HAKKO

Electrostatic Management System

for FG-465

Instruction Manual

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Caution

The contents of this manual are subject to change without notice.
The specifications of this device and software are subject to change without notice due to improvements.
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Trademarks

System names, product names, and service names on this document are generally registered trademarks or trademarks of their respective developers.
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Disclaimer

We will assume that, by downloading and installing this software, the customer has agreed to the following disclaimers.

- We will bear no responsibility for any claims for losses, lost earnings, or claims by third parties due to operation of this software.
- We will bear no responsibility for any problems that result through download and installation of this software.
- The company retains all property rights, ownership rights, intellectual property rights, etc. related to this software.

1. Installing and Uninstalling the Software

1-1 Supported OS

Supports Windows10 or later.

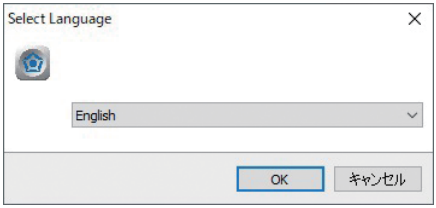
Note It is recommended to ensure your operating system is up to date using Windows Update.

1-2 Installing

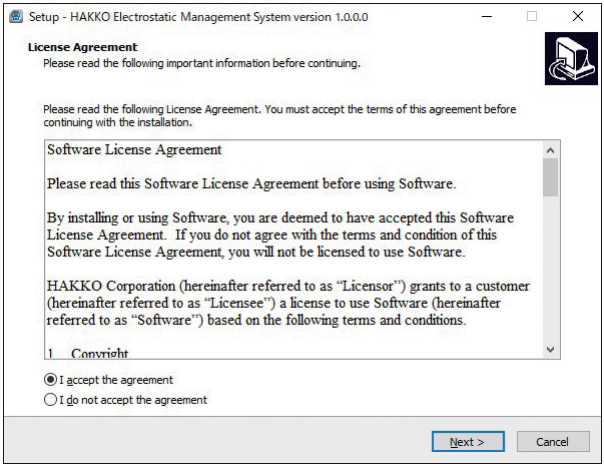
The installer is launched when the downloaded
“HAKKOElectrostaticManagementSystemSetupx.x.x.x.exe” is executed.

Note Users with administrator privileges are to perform software installation.

(I) The following screen is displayed, select a language, and click the [OK] button.



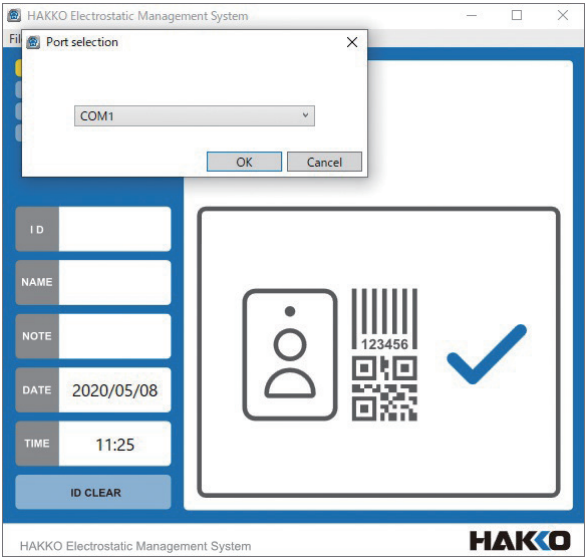
(II) The “License Agreement” dialog box is displayed, apply a check to [I accept the agreement], and click [Next].



(III) From here, follow the instructions on the screen.

(IV) The software will launch automatically if installation is completed successfully.

Note If the FG-465 is not connected to the PC, click the [Cancel] button and close the software.



1-3 Uninstalling

Click Windows10 [Start menu] > [Windows System] of the app list > [Control Panel] to launch “Control Panel.”
Click [Programs and Features] then click [HAKKO Electrostatic Management System] from the list of installed apps, and click [Uninstall].

Note Files installed during installation will be deleted when uninstalled, but record files and other files generated after installation will not be deleted.

2. File System

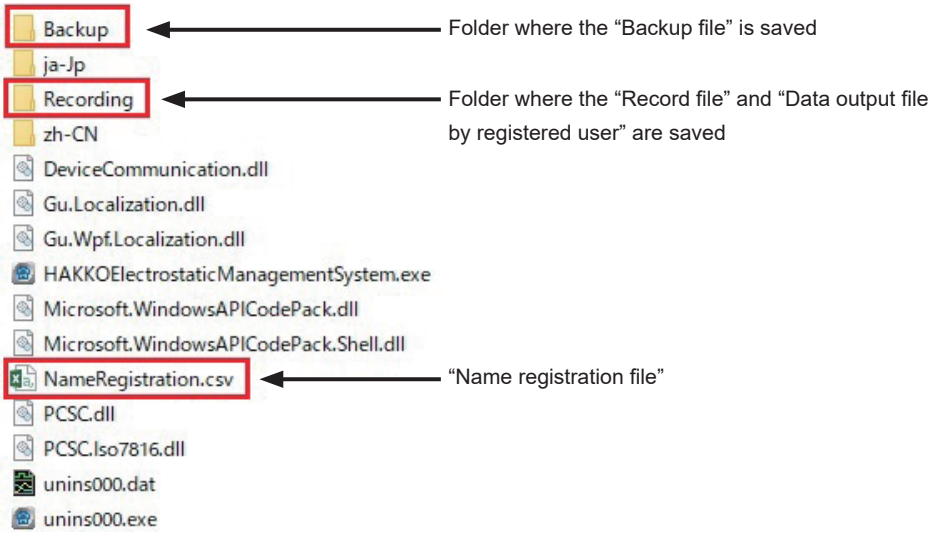
- The following files are generated by this software.

Record file	File to which measurement data is recorded (extension .csv)
Backup file	Backup file of the record file (extension .bak)
Name registration file	File used if using the name auto input function (extension .csv)
Data output file by registered user	File if outputting measurement data by ID (extension .csv)

- File storage location.

