

EC200 series

Human Machine Interface



A hand is shown touching a tablet screen. The screen displays a target icon (three concentric circles) and a power button icon (a circle with a vertical line). The background is a blurred image of the tablet's interface, with a white outline of the tablet's frame visible on the left side.

EC200 series

Excellent performance



t o u c h e d t h e f u t u r e





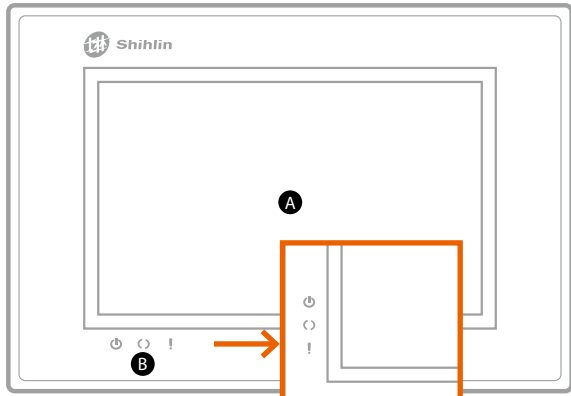
Model Description

EC2 10 – CT 11

(A) (B) (C) (D)

- (A) EC200 Series
- (B) Dimensions of the HMI
 - 05 : 4.7"
 - 07 : 7"
 - 08 : 8"
 - 10 : 10.2"

- (C) Screen Formats
 - CT : TFT Color Model
- (D) Series Types
 - 0S : Economic Model Model
 - 0A : Economic Model Model
 - 00 : Basic Model
 - 1S : Economic Model with Ethernet
 - 11 : Ethernet Model



EC207 / EC210

EC205 / EC208

EC207-CT0S, EC207-CT1S without indicator light.

Description of the Components

A : Display Section

B : Lamp

	Power Lamp
	Run Lamp
	Alarm Lamp

C : Battery Holder

D : USB Port(Slave)

E : USB Port(Host)

F : Ethernet Connector

G : Audio Output

H : SD Slot

I : DC Power Terminal

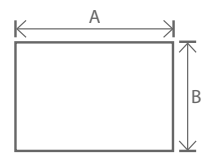
J : COM1 Port(Support RS232/422/485)

K : COM2 Port

L : COM3 Port (Support RS232)

Economic Model	RS422 / 485
Basic Model	RS232 / 422 / 485
Ethernet Model	

Portiforium Dimensions

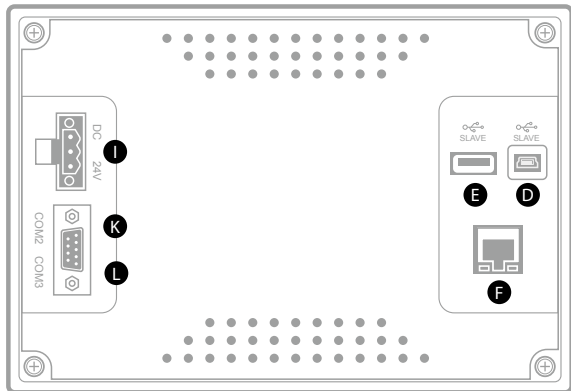


單位 : mm

Model Type	A	B
EC210	259	201
EC208	218	165
EC207	192	138
EC205	139	94.1

Economic Model

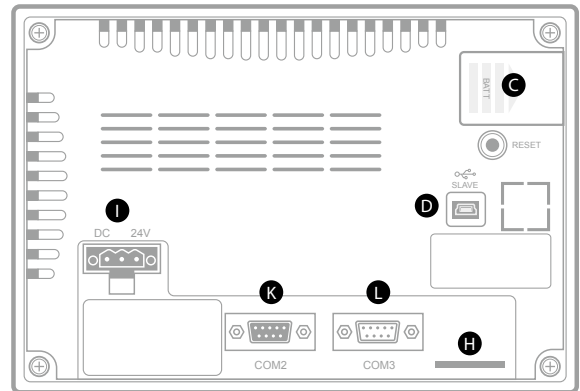
EC207-CT0S、EC207-CT1S



DC Power Input TFT 65536 Color LED Backlight Sources WVGA 800*480 USB Port*1 COM Port*2

CE Certified * EC207-CT0S Not Support Ethernet

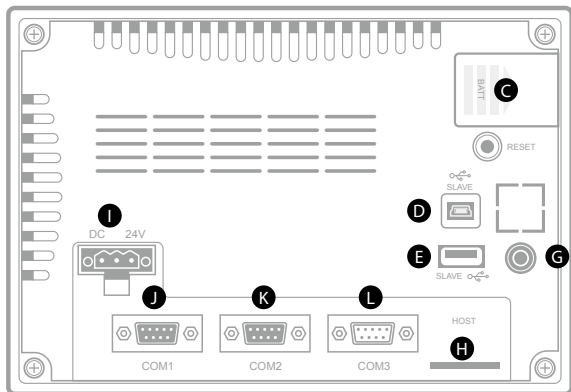
EC205-CT0A / EC207-CT0A



DC Power Input TFT 65536 Color LED Backlight Sources WVGA 800*480 USB Port*1 COM Port*2

