

Brief User Manuel

For Smart Manager Pro

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SmartManager Pro Help answers basic questions and explains the usage of different functions or the way to program the objects and projects.

■ [How to start using SmartManager Pro software?](#)

■ [SmartManager Pro Basic Functions : All Subjects](#)

Note: Different models support different features. When building a project, please follow the guidance of the software.

■ **Quick search for answers**

Key in the key words in the search field left side.

Press the Help button in setting dialog to get help, or press F1 on your keyboard at anytime.

■ [SmartManager Pro Basic Functions : All Subjects](#)

Getting Started	Menus	Hardware Setup	Tutorials	Reference Information
Create Project	File	Calibration Mode	Barcode Device / Keyboard	HMI TCP Port List
Program Introduction	Home	System Initialization	Data Sampling	Window Style
	Project	Pin Designations	Event (Alarm) Log	Window Editing Tips
	Object	System Settings	System Parameter Settings	Default Keyboard Shortcuts
	Data/History	System Setting Bar	Data Security	Modbus Address Types
	IIoT		Index Register	Support 4G Dongle
	View		Recipe Data	Object ID Mapping Table
	Tool		Object safety protection	ASCII Chart
			Station Number Variable	PC Simulation Limitations
			MODBUS TCP/IP Gateway	External Device Download Settings
			Pass-through	

Create Project

There are 6 steps to create a new project:

Step 1. Open new file: Select [New](#) from the File menu and select the appropriate HMI model for programming.

Step 2. Configure the devices and parameters: From Edit \ System Parameter Settings menu, in the [Device tab](#) select the controller, configure communication parameters and properties.

Step 3. Design the project: Create windows and place objects. Users can design graphics using [Drawing Tools](#). Import the needed graphics from Library and use objects in the [Objects Menu](#) to visualize the project.

Step 4. Save and Compile the project: Each project must be [Compiled](#) to .exhmi file before download to HMI.

Step 5. Simulate the project to verify operation: Simulation avoids the task of downloading a project multiple times during the development cycle and therefore saves time. There are two types of simulators available: [Off-line Simulation / On-line Simulation](#).

Step 6. Download project to HMI: [Downloading](#) is the last step. Once downloaded the HMI will perform your project design.

Program Introduction

Several programs are installed with SmartManager Pro. These programs can be found in Windows [Start] >> [All Programs] >> [SmartManager].

Program	Description
Administrator Tools	Administrator Tools offers [User Accounts], [USB Security Key] functions. Users can save these two settings to an external device (USB stick or SD card), and import the file to HMI, making the settings file easy to edit and portable.
DatabaseEditor	Imports recipe definition and recipe data files, allowing the user to edit these files, export the data as *.db file, and then download the file to HMI using UtilityManagerEx.
AddressViewer	Shows device types and register range in table form.
SmartManager	SmartManager Pro project editor.
Converter	Reads the Data Sampling file, Event Log file, and Operation Log file in HMI and converts the files to Excel format.
Diagnoser	Diagnoses HMI and device communication.
Download	Allows downloading the project data file built in SmartManager Pro via Ethernet or USB cable. In SmartManager Pro main menu, select [Tools] and then select [Build Data for USB Disk or SD Card Download] to build the data file before running Download.
Printer	Allows HMI to perform remote screen hardcopy / backup via Ethernet. Data is transferred to the server of remote PC.
Simulator	Executes on-line / off-line simulation without installing SmartManager Pro, but the relevant files still need to be prepared.

SystemSetting	Allows updating hardware system settings by using systemsetting.conf file saved in SD card or USB drive.
Watch	Allows users to monitor the HMI or the device address values via Ethernet on PC, or to call Macro for debugging, remote monitoring, and controlling.
RecipeEditor	Creates recipe files for HMI, also opens the existing recipe files for editing.
ReleaseNote	Latest information on SmartManager Pro
Structure Editor	Supports TAG and improves the flexibility to read / write an object.
UtilityManagerEx	SmartManager Pro managing tool.

Note: Certain HMI models support downloading / uploading project via USB cable. After installing SmartManager Pro , Please connect HMI to PC via USB cable and go to [Computer Management] \ [Device Manager] to check if USB driver is installed, if not, please refer to installation steps to manually install.

File

This menu shows some commands relating to the handling of project file.

Item	Icon	Description
New		Create a new project and select the appropriate HMI model for editing.
Open		Open an existing project.
Save		Save the current project with same filename and directory. .
Save as		Save the current project with new filename or directory.
Close		Close the current project.
Decompile		The .exhmi file can be decompiled to .hmi file that can be opened in SmartManager Pro.
Upload (HMI -> PC)		Send the project file from HMI to PC via Ethernet or USB cable.
Print		Print the current project, it is able to specify the print range, number of copies, and destination printer.
Preferences		Miscellaneous functions which include viewing object ID and automatic functions.
Help Topics		Press the Help button in setting dialog to get help, or press F1 on your keyboard at anytime.
About		Display SmartManager Pro version information and copyright.

Home

This menu describes some tools that are frequently used while editing the project.

Group	Item	Icon	Description
Clipboard	Paste		Place contents from clipboard to the project.
	Cut		Cut the selected object in the project and relocate it on the clipboard.
	Copy		Copy the selected object in the project and locate it on the clipboard, or use quick copy .
System Parameters			System parameter settings relevant to HMI.
Editing	Select		Activate the cursor for selecting and dragging object.
	Hand Tool		Press and hold on the left mouse button in the editing window can open panning mode.
	Select All Objects		Select all objects on a window at one time.
	Select Next Object		Select the object one layer down from current layer for overlapped objects.
	Find/Replace Addr		To search for a specific range of address, or replace the current address with another address.
	Multi. copy		Copies and multiply the selected object and place them in the screen.
	Window copy		Import the windows of other project to the current project.
	Arrange		When multiple objects are selected, this command is to align them with the object marked in red dots.
			When an object is selected, the object can be moved to the center of the window.
			Groups up multiple objects in the same steady or return grouped objects to individual ones. Once the objects are grouped, they are moved as one single object.
			Locks the position of the object so that it cannot be resized or moved by dragging. A pinned object has a yellow mark in the upper right corner.
			Spaces the selected objects equally in horizontal / vertical direction.
			Adjusts the size, width, or height of the selected objects in accordance with the size of the object marked in red dots.
			Change color of the selected drawing objects in accordance with the color of the object marked in red dots.
			Changes the layer of the selected object.
	Layer		

			
	Nudge		Moves the selected object one pixel in the specified direction by every click.
	Resize		After selecting an object, the height and width of it can be increased or decreased one pixel by clicking the following buttons.
	Flip/Rotate		Flips the selected drawing object horizontally, vertically, or rotate 90 degrees.
Font	Text size		Enlarges or reduces the text size.
	Italic		Turns the text into <i>italic</i> font.
	Text color		Changes text color.
	Underline		Underlines the text.
	Alignment		Aligns the text in an object after selecting the object.
	Label Position tracking		If selected, the position of the label in all states of an object can be adjusted once by clicking alignment buttons. If not selected, clicking alignment buttons can only adjust the position of the label in current state.
State/Language	State		View the selected object state in the editing window.
	Language		View the selected language in the editing window.

Project

This list shows some tools relating to project editing.

Group	Item	Icon	Description
Setting	System Message		Sets the text content of the popup message dialog.
	Language & Font		Integrates font related settings used by the project.
	Text DPI Setting		Reset the DPI information to prevent the incorrect text display due to the difference in DPI settings between different PC.
Build	Compile		Compile the project and check if there is any error in it. Any project error will be reported in compiling process, and all errors must be resolved before simulating / downloading a project. An .exhmi file will be obtained after compiling.
	Online Simulation		Simulate HMI and device operation on PC by connecting PC with device and accurately setting the communication parameters.

	Offline Simulation		Simulate HMI and device operation on PC without connecting to device.
	Download (PC -> HMI)		Project can be transferred to HMI by Ethernet or USB cable.
	Build Download Files		Builds download data in external device which is used to download project file to HMI.
	Reboot HMI		Remotely reboot HMI. The HMI will display the start screen of the project after reboot.
Library	Shape		Select the needed shape from the library and place it on the editing window. Each shape includes up to 256 states.
	Save to shape		Save the shape to shape library.
	Picture		Select the needed picture from the library and place it on the editing window. Each shape includes up to 256 states.
	Label		Label library is used in the multi-language environment. The content of the labels can be designed base on actual usage, and the suitable label can be selected from the library when needed.
	String		By defining the text and its corresponding serial number in the String Table, the text can be changed dynamically on HMI. String Table can also be used in a multi-language environment.
	Macro		Macros provide the additional functionality your application may need. Macros are automated sequences of commands that are executed at run-time.
	Address		Predefine the commonly-used addresses in Address Tag Library. It not only avoids setting the addresses repeatedly but also expresses the function of an address more clearly.
	Group		Group library can combine shapes, pictures and animations to a group. Once a group library is created, it can be used in other projects, this speeds up project development greatly.
	Save to group		Save the group of objects to group library.
	Sound		Sound library can be used to alert the operator about various HMI conditions. Sounds can also be used to confirm touch actions.。
	Hire purchase		The project supports static installment mode and runtime installment mode. Only one installment payment mode can be selected for a project.
	Password generation tool		Dynamically generate passwords based on Key & expiration time

Object

This menu describes the operation of objects.

Group	Item	Icon	Description
Draw	Line		Draw a straight line.
	Arbitrary Line		Draw a freehand line.
	Link Line		Draw linked straight lines.
	Arc		Draw an arc.
	Ellipse/Circle		Draw an ellipse / circle.
	Pie		Draw a pie.
	Rectangle		Draw a rectangle.
	Polygon		Draw an inequilateral polygon.
	Scale		Draw the scale by setting the number of division and length.
	Text/Comment		Place texts on the screen. The font type, color, size and other related attributes can be set.
	Picture		Place a picture selected from Picture Library on the screen.
	Shape		Place a shape selected from Shape Library on the screen.
	Table		Grid lines can be drawn in a window, and the Border, Grid, Fill can be customized.
Lamp	Bit Lamp		Displays the state of a designated bit address in different pictures or texts.
	Word Lamp		Displays the state according to the value of a designated word register.
Button	Set Bit		Manual mode can trigger a designated bit address to change the state between ON and OFF when the object is pressed. In automatic mode, the bit is automatically activated when a pre-defined condition occurs, touching the button will not be effective.
	Set Word		Manual mode can change the value in a designated word address when the object is touched. In automatic mode, the word register is automatically activated when a pre-defined condition occurs, touching the button will not be effective.
	Toggle Switch		This object is a combination of Bit Lamp and Set Bit objects. The state of the designated bit address is changed when pressing the object.
	Multi-State Switch		This object is a combination of Word Lamp and Set Word objects. The appearance of the object is controlled by the

			value of the read word address when pressing the button.
	Function Key		Used to control a window, create a keyboard, trigger macro or print screen.
	Combo Button		This object can execute multiple commands including set bit, set word, change window, and execute Macro. It also displays the state of a bit or word register.
	Slider		Changes the value in a designated word register address by moving the roller on the screen.
	Option List		Displays a list of items for viewing and selecting. Once an item is selected, the corresponding value or data will be loaded.
Input	Numeric		Enters / displays the value of a designated word register.
	ASCII		Enters / displays ASCII or UNICODE characters held in a number of sequential registers form a designated word register.
Illustration	Pie Chart		After entering data to the designated word addresses, this object is divided into slices to illustrate numerical proportion.
	Dynamic Scale		Dynamic Scale makes easier reference for objects using tick marks and scale labels.
	Data Block Display		Displays the data of continuous addresses with plots and lines.
	XY Plot		Drawn where pair of word registers control the X and Y-axis.
	Bar Graph		Displays data as a bar graph in proportion to its value.
	Meter Display		Displays the value of word device by meter.
	Dynamic Drawing		Dynamic Drawing object enables drawing a shape in a specified region on HMI screen at run time, by setting the corresponding Attributes addresses. The shape can be a line, a rectangle, a circle, or a dot, and the style and color of the shape can be customized.
	Moving Shape		Defines the states and moving distance of an object. The state and the location of the object depend on three consecutive word addresses.
	Animation		Defined by a pre-defined path and states. The object will move to the given point and show in the given state as defined by the value of the designated word registers.
	Flow Block		Displays the flow status of the blocks in the pipe. The blocks flow at a fixed interval in a horizontal or vertical straight line.
PLC Control	-		PLC Control object can perform the selected operation when the related command is triggered.