  The following folders and files are created in the folder the software was installed in.

Installation folder “HAKKO Electrostatic Management System”



2-1 File Type

2-1-1 Record File

File name: FG465_“Date”.csv
(For example, FG465_20200422.csv)

The measurement result is recorded in the CSV file format.
The record file is generated by date.

Item	Content
Date	Measurement date
Time	Measurement time
ID	Measurer ID
Name	Measurer name
Comprehensive result	Comprehensive result
Left foot (Resistance)	Left foot resistance range
Left foot (Result)	Left foot result
Right foot (Resistance)	Right foot resistance range
Right foot (Result)	Right foot result
Wrist strap	Wrist strap result
Conductivity evaluation	FG-465 setup state (Setting of the rear DIP switch of FG-465)
Lower evaluation limit	
Upper evaluation limit	
Evaluation buzzer	
Evaluation external output	
FG-470	FG-470 connection state
NOTE	Text input in “NOTE”

2-1-2 Backup File

File name: FG465_“Date”.bak
(For example, FG465_20200422.bak)

A file with the same content as the record file is backed up for each measurement.
The backup file is generated by date.

2-1-3 Name Registration File

File name: NameRegistration.csv

The name is automatically input if an ID is input while “Name auto input” of the Setting menu is set to [Yes].
This is the file to which IDs and names are registered if this function is used.
Registration through “Name registration” > [Registration] of the Management menu is required.

2-1-4 Data Output File by Registered User

File name: FG465_ID_“ID”_“Output date”.csv
(For example, FG465_ID_1234_20200422.csv)

Using the “Data output by registered user” function of the Management menu enables extraction of pass/fail results of specified IDs and records of periods, and outputs them to files.
Files are saved to the “Recording” folder which is the same saving location as record data.

3. Connection

3-1 FG-465 Connection

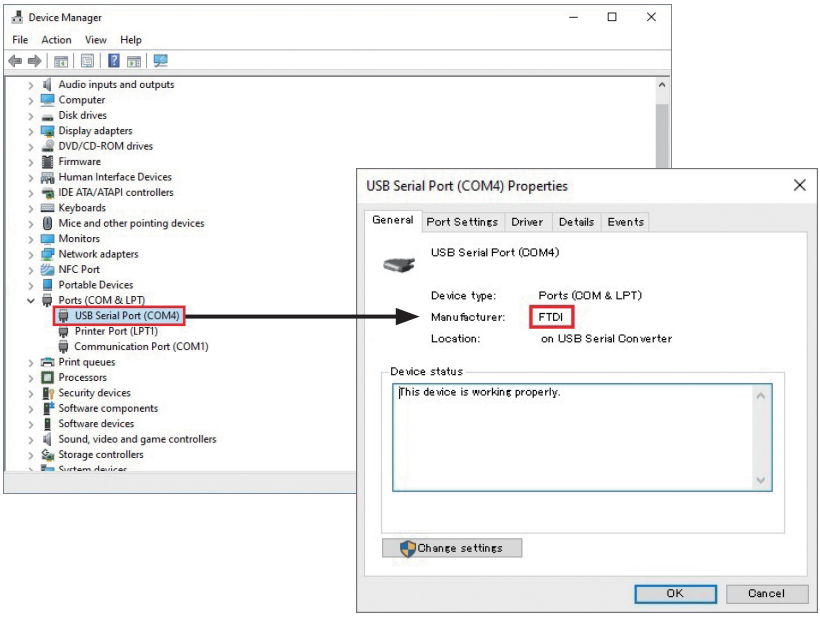
Connect the FG-465 USB (B) terminal to the PC with the USB cable included with the FG-465.
Turn the power of FG-465 on after connection and launch this software.

Note If connecting FG-465 to the PC for the first time, installation of the USB driver will be launched on Windows Update. This process may take more than a few minutes depending on the environment.

⚠ CAUTION
To install the USB driver with Windows Update, a PC internet environment is required. If a communication environment is unavailable, you will be required to download and install a USB serial conversion IC driver from the FTDI website.

Note If the driver is installed correctly, the “FTDI” driver is displayed in “USB Serial Port (COM x) Properties” of “Device Manager.”

Note The Device Manager can be launched from the Control Panel.



3-2 ID Input Device Connection

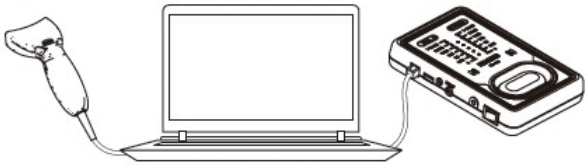
The ID of this software can be input from the input device connected to the PC.
Connect an input device equivalent to a USB keyboard that meets USB-HID standards.

Note Input can be performed on the PC keyboard as well.

- Numeric keypad
- Card reader
- Barcode reader

PC/SC conforming FeliCa readers can be connected as well.
This includes SONY PaSoRi, etc.

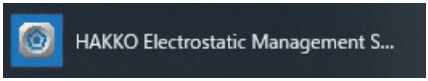
Note Installation of the FeliCa reader driver is required to use the FeliCa reader.
Refer to the FeliCa reader instruction manual for installation details of the driver.



4. Launching and Closing

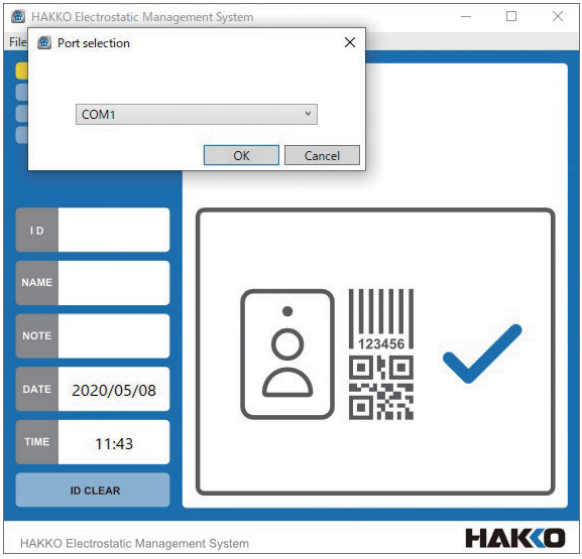
4-1 Launching the Software

Launch the software by clicking Windows10 [Start menu] > [HAKKO Electrostatic Management System] in the app list.