SD Memory Card Supported CE Certified EC205 : WVGA 480*272 * EC205-CT0A Not Support SD Memory Card * EC205-CT0A COM2&COM3 Two In One

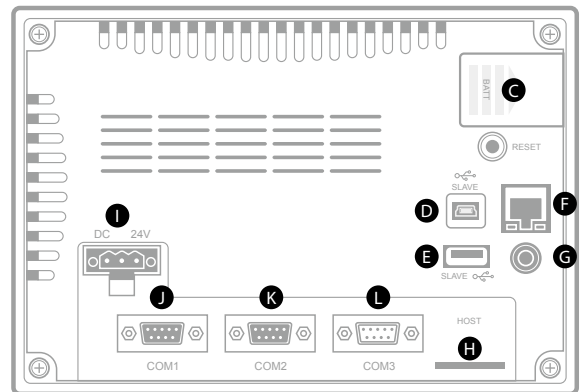
Basic Model EC207-CT00 / EC208-CT00 / EC210-CT00



DC Power Input TFT 65536 Color LED Backlight Sources WVGA 800*480 USB Port*2 COM Port*3

SD Memory Card Supported Audio Output CE Certified EC208 : SVGA 800*600

Ethernet Model EC207-CT11 / EC208-CT11 / EC210-CT11



DC Power Input TFT 65536 Color LED Backlight Sources WVGA 800*480 USB Port*2 COM Port*3

Ethernet 10/100M SD Memory Card Supported Audio Output CE Certified EC208 : SVGA 800*600

HMI EC200 Series

Hardware Performance

UP!!

Boot time speed up!
Macro execution speed up!



Persistent Storage Memory

It supports perpetual calendar, history data storage of internal log, advanced alarm, etc.

Standard USB and SD Memory Card

It's SD card and USB supportable for saving HMI files, recipe file, alarm file, parts image, etc.

1. EC205-CT0A and, EC207-CT0A USB flash drives not supported
2. EC205-CT0A, EC207-CT05 and EC207-CT15 SD cards not supported

Vertical / Horizontal Display

EC205-CT0A model add a function which is vertical / horizontal display. The designer can adjust the display direction easily by panel size or user's demand.

Audio Output

Connect the audio speakers to the HMI audio output .The WAV files can be imported to HMI and set to play when an alarm event is triggered.

*EC205-CT0A, EC207-CT0A, EC207-CT05 and EC207-CT15 audio output not supported.

Multilingual Support



With multilingual function, international user can operate HMI easily .User can easily select the required language from the switch language function.

Bitmap TrueType



Traditional Chinese	Japanese	German	Norwegian	French	Turkish
Simplified Chinese	Dutch	Icelandic	Portuguese	Italian	Thai
English	Finnish	Irish	Spanish	Danish	Russian

