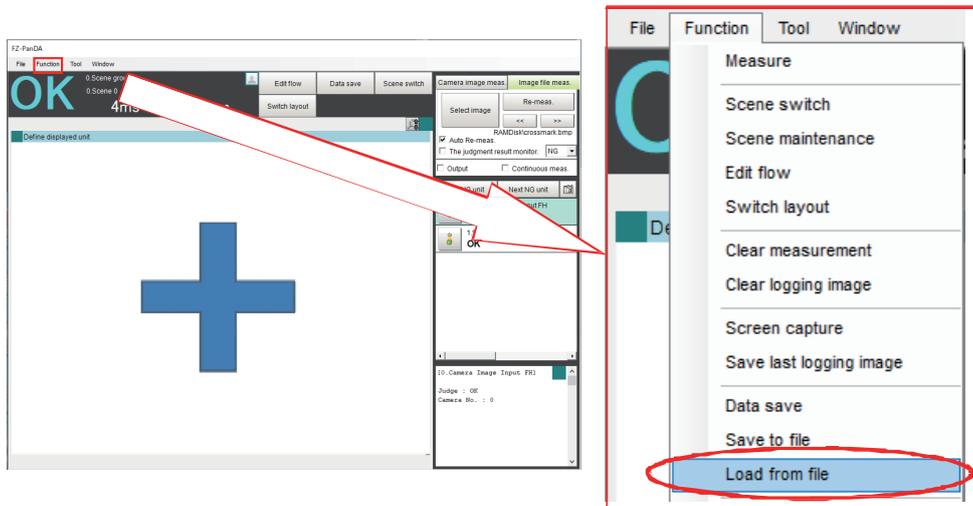
- 2 Select the tab of the data to be saved and select the save target and save destination. After confirming, click **OK**.
Save is complete.



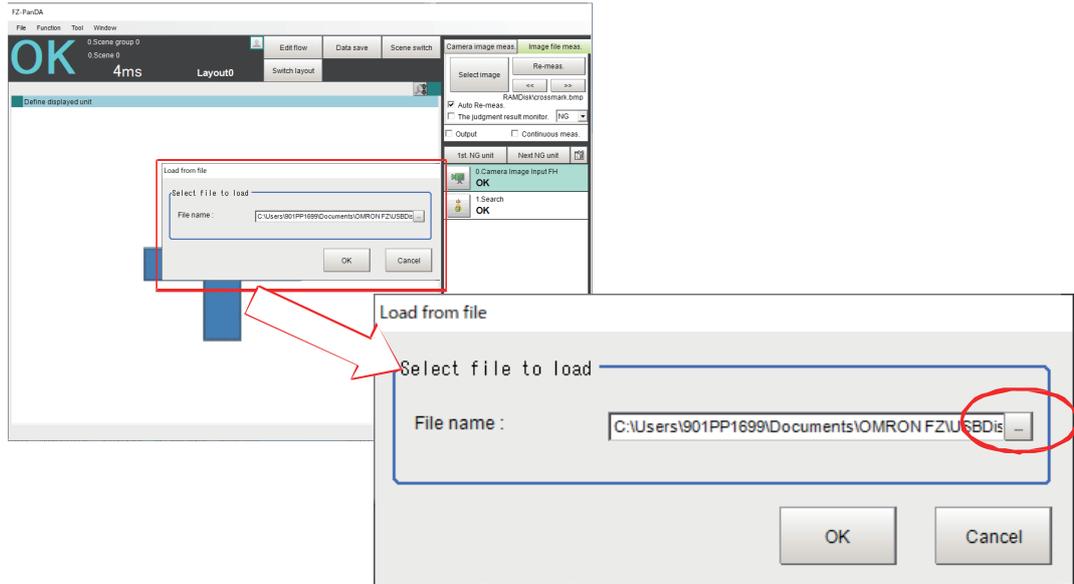
1-6-5 Loading Scene and Scene Group Data (Load)

Load the scene group, or scene data that has been saved.