Or, click the [HAKKO Electrostatic Management System] icon on the desktop.

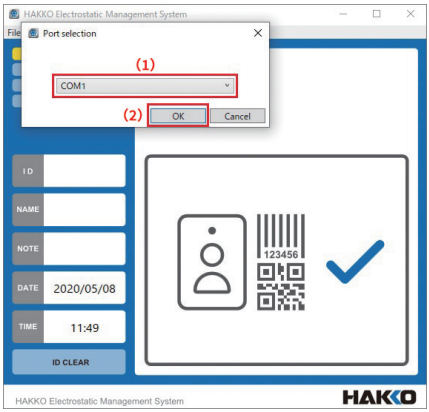
“HAKKO Electrostatic Management System” is launched.



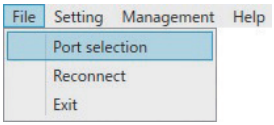
4-2 USB Port Connection

The “Port selection” dialog box will be displayed when the FG-465 is connected for the first time or if the PC or FG-465 is changed, so select the COM port the FG-465 is connected to. The COM port the device is connected to can be confirmed in the Device Manager.

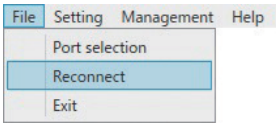
(1) Select the [COM Port] the device is connected to.
(2) Click the [OK] button.



Note If resetting the selected port, click [File] > [Port selection], and select the port the device is connected to.

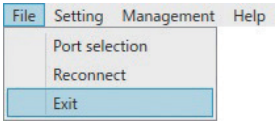


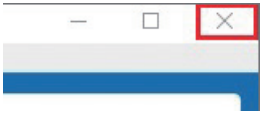
Next, click [File] > [Reconnect], and the connection between FG-465 and the PC will be connected.



4-3 Closing the Software

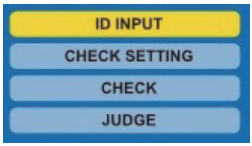
To close this software, click [File] > [Exit].
Or, click the x mark on the upper right area of the screen.



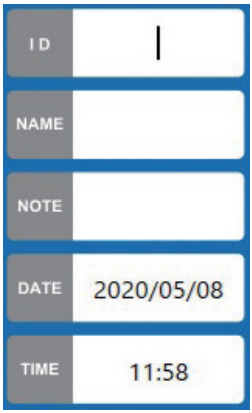


5. Use Method

5-1 Screen



ID INPUT	Lights up during ID input.
CHECK SETTING	Lights up when preparations for measurement are complete.
CHECK	Lights up during measurement.
JUDGE	Lights up while measurement results are displayed.



ID	The input ID is displayed.
NAME	The input name is displayed. If name auto input is set to “Yes,” the name is automatically input when the ID is input and the measurer will be unable to input their name. If name auto input is set to “No,” measurer will be able to input their name.
NOTE	Measurer can input notes from the keyboard.
DATE	The date of measurement is automatically displayed.
TIME	The time of measurement is automatically displayed.

ID CLEAR	The input ID is reset if this button is pressed.

The software status is displayed.
Perform measurements following the instructions displayed here.

After the measurement finishes, the comprehensive pass/fail result is displayed.

Instruction content is displayed graphically.

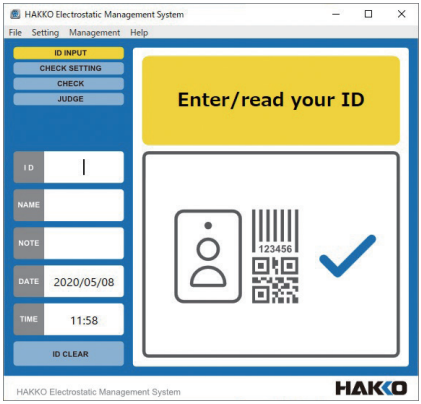
After the measurement finishes, the details of the pass/fail result is displayed.

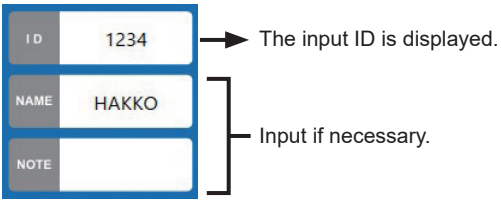
5-2 Measurement Procedure

(I) ID Input

Input an ID from the ID input device.
Perform NAME and NOTE input from keyboards, etc. when required.

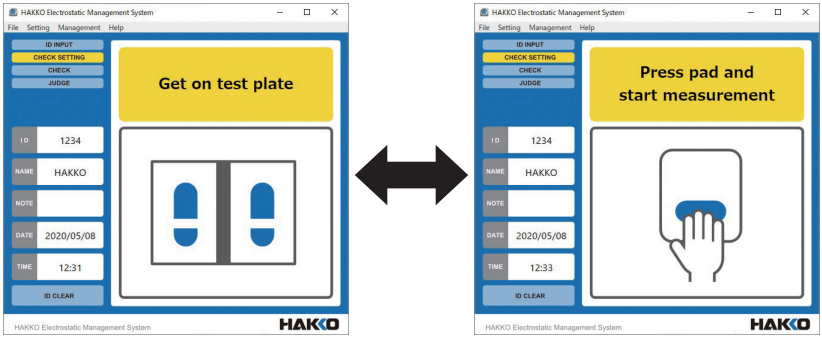
Note The following measurement procedures assume default settings of the FG-465.
“FG-470 Connection” - “No”, “ID Input” - “Yes”, “Name auto input” - “No”





(II) Start Measurement

(1) “Get on test plate” and “Press pad and start measurement” will be displayed alternately.