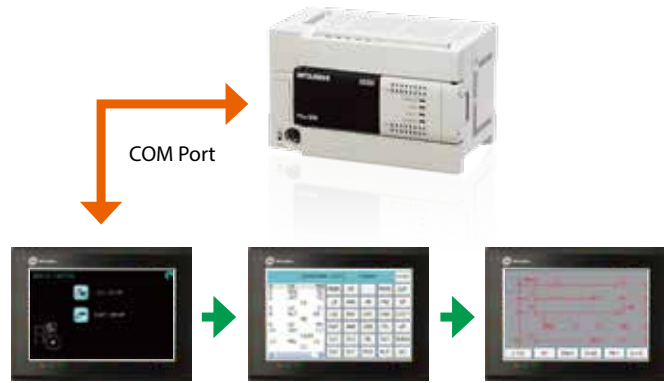
Allow setting 10 different languages

It supports Window True Type Fonts for making the edited screen more attractive,

Edit List of Commands & Monitor Ladder Diagrams

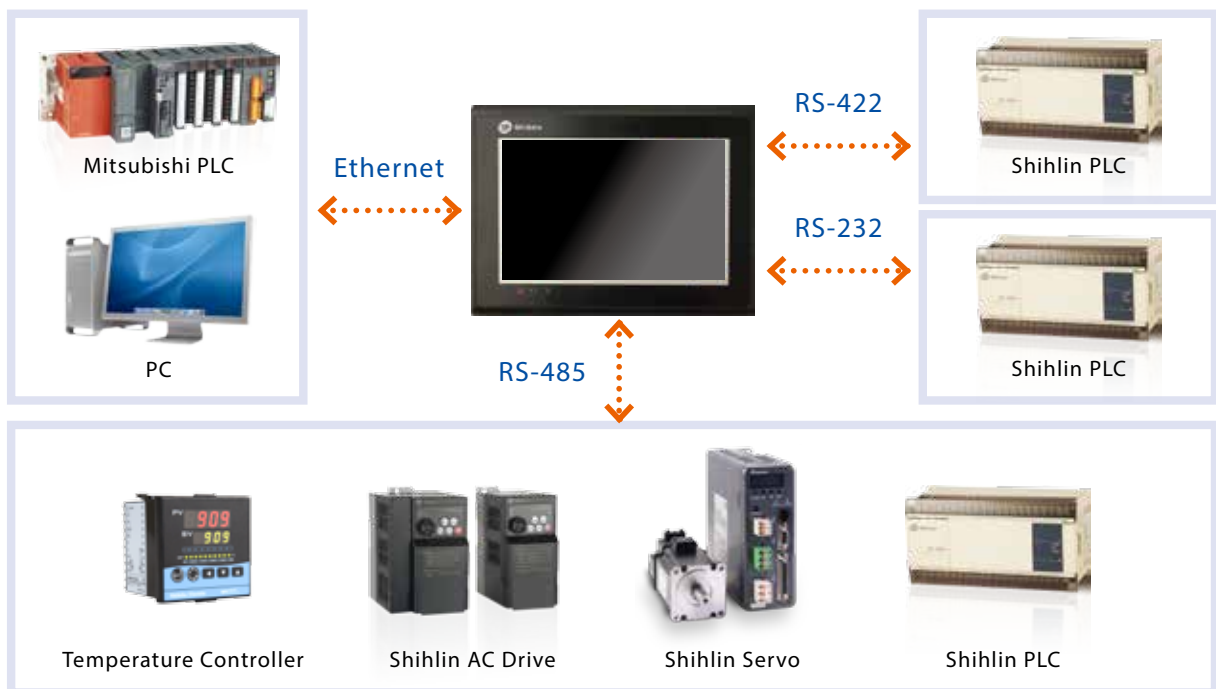
It replaces computer PLC editing software by directly editing and executing commands at the OS system. PLC ladder diagrams are used for instantaneous program monitoring.

Support Mitsubishi FX series only. (*Not for EC205-CT0A)



Flexible Communication

The EC200 Series supports RS-232/422/485 communication interface as well as controller communication drivers from various brands. The multifunctional model also supports an Ethernet connection. As many as three types of communication interface can be operated simultaneously. Assorted devices can be connected easily to achieve using human-machine to administer all the functions of the devices.



Multiple brands of PLC Connectable

HMI can connect to all major brands of PLC.

EX. Shihlin AX PLC / Mitsubishi FX、Ans、Q Series PLC / Siemens PLC, etc

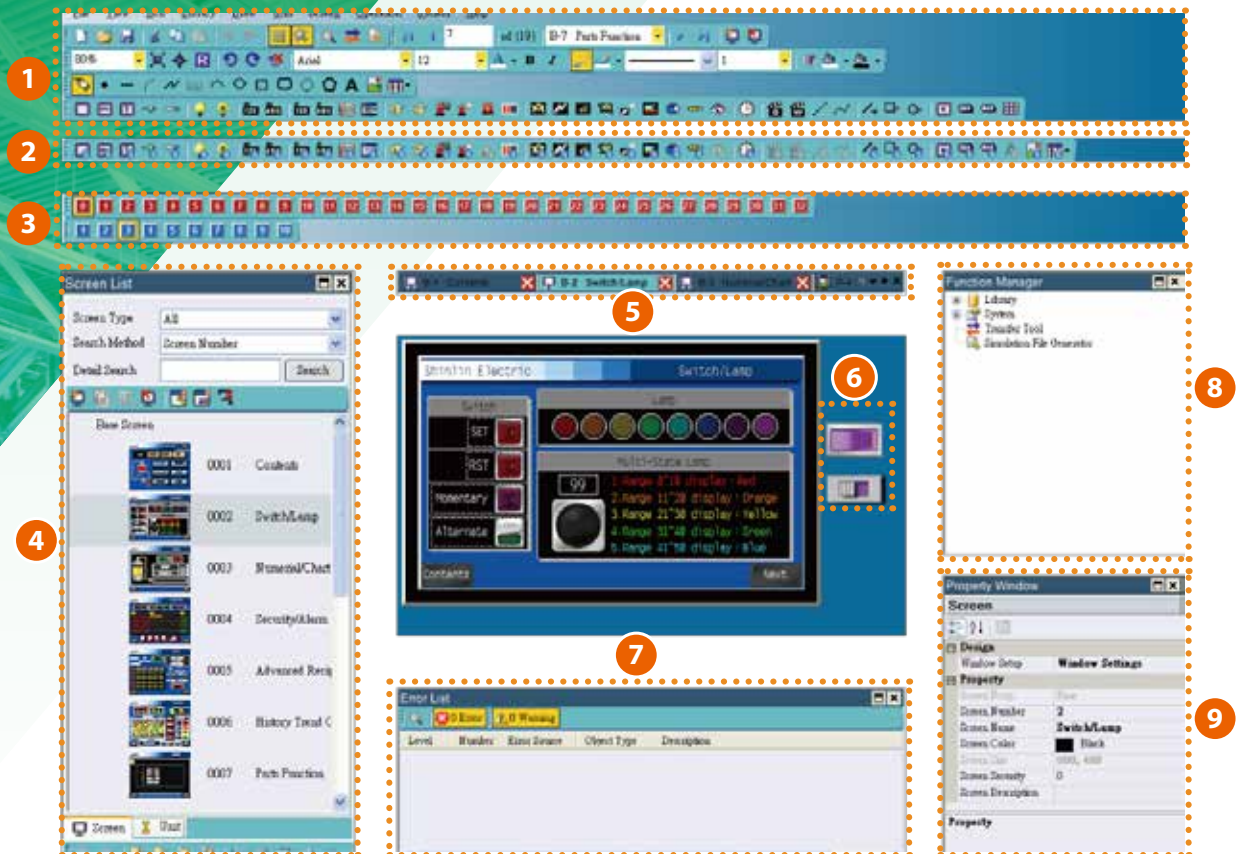
For more details, please refer to Shihlin Electric HMI communication manuals.