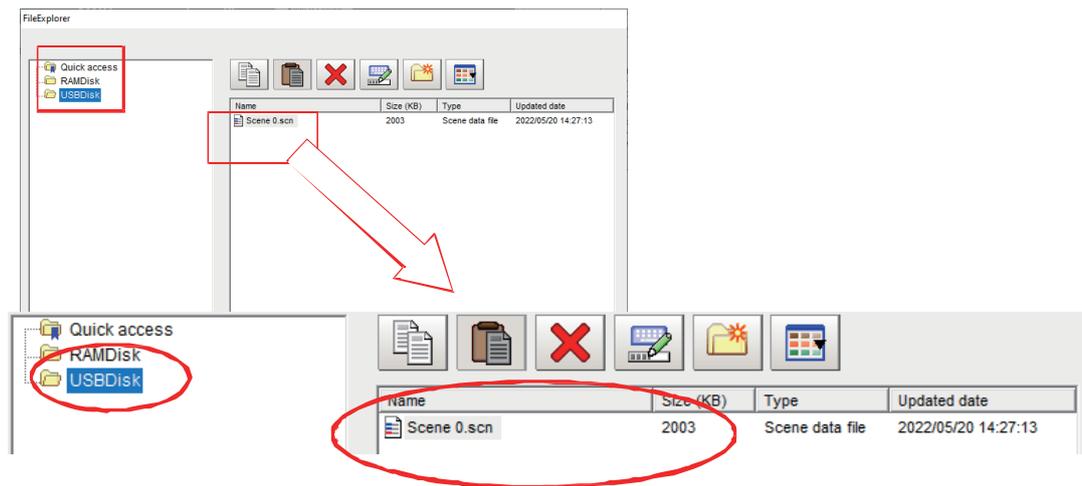
- 1 Click on **Function - Load from file**.
The **Load from file** dialog box is displayed.



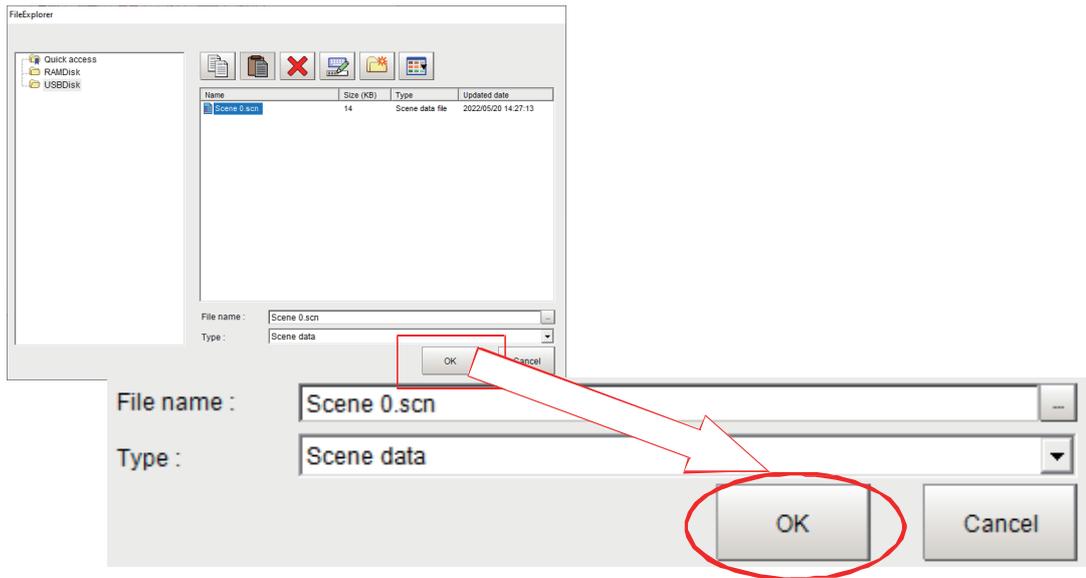
- 2 Click on
The **FileExplorer** is displayed.



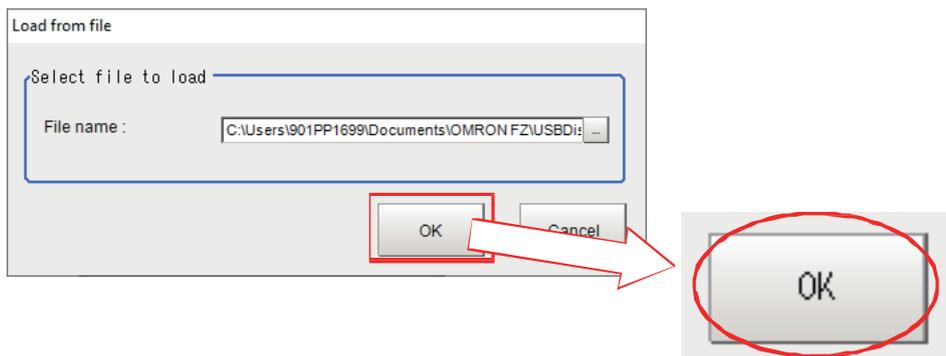
3 Click the desired folder from the left side and select the data you want to load.