Others	Indirect Window		When the state of the designated word register is changed, the predefined child window opens in current window.
	Direct Window		When the state of the designated bit register is changed, the predefined child window opens in current window.
	Data Transfer (Per-page)		Transfers values from the source registers to the destination registers. The data transfer operation can be activated manually or by changing the state of the designated bit register.
	Data Transfer (Global)		Transfers values from the source registers to the destination registers in time-based frequency.
	Picture View		This object plays sideshow of picture files. The user can save the operation procedure or maintenance instructions into pictures to enable on-site operators to perform tasks efficiently.
	PDF Reader		PDF Reader object enables opening PDF documents stored in external devices and allows viewing them in a preset window on HMI.
	PLC Web Browser		Use components to connect to the PLC and browse its Web information.
	Media Player		Plays video files to provide maintenance instructions or procedures on video so as to enable on-site operators to perform tasks efficiently.
	Video In		After installing a surveillance camera, real time image can be viewed from HMI, captured images can be stored in external devices, and play it using Picture View object.
	2D Barcode Display		After entering data in the designated word addresses, a 2D Barcode will be generated in the window for scan.
	Barcode Scanner (Android Camera)		By connecting an Android device (phone / tablet) equipped with a camera to an HMI using cMT Viewer installed on the Android device, the camera can be used to scan 1D or 2D barcodes, and the data will be written to the designated addresses.
	Date/Time		Displays the RTC time in HMI.
	Timer		The system provides 5 modes to control the timer by setting the relevant address.
	Scheduler		Turns bit ON / OFF, or writes value to word address at designated times.
	Action Trigger		Action Trigger can classify actions into action groups. Actions in the same group will be executed at a time. The groups are put into sequence, and only when the actions in the previous group are all triggered, the actions in the next group will then be triggered.
	VNC Viewer		The window opens on HMI for controlling the remote device.

File Operation	Contacts Editor		Contacts Editor enables users to dynamically change contact name, e-mail address, and contact group on HMI.
	File Browser		This object can be used to display the name of the folder or the file stored in the SD card or USB disk. The selected file name can be written to a designated address, and be imported/exported by Import/Export object.
	Import/Export		This object can be used to import or export string table, or a specific recipe in Recipe Database.

Data/History

This menu shows some commands relating to the handling of historical data.

Group	Item	Icon	Description
Data Logging	Data Sampling		Defines how the data is sampled by address and data length, and then use Trend Display, Circular Trend Display, and History Data Display objects to display sampling records.
	Trend Display		Uses curves to represent the data recorded by Data Sampling object.
	Circular Trend Display		Circular Trend Display object draws the trend curve of Data Sampling in a polar coordinate system, where y-axis represents the radial coordinate and the x-axis represents the angular coordinate.
	History Data Display		Displays data stored by Data Sampling object using tables.
Alarm	Event (Alarm) Log		Defines event content and trigger condition. The system will trigger events according to the condition, and then displays messages in Event Display, Alarm Display, and Alarm Bar objects.
	Alarm Bar		Displays alarm messages defined in Event (Alarm) Log when the designated addresses meet the trigger condition. Alarm Bar scrolls all alarm messages in one single display line.
	Alarm Display		Displays alarm messages defined in Event (Alarm) Log when the designated addresses meet the trigger condition. Alarm Display shows active alarm messages in multiple lines.
	Event Display		Displays alarm messages defined in Event (Alarm) Log when the designated address once meets the trigger condition.
	Event Bar Chart		Event Bar Chart is a type of easy-to-use bar chart that can comprehensively illustrate project schedule. Using Event Bar Chart to illustrate HMI events or alarms can help users to clearly understand the time at which an event or alarm occurs, and its duration.

Backup	Backup (Per-page)		Backup recipe data (RW, RW_A), event log, data sampling, recipe database, or operation log to external device (USB disk / SD card / remote backup server / send through email with attachment).
	Backup (Global)		Backup recipe data (RW, RW_A), event log, data sampling, recipe database, or operation log to external device (USB disk / SD card / send through email with attachment).
Operation Log	Operation Log Settings		Operation Log records user operation steps and display them in real time by Operation Log View object.
	Operation Log View		Displays Operation Log in table format.
	Operation Log Printing		The Operation Log sheet can be printed by saving as JPEG file into an external device, or print out by a printer.
	Recipe Database Editor		The contents of recipe items can be set in the recipe database record. After editing, you can browse the recipe through the recipe viewing element.
Recipe	Recipe Transfer		Read the data of the recipe to the specified address or write the data of the specified address to the recipe
	Recipe View		Displays recipe records in table form. The user can modify recipe data directly on HMI.
	Database Server		Database Server object enables HMI to connect database server on PC, allowing the user to send data log or event log to database server in PC.
Database	SQL Query		SQL Query can exchange data with MySQL database.
	SQL Query Result Viewer		This object shows the results obtained by running SQL Query.

IIoT

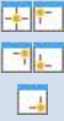
This menu describes features IIoT Management.

Group	Item	Icon	Description
IIoT	MQTT		MQTT can either publish messages to a remote server, or subscribe to a remote server. HMI can serve as a local server.
	OPC UA Server		OPC UA (Unified Architecture) is a communication technology often used in industrial automation fields. OPC UA features cross-platform interoperability, unified access, standardized communication, and security. Could allow OPC UA clients to access HMI or device data by subscribing to tags to receive real-time updates. This new architecture can help you achieve vertical integration.

View

This menu describes some shortcut keys that can be used while editing the project.

Group	Item	Icon	Description
Display	Common Window		If selected, when editing a project, the objects on common window will be displayed on base windows.
	Underlay Window		If selected, when editing a project, the objects on underlay window will be displayed on base windows.
	Object ID		Set whether to display the ID of the object when placing the object in the window.
	Object Address		Set whether to display the address of the object when placing the object in the window.
	Comment		If selected, Comment object will appear in the project editing window.
Positioning	Touch Area		If selected, when the touchable objects are overlapped in the editing window, the overlapping area can be highlighted.
	Ruler		If selected, rulers will appear along the top and left sides of the editing screen. Guides can be added to the ruler, and when dragging or resizing an object, the object will automatically dock on the reference lines drawn by the guides.
	Grid		If selected, displays the grid on the screen.
	Snap		If selected, when drawing an object or placing an object in the editing window, the object will be automatically aligned to the grid.
Toolbar	Address Grid		The address window shows the used and unused addresses. The used are marked in red while the unused are marked in green.
	Windows Tree		A quick access for windows and object settings dialog boxes.
	Web Window		Visit official website to see what's new on software / hardware upgrades using an internet browser, please check internet connection before use.
	Shape		The window can be used to immediately change the shape used by one or multiple objects. Certain libraries support immediate color change.
	Picture		The window can be used to immediately change the shape used by one or multiple objects. Certain libraries support immediate color change.
	Sound		The window can be used to immediately change the sound used by one or multiple objects.
Zoom	Zoom		A list of zoom levels that can be selected to change the size of the editing window.
	ZoomIn		A shortcut button that can be used to enlarge the editing window.

	ZoomOut		A shortcut button that can be used to shrink the editing window.
	Center View		Click this icon or press the Home key on the keyboard to return to the center point of the editing window, or click a corresponding key to view one of the corners of the editing window.
Window	Open Window		All the existing windows are shown in dialog box. Users can create a new window, delete a window, and change window settings.
	Cascade		Arrange current open windows as cascading windows.
	Title		Arrange current open windows as tiling windows.

Tool

This menu describes the stand-alone programs.

Item	Icon	Description
Data/Event Log Converter		Reads the Data Sampling file, Event Log file, and Operation Log file in HMI and converts the files to Excel format. Please refer to Converter Help for more information.
Address Viewer		Displays the address information of the supported devices in table form.
Watch		Allows users to monitor the HMI or the device address values via Ethernet on PC, or to call Macro for debugging, remote monitoring, and controlling. Please refer to Watch Help for more information. Click the icon to watch the demonstration film. Please confirm your internet connection before playing the film.
Administrator Tools		Administrator Tools offers [User Accounts], [USB Security Key] functions. Users can save these two settings to an external device (USB disk or SD card), and import the file to HMI, making the settings file easy to edit and portable. Please refer to Administrator Tools Help for more information.
System Setting Editor		Allows updating hardware system settings by using systemsetting.conf file saved in SD card or USB disk. Please refer to SystemSetting Help for more information.
Recipe Database Editor		Imports recipe definition and recipe data files, allowing the user to edit these files, export the data as *.db file, and then download the file to HMI using SmartManager Pro . Please refer to DatabaseEditor Help for more information.

Hardware Setup

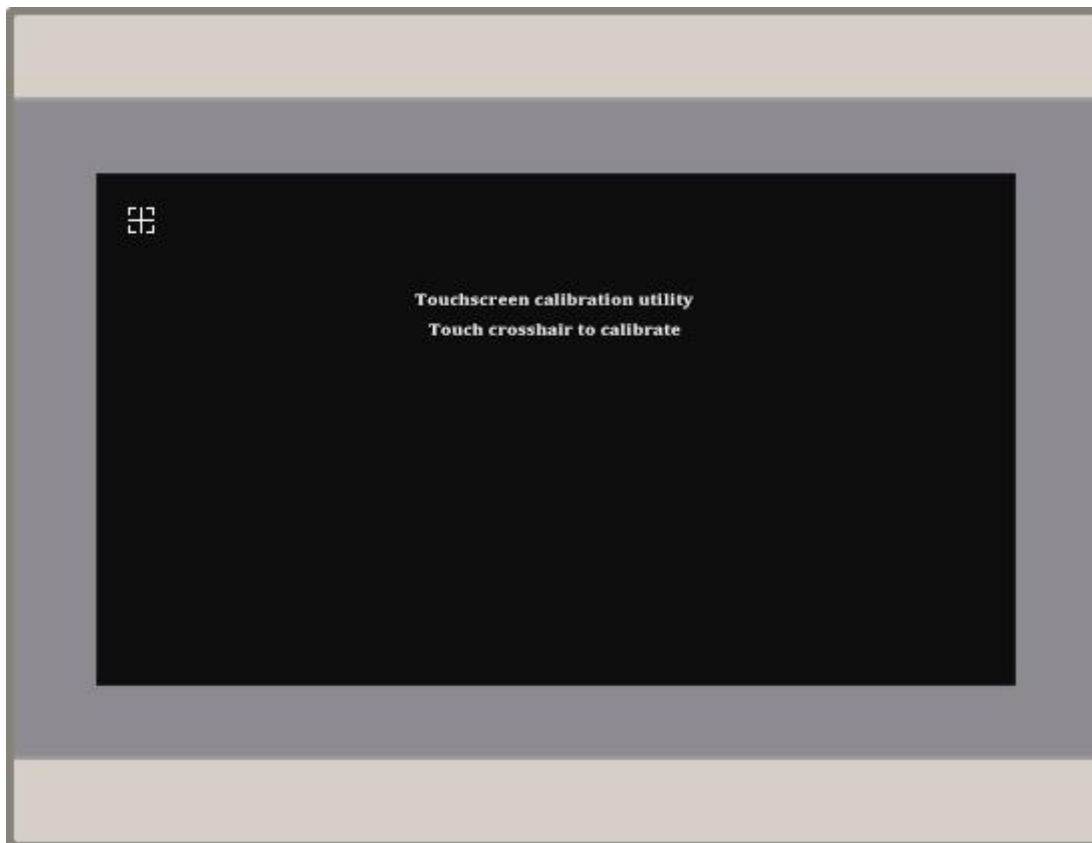
Calibration Mode

Provide the following methods to enter the touch screen calibration mode:

-When HMI starts, after the start page appears, press and hold anywhere on the screen for 12 seconds.

