OMRON

Vision Sensor

FH-UMAI

FH Application Software

Version Update Tool Operating Manual

FH-UMAI□
FH-5□□□/FH-5□□□-□□

Z438-E1-01

NOTE

- All rights reserved.
- No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form, or by any means, mechanical, electronic, photocopying, recording, or otherwise, without the prior written permission of OMRON.
- No patent liability is assumed with respect to the use of the information contained herein. Moreover, because OMRON is constantly striving to improve its high-quality products, the information contained in this manual is subject to change without notice. Every precaution has been taken in the preparation of this manual. Nevertheless, OMRON assumes no responsibility for errors or omissions.
  Neither is any liability assumed for damages resulting from the use of the information contained in this publication.

Trademarks

- Sysmac and SYSMAC are trademarks or registered trademarks of OMRON Corporation in Japan and other countries for OMRON factory automation products.
- This software is based in part on the work of the Independent JPEG Group.
- Microsoft, Windows, Windows Vista, Excel, and Visual Basic are either registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.
- Intel, Core and Pentium are trademarks of Intel Corporation in the U.S. and/or other countries.
- EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.
- ODVA, CIP, CompoNet, DeviceNet, and EtherNet/IP are trademarks of ODVA.
- The SD, SDHC, microSD, and microSDHC logos are trademarks of SD-3C, LLC.

- QR Code is a registered trademark of DENSO WAVE INCORPORATED.
- MELSEC is a registered trademarks of Mitsubishi Electric Corporation.

Other company names and product names in this document are the trademarks or registered trademarks of their respective companies.

Copyrights

Microsoft product screen shots reprinted with permission from Microsoft Corporation.

Introduction

Thank you for purchasing the FH-UMAI.
This manual contains information that is necessary to use the FH-UMAI.
Please read this manual and make sure you understand the functionality and performance of the FH-UMAI before you attempt to use it in a control system.
Keep this manual in a safe place where it will be available for reference during operation.

Intended Audience

This manual is intended for the following personnel, who must also have knowledge of electrical systems (an electrical engineer or the equivalent).

- Personnel in charge of introducing FA systems.
- Personnel in charge of designing FA systems.
- Personnel in charge of installing and maintaining FA systems.
- Personnel in charge of managing FA systems and facilities.

Applicable Products

This manual covers the following products.

- FH-UMAI□
- FH-5□□□
- FH-5□□□-□□

Part of the specifications and restrictions are given in other manuals. Refer to Relevant Manuals on *Relevant Manuals* on page 2 and *Related Manuals* on page 15.

Relevant Manuals

The following table provides the relevant manuals for the upgraded FH sensor controller that uses FH-UMAI.
Read all of the manuals that are relevant to your system configuration and application before you use the FH sensor controller.

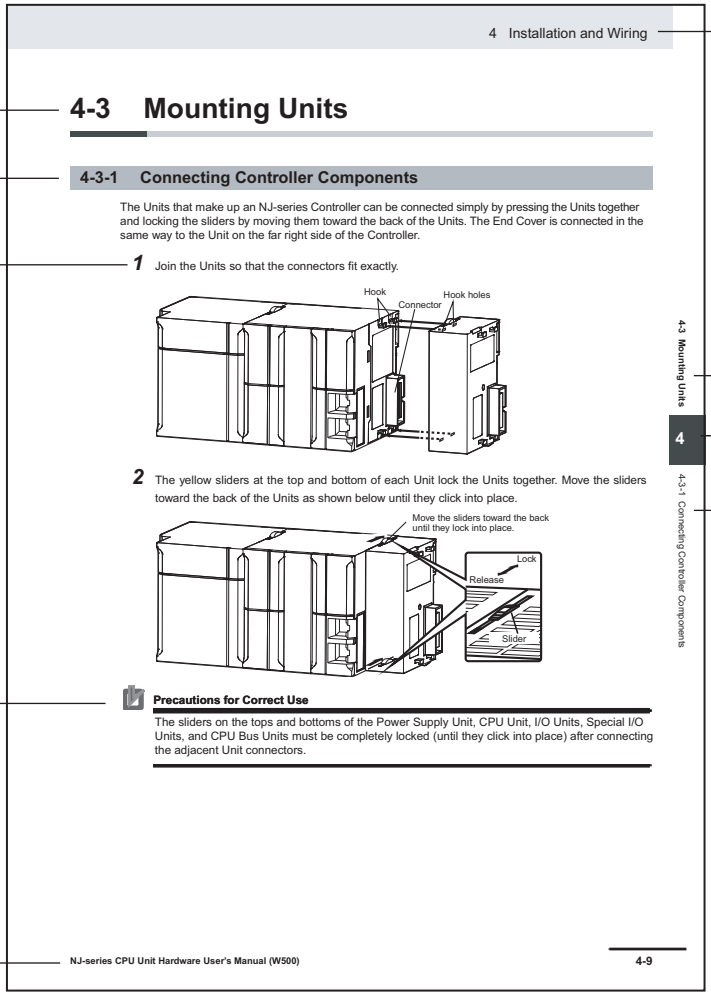
Purpose of use	Manual					
	Basic information					
	FH/FHV Series Vision System User's Manual	FH Series Vision System Hardware Setup Manual	FH-UMAI FH Application Software Processing Item Function Reference Manual	FH Series Vision System Macro Customize Functions Programming Manual	FH/FHV Series Vision System User's Manual for Communications Settings	FH/FHV Series Vision System Operation Manual for Sysmac Studio
Overview of FH series	●	●				
Setup and Wiring						
EtherCAT						
EtherNet/IP						
PROFINET		●				
Ethernet						
RS-232C						
Parallel interface						
Setup the communication setting of Sensor Controller						●
EtherCAT						
EtherNet/IP						
PROFINET	●	●			●	
Ethernet						
RS-232C						
Parallel interface						
Setup the Sensor Controller						●
EtherCAT						
EtherNet/IP						
PROFINET	●				●	
Ethernet						
RS-232C						
Parallel interface						