HMI EC200 Series

Software Performance

Screen Design Software : EU Works 2



Software Interface

1. Toolbar
2. Global unit
3. Multiple switches and multilingual setup
4. Screen list
5. Screen change
6. The empty space on the site of main editing screen
7. Error list
8. Function Manager
9. Property Window

Multiple switches can achieve 32 status sets. Multiple setups can be carried out rapidly.

Frequently used units can be placed at empty space of main editing screen to help users reduce selecting time

Property window is located at right side as default. Users can quickly modify the units properties.

Common unit within the same group, whose properties have the same settings.

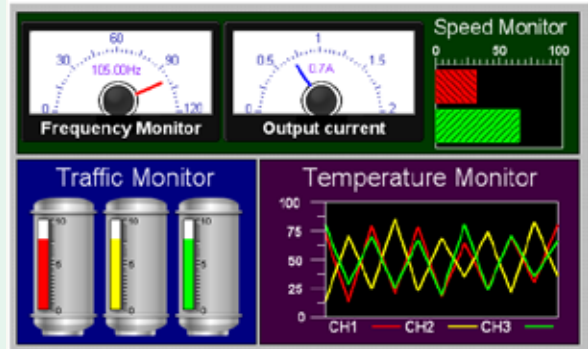
Comprehensive Graphical Images Library

Expanded graphical library provides more selectable objects.



Variety Graphical Charts

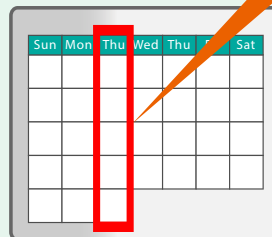
Provides a large variety of chart functions. To meet different user needs and create visually-rich.



Time Action

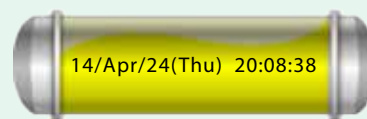
It can be planned, setting mode, time and week to execute actions at regular time in the editor. Besides, also available to set the 'Time Action' in the external control device, it allows users to edit time action parameters on HMI directly.

Buzzer is set to be triggered every Wednesday.



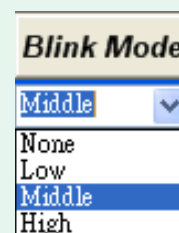
Clock Function

Available for showing Day of the Week from the clock function to indicate clear time information.



Numeral Blink Function

Available for Blink Function in order to make users focus while numeric input, the numeric will blink when the data exceed the restriction range, also adjustable for the speed of blink.

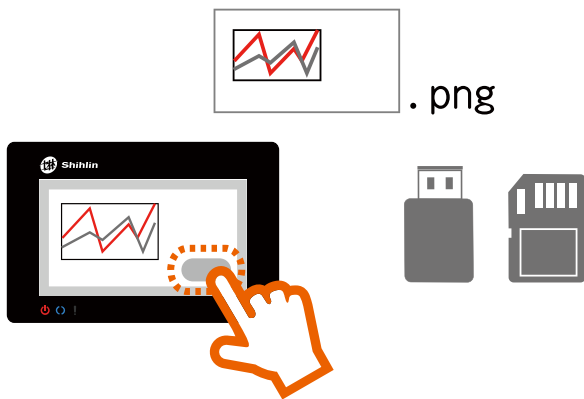


HMI EC200 Series

Software Performance

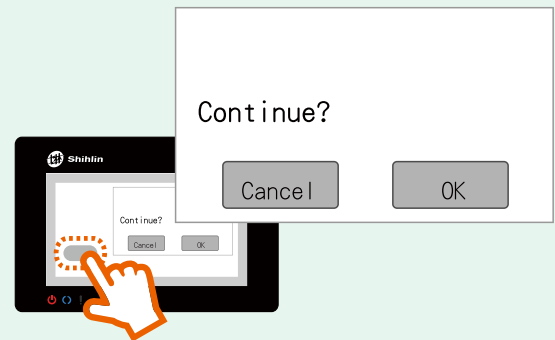
Print Screen Function

The Print Screen Function can be set at expanded selection list in button functions. To press the set button to print screen and save in external memory device.