After entering the calibration mode, a "+" symbol will appear on the screen. Touch the center of the symbol with a stylus or finger.

After touching all five signs, "+" disappears and the touch screen parameters will be stored in the HMI system.



Pin Designations

MS Series	MR Series	MH Series
	MR0501NE	
	MR0701NE	
	MR1001NE	
	MR1501NE	

System Initialization

■ MR Series

If you accidentally forget the system setting password of HMI, restart and long press the screen for 12 seconds.

At this time, HMI will enter touch correction mode. After touch correction, the system will display two setting buttons: clear project file & run project file.

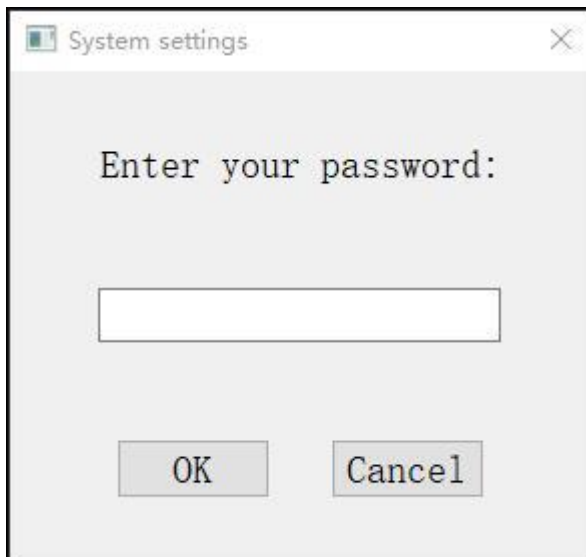


Note: Because excluding the project file will clear the project file and historical data in the HMI, it is necessary to download the project to the HMI again.

System Settings

■ **MR Series** (The supported functions may vary between models, please configure system settings according to the model used.)

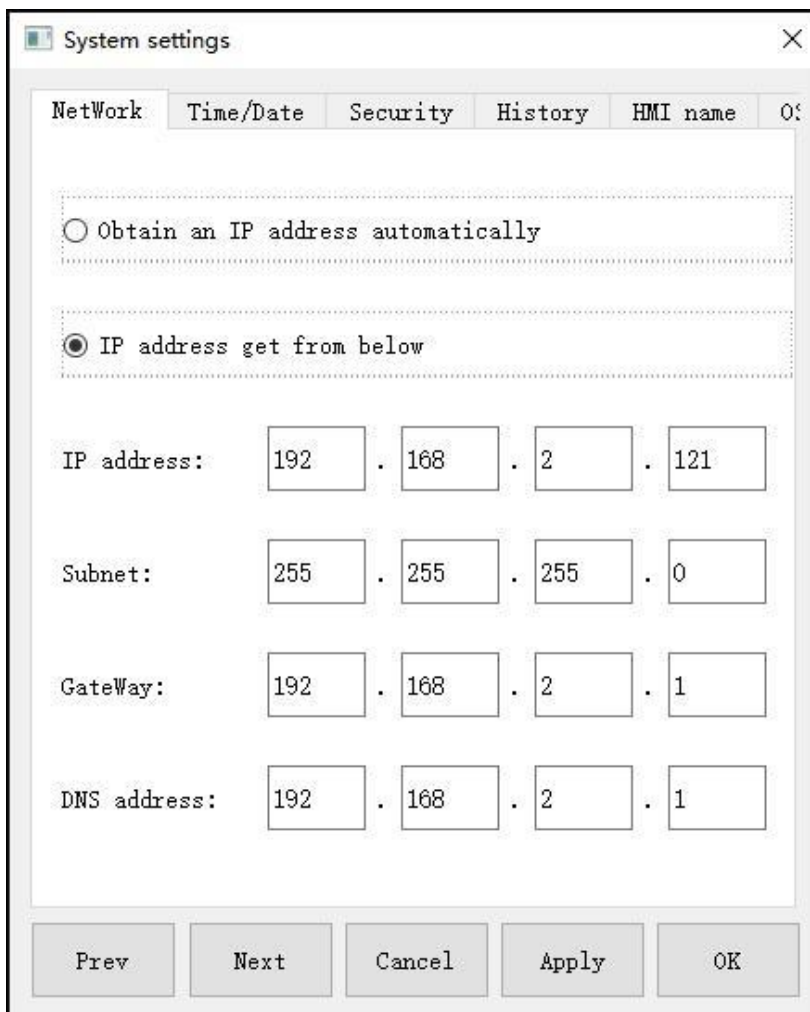
To start HMI system settings, please enter the password, the default is 111111.



■ Network tab

To connect with HMI via Ethernet, please set HMI IP address.

If select [Obtain an IP Address Automatically], HMI IP address is assigned by DHCP. If select [IP address get from below], please enter the IP address manually.



■ Time/Date tab

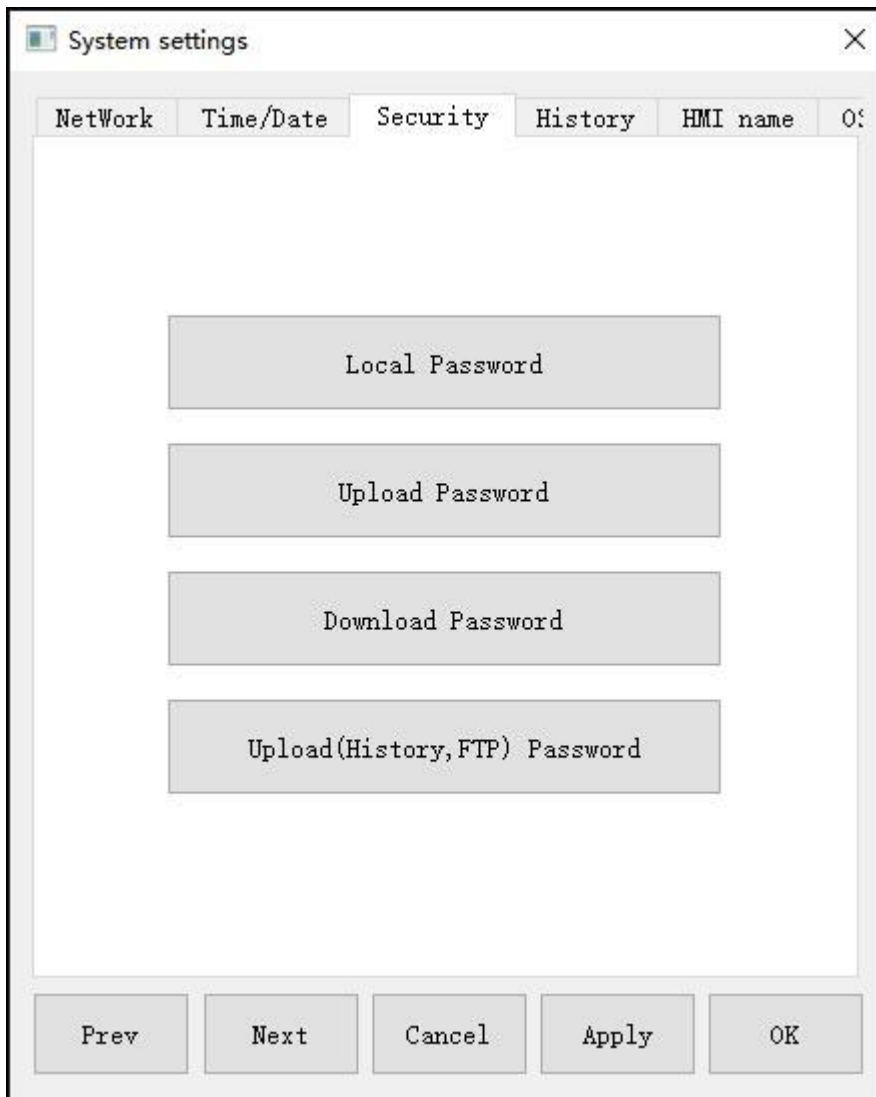
Set HMI local time/date.

The screenshot shows a 'System settings' dialog box with a close button (X) in the top right corner. The 'Time/Date' tab is selected, showing fields for Year (2021), Mon (3), Day (16), Week (2), Hour (16), Min (33), and Sec (0). Each field has up and down arrow buttons for adjustment. At the bottom are buttons for 'Prev', 'Next', 'Cancel', 'Apply', and 'OK'.

Field	Value
Year	2021
Mon	3
Day	16
Week	2
Hour	16
Min	33
Sec	0

■ Security tab

The files can be password protected, please enter the Upload / Download password.



[Local Password] Password for entering system setting.

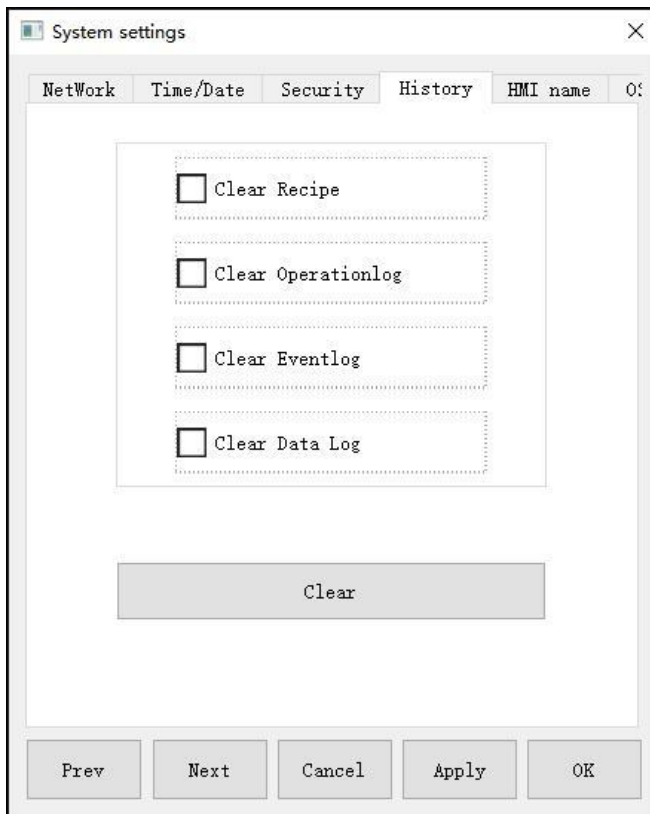
[Upload Password] Password for uploading project.

[Download Password] Password for downloading project.

[Upload (History) Password] Password for uploading history file.