Purpose of use	Manual					
	Basic information					
	FH/FHV Series Vision System User's Manual	FH Series Vision System Hardware Setup Manual	FH-UMAI FH Application Software Processing Item Function Reference Manual	FH Series Vision System Macro Customize Functions Programming Manual	FH/FHV Series Vision System User's Manual for Communications Settings	FH/FHV Series Vision System Operation Manual for Sysmac Studio
Create and Set the Scene						●
EtherCAT						
EtherNet/IP						
PROFINET	●		●			
Ethernet						
RS-232C						
Parallel interface						
Optimizing the Scene Flow						
EtherCAT						
EtherNet/IP						
PROFINET			●	●		
Ethernet						
RS-232C						
Parallel interface						
Connecting the Controller						●
EtherCAT						
EtherNet/IP						
PROFINET	●	●			●	
Ethernet						
RS-232C						
Parallel interface						
Using Helpful Functions						●
EtherCAT						
EtherNet/IP						
PROFINET	●					
Ethernet						
RS-232C						
Parallel interface						
Troubleshooting and Problem Solving	●					

Manual Structure

Page Structure

The following page structure is used in this manual.



Level 1 heading

Level 2 heading

Level 3 heading

Gives the current headings.

Page tab

Gives the number of the main section.

Icons indicate precautions, additional information, or reference information.

Note This illustration is provided only as a sample. It may not literally appear in this manual.

Special Information

Special information in this manual is classified as follows:

Precautions for Safe Use

Precautions on what to do and what not to do to ensure safe usage of the product.

Precautions for Correct Use

Precautions on what to do and what not to do to ensure proper operation and performance.

Additional Information

Additional information to read as required.
This information is provided to increase understanding or make operation easier.

Conventions Used in This Manual

Use of Quotation Marks and Brackets

In this manual, menus and other items are indicated as follows.

Bold	Menu	Indicates the menu bar, button, and icon.
Italic	Item name	Indicates the item and area names displayed on the screen.

CONTENTS

Introduction **1**
Intended Audience 1
Applicable Products 1

Relevant Manuals **2**

Manual Structure **4**
Page Structure 4
Special Information 5
Conventions Used in This Manual 5

Terms and Conditions Agreement **8**
Warranty, Limitations of Liability 8
Application Considerations 9
Disclaimers 9

Safety Precautions **11**

Precautions for Safe Use **12**

Precautions for Correct Use **13**

Regulations and Standards **14**

Related Manuals **15**

Revision History **16**

Section 1 FH-UMAI Version Update Tool Operating Manual

1-1 Introduction **1-2**

1-2 Applicable Devices and Device Configuration **1-3**
1-2-1 Applicable Devices 1-3
1-2-2 Device Configuration 1-3

1-3 Operating procedure **1-4**

1-4 Troubleshooting **1-9**

Terms and Conditions Agreement

Warranty, Limitations of Liability

Warranties

- **Exclusive Warranty**

  Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

- **Limitations**

  OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

  Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right.

- **Buyer Remedy**

  Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

  See http://www.omron.com/global/ or contact your Omron representative for published information.

Limitation on Liability; Etc

OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN

ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

Application Considerations

Suitability of Use

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

Programmable Products

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

Disclaimers

Performance Data

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

Change in Specifications

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the

Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

Errors and Omissions

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

Safety Precautions

For details on Safety Precautions, refer to *Safety Precautions* in the *Vision System FH/FHV Series User's Manual (Cat. No. Z365)* and the *FH-UMAI Instruction Sheet (5628265-8)*.

Precautions for Safe Use

For details on Precautions for Safe Use, refer to *Precautions for Safe Use* in the *Vision System FH/FHV Series User's Manual (Cat. No. Z365)* and the *FH-UMAI Instruction Sheet (5628265-8)*.

Precautions for Correct Use

For details on Precautions for Correct Use, refer to *Precautions for Correct Use* in the *Vision System FH/FHV Series User's Manual (Cat. No. Z365)* and the *FH-UMAI Instruction Sheet (5628265-8)*.

Regulations and Standards

For details on Regulations and Standards, refer to *Regulations and Standards* in the *Vision System FH/FHV Series User's Manual (Cat. No. Z365)*.

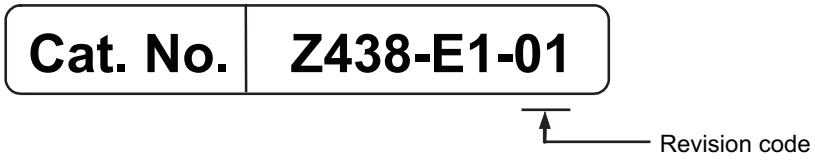
Related Manuals

The followings are the manuals related to this manual. Use these manuals for reference.