Confirm Box Function

Newly added pop-up start confirmation windows function at the switch function, multiple action switch and multiple status switch. The confirmation window will pop-up when users press button, and will be close after the set seconds.



Advanced Recipe Function

In addition to 'Recipe Function', the 'Advanced Recipe Function' not only available for multi-data entry, but also available for more personalize settings. It is selectable for continue or individual settings, also can control numbers for entered data.



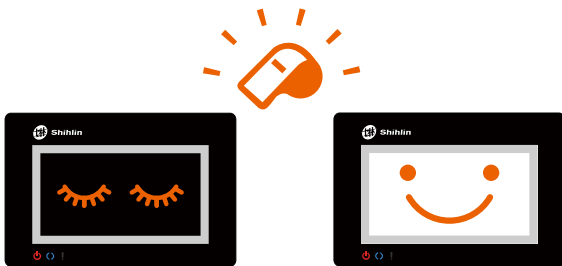
User images are downloadable.

User defined data can be preserved and reloaded to HMI.



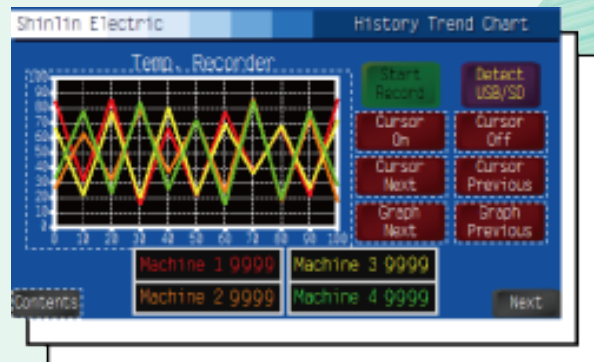
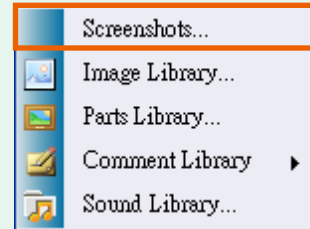
Advanced Recipe Function

If alarm is triggered, monitor will display and light to inform user. We add this function in alarm history list and advanced alarm unit.



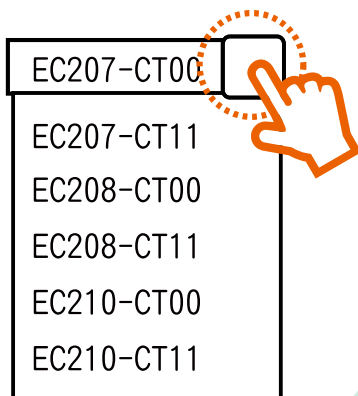
Screenshot function

EU Work2 supports image file output(png format). Users can use the data to edit their operational manual.



Combo Box Function

Users can easily to select the item by list or drop-down menu then set the value in to device.



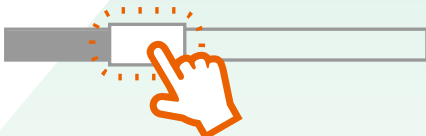
HMI Data Receiver

History trend chart data can be converted to a readable CSV file or directly transported to PC via USB(Slave).



Slider Function

Users can change and set the device value by slider switch.



HMI EC200 Series

Software Performance

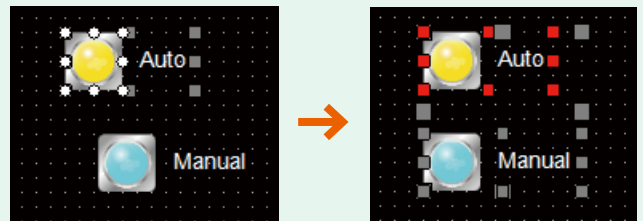
The Error List Function

The default location of the error list is at the bottom of the window. When carrying out program editing, engineers can check correctness of the units from the error list, which is time saving.



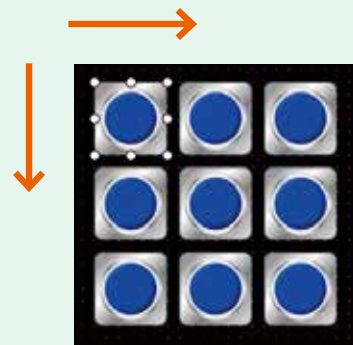
Item Alignment Function

The item alignment function can align two or more objects in the editor.