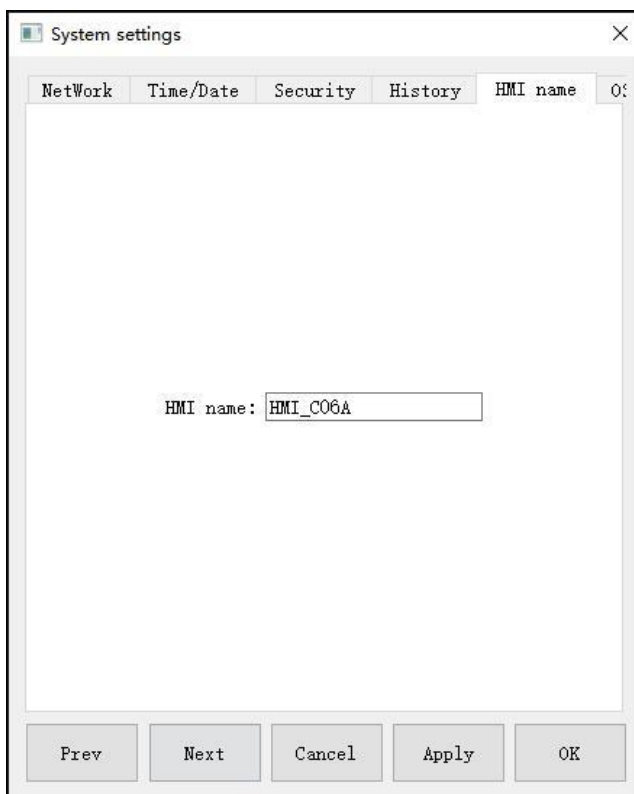
■ History tab

Clear history data in HMI.



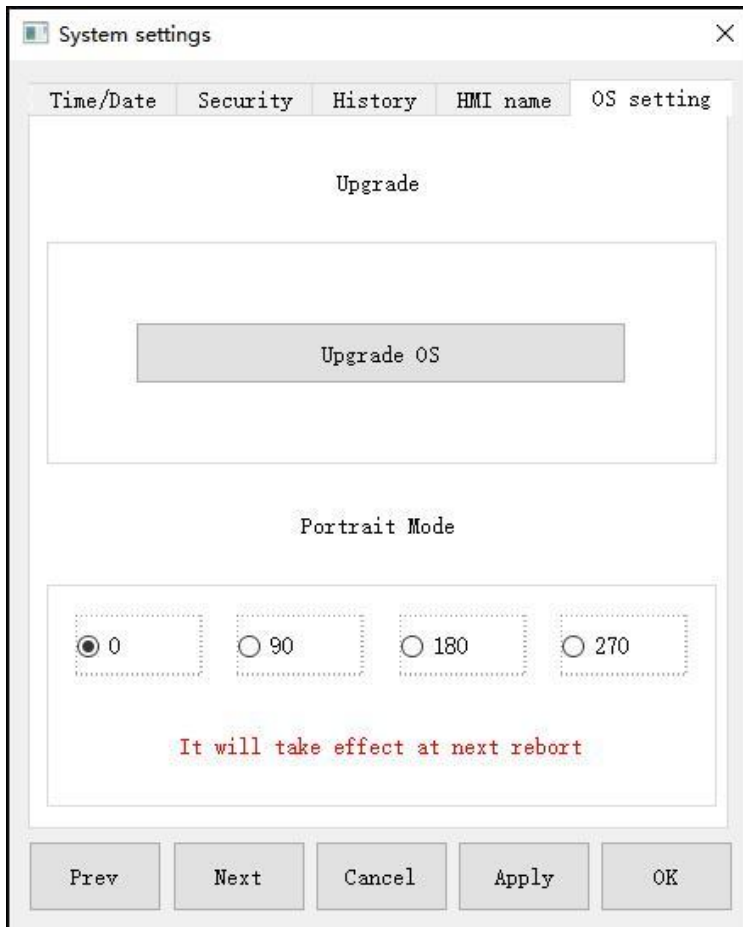
■ HMI name tab

Set the HMI name for managing multiple HMIs instead of using HMI IP address.



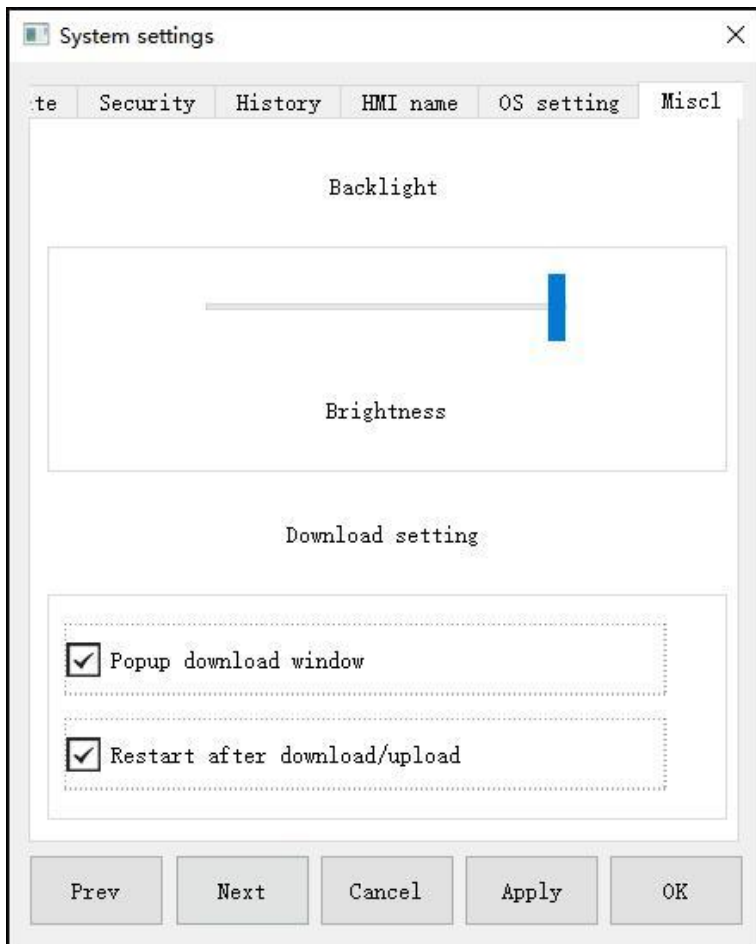
■ OS setting tab

Upgrade OS / Enable [portrait mode](#).



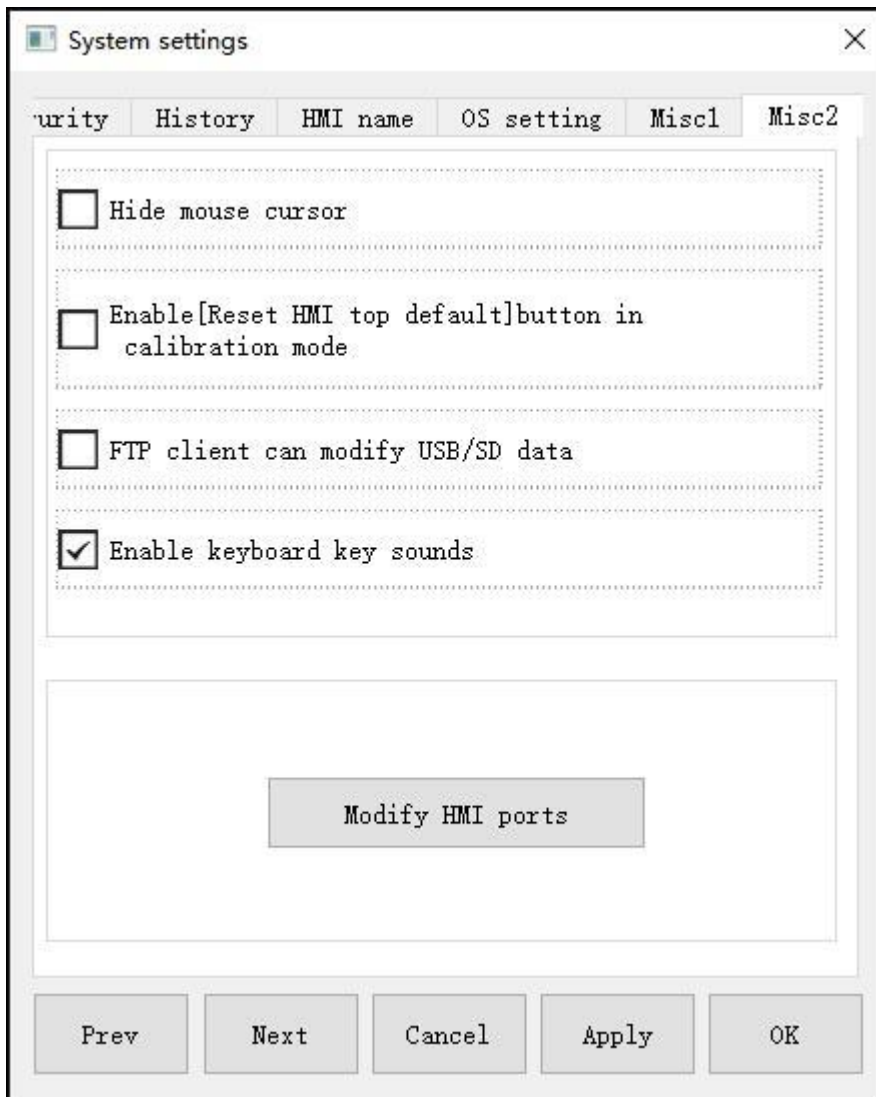
■ Misc 1 tab

Sliding switch for adjusting LCD brightness.



■ Misc 2 tab

Set whether to hide mouse cursor, and modify HMI port number.



If the [Hide mouse cursor] check box is selected, the system register LB-9018 will not be available for setting mouse cursor.

If the [Hide mouse cursor] check box is not selected, the system register LB-9018 will be available for hiding / showing mouse cursor.

The priority of system settings is higher than the system register.

System Setting Bar

After booting HMI, users can set the system with system setting bar at the bottom of the screen. Normally, this bar is hidden automatically. Only by touching the target at the bottom-right corner of the screen will the system setting bar pop up.

Click on an icon for more information.



[Wish to know how to hide HMI System Setting Bar?](#)

System register [LB-9020: show / hide system setting bar] in SmartManager Pro can also enable / disable system setting bar. When LB-9020 is set ON, the bar is displayed, and set OFF to hide the bar.

Tutorials

Barcode Device / Keyboard

HMI can connect with USB / COM port barcode reader or keyboard. Please add Barcode Scanner/Keyboard device in [\[System Parameter Settings \ Device\]](#) tab.

Parameters in this tab determines the attributes of each device connected with HMI. The device can be a device, remote HMI, or PC.

Click on an area for more information.

System Parameter Settings

Cellular Data Network | Printer/Backup Server | Time Sync./DST | E-mail | Recipe Database | Extended Memory

Device | Model | General | System | Remote | security

Device	Name	Location	Device	Interface	I/F Protocol
Local HMI	Local HMI	Host	MR0701NE(8...	-	-
Local HMI	MODBUS RTU	Host	MODBUS RT...	COM1(9600,E...	Serial port

< | >

New HMI | **New device** | Delete | Settings/Security

OK | Cancel | Help

When finish setting, a new device will be added to the [Device list].

Now the barcode reader can be selected in [Device] when creating an object, and use the relevant address types.

Address type	Device type	Address	Description
Bit	FLAG	FLAG-0	Indicates the status of data reading. When reading data, the status of FLAG is set OFF and will return ON when finish reading successfully.