Name of Manual	Cat. No..	Model	Purpose	Contents
FH-UMAI Instruction Sheet	5628265-8	FH-UMAI□	To confirm the safety and usage precautions of the FH Application Software FH-UMAI. When User want to know about the hardware specifications or to setup the FH Application Software FH-UMAI..	Describes the definitions of basic terms, product specifications, how to use, meaning of signal words, and precautions for correct use of FH series in the manual.
Vision System FH Instruction Sheet	3102269-4	FH-2□□□ FH-2□□□-□□ FH-5□□□ FH-5□□□-□□		
Vision System FH/FHV Series User's Manual	Z365	FH-1□□□ FH-1□□□-□□ FH-2□□□	When User want to know about the FH/FHV series.	Describes the soft functions, setup, and operations to use FH/FHV series/
Vision System FH/FHV Series User's manual for Communications Settings	Z342	FH-2□□□-□□ FH-3□□□ FH-3□□□-□□ FH-5□□□ FH-5□□□-□□ FH-L□□□ FH-L□□□-□□	When User confirm the setting of communication functions.	Describes the functions, settings, and communications methods for communication between FH/FHV series and PLCs. The following communications protocol are described. Parallel, PLC Link, EtherNet/IP, EtherCAT, and Non-procedure.
FH Application Software FH-UMAI Processing Item Function Reference Manual	Z437	FH-UMAI□ FH-5□□□ FH-5□□□-□□	When User confirm the details of each processing items at the create the measurement flow or operate it.	Describes the software functions, settings, and operations for using FH/FHV series.
Vision System FH series Hardware Setup Manual	Z366	FH-1□□□ FH-1□□□-□□ FH-2□□□ FH-2□□□-□□ FH-3□□□ FH-3□□□-□□ FH-5□□□	When User want to know about the Hard-ware specifications or to setup the Sensor Controller of the Vision System FH series.	Describes FH series specifications, dimensions, part names, I/O information, installation information, and wiring information.
Vision System FH series Macro Customize Functions Programming Manual	Z367	FH-5□□□-□□ FH-L□□□ FH-L□□□-□□	When User operate or programming using Macro Customize functions.	Describes the functions, settings, and operations for using Macro Customize function of the FH series.
Vision System FH/FHV Series Operation Manual for Sysmac Studio	Z343	FH-1□□□ FH-1□□□-□□ FH-2□□□ FH-2□□□-□□ FH-3□□□ FH-3□□□-□□ FH-5□□□ FH-5□□□-□□	When User connect to NJ/NX series via EtherCAT communication.	Describes the operating procedures for setting up and operating FH/FHV series Vision Sensors from the Sysmac Studio FH/FHV Tools.

Revision History

A manual revision code appears as a suffix to the catalog number on the front and back covers of the manual.



Rev. Code	Rev. Date	Revision Contents
01	Jul. 2020	Original production

1

FH-UMAI Version Update Tool Operating Manual

1-1 Introduction 1-2

1-2 Applicable Devices and Device Configuration 1-3

1-2-1 Applicable Devices 1-3

1-2-2 Device Configuration 1-3

1-3 Operating procedure 1-4

1-4 Troubleshooting 1-9

1-1 Introduction

This manual describes the procedures for upgrading the software of the FH sensor controller with the FH-UMAI.
Please perform the software version upgrade only after confirming the operating procedures and cautions. After upgrading, if you want to return to the previous version, use the Version upgrade tool (Ver.6.11 or higher) and install the applicable FH sensor controller software.

Precautions for Correct Use

- FH-UMAI can be used for version upgrade of one FH Sensor Controller.
- Keep the FH-UMAI device in a safe place as it will be needed when using again or repairing a controller.
- Do not make any modifications to the files or file structure of the FH-UMAI. It may cause the device to no longer function correctly.

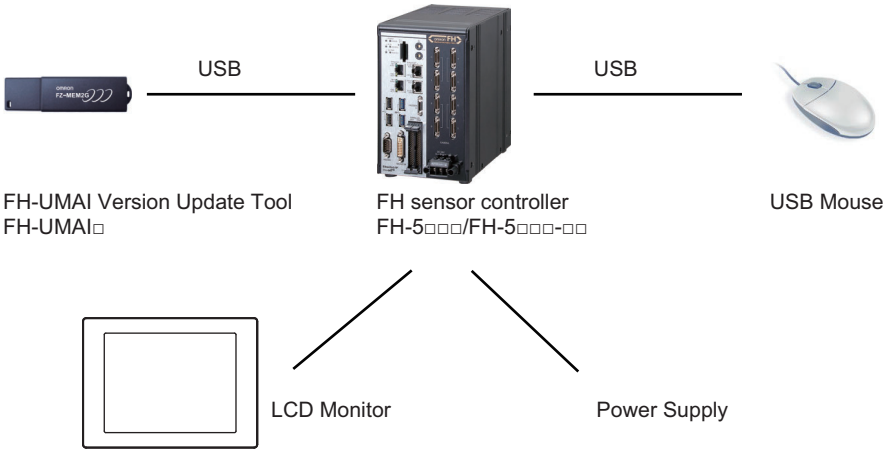
1-2 Applicable Devices and Device Configuration

1-2-1 Applicable Devices

The devices for which there is FH-UMAI support are as follows.