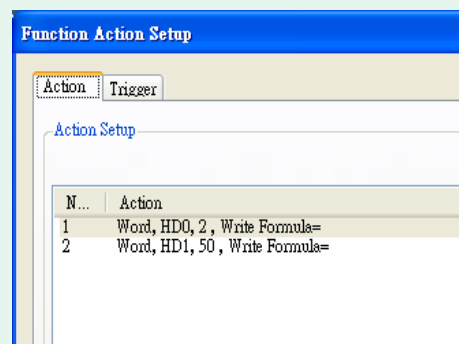
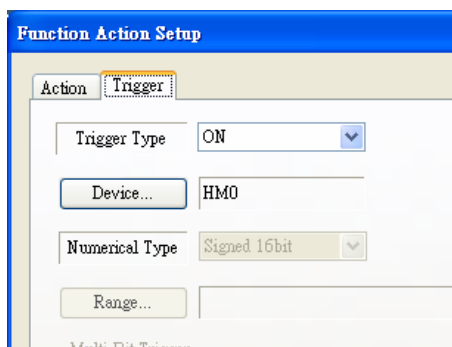
The Array Copy

Select an object for array copy and click on either the menu or the quick tool access bar to open the dialog box for array copy. Click on the object for array copy and determine the direction of copies, number, space, and device increment. After confirmation, array copy setting is ready.



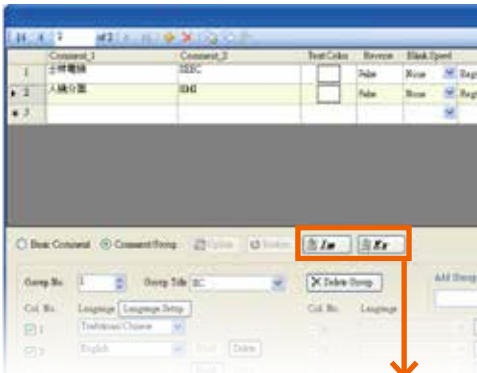
Simple Macro

Background logical judgement programme. Related actions will be executed when trigger condition is met. Easy to edit for all users.



The Library Function

The comment library



Users are allowed to export the comment data into Excel format file when dealing with a large number of comments. The comment data can be edited in Excel and then imported into EUEditor.

Multilingual and font size can be set separately



The Image Library

There are built-in images for selection, but other types of images can also be included into the library, for a richer human-machine interface content. The already built-in images can be shared with others to save editing time.



The macro library

Provides a multi-functional effect by allowing users to edit macro commands at the human-machine interface. Macro commands can also be used to simplify controller processing procedure.

For easy scripting, a grammar of C-like language is used so the design personnel engineer needs not to get familiar with any new language. The three major categories of macro commands are flow control, basic operation, and math functions

Item	Macro Instruction
Control Statement	if \ if-else \ while \ for \ switch
Function	set \ rst \ alt \ sub \ change \ oWindow \ cWindow \ olmpose \ clmpose \ fmov \ bmov \ delay \ setssystemtime
Math Function	sin \ cos \ tan \ asin \ acos \ atan \ log \ ln \ exp \ ldexp \ pow \ sqrt \ absround \ floor \ ceil

Switch Macro Macros can be set and design to be executed before or after switch action.

TAG

Different controllers are allowed to be applied in the same macro as long as their devices has been tagged.

```

1  if (M0)
2  {
3  DO=10;
4  $COM2D100=20; //COM2
5  $COM3D200=50; //COM3
6  }
7
8
9
10

```

Macro comment

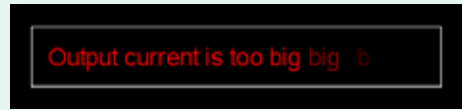
Additional comments can be inserted into Macros to make Macros more readable.

HMI EC200 Series

Software Performance

Scrolling text features

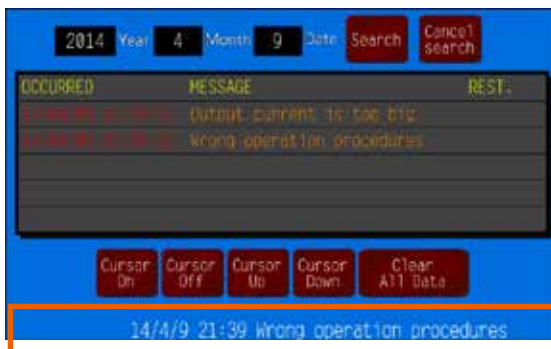
Scrolling text can be set in EU Works 2, cycling period and display type. Three types of movement speed adjustable.



Scrolling text type

Current screen scrolling text	Different scrolling text can be set for each screen °
All screen scrolling text	After editing scrolling text content, device and location, the scrolling text will be shown on every screens if any alarm occurs.

The Alarm Record Function



The pop-up functionality of advanced alarm is to show the alarm status through floating alarm function when a fault event occurs.

Historical alarm record, advanced alarm record, and advanced alarm pop-up display functions are available for the engineers. The figure on the left is a template for the historical alarm record and the advanced alarm record. Alarm issues can be not only displayed on time, but also searched by date to browse the historical information.