	RESET	RESET-0	Clears the data of BARCODE and RESULT when set ON.
	CONNECT_STATUS	CONNECT_STATUS-0	Indicates whether the barcode reader (USB interface) is connected. When the status is ON, the barcode reader is connected.
Word	BARCODE	BARCODE-0	Number of bytes currently read.
		BARCODE-1 ~ n	Stores the data read.
	RESULT	RESULT-0	Indicates the result of data reading. The following data indicate: 0x00: Ready. 0x01: Data successfully read. 0x02: Invalid data format. 0x03: Exceeds the number of bytes specified in [Read byte limit]. 0x04: The data does not identify with the specified start code. 0x05: The data does not identify with the specified terminator.

Note: HMI can only connect with one USB barcode reader. When the device list in the project includes this kind of device, the system register [LB-9064: enable USB barcode device (disable keyboard) (when ON)] will set ON. To enable USB keyboard again and stop using USB barcode reader, please set LB-9064 OFF.

Data Sampling

Defines how the data is sampled by address and data length, and then use Trend Display, Circular Trend Display, and History Data Display objects to display sampling records.

Note: The maximum number of configurable data is 256.

Click on an area for more information.

Data Sampling

Number	Comment	Read address	Sampling method	Trigger address	Start control address	Stop control address	Auto
1		Local HMI:LW...	Time-based	Disable	Disable	Disable	Disab

Event (Alarm) Log

Defines event content and trigger condition. The system will trigger events according to the condition, and then displays messages in [Event Display](#)、[Alarm Display](#), and [Alarm Bar](#) objects.

Click on an area for more information.

Event(Alarm) Log

Current type: All[1]

Number	Class	Event content	Address type	Trigger condition	Read address	Notifi
1	0	Event 0	WORD	< 0	Local HMI:LW...	Disable

< >

☒ Enable back light when alarm occurs

☒ Save to HMI
 ☐ Save to USB1
 ☐ Save to USB2

☒ File retention time limit
 Save time: 7 Sky

Add... Insert... Delete Set... Export... Import...

Copy Paste Paste (add mode) Close

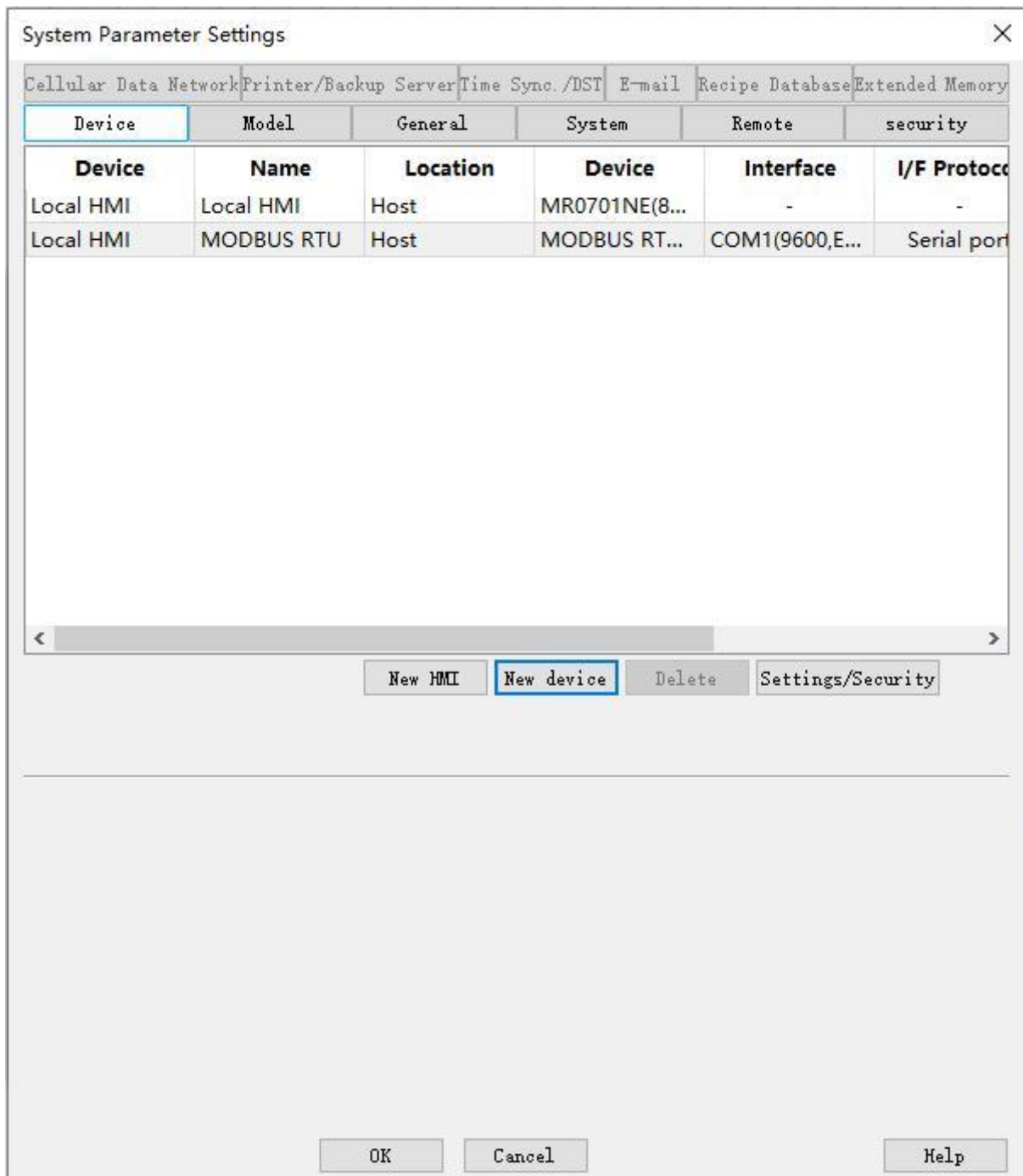
System Parameter Settings \ Device

[\[Printer/Backup Server\]](#)
[\[Time Sync./DST\]](#)
[\[Recipe Database\]](#)
[\[Cellular Data Network\]](#)

[\[Device\]](#)
[\[Model\]](#)
[\[General\]](#)
[\[System Setting\]](#)
[\[Remote\]](#)
[\[Security\]](#)
[\[Extended Memory\]](#)

Parameters in this tab determines the attributes of each device connected with HMI. The device can be a device, remote HMI, or PC.

Click on an area for more information.



System Parameter Settings \ Model

[\[Printer/Backup Server\]](#) [\[Time Sync./DST\]](#) [\[Recipe Database\]](#) [\[Cellular Data Network\]](#)

[\[Device\]](#) [\[Model\]](#) [\[General\]](#) [\[System Setting\]](#) [\[Remote\]](#) [\[Security\]](#) [\[Extended Memory\]](#)

Parameters in this tab determines the HMI model, timer, printer and scroll bar settings.

Click on an area for more information.

System Parameter Settings [X]

Cellular Data Network | **Printer/Backup Server** | Time Sync./DST | E-mail | Recipe Database | Extended Memory

Device | **Model** | General | System | Remote | security

HMI model: MRO701NE(800x480) [v] Horizontal [v]

station no. : 0 [v]

Prot no. : 8000 [text]

☒ Support HMI communication protocol

Prot no. : 8010 [text] (connection port number used by HMI as MODBUS ,

Clock

Clock source: External device [v]

Device: Local HMI [v] [Settings...]

Address: LW [v] 0 [text] [text] 6-bit Unsigned

Printer

Type: None [v]

Scroll bar:

Scroll bar style: Style 2 (blue) [v] [Image]

Width: ☒ Small ☐ Middle ☐ Large

Pass through(Virtual COM port)

Prot no. : 2000 [text] (2000~2100) ☐ Enable RSLinux broadcast reply command

OK Cancel Help

System Parameter Settings \ General

[\[Printer/Backup Server\]](#) [\[Time Sync./DST\]](#) [\[Recipe Database\]](#) [\[Cellular Data Network\]](#)

[\[Device\]](#) [\[Model\]](#) [\[General\]](#) [\[System Setting\]](#)
[\[Remote\]](#) [\[Security\]](#) [\[Extended Memory\]](#)

Parameters in this tab determines all properties related to screen display.

Click on an area for more information.

System Parameter Settings

Cellular Data Network | Printer/Backup Server | Time Sync./DST | E-mail | Recipe Database | Extended Memory

Device | Model | **General** | System | Remote | security

Options

☐ Enable fast display mode when change window ☒ Enable the RW_A register

Windows

Startup window no. : 10.WINDOWDOWN_010

Common window: Above basic window Object layout: Nature

Screen saver

Back light saver: 30 Minute

☒ Enable backlight when alarm occurs

Screen saver: 25 Minute

Saver window no. : 80.Screen Saver

Fast selection button

Attributes: Enable Settings...

Position: Left ☐ Hide button when HMI starts

Event

☒ Use LW9450~9455 as the time tags of event logs

Time tag format: BCD

Keyboard

50.Keypad 11 - Integer
56.Keypad 7 - HEX
57.Keypad 8 - Floating
58.Keypad 9 - Numeric

Add Delete

External keyboard layout mode (LW-9199)

☒ QWERTYT(0) ☐ AZERTYT(1)

Caret color:

Select color:

Project protection

☒ Enable Project key: 111111 (Range:0~4294301750)

* If this key is different from HMI key, the project will not be executed normally

OK Cancel Help

System Parameter Settings \ System Setting

[\[Printer/Backup Server\]](#) [\[Time Sync./DST\]](#) [\[Recipe Database\]](#) [\[Cellular Data Network\]](#)

[\[Device\]](#) [\[Model\]](#) [\[General\]](#) **[System Setting]** [\[Remote\]](#) [\[Security\]](#) [\[Extended Memory\]](#)

Parameters in this tab determines different functions of EasyBuilder Pro, some of them have same function as system registers.

Click on an area for more information.

The screenshot shows the 'System Parameter Settings' dialog box with the 'System' tab selected. The dialog has a title bar with a close button (X). Below the title bar is a tabbed interface with tabs for 'Cellular Data Network', 'Printer/Backup Server', 'Time Sync./DST', 'E-mail', 'Recipe Database', and 'Extended Memory'. The 'System' tab is active, showing various settings. At the top, there are sub-tabs: 'Device', 'Model', 'General', 'System' (selected), 'Remote', and 'security'. The settings include: 'Startup language after redownloading the project' set to 'Language1'; 'Delay time of device communication after HMI starts' set to '2' seconds, with an unchecked checkbox for 'When HMI is started, it contains the code of delaying initialization macro instruction'; 'Execute init. macro when power on' checked, with 'Macro' set to '[000] macro_0'; 'Auto logout' section with 'Enable' checked and time set to '1' minute, and a note '* When a user does not operate the HMI for longer than the setting time, the system will autom:'; 'Hide system settings bar' unchecked, 'Hide mouse cursor' checked, and 'Mouse cursor size' set to 'Default', with a note '* Use LB-9062 to open the hardware settings dialog'; 'Sound control' section with 'With each operation from a button, a sound is emitted' selected (radio button), and 'Disable sound output (or use LB-9019 to disable/enable sound output)' unchecked; 'Disable upload function (effective after rebooting HMI) (or set LB9033 ON)' checked; 'Display disconnection icon on already shown objects after communication fails' unchecked; 'Enable watchdog (LB-9049)' checked, with 'Restart HMI' selected from a dropdown and 'Timeout (LW-11)' set to '5' seconds. At the bottom are 'OK', 'Cancel', and 'Help' buttons.