4 Confirm the file name and click **OK**.
Returns to the **Load from file** screen.

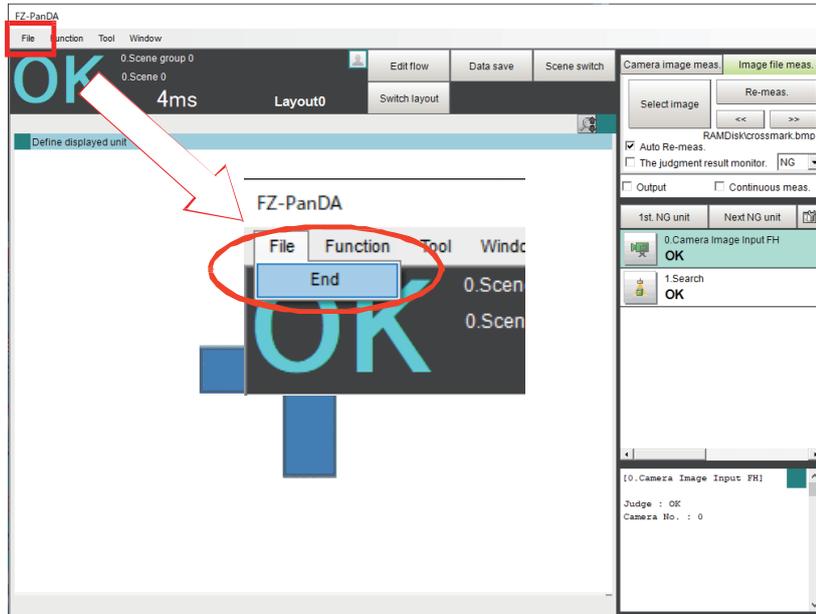


- 5** Click **OK**.
The file is selected. Returns to the main screen.

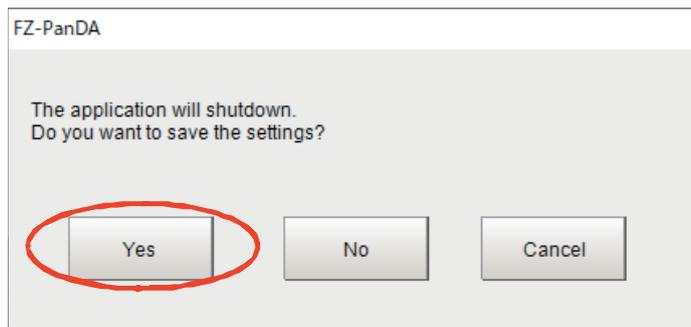


1-7 Closing the Simulation Software

- 1 Click on **File - Exit**.
The Exit Application confirmation screen is displayed.



- 2 Click **OK**.
Any setting changes are saved and the application closes.

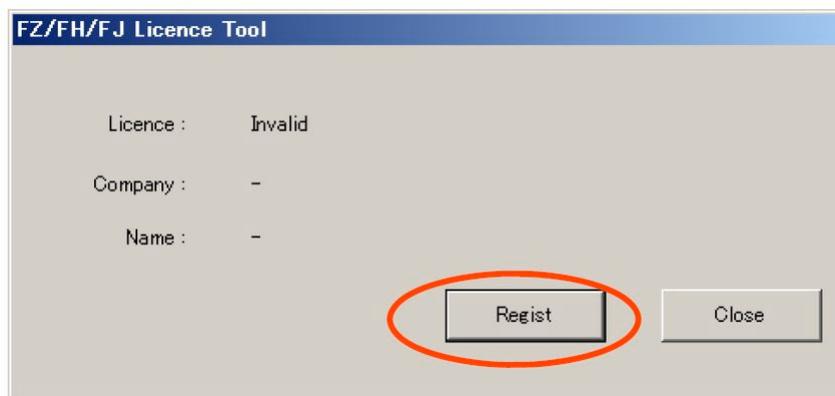


1-8 Registering the License

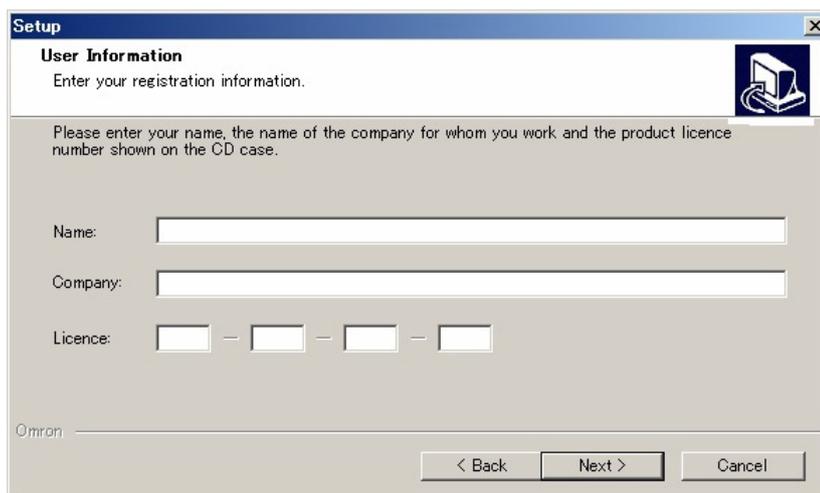
This software displays a *License error!* message at startup when it passes 30 days after the installation and does not launch. To use this continuously, register the license.