Manufacturer	Name	Model	Version
OMRON	FH sensor controller	FH-5□□□, FH-5□□□□□	Ver. 6.11 or higher

1-2-2 Device Configuration



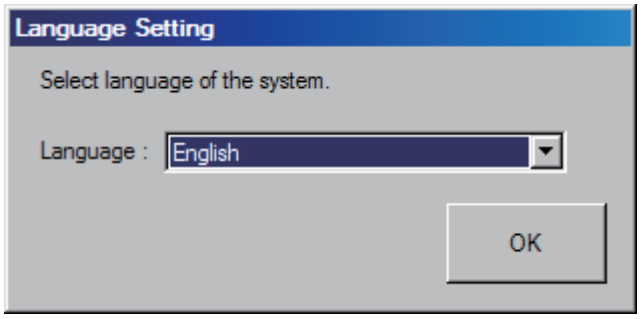
Manufacturer	Name	Model	Version
OMRON	FH-UMAI Version Update Tool	FH-UMAI□	-
OMRON	FH sensor controller	FH-5□□□, FH-5□□□□□	Ver. 6.11 or higher
-	USB Mouse	-	-
-	LCD Monitor	-	-
-	Power Supply	-	-

1-3 Operating procedure

Precautions for Correct Use

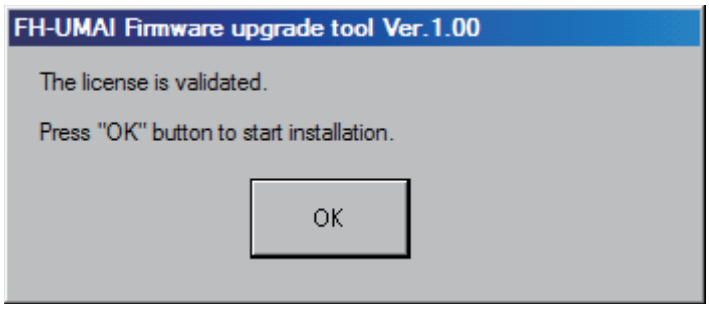
Do not remove the FH-UMAI from the FH sensor controller during the version upgrade. It may cause the version upgrade to fail.
Do not turn off the power to the FH Sensor Controller during the version upgrade. It may cause the version upgrade to fail.

1 Make sure the FH-UMAI is inserted in the FH Sensor Controller when it is started up.
The **Language Setting** dialog will be displayed the first time the FH-UMAI is used.
In the **Language Setting** dialog, select the language and click **OK**.

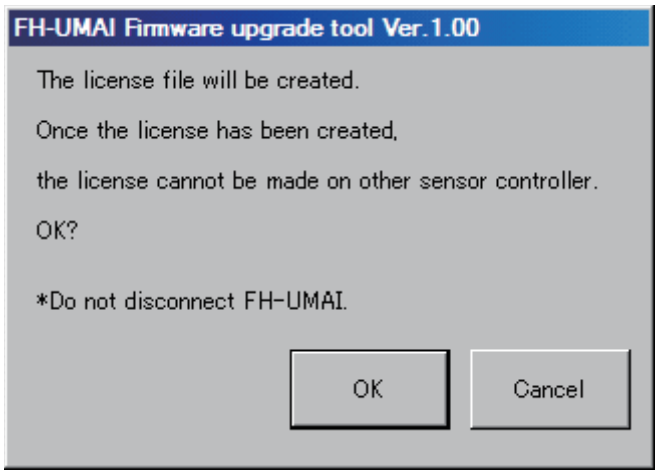


2 The following dialogs will be displayed. Click **OK**.

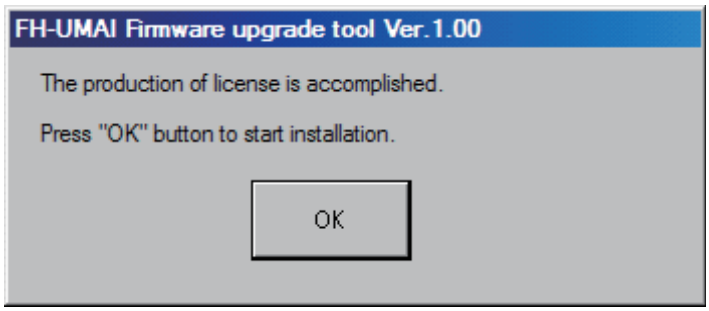
- If the license file has already been generated:



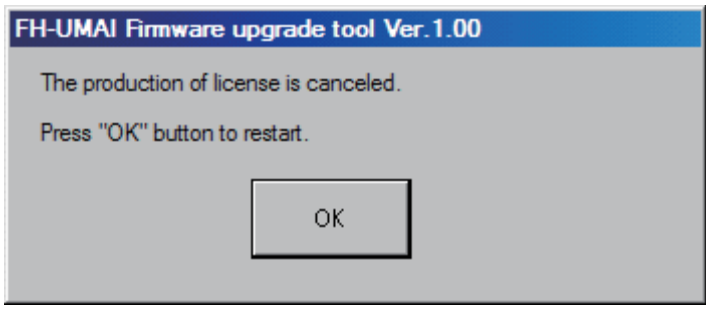
- If the license file has not already been generated:



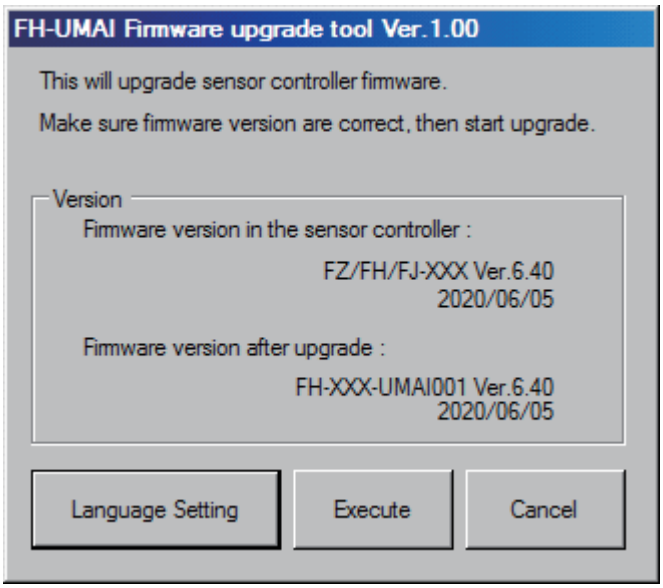
If you click **OK**, the dialog will not be displayed again.
The following dialogs will be displayed. Click **OK**.