Cellular Data Network	Printer/Backup Server	Time Sync./DST	E-mail	Recipe Database	Extended Memory
Device	Model	General	System	Remote	security

Startup language after redownloading the project: Language1

Delay time of device communication after HMI starts: 2 second(s)

☐ When HMI is started, it contains the code of delaying initialization macro instruction

☒ Execute init. macro when power on Macro: [000] macro_0

Auto logout

☒ Enable 1 Minute

* When a user does not operate the HMI for longer than the setting time, the system will autom:

☐ Hide system settings bar ☒ Hide mouse cursor Mouse cursor size: Default

* Use LB-9062 to open the hardware settings dialog

Sound control

☐ With each touch on a button, a sound is emitted

☒ With each operation from a button, a sound is emitted

☐ Disable sound output (or use LB-9019 to disable/enable sound output)

☒ Disable upload function (effective after rebooting HMI) (or set LB9033 ON)

☐ Display disconnection icon on already shown objects after communication fails

☒ Enable watchdog (LB-9049) Restart HMI Timeout (LW-11) 5 second(s)

OK Cancel Help

System Parameter Settings \ Remote

[\[Printer/Backup Server\]](#) [\[Time Sync./DST\]](#) [\[Recipe Database\]](#) [\[Cellular Data Network\]](#)

[\[Device\]](#) [\[Model\]](#) [\[General\]](#) [\[System Setting\]](#) **[Remote]** [\[Security\]](#) [\[Extended Memory\]](#)

This tab is for setting functions relating to remote connection. Certain functions can be carried out by using system registers.

Click on an area for more information.



System Parameter Settings \ Security

[\[Printer/Backup Server\]](#) [\[Time Sync./DST\]](#) [\[Recipe Database\]](#) [\[Cellular Data Network\]](#)

[\[Device\]](#) [\[Model\]](#) [\[General\]](#) [\[System Setting\]](#) [\[Remote\]](#) **[Security]** [\[Extended Memory\]](#)

Parameters in this tab determines the user passwords and security classes.

In [General mode] up to 12 sets of user and password are available. There are six security classes available: A to F.

Click on an area for more information.

System Parameter Settings

Cellular Data Network Printer/Backup Server Time Sync./DST E-mail Recipe Database Extended Memory

Device Model General System Remote **security**

☒ General mode ☐ Enhanced security mode Edit

Select operable classes for each user

NO.	Enable	Password	Class A	Class B	Cl
1	☒	0	☒	☒	
2	☒	222	☒	☒	
3	☒	333	☒	☐	
4	☒	0	☒	☐	
<					>

Project password

☒ Enable Password: 123456 Range (1~4294967295)

OK Cancel Help

System Parameter Settings \ Extended Memory

[\[Printer/Backup Server\]](#) [\[Time Sync./DST\]](#) [\[Recipe Database\]](#) [\[Cellular Data Network\]](#)

[\[Device\]](#) [\[Model\]](#) [\[General\]](#) [\[System Setting\]](#) [\[Remote\]](#) [\[Security\]](#) **[Extended Memory]**

Parameters in this tab determines the location of the extended memory.

Extended memory is numbered from EM0 to EM9. It works in a way similar to other device types in HMI. Users can simply select from device type list while adding a new object.

Extended memories are saved as files in SD card or USB disk. EM0 to EM9 are saved as "em0.emi" to "em9.emi" respectively. Users can use RecipeEditor to open these files and edit the data in the

extended memory. External devices such as SD card and USB disk are not affected by power loss. Data stored in these devices is retained regardless of HMI power conditions.

When the device of extended memory does not exist and to read data in it, the data content will be "0"; to write data to a device that does not exist, the "Device no response" message will be shown in HMI.

HMI supports hot swapping function for SD card and USB disk. Users can insert or remove the device for extended memory without cutting the power. With this function, users can update or take data in extended memory.

System Parameter Settings \ Printer/Backup Server

[Printer/Backup Server] [\[Time Sync./DST\]](#) [\[Recipe Database\]](#) [\[Cellular Data Network\]](#)

[\[Device\]](#) [\[Model\]](#) [\[General\]](#) [\[System Setting\]](#) [\[Remote\]](#) [\[Security\]](#) [\[Extended Memory\]](#)

Parameters in this tab determines the remote server configuration.

After setting, [Function Key](#) or [PLC Control](#) object can be used to trigger remote printer function, or set [Backup](#) object to trigger backup of the history data.

Click on an area for more information.

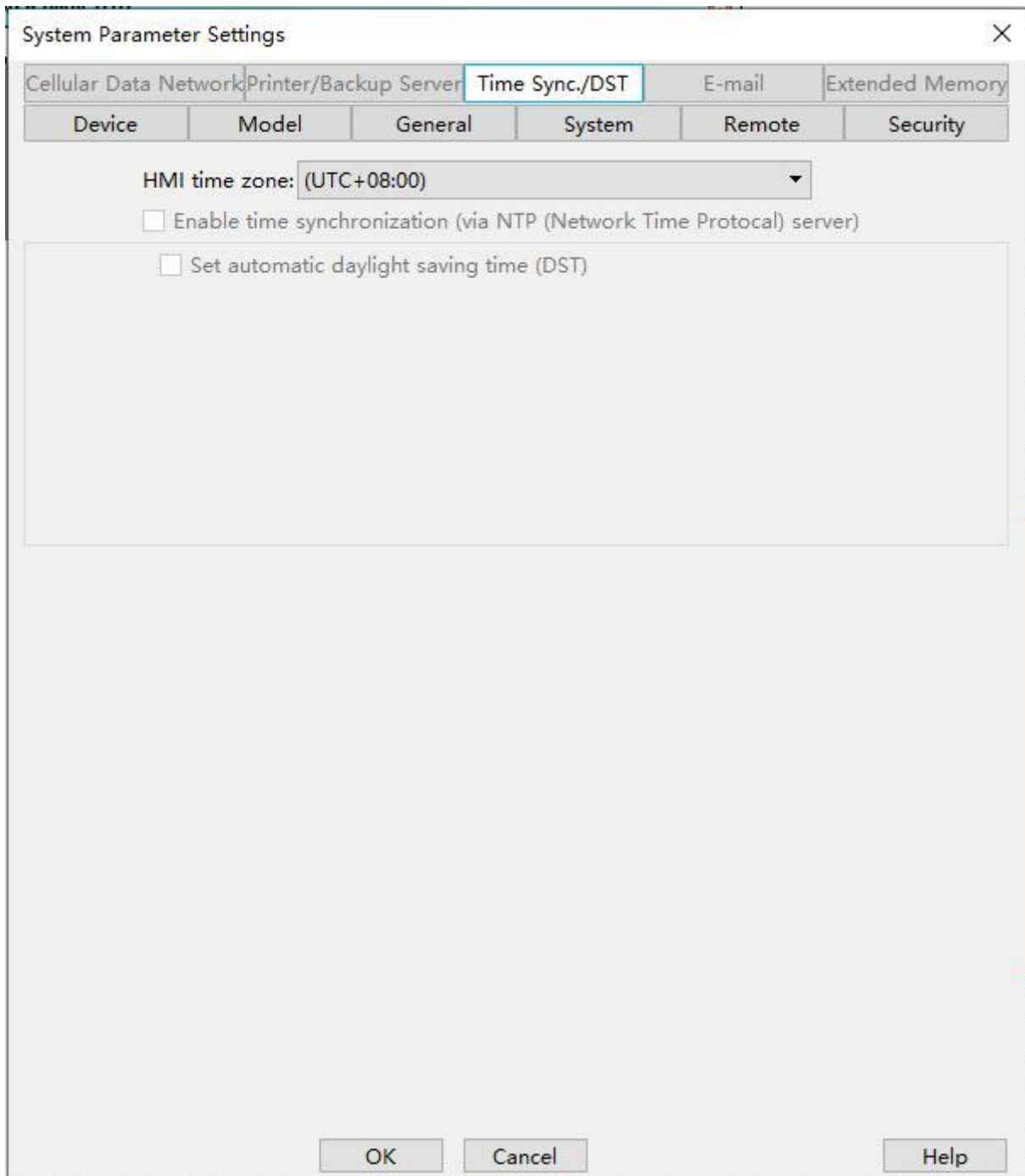
System Parameter Settings \ Time Sync./DST

[Printer/Backup Server] **[Time Sync./DST]** [\[Recipe Database\]](#) [\[Cellular Data Network\]](#)

[\[Device\]](#) [\[Model\]](#) [\[General\]](#) [\[System Setting\]](#) [\[Remote\]](#) [\[Security\]](#) [\[Extended Memory\]](#)

This tab can be used to configure the synchronization of HMI time with NTP server, and daylight saving time.

Click on an area for more information.



System Parameter Settings \ Cellular Data Network

[\[Printer/Backup Server\]](#) [\[Time Sync./DST\]](#) [\[Recipe Database\]](#) [\[Cellular Data Network\]](#)

[\[Device\]](#) [\[Model\]](#) [\[General\]](#) [\[System Setting\]](#)
[\[Remote\]](#) [\[Security\]](#) [\[Extended Memory\]](#)

Parameters in this tab determines the related configuration of cellular network. Click [Here](#) to find the supported 3G/4G dongles.

Recipe Database

Set the recipe format including item name, data type, and other properties.

After setting, the recipe content can be edited by [Records of Recipe Database](#) , and displayed by [Recipe View](#) object, and the recipe data can be transmitted using [components](#) .

Click on an area for more information.

Recipe Data

Recipe Database Recipe log

Recipe table

Recipe

	Item name	Data format	Size	Width	Decimal	Align
1	NewItem	16bit-BCD	1	5	0	Left
2	NewItem1	32bit-Float	2	5	0	Left
3	NewItem2	16bit-Unsigned	1	5	0	Left

Import... Export... New Delete Set...

Recipe Control Address

Device: Local HMI Settings...

Address: LW 8900

OK Cancel Help

Index Register

SmartManager Pro provides index registers for changing addresses flexibly. With index registers, object's read/write address can be changed directly on HMI without modifying its settings.

There are 32 index registers, divided into 16-bit and 32-bit.

16-bit index register: [LW-9200 (16bit): address index 0] ~ [LW-9215 (16bit): address index 15]

32-bit index register: [LW-9230 (32bit): address index 16] ~ [LW-9260 (32bit): address index 31]

Address

Device: Local HMI

Address Type: LW

Address: 0 ☐ System tag ☐ User-defined tag

Address Format: DDDDD [Range: 0~12000]

Index: INDEX 0 (16-bit) ☒ Index register

16bit-Unsigned

To make calculation(arithmetic operations+*/or more)form raw data,use an user-defined tag

Tag Library... OK Cancel

While using index register, the address is designated by the following equation:

The constant set in [Address] + the value in the chosen [Index Register].

Example:

■ Word format

Set read address to LW-20, use index register 1 (LW-9201), and the value in LW-9201 is 10.

The system will read the value in LW-30.

■ Bit format

Set read address to LB-20, use index register 3 (LW-9203), and the value in LW-9203 is 1 (1 word = 16 bits).

The system will read the state of LB-36.

Note: When using index registers for bit addresses, 16 bit addresses will be calculated as one unit.

Recipe Data

Recipe Data refers to the data stored in RW and RW_A addresses. The way of reading and writing these addresses is the same as operating a word register. The difference is that recipe data is stored in flash memory, when restarting HMI, the latest data records in RW and RW_A are kept.

Users can update recipe data with SD card, USB disk, USB cable or Ethernet and use the data to update device data. Recipe Data can also be uploaded to PC; furthermore, device data can be saved in recipe data. The following explains the ways of transferring recipe data.