Input the license number using the **FH/FHV Licence Tool**. The FH_FHV License Tool should be executed with administrative rights.

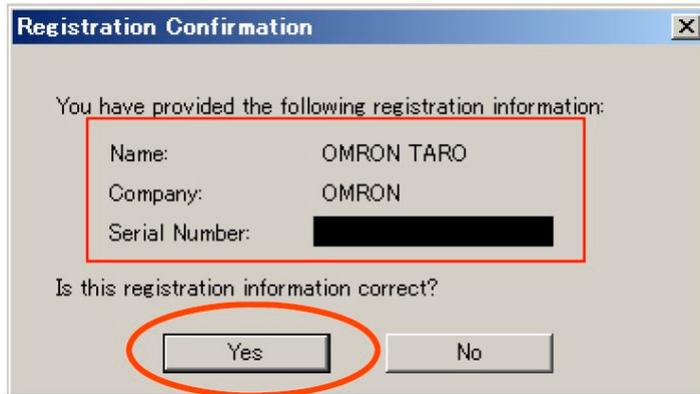
- 1 Click **Start** on the task bar of Windows and click **All programs**.
- 2 Click **FH_FHV License Tool** on **FH_FHV Series** of **OMRON**.
FH_FHV License Tool dialog appears.



- 3 Click **Regist**.
The **Setup** dialog appears.



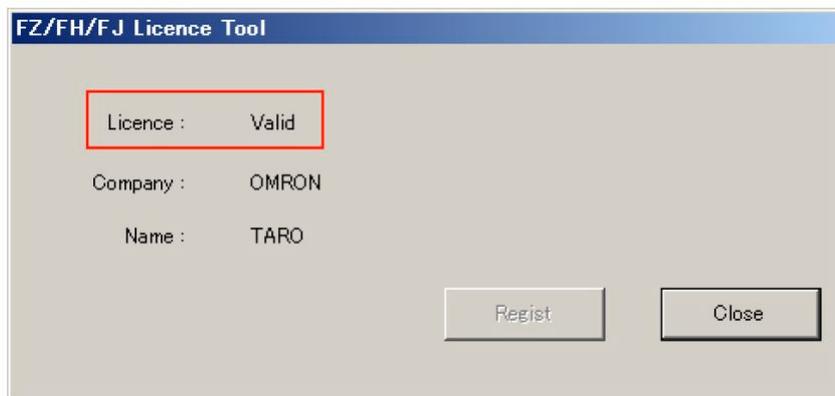
- 4 In the **Setup** dialog, input the Name, Company, and Serial Number (License number) and click **Next**.
The **Registration Confirmation** dialog appears.



For the license number, please contact one of our branches or regional offices.

5 Click **Yes**.

When *Valid* is displayed in *License:*, the input is completed.



6 Click **Close** to close the window.

1-9 Version Information / Revision History

Date	Simulation software version	Controller
Jan. 2009	3.0	FZ3 controller Ver.3.0
Jan. 2010	3.12	FZ3 controller Ver.3.12
Feb. 2010	3.14	FZ3 controller Ver.3.14
Jun. 2010	3.21	FZ3 controller Ver.3.21
Dec. 2012	4.1	FZ4 controller Ver.4.1
Feb. 2014	5.2	FH/FZ5 controller Ver.5.2
Dec. 2015	5.52	FH/FZ5 controller Ver.5.52
Apr. 2017	5.71	FH/FZ5 controller Ver.5.71
Jul. 2017	6.10	FH controller Ver.6.10
Aug. 2018	6.11	FH controller Ver.6.11
Jul. 2020	6.4	FH controller Ver.6.4
May 2022	6.5	FH controller Ver.6.5
Sep. 2022	6.5	Revisions for adding <i>Safety Precautions Regarding Security</i>
Mar. 2023	6.5	Revisions for <i>Recommended Operating Environment</i>
Mar. 2024	6.6	FH controller Ver.6.6 Revisions for <i>Recommended Operating Environment</i>

OMRON Corporation Industrial Automation Company

Kyoto, JAPAN

Contact : www.ia.omron.com

Regional Headquarters

OMRON EUROPE B.V.

Wegalaan 67-69, 2132 JD Hoofddorp
The Netherlands
Tel: (31) 2356-81-300 Fax: (31) 2356-81-388

OMRON ELECTRONICS LLC

2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A.
Tel: (1) 847-843-7900 Fax: (1) 847-843-7787

OMRON ASIA PACIFIC PTE. LTD.

438B Alexandra Road, #08-01/02 Alexandra
Technopark, Singapore 119968
Tel: (65) 6835-3011 Fax: (65) 6835-3011

OMRON (CHINA) CO., LTD.

Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-6023-0333 Fax: (86) 21-5037-2388

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