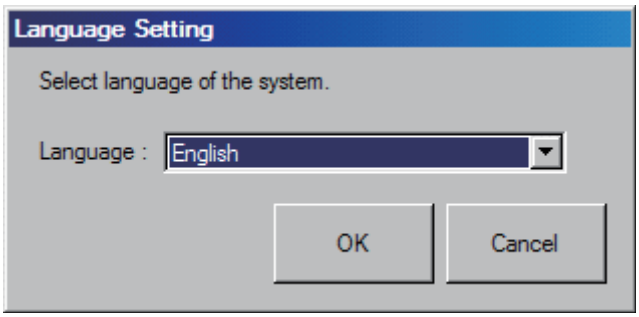
If you click **Cancel**, the license file creation will be canceled and the FH Sensor Controller will be restarted.



3 The following dialog will be displayed. Click **Execute**.



- Clicking **Execute** starts the Version upgrade.
- If you click **Cancel**, the Version upgrade is cancelled and the FH Sensor Controller will be restarted.
- If you click **Language Setting**, the **Language Setting** dialog will open. Select your desired language and click **OK**. The dialog will change to the selected language. If you click **Cancel** it will revert to the previous language.

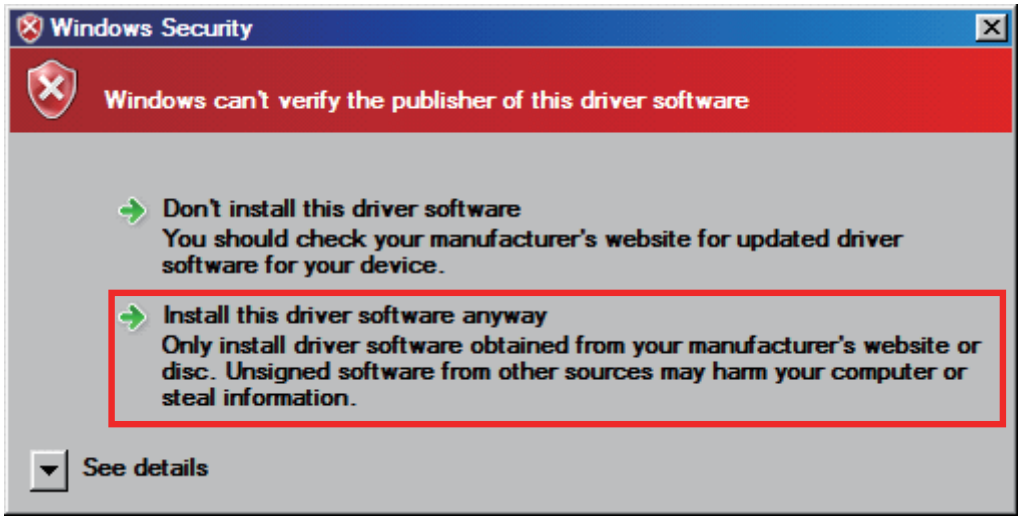


4 When upgrading, the FH sensor controller may restart more than once.

Precautions for Correct Use

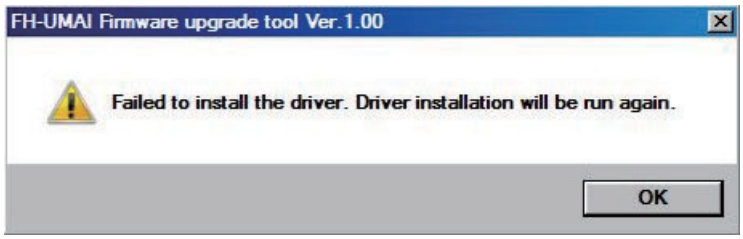
Do not remove the FH-UMAI until the version upgrade is completely finished.

5 If the following dialog appears, select **Install this driver software anyway**. If the dialog below does not appear, proceed to the next step.