Description

Display Type	Historical Record: Each alarm happened is recorded in the data table.
	Alarm Counting: The number of times that same alarm occurs is counted and saved into a list.
Display Sequence	The oldest: The older is arranged following the alarm occurrence time; the list begins with the earliest one and so forth
	The Newest: The older is arranged following the alarm occurrence time; the list begins with the latest one and so forth

History Data Display

EU WORKS 2 supports both graphical display and letter display. Historical data and update time can be indicated via text messages.

No.	Date	Time	1	2
87	2014/04/09	13:23:48	55	90
88	2014/04/09	13:23:49	25	70
89	2014/04/09	13:23:49	25	70
90	2014/04/09	13:23:50	85	20
91	2014/04/09	13:23:50	25	70

The Security Function

Protect security HMI programs from being uploaded or downloaded by unauthorized personnel is critical. At here, "Password" is used for device security.

For the level of security, EU200/ EC200 Series offers 15 sets of password; the right to control or display units depends upon the level of the entered password.



Functions for Bar Code Reading and Setup

To upgrade industrial process of automated production, every product item is given a product bar code. EU200/EC200 Series can be connected to a BARCODE device via COM port and store the scanned data in the SD card to record the production state.



Auto Standby Wake-up Setting

Users can set the screen turn on/off time from HMI system menu "Power Setup\Auto Stand by Wake-up Setting". HMI turns off screen when it goes into power save mode. The maximum number of setting items is 8



Automatic screen switches function under power saving mode

Automatic switch HMI screen to the setting screen when standby time is up.



Automatic switch HMI screen to No.5 after 1 minute if standby time is set to 1 minute.

HMI EC200 Series

Software Performance

Package Function

Customized units can be designed by adopting existed units. For instance, customized keypads and panel meters. Those customized units can be saved into a group list and repeated usable. Users can use those customized units and drag them to the main editing area.



First Page Assignable

Select the page number to be start page under the HMI Type/Device Settings window.



Multilingual Switching Function

Language can be switched both manually and automatically. Current screen language and all screens language can be switched manually through the switch unit. All screens language also can be changed automatically by HMI internal device.



Base Image Function

Design the common background by using background screen function to reduce screen editing time. Base Screen, Window Screen and Keypad Screen are allowed to set as background screens. Designers can superimpose multiple background screens.

Set Page 2 as same base image as page 1



PAGE 1



PAGE 2



PAGE 2

Global Unit Function

EU WORKS2 provides whole new units function-global units function. If users modify the global units, the editor will synchronise the settings of all their clones on screens. Thirty five sort of global units are supported. For instance, Switch, Lamp, Numerical Input, ... (Refer to the manual for details)



Remote Monitoring Function

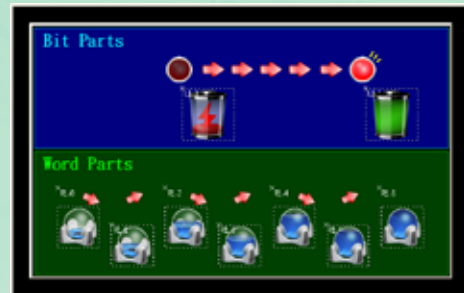
PC with the external Ethernet connections can be monitored via remote HMI screen simulation software.



*Only Ethernet Model Supported

Animation Function

To represent the dynamical graphics. Users can use Bit/Word device to trigger this function.