■ **Updating recipe data with Ethernet or USB cable**

Click [Download] in SmartManager Pro. Select [RW] and [RW_A] and designate the directory of the source files. After downloading is completed, start up HMI again, and the contents of RW and RW_A will be updated.

When [Reset recipe] check box is selected, the system will clear all the data in [RW] and [RW_A] before downloading.

■ **Updating recipe data with SD card or USB flash drive**

Open SmartManager Pro and click [Build Download Data for SD Card or USB Disk].

Insert SD card or USB flash drive to PC and click [Browse] to assign the file path and then click [Build] to set all contents of the downloaded data. SmartManager Pro will then build the sources into SD card or USB flash drive.

Note: When download data is successfully built, one folders can be found: ftp. history is for storing recipe data and data sampling / event log records. Please manually reboot HMI to update recipe data.

■ **Transferring recipe data**

Use Data Transfer (Trigger-based) object to transfer recipe data to the specified address, or save the data of the designated address in RW and RW_A as well.

■ **Saving recipe data automatically**

In order to prolong the life span of HMI flash memory, system will automatically save the recipe data to HMI every minute. To avoid losing data when turning HMI off during the interval of saving data, system register [LB-9029: save all recipe data to machine (set ON)] is provided. Set ON LB-9029 will force system to save recipe data once. Set ON [LB-9028: reset all recipe data (set ON)], system will clear all recipe data.

Security Function

Smartmanager Pro divides component security into:

■ **User Password**

Set user password and operable classes.

Parameters in this tab determines the user passwords and security classes.

In [General mode] up to 12 sets of user and password are available. There are six security classes available: A to F.

Click on an area for more information.

The screenshot shows the 'System Parameter Settings' dialog box with the 'security' tab selected. The 'General mode' radio button is chosen. Below the mode selection, there is a table titled 'Select operable classes for each user'. The table has columns for 'NO.', 'Enable', 'Password', 'Class A', 'Class B', and 'Class C'. The first four rows are visible, showing users 1 through 4. User 1 has password '0' and is enabled for Class A and Class B. User 2 has password '222' and is enabled for Class A and Class B. User 3 has password '333' and is enabled for Class A. User 4 has password '0' and is enabled for Class A. Below the table, there is a 'Project password' section with an 'Enable' checkbox checked, a password field containing '123456', and a range '(1~4294967295)'. At the bottom of the dialog are 'OK', 'Cancel', and 'Help' buttons.

NO.	Enable	Password	Class A	Class B	Class C
1	☒	0	☒	☒	
2	☒	222	☒	☒	
3	☒	333	☒	☐	
4	☒	0	☒	☐	

Project password

☒ Enable Password: 123456 Range (1~4294967295)

■ [Security Setting](#)

Enable this function in the security tab of the component to control the use behavior of the component according to the security mechanism set by the user..

Protect object operation according to the selected authentication mode.

■ Security tab

Click on an area for more information.

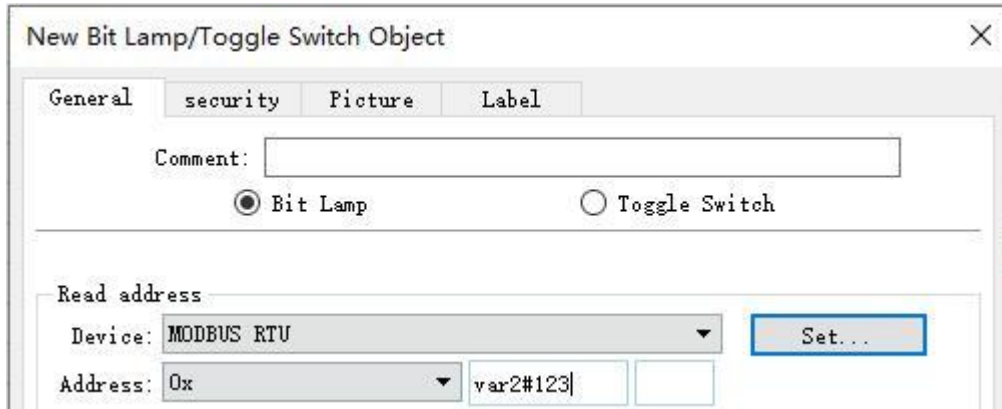
The screenshot shows the 'New Set Word Object' dialog box with the 'security' tab selected. The dialog has four tabs: 'General', 'security', 'Picture', and 'Label'. The 'security' tab contains the following sections:

- Safety control**: Includes a 'Min. press time (sec):' dropdown set to '0' and a checkbox for 'Display confirmation request' with a 'Max. waiting time(sec):' dropdown set to '10'.
- Enable/Disable**: Includes a checked checkbox for 'Use register status/value', radio buttons for 'Bit' (selected) and 'Word', a 'Device:' dropdown set to 'Local HMI', an 'Address:' dropdown set to 'LB' with a value of '0', an 'Enable if bit is:' dropdown set to 'ON', and an 'Action:' dropdown set to 'Do nothing when disabled'.
- User restriction**: Includes an 'Object class:' dropdown set to 'Class: A', three checkboxes ('Disable protection permanently after initial activation', 'Display warning message if access denied', and 'Make invisible while protected' - which is checked), and a note: '* IF the user tries to operate on an object without authorization, LB-'. There is also a 'Settings...' button.
- Sound**: Includes a checked checkbox for 'Enable', a 'Sound library...' button, and a 'Play' button.

At the bottom of the dialog are 'OK', 'Cancel', and 'Help' buttons.

Station Number Variable

When setting read / write address, enable station number variables. As shown below, “var2” is one of the 16 station number variables.



The syntax of the variable of a station number is: **varN#address**

In which N is an integer number from 0 to 15, and address means read / write address.

There are 16 variables to control the station number, from var0 to var15. The values of these variables are read from address LW-10000 to LW-10015 respectively.

For example: “var2#123” reads value from LW-10002, when the value in LW-10002 is “3”, var2#123 = 3#123, the station number is 3.

MODBUS TCP/IP Gateway (Under development)

To access the data of the device connected to HMI with SCADA software (Supervisory Control and Data Acquisition), the former way was to transfer device data to the HMI's local address first, and then use MODBUS TCP/IP protocol on PC to read HMI local address to get device data.

Now by using MODBUS TCP/IP Gateway provided by SmartManager Pro, the mapping of MODBUS address to device address can be defined first, and then one can directly use MODBUS TCP/IP protocol to access device data.



Steps to create an address mapping table. ([Notes about configuring address mapping](#))

Step 1. In [System Parameter Settings \ Device] tab, add the device. (In the example FATEK FB Series is used).

Step 2. Add MODBUS Server (Ethernet), select [Enable] check box under [MODBUS TCP/IP Gateway] as shown in the following figure.

Step 3. Click [Address Mapping Tables] button and the following default tables will be displayed. Modify the tables if needed or add new tables.

Step 4. For example, to access the data in the 50 consecutive registers of FATEK FB Series PLC starting from register D-0, configure the settings as shown in the following figure.

- (1) Select the device type of the registers to be mapped, in the example select [Word].
- (2) Select the mode to access the data in the mapped register, in the example set to [Read/Write].
- (3) Set the start address of MODBUS, in the example set to [4x-1].
- (4) Set the start address of the mapped PLC, in the example set to [D-0].
- (5) Set the range size of address mapping, in the example set to [50].
- (6) If needed, select high/low byte swap or high/low word swap.

The above figure shows that MODBUS Server 4x-1 ~ 4x-50 registers are mapped to FATEK FB Series PLC D-0 ~ D-49 registers.

Step 5. When finished, the data of FATEK FB Series PLC D-0 ~ D-49 registers are now accessible by using MODBUS TCP/IP protocol to send read / write command to 4x-1 ~ 4x-50 registers.

Notes about configuring address mapping

- UDP is not supported when using the MODBUS TCP/IP Gateway function.
- This function is only supported by MODBUS Server (Ethernet) interface.
- The defined register range must not overlap between different mapping tables.
- If [MODBUS TCP/IP Gateway] is enabled, EasyBuilder Pro will cancel the original mapping between MODBUS Server and HMI register. That includes:

- 0x, 1x mapped to LB

- 3x, 4x mapped to LW / RW

Therefore, to access data in LB or LW register via 0x, 1x, 3x, 4x, configure the address mapping table again. The following figure is an example.

Table	Description	MODBUS Address		PLC Name	Mapped PLC Address	Table Size	Read/Write
1	0x <==> LB	0x-1	<==>	Local HMI	LB-0	12400 Bit(s)	Read/Write
2	1x <==> LB	1x-1	<==	Local HMI	LB-0	12400 Bit(s)	Read only
3	3x <==> LW	3x-1	<==	Local HMI	LW-0	9999 Word(s)	Read only
4	4x <==> LW	4x-1	<==>	Local HMI	LW-0	9999 Word(s)	Read/Write
5	3x <==> RW	3x-10000	<==	Local HMI	RW-0	55536 Word(s)	Read only
6	4x <==> RW	4x-10000	<==>	Local HMI	RW-0	55536 Word(s)	Read/Write

- System register LW-9288 is used to indicate if data transfer has been correctly executed.

The following error codes represent:

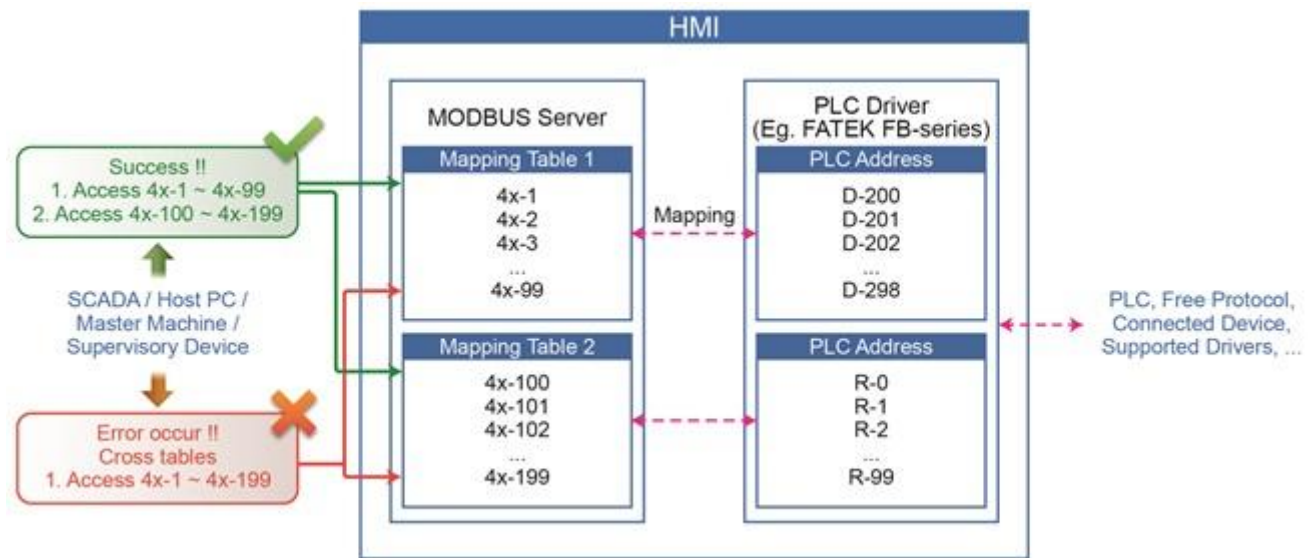
Value	Definition
0	Normal
1	Read or write the register that is not defined in the Address Mapping Table.
2	Read or write a range of registers that is not within the range defined in a single Address Mapping Table. (Or, read / write a register that is defined in other Address Mapping Table.)
3	The command format does not follow MODBUS TCP/IP protocol.
4	Modify a read-only register.
5	Read a write-only register.
6	Cannot get the correct reply from device within the specified time range.
7	Use a function code that is not supported by MODBUS Server.