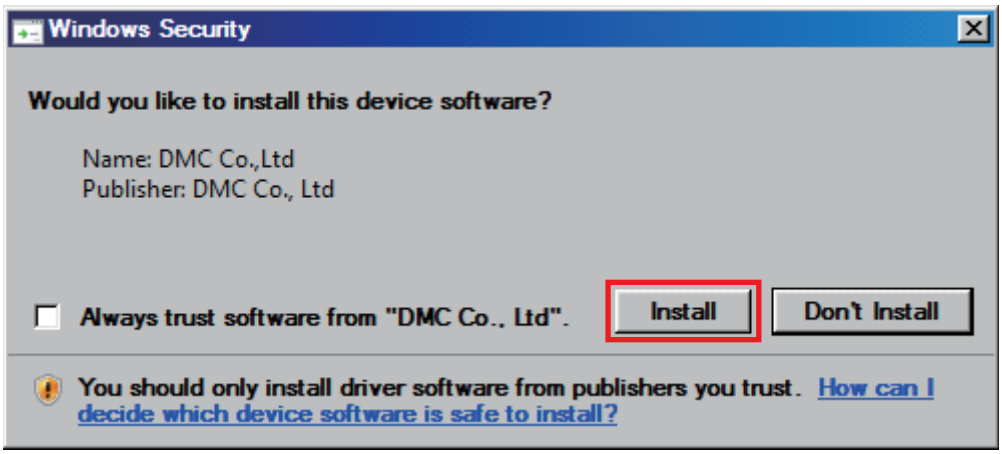


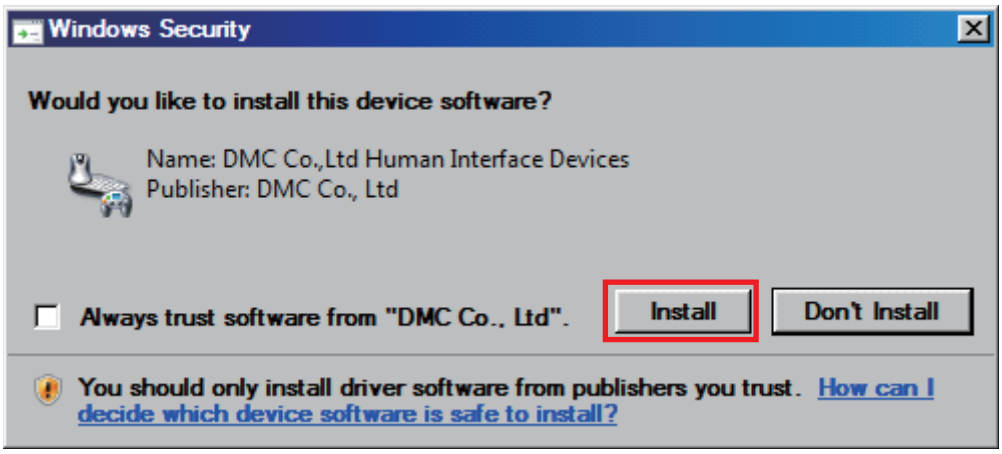
Precautions for Correct Use

If you select **Don't install this driver software**, the process will proceed without updating the driver. If you mistakenly select this, the following dialog will appear. Click **OK** to display the same dialog screen will appear again during the process. In which case select **Install this driver software anyway**.



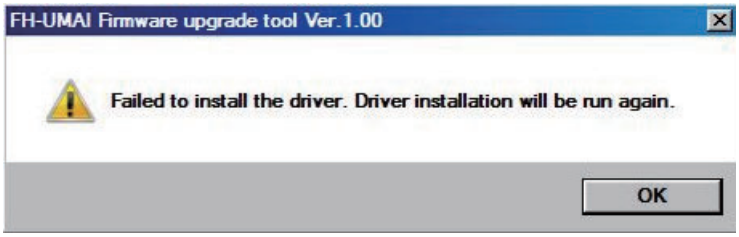
6 Depending on the configuration of the FH sensor controller, Touch panel drivers may also be installed. If the following dialog appears, select **Install**. If the dialog below does not appear, proceed to the next step.





Precautions for Correct Use

If you select **Don't install**, the process will proceed without updating the driver. If you mistakenly select this, the following dialog will appear several times. Click **OK**. After that, please proceed to step 9 and execute the version upgrade procedure again.

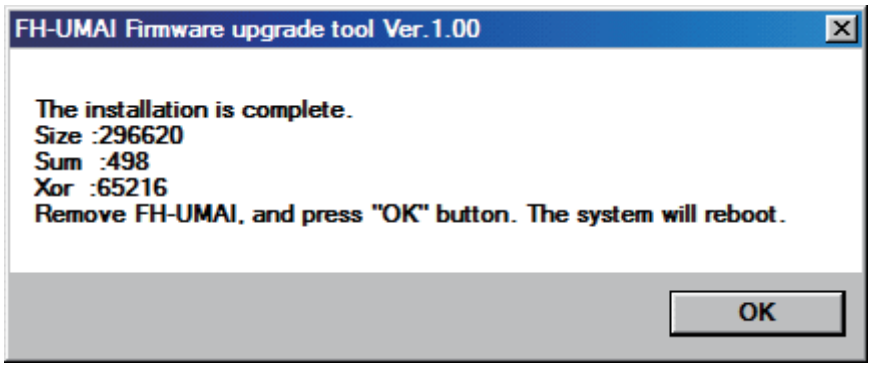


7 When upgrading, the FH sensor controller may restart more than once.

Precautions for Correct Use

Do not remove the FH-UMAI until the version upgrade is completely finished.