EC205 Vertical/Horizontal Display Function

EC205 Vertical/Horizontal Display Function

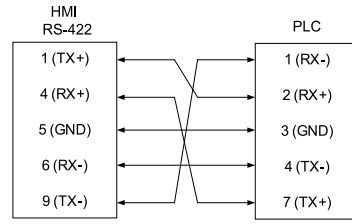


EC200 Series Specification

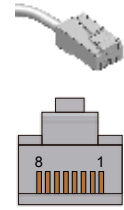
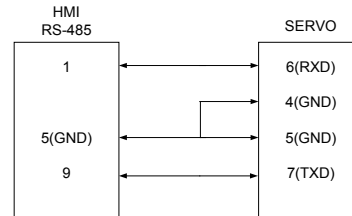
Screen Size (inch)		4.7"	7"				8"		10.2"		
Appearance											
Type		EC205-CT0A	EC207-CT0S	EC207-CT1S	EC207-CT0A	EC207-CT00	EC207-CT11	EC208-CT00	EC208-CT11	EC210-CT00	EC210-CT11
Hardware Specifications											
Display Specification	Color Display	64K Colors									
	Screen	Colors TFT LCD									
	Resolution (DPI)	480×272	800×480				800×600		800×480		
	Viewing Angle Scope (Up/Down/Left/Right)	60/70/70/70	50/70/70/70				50/70/70/70		45/65/65/65		
	Backlight Sources	30,000 hours									
Touch-control control Specification	Touch Control Panel	4-wire Resistive									
	Touch Resolution	2mm and Above									
	Lifespan	More Than 1 Million Time									
	Screen Surface Hardness	4H									
	The Number of Switch Can Be Set (Number/Screen)	312(24X13)	960(40X24)				1160(40X29)		960(40X24)		
Battery		Two years from manufacturing date									
Text	Display Text	TrueType Font									
	Language Font	Support Unicode									
Communication Ports	Serial Ports	COM1	-				RS-232/422/485				
		COM2	RS-422/485				RS-232/422/485				
		COM3	RS-232								
	Ethernet	-	10/100MB	-	10/100MB	-	10/100MB	-	10/100MB		
	USB	Host	-	USB1.1 x 1	-	USB1.1 x 1					
Client		USB2.0 x 1									
Sound Interface		-				Yes					
Memory	Internal	ROM	256 MBytes Nand Flash (User 64MBytes)								
		SDRAM	64MB DDR2								
		Backup memory	128KB								
	External Interface	-	SD Card (support up to 16G)								
Environment Specifications											
Power Source Specification	Voltage	DC Power: 24V									
	Voltage Tolerance	DC24V ± 15%									
	Range for Instantaneous Stop	Within 10ms	Within 40ms			Within 10ms					
	Power Consumption	Under 10W									
Environment Specification	Operation Temperature	0° C ~ 45° C (avoid freezing)									
	Storage Temperature	-20° C ~ 60° C (avoid freezing)									
	Operation Humidity	10% ~ 90%RH (0°C ~ 40°C), 10% ~ 85%RH (41°C ~ 45°C), An Environment without Condensation									
	Environmental Tolerance	Non-corrosive Environment; Non-conductive Environmen									
	Vibration Resistance	IEC 61131-2 Compliant · Vibration frequency : 5~150Hz · Acceleration : 9.8m/s2(1.0G) · X · Y · Z directions for 12 times									
	Noise Resistance	Compliant with IEC61000-6-2 : 2001									
Installation Criteria	Grounding	D Class Grounding									
	Water Resistance	Front: IP65 (Dust-proof/Anti-drop Design); Back: IP20									
	The Cooling Method	Natural Cooling									
	Exterior Dimensions W*H*D(mm)	143x98.1x40.6	200x146x36			208x154x40.6		226x173x42.1		271x213x42.1	
	Portiforium size W*H (mm)	139x94.1	192x138				218x165		259x201		
Weight(kg)	≒ 0.29	≒ 0.54			≒ 0.85		≒ 1.04		≒ 1.4		
Certification Specifications		CE \ FCC									

Communication Cable

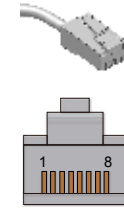
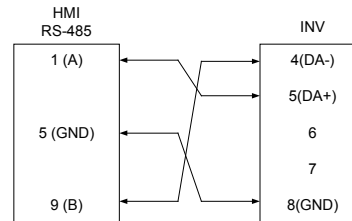
Mitsubishi PLC
FX Series



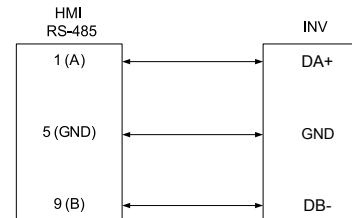
Shihlin Servo
SDA/SDB Series



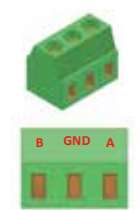
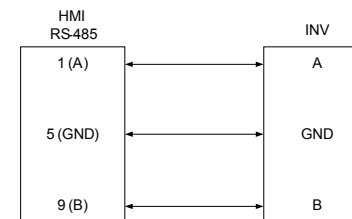
Shihlin Inverter
SS2 Series



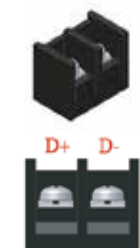
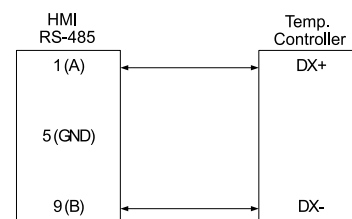
Shihlin Inverter
SE2 Series



Shihlin Inverter
SH/SF/SF-G Series



Shihlin Temperature
WT Series



EEC2000

series

Human Machine Interface



Shihlin Electric & Engineering Corporation

Head Office:

16F, No. 88, Sec. 6, ChungShan N. Rd., Taipei, Taiwan, 111

TEL:+886-2-2834-2662

FAX:+886-2-2836-6187

HsinFun Factory (Taiwan):

No.234, Chung Lun, Hsin Fun, HsinChu, Taiwan, 304

TEL:+886-3-599-5111

FAX:+886-3-5907173

SuZhou Factory(China):

88 GUANGDONG STREET SUZHOU NEWDISTRICT, JIANGSU, CHINA 215129

TEL : (0512) 68432662

FAX : (0512) 68432599

Official website www.seec.com.tw

Automation Division website www.seecfa.com

automation@seec.com.tw