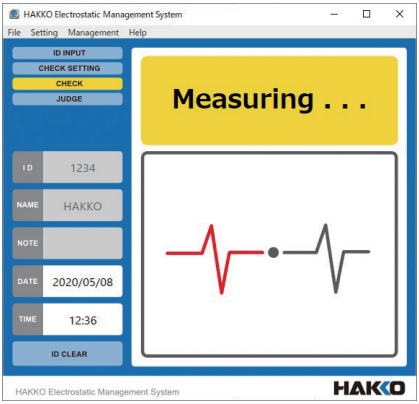


(2) Get on the test plate, press the pad on the FG-465, and start measuring.

Note Measurement starts regardless of what is displayed when the pad is pressed.

(III) Measuring

Keep the pad pressed until the measurement ends and the result is displayed.

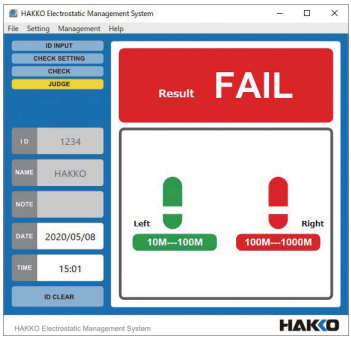


(IV) Display Results

(1) The result is displayed when the measurement ends.
The result is displayed while the pad is pressed.

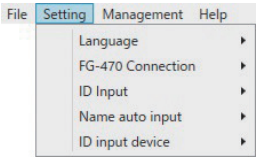
(2) When the pad is released, the display returns to “ID Input,” and enables measurement of the next person.

Note The measured resistance range is displayed on both left and right foot icons.



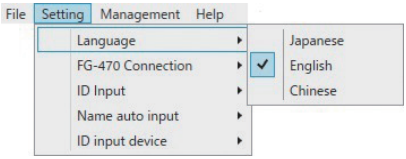
6. Setting Menu

Device and software settings can be set in the Setting menu.



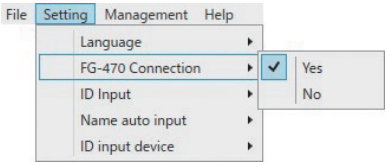
6-1 Language

You can select from [Japanese], [English], and [Chinese].



6-2 FG-470 Connection

If measuring while FG-465 and FG-470 are connected, sets [FG-470 Connection] to [Yes].

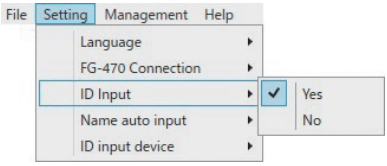


6-3 ID Input

If ID memorization is not required, set [ID Input] to [No].

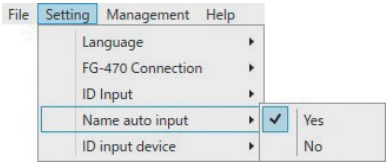
Enables measurements without inputting an ID

The “ID” and “NAME” fields become hidden, and “NOTE” can be input from keyboards, etc.



6-4 Name Auto Input

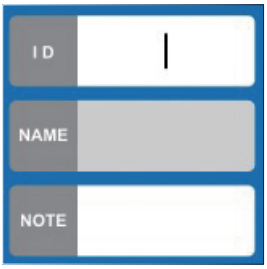
If using the name auto input function, set [Name auto input] to [Yes].



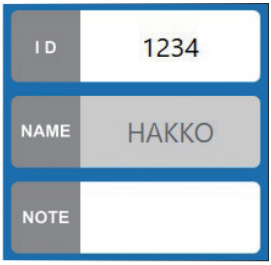
Note Registration of IDs and names to the “Name registration file” is required.
(Refer to chapter 7-5)

Note If “Name auto input” is set to “Yes,” NAME cannot be input manually.

Note If “Name auto input” is set to “Yes,” measurements cannot be performed with IDs that are not registered in the name registration file.



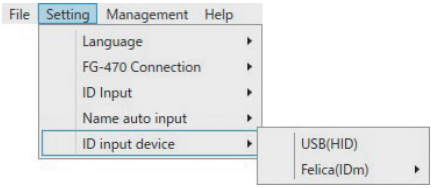
← Cannot input since “NAME” is grayed out.



← The name is automatically input when the ID is input.

6-5 ID Input Device

The ID input device can be selected from the [USB-HID] device or [FeliCa] reader.



6-5-1 USB (HID)

Select if using USB input devices that conform to the USB-HID standard.

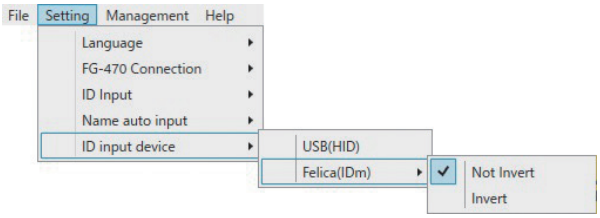
⚠ CAUTION
This software receives data sent from ID input devices as ID as they are. Refer to the instruction manuals of each device for barcode reader and card reader settings.

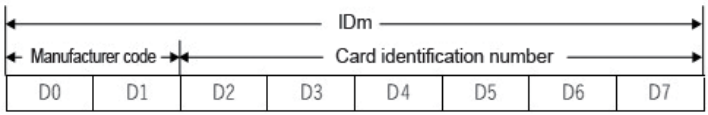
6-5-2 FeliCa (IDm)

Select if using FeliCa readers that conform to PC/SC.
This includes SONY “PaSoRi,” etc.

⚠ CAUTION
- Installation is required for FeliCa reader exclusive drivers. Refer to the reader instruction manual for installation details of the driver. - Input from USB-HID devices is available even if [FeliCa] is set for “ID input device.”

If [FeliCa] is selected, “IDm” data of the FeliCa card is scanned.
In this case, you can select whether to scan from the lower level or upper level of the “IDm” data.

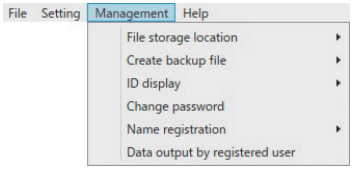




[Not Invert]: Receive in D0 - D7 order.
[Invert]: Receive in D7 - D0 order.