8 The following dialog will appear. Remove the FH-UMAI from the FH sensor controller and click **OK**.

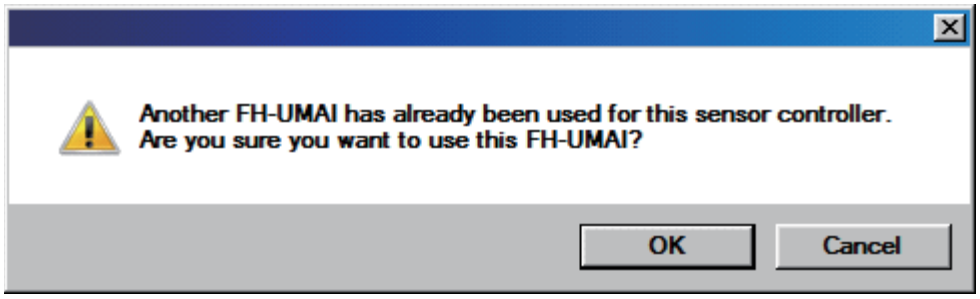


9 The FH controller will restart.
This will complete the Version upgrade.

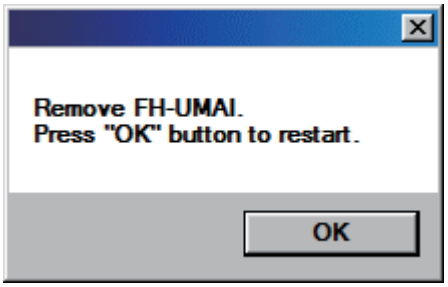
1-4 Troubleshooting

When this occurs	Possible cause	Corrective action
The Version upgrade tool does not start.	• The files in the FH-UMAI may be corrupted. • At startup, there may be a delay in recognizing FH-UMAI, and the Version upgrade tool may have failed to load.	Perform the Version upgrade procedure again. If it does not start after the above actions, please contact us.
The FH controller does not restart.	• A power failure may have occurred during installation, and the hardware of the FH Sensor Controller may be damaged.	Turn off the power of the FH sensor controller and restart it. If the above does not work, the file or hardware may be damaged. Please contact Omron.
	• The files in the FH Sensor Controller may be corrupted. • The version upgrade may have failed due to the insertion / extraction of FH-UMAI.	Perform the Version upgrade procedure again. If the above does not work, the file or hardware may be damaged. Please contact Omron.
The camera or I/O do not work properly after the version upgrade.	• Some files may not have been updated due to FH-UMAI insertion / removal while the FH sensor controller was restarting.	Perform the Version upgrade procedure again. If the above does not work, the file or hardware may be damaged. Please contact Omron.
After version upgrade, the FH sensor controller does not start normally.	• You may have selected "Do not install" in the driver installation confirmation dialog during the version upgrade. Some files may not have gotten updated. • It is possible that the power was turned off without pressing the OK button when the version upgrade complete message was displayed. Some files may not have gotten updated. • There was a delay in recognizing the FH-UMAI while restarting the FH sensor controller, and some files may not have gotten updated.	Perform the Version upgrade procedure again. If the above does not work, the file or hardware may be damaged. Please contact Omron.

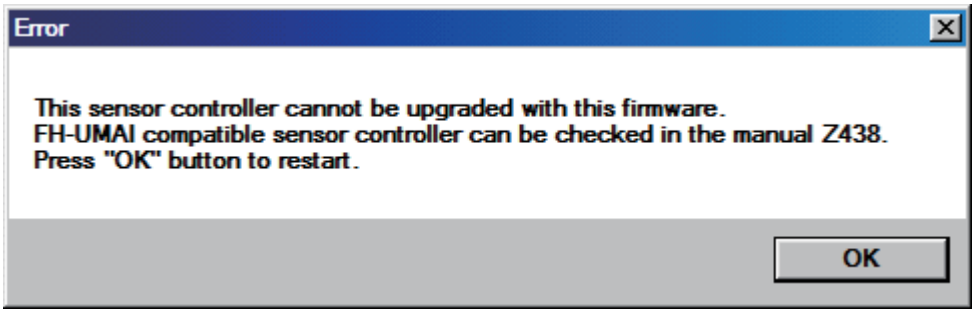
- If an FH-UMAI of the same format was previously used for the same FH sensor controller in the past, the following dialog is displayed.



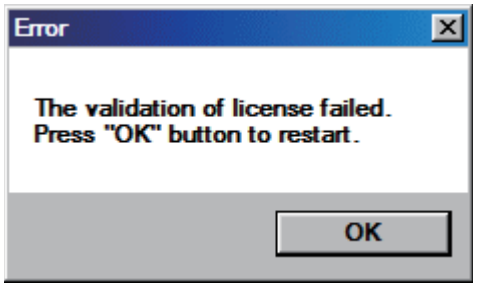
To execute, click **OK**.
To cancel, click **Cancel**. If you click **Cancel**, the following dialog is displayed. Remove the FH-UMAI and then click **OK**. The FH controller will restart.

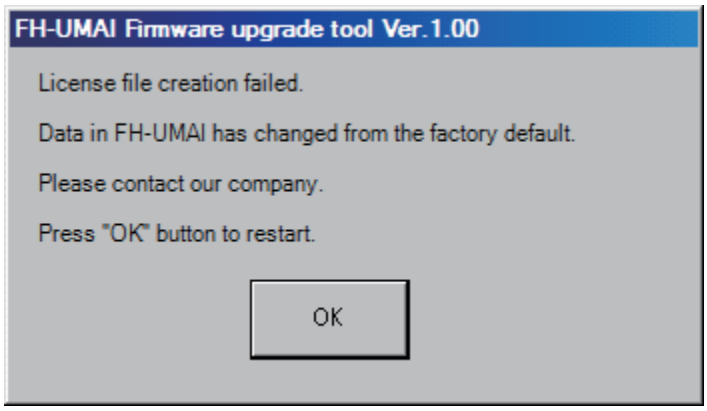


- If the FH-UMAI is executed on a non-supported FH sensor controller model, the following dialog will be displayed.
  Check that the device is a supported model and perform the version upgrade procedure again. Refer to *1-2-1 Applicable Devices* on page 1-3.