- SCADA can only read / write the register defined in one Address Mapping Table at one time, that is, the same MODBUS command cannot access the data in the registers defined in different Address Mapping Tables.

Table	Description	MODBUS Address		PLC Name	Mapped PLC Address	Table Size	Read/Write
1	Access D200 ~ D298	4x-1	<==>	FATEK FB Series	D-200	99 Word(s)	Read/Write
2	Access R0 ~ R99	4x-100	<==>	FATEK FB Series	R-0	100 Word(s)	Read/Write

As shown in the above figure, in Mapping Table 1 set MODBUS 4x-1 to access register D-200, table size 99 words, and in Mapping Table 2 set MODBUS 4x-100 to access register R-0, table size 100 words. If using SCADA to send a command to read from 4x-1 to 4x-199, table size 199 words, since the range spans two different tables, the command will not be accepted by HMI. Instead, access the

data with two separate commands (4x-1 ~ 4x-99 and 4x-100 ~ 4x-199), each reading only from one table as shown in the following figure.



Reference Information

Default Keyboard Shortcuts

SmartManager Pro provides shortcuts to help you quickly build projects. The keyboard shortcuts appear next to the command names.

Basic operation commands	Shortcut
New	Ctrl + N
Open	Ctrl + O
Save	Ctrl + S
Print	Ctrl + P
Undo	Ctrl + Z
Redo	Ctrl + Y
Cut	Ctrl + X
Copy	Ctrl + C
Paste	Ctrl + V
Delete	Delete
Find / Replace Address	Ctrl + F
Decrease Height	Ctrl + Up
Increase Height	Ctrl + Down
Decrease Width	Ctrl + Left
Increase Width	Ctrl + Right
Close Window	Ctrl + W

Select All Objects	Ctrl + A
Home	Home
Zoom In	Ctrl +
Zoom Out	Ctrl -
Zoom Level 100%	Ctrl + 0
Touch Area	Ctrl + Shift + A
Jump to selected shape/picture libraries	Ctrl + G
Compile	F5
On-line Simulation	Ctrl + I
Off-line Simulation	Ctrl + T
Download	F7
Upload	F8
Macro	Ctrl + M
Help	F1

ASCII Chart

Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char
32	20	(space)	64	40	@	96	60	`
33	21	!	65	41	A	97	61	a
34	22	"	66	42	B	98	62	b
35	23	#	67	43	C	99	63	c
36	24	\$	68	44	D	100	64	d
37	25	%	69	45	E	101	65	e
38	26	&	70	46	F	102	66	f
39	27	'	71	47	G	103	67	g
40	28	(	72	48	H	104	68	h
41	29	)	73	49	I	105	69	i
42	2A	*	74	4A	J	106	6A	j
43	2B	+	75	4B	K	107	6B	k
44	2C	,	76	4C	L	108	6C	l
45	2D	-	77	4D	M	109	6D	m
46	2E	.	78	4E	N	110	6E	n
47	2F	/	79	4F	O	111	6F	o
48	30	0	80	50	P	112	70	p
49	31	1	81	51	Q	113	71	q
50	32	2	82	52	R	114	72	r
51	33	3	83	53	S	115	73	s
52	34	4	84	54	T	116	74	t
53	35	5	85	55	U	117	75	u
54	36	6	86	56	V	118	76	v
55	37	7	87	57	W	119	77	w
56	38	8	88	58	X	120	78	x
57	39	9	89	59	Y	121	79	y

58	3A	:	90	5A	Z	122	7A	z
59	3B	;	91	5B	[	123	7B	{
60	3C	<	92	5C	\	124	7C	
61	3D	=	93	5D	]	125	7D	}
62	3E	>	94	5E	^	126	7E	~
63	3F	?	95	5F	_			

Object ID Mapping Table

The following table lists the corresponding Object ID for each object. Whether to show Object ID can be set in [\[Preferences \ Display\]](#) tab. Object ID can be seen in the editing window or in the [Window Tree](#).

Object Name	Object ID
Text/Comment	TX
Picture	GP
Shape	SP
Table	TB
Bit Lamp	BL
Word Lamp	WL
Set Bit	SB
Set Word	SW
Toggle Switch	TS
Multi-State Switch	MS
Function Key	FK
Combo Button	CB
Slider	SL
Option List	OL
Numeric	NE
ASCII	AE
Pie Chart	PC
Dynamic Scale	DS
Data Block Display	BD
XY Plot	XY
Bar Graph	BG
Meter Display	MD
Dynamic Drawing	DO
Moving Shape	MV
Animation	AN
Flow Block	FB
Indirect Window	WP
Direct Window	WC
Data Transfer (Per-page)	RP
Picture View	PV
PDF Reader	PR

Media Player	MP
Video In	VI
2D Barcode Display	QR
Barcode Scanner	BS
Date/Time	DC
VNC Viewer	RA
Recipe View	RV
Contacts Editor	CE
File Browser	FR
Trend Display	TD
Circular Trend Display	IT
History Data Display	DD
Alarm Bar	AB
Alarm Display	AL
Event Display	ED
Event Bar Chart	GC
Backup (Per-page)	BU
Operation Log View	OV
SQL Query Result Viewer	SV
Demand Display	EI

External Device Download Settings

Apart from downloading project via Ethernet or USB cable, downloading project file using an external device is also possible.

Insert the external device to HMI, browse for a directory, the data in the directory will all be downloaded to HMI.

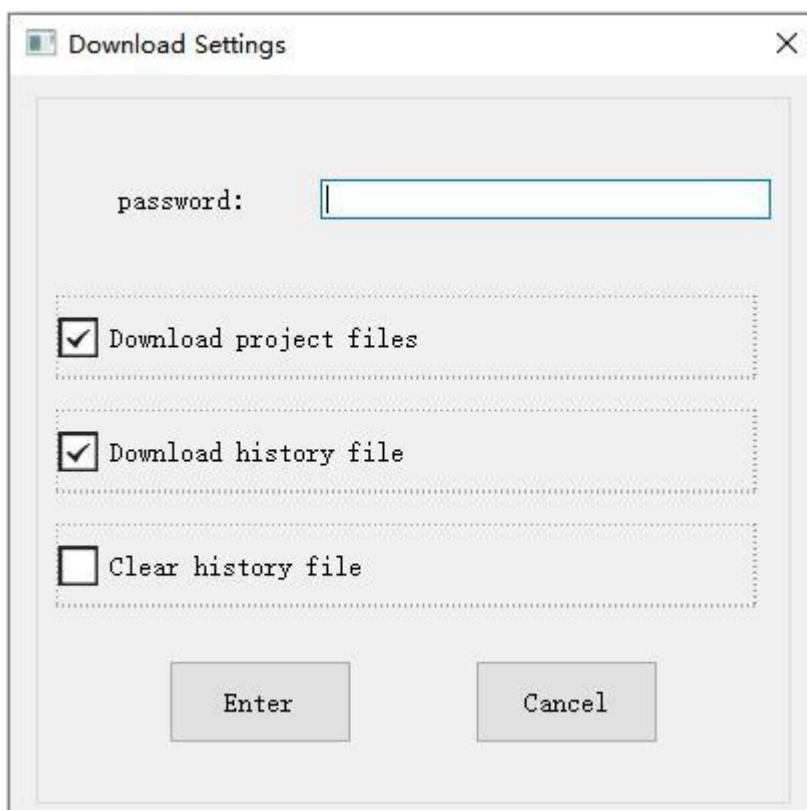
Note: The download data must be created in [\[Build Download Files\]](#) first.

■ Download Process

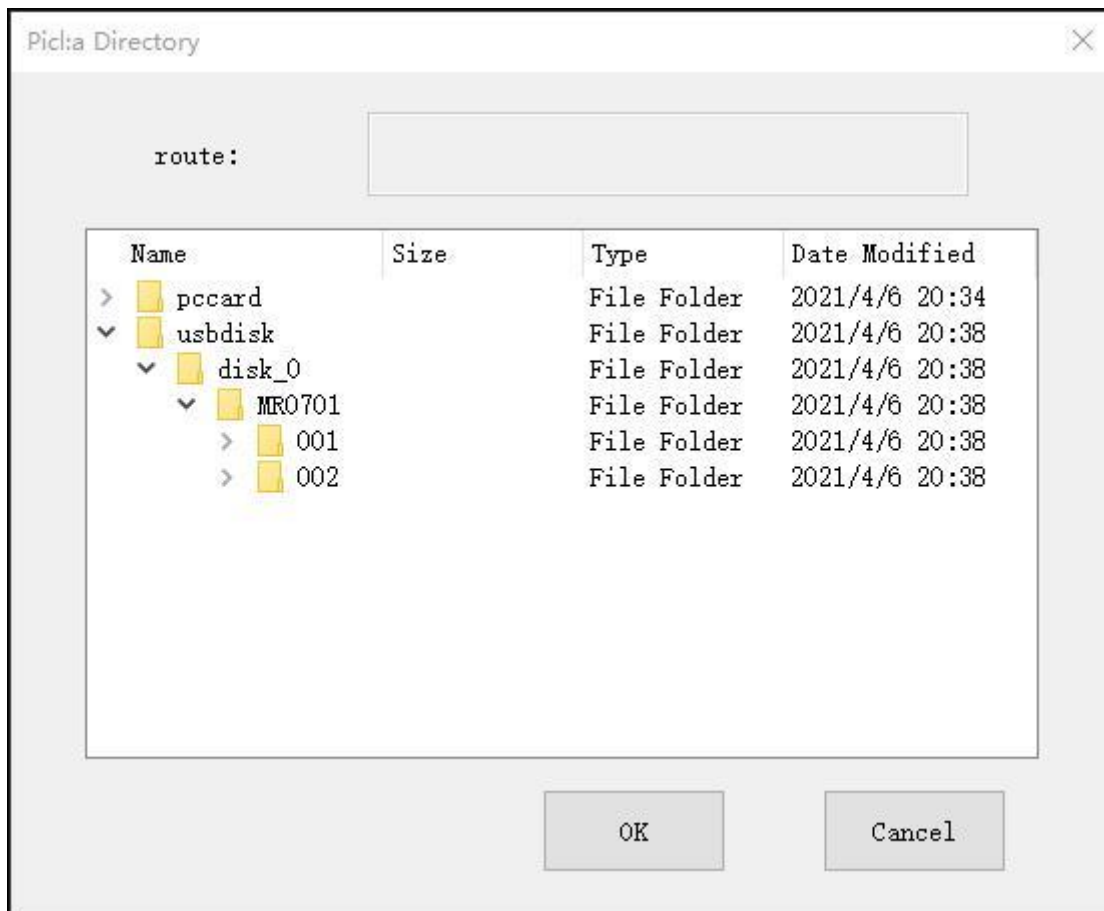
When HMI detects an external device, the following screen appears:



Enter the download password.



The directory of the external device is shown. (pccard: SD card; usbdisk: USB disk)



Please select the parent directory of the generated files when downloading. For the structure above, please select disk_0, not MR0701.

■ Upload Process

The upload process via an external device is almost the same as download.

Insert the external device, click upload, enter password, select the upload directory and then click OK.

Upload Settings

password:

☒ Upload project files

☐ Upload history file

Enter Cancel

- Upload project: Upload only project.exhmi file.