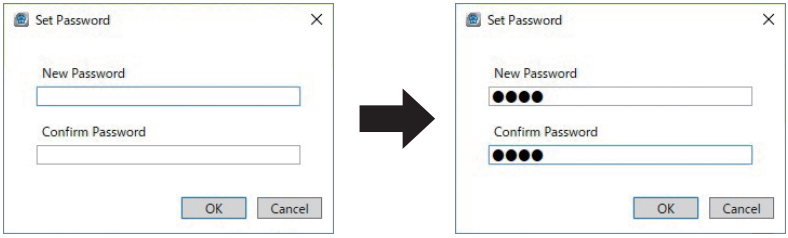
7. Management Menu

Perform settings for file management on the Management menu.



Note Password input is required to perform Management menu settings.
Securely store your password.

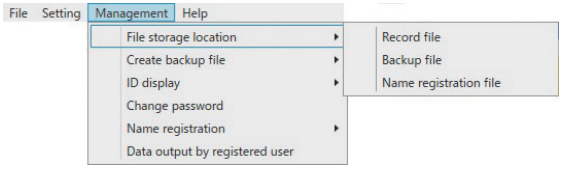
Note When the “Management” menu item is opened for the first time, the “Set Password” dialog box will be displayed. Input your password and click the [OK] button.



After setting your password and selecting an item from the “Management” menu, the “Password” dialog box will be displayed. Input the set password and click the [OK] button.

7-1 File Storage Location

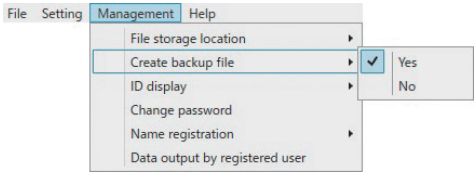
You can change the storage location of the [Record file], [Backup file], and [Name registration file].



⚠ CAUTION
- If the storage location of each file is changed, the saved file itself will not be relocated. - If you’ve changed the location of the “Name registration file,” and a “Name registration file” already exists in the destination folder, the name registration data within the program will be deleted and overwritten by the “Name registration file” of the destination.

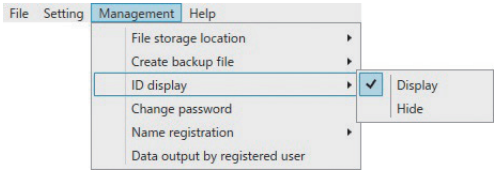
7-2 Creating a Backup File

You can select [Yes] or [No] for backup file creation.



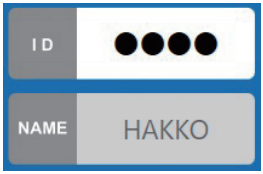
7-3 ID Display

If you do not wish to display IDs, select [Hide] in [ID display].



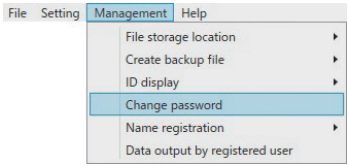
“ID display” > “Display”

“ID display” > “Hide”



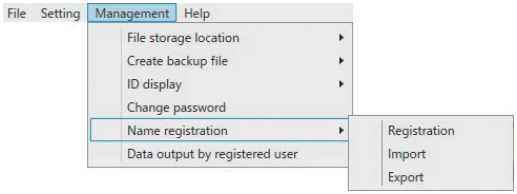
7-4 Changing Passwords

Changes the password.

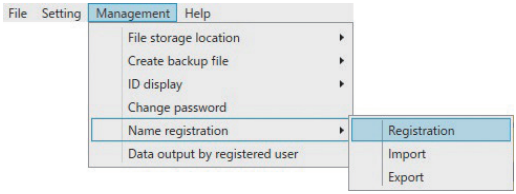


7-5 Name Registration

Registers the “ID” and “Name” that are required when using the name auto input function to the name registration file.

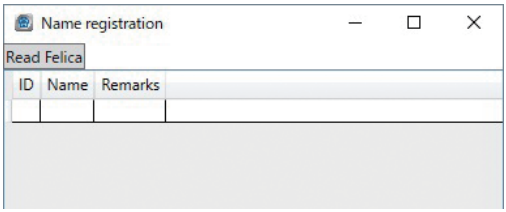


7-5-1 Registration



(I) Registration Method

(1) Click [Name registration] > [Registration] of the “Management” menu.



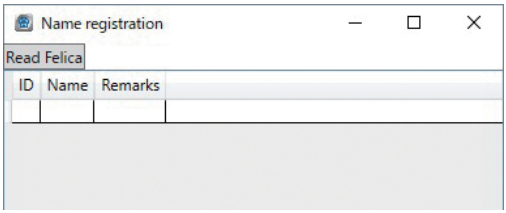
(2) Place the cursor over the ID field and input “ID.”
(3) Place the cursor over the name field and input “Name.”
(4) After registration, press the x mark on the upper right to close.

- You can freely enter content in the remarks field, but the content will not be displayed on the screen, and it will not be stored in the record data.
- The next row is inserted after you finish inputting the content and the return key is pressed.
- You can delete the selected row with the delete key on the PC.
- An error will occur if an invalid ID (blank, duplicate) is input.
- Avoid errors by deleting rows or re-inputting.
- ID field input can be performed from connected USB-HID input devices as well.
- Maximum number of ID that can be registered is 10,000.
- Maximum number of letters that can be entered for each item is as below.
  ID: 50 letters
  Name: 100 letters
  Remarks: 100 letters

(II) ID Input Method Through FeliCa Cards

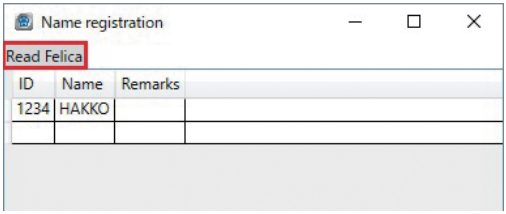
Note If inputting through FeliCa cards, [FeliCa] must be selected for the ID input device.