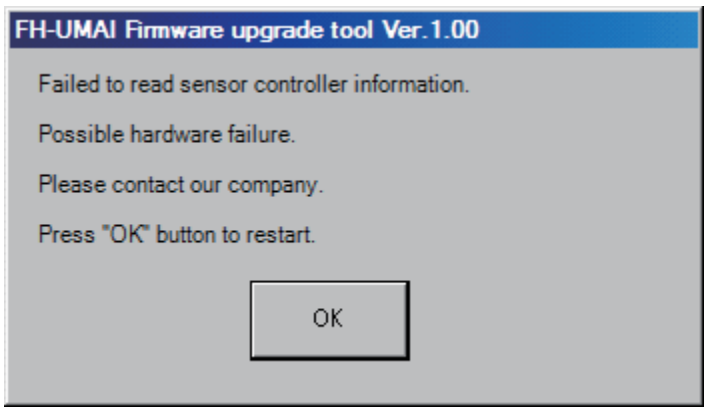


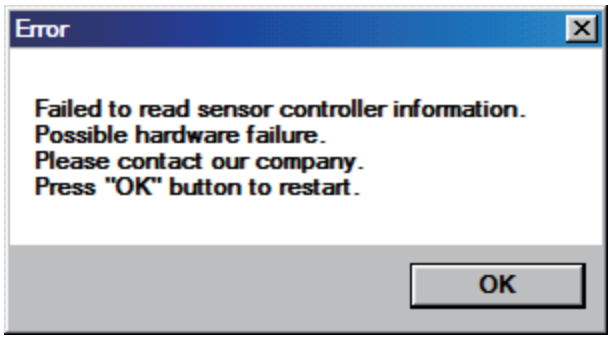
- If the file structure of FH-UMAI is changed, the following dialog may be displayed.If the following dialog appears, please contact Omron.



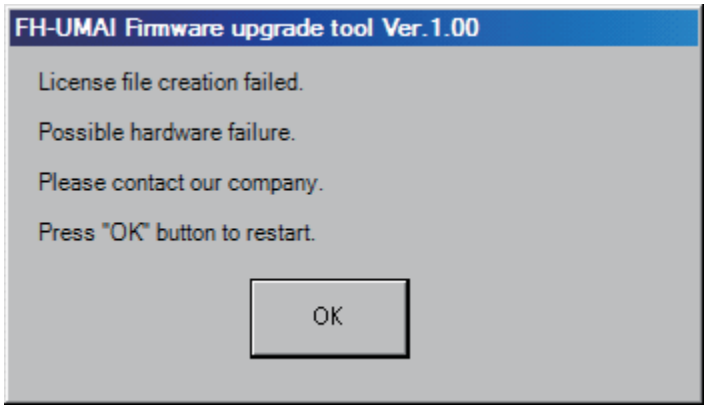


- If an error occurs in the controller, the following dialog will be displayed.If the following dialog appears, please contact Omron.

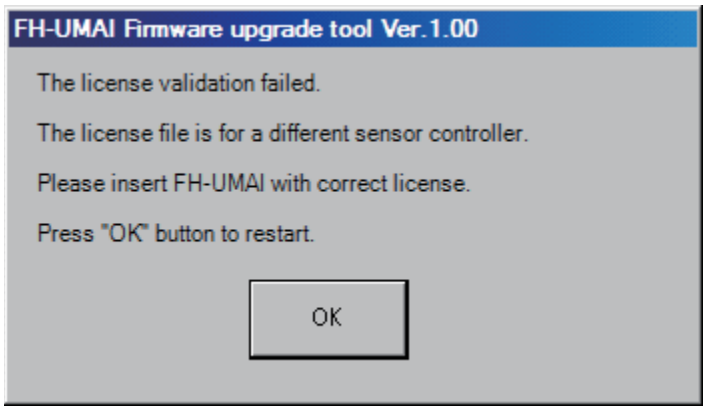




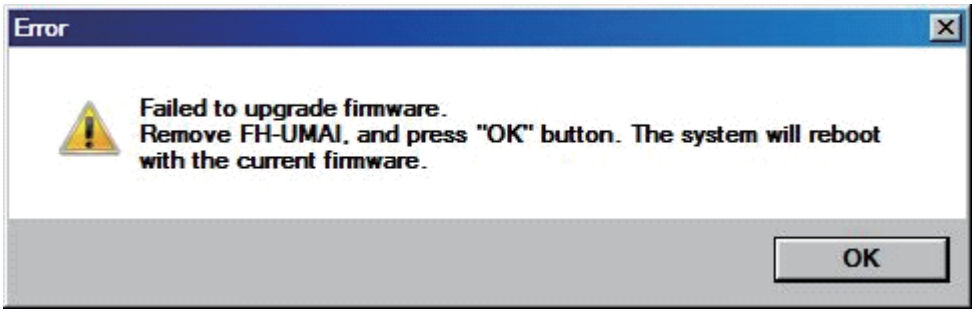
- If an error occurs in FH-UMAI, the following dialog will be displayed.If the following dialog appears, please contact Omron.



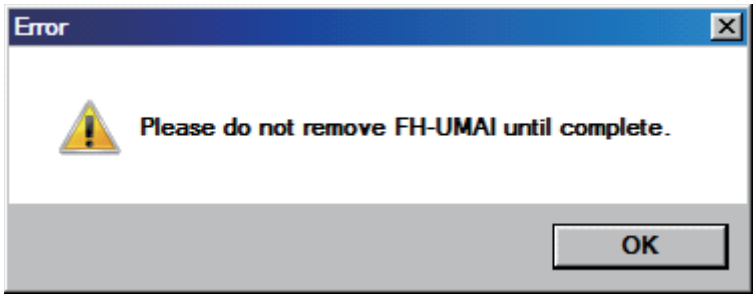
- If you use a licensed FH-UMAI with an FH sensor controller that is different from the one used when the license was created, the following dialog will be displayed.
  Use FH-UMAI with the correct license file.



- If the version upgrade fails, the following dialog will be displayed. Perform the Version upgrade procedure again.



- If you remove the FH-UMAI while updating the driver, the following dialog will be displayed. Connect FH-UMAI again and press the **OK** button. The Version upgrade will continue.



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.
No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967
Tel: (65) 6835-3011/Fax: (65) 6835-2711

OMRON (CHINA) CO., LTD.
Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

Authorized Distributor:

© OMRON Corporation 2020 All Rights Reserved.
In the interest of product improvement,
specifications are subject to change without notice.

Cat. No. Z438-E1-01 0720