(1) Click “Management” Menu > [Name registration] > [Registration] and proceed to the “Name registration” dialog box.

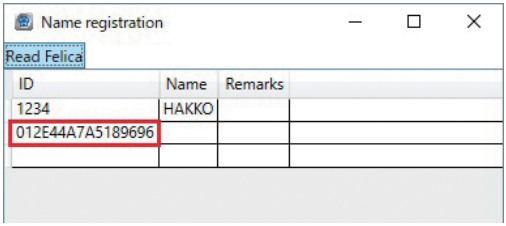


(2) When in this state, place the FeliCa card you wish to input on the card reader.

(3) Click the [Read FeliCa] on the “Name registration” dialog box.

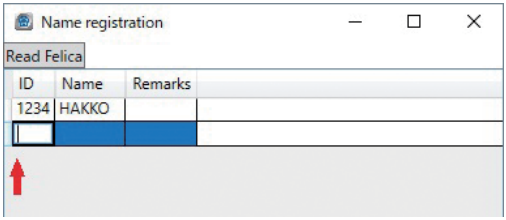


(4) The FeliCa IDm will be input on the ID field so proceed to input the name.

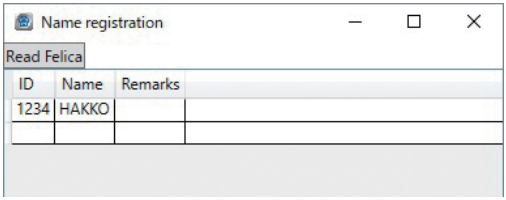


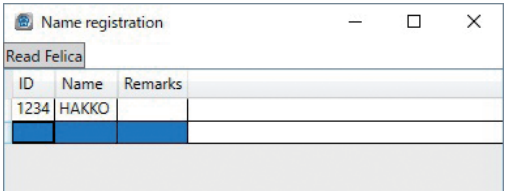
(III) Cautions When Inputting from a FeliCa Card

When inputting through a FeliCa card, scanning will not complete successfully if the ID field has been clicked and the cursor is displayed.

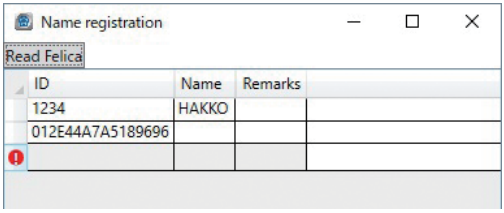


Perform scanning when in the following conditions.



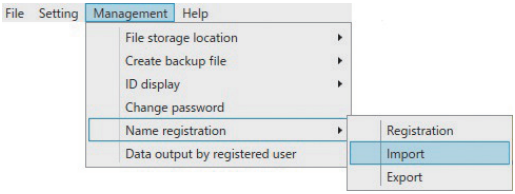


If scanning failed, an error mark as shown below will be displayed, so close the dialog box and restart from the beginning.



7-5-2 Importing

You can import data from other files to “Name registration file.”

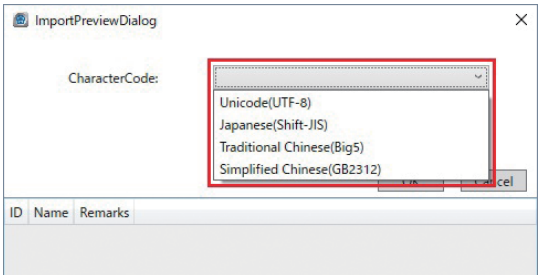


⚠ CAUTION
If a file is imported, the original “NameRegistration.csv” will be overwritten with the new data. Files that can be imported are CSV files that contain data of “ID,” “Name,” and “Remarks” starting from the column on the left. Data from the 4th column on are ignored.

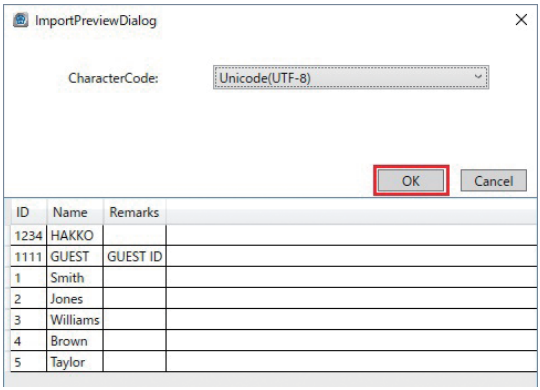
Example of files that can be imported

	A	B	C	D	E	F
1	1234	HAKKO				
2	1111	GUEST	GUEST ID			
3	1	Smith				
4	2	Jones				
5	3	Williams				
6	4	Brown				
7	5	Taylor				
8						
9						

(1) Click [Management] > [Name registration] > [Import], input the password, and then select the file to import.
(2) The “ImportPreviewDialog” dialog box is displayed.
(3) Select from the “CharacterCode” pull-down menu.

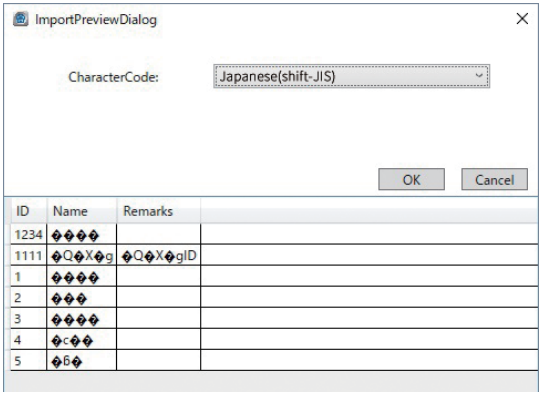


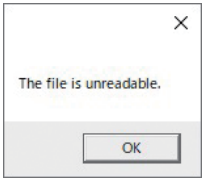
(4) Selecting an appropriate “CharacterCode” displays the content correctly (refer to the following preview) so click the [OK] button to import it.



⚠ CAUTION

If the character code for the imported file does not match the content format or the “The file is unreadable” dialog box is displayed, the measurement screen and record file will not be displayed correctly.



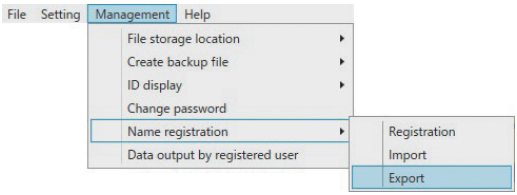


⚠ CAUTION

“NameRegistration.csv” will be overwritten with the imported data.
The original data will be deleted, so if there is data remaining in “NameRegistration.csv,” we recommend making a backup before importing.

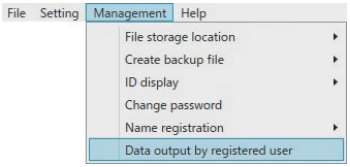
7-5-3 Exporting

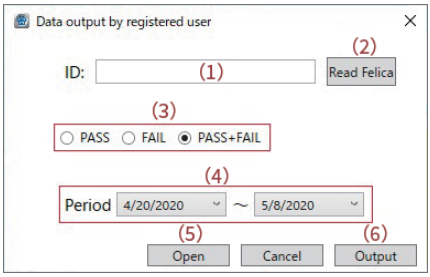
“NameRegistration.csv” can be exported to any folder in CSV file format.



7-6 Data Output by Registered User

You can display or output as CSV files by specifying the ID, pass/fail results, and period from the saved “Record file” and extracting the data.





Note If there is no “record data,” both “Open” and “Output” will be canceled.

(1) Input the ID (registered person) you want to extract in the ID field.
Other than keyboards, input can be performed from USB-HID input devices as well.

(2) If FeliCa is set as the ID input device, input can be performed through FeliCa cards.
The input method through FeliCa cards is the same as name registration.
Place the FeliCa card on the FeliCa card reader and click the [Read FeliCa] button.

(3) Select the comprehensive result you want to extract.

(4) Select the period you want to extract.

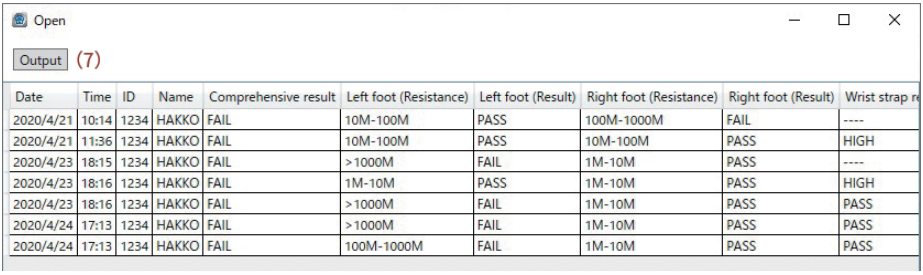
For example...

(1) The ID (registered person) you want to extract: 1234

(3) The comprehensive result you want to extract: FAIL

(4) Extraction period: April 20, 2020 - April 24, 2020

Clicking (5) [Open] while set to the above, the following “Open” dialog box will be displayed.



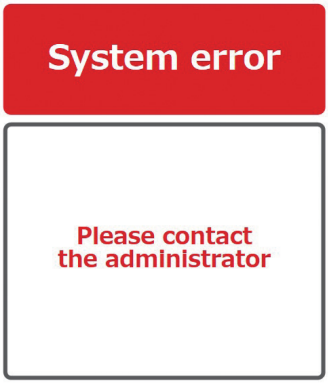
Date	Time	ID	Name	Comprehensive result	Left foot (Resistance)	Left foot (Result)	Right foot (Resistance)	Right foot (Result)	Wrist strap r
2020/4/21	10:14	1234	HAKKO	FAIL	10M-100M	PASS	100M-1000M	FAIL	----
2020/4/21	11:36	1234	HAKKO	FAIL	10M-100M	PASS	10M-100M	PASS	HIGH
2020/4/23	18:15	1234	HAKKO	FAIL	>1000M	FAIL	1M-10M	PASS	----
2020/4/23	18:16	1234	HAKKO	FAIL	1M-10M	PASS	1M-10M	PASS	HIGH
2020/4/23	18:16	1234	HAKKO	FAIL	>1000M	FAIL	1M-10M	PASS	PASS
2020/4/24	17:13	1234	HAKKO	FAIL	>1000M	FAIL	1M-10M	PASS	PASS
2020/4/24	17:13	1234	HAKKO	FAIL	100M-1000M	FAIL	1M-10M	PASS	PASS

If (6) “Output” of the “Data output by registered user” dialog box or the (7) [Output] button of the “Open” dialog box is clicked, the extracted data is saved as a CSV file.

- The output folder is the folder where the “Record file” is saved.
- The output file name is set as the following.

FG465_ID_“ID”_“Output date”.csv
(For example, FG465_ID_1234_20200422.csv)

8. Error Messages and Solutions

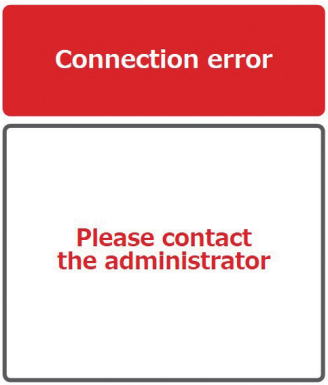


System error

- Displayed when a critical error occurs on the system.
- Displayed when No. 3 and No. 4 of the DIP switch on the back of the FG-465 are ON.

Solution

- Confirm that the FG-465 DIP switch setting is correct.



Connection error

- Displayed when a problem occurs with the connection between FG-465 and the PC.

Solution

- Confirm that the FG-465 power is on.
- Confirm that there is no problem with the USB cable connecting FG-465 and the PC.

FG-470 error

- Displayed when a problem occurs with the connection between FG-465 and FG-470.
- Displayed when the connection setting between this software and FG-465 & FG-470 do not match.

Solution

- Confirm that there is no problem with the modular cable connecting FG-465 and FG-470.
- Confirm that “FG-470 Connection” of the Setting menu is set correctly.
- Confirm that there is no problem with the connection between FG-465 and FG-470.

Recording error

Please contact the administrator

Recording error

- Displayed when a measurement was performed but the measurement couldn't be written to the record file. This is since the record file is open on another system.

Solution

- Close the open file and perform measurement again.

Measurement canceled

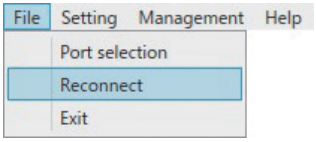
Measurement canceled

- Displayed when the pad was released during measurement and the measurement was not completed successfully.

Solution

- The operation will return to the normal operation after 3 seconds, so perform measurement again.

⚠ CAUTION
To recover from an error, perform [File] > [Reconnect] after solving the error.



9. Precautions

9-1 ID Input Device

9-1-1 Precautions When Using Card Readers, etc.

(I) Settings of ID Input Devices

This software receives data output from USB-HID card readers and barcode readers as “ID.”
The format of data output from ID input devices depend on card reader and barcode reader settings.
Refer to the ID input device instruction manual for data output methods.

(II) Double-Byte/Single-Byte Settings on the PC

Data from the ID input device will be input as single-byte or double-byte characters depending on PC settings.
Both single-byte and double-byte characters can be input, but the input content will be sorted as double-byte and single-byte, so have the PC double-byte and single-byte setting set to the same setting as the setting used when the name registration file was input.

9-1-2 Precautions When Using a FeliCa Reader

- Only “IDm” is read from the FeliCa reader.
  Other record data within the card cannot be read.
- If FeliCa is set, the FeliCa reader driver, etc. must be installed to the PC.
  Refer to the FeliCa reader instruction manual for how to acquire the driver and its installation details.

9-2 Name Registration

9-2-1 Precautions for Name Registration

ID input during name registration is sorted by double/single-byte and upper/lower case so make sure that the character type used for ID input is the same character as the type used during registration.

9-2-2 Editing the Name Registration File

The name registration file can be directly edited but may not be displayed correctly depending on the character code type of the PC environment.
Use the import function of this software if possible.

9-2-3 Importing the Name Registration File

If the file is imported, it will overwrite “NameRegistration.csv.”
Backup of “NameRegistration.csv” is recommended before importing.

9-3 Keyboard Conversion during USB (HID) Input

The name registration file differentiates the ID character type (double/single-byte, upper/lower case). Set the PC character input type to the same setting for the name registration file when inputting an ID for measurements.

9-4 Precautions When Using Spreadsheet Software

9-4-1 Input of Values of 16 or More Digits

If the record file containing a “value” of 16 or more digits is displayed on spreadsheet software, the value from the 16th digit may be displayed as “0” due to the specification of the spreadsheet software.

ID “1111111111111111” displayed on spreadsheet software ⇒ “1111111111111110”

The number from the 16th digit is displayed as “0.”

If a character is contained, it will be displayed normally since it is recognized as a character string.

ID “111A111111111111” displayed on spreadsheet software ⇒ “111A111111111111”

Recognized as a character string since a character is included and the value from the 16th digit is correctly displayed.

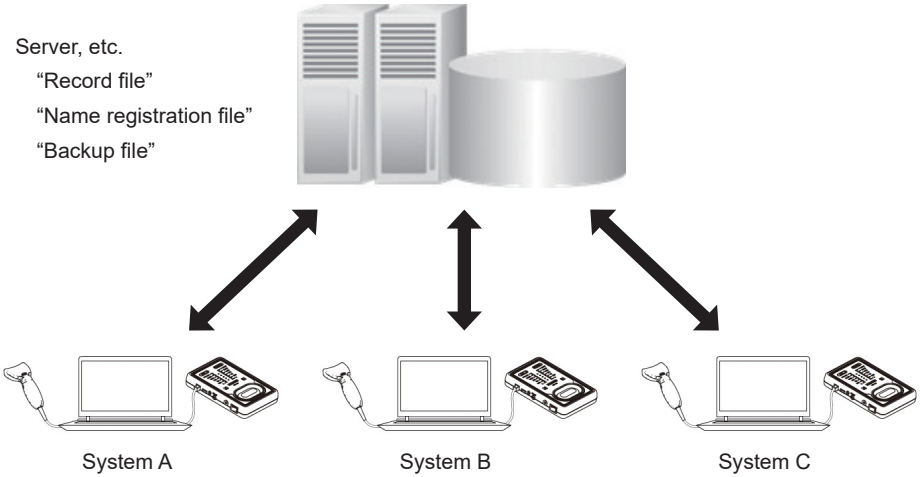
It can be handled by reading the ID column as a character string by using the macro function of the spreadsheet software.

⚠ CAUTION
This phenomenon is only for spreadsheet software display and does not make the record file data “0.” However, opening the record file on the spreadsheet software and performing “overwrite” saves the data set with “0.” Be sure not to perform “overwrite.” If processing the record file, it is recommended to create a copy before processing.

9-4-2 Corrupted Characters

The “Character Code” of input and output CSV files correspond to UTF-8.
If using the import function, character codes can be selected, but please be careful of character codes if performing other operations.
If using an old OS, it does not support UTF-8, and may cause corrupted characters.

9-5 If Sharing the “Record File” and “Name Registration File” from Numerous Software



9-5-1 Record File

- The same “Record file” can be shared from numerous systems, however, when other systems perform writing of the “Record file,” “Recording error” may be displayed.
- Even if “Record file” is shared, it cannot be determined from which system it was written from.

9-5-2 Name Registration File

- The same “Name registration file” can be shared from numerous systems.
- Even if name registration or importing is performed on other systems, unless software reboot or [Name registration] > [Registration] is performed and name registration data is updated, it is not reflected on each system.
- If changing the saving location of the “Name registration file” and a “Name registration file” already exists in the folder of the changed saving location, the data on the program will be overwritten. Please note that data up to that point will be deleted.

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