

ATSEL HMI User Manual

(Version: 2.02)



Selec Controls Pvt. Ltd.



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Installation

Dimension for installation opening

SP112 series of HMI (SP112-GT40-S-CE & SP112-GT40-ET-CE)

SP112 - 129×93mm



Interface SP112 interface

Cable layout: back side of the HMI





COM port connection

For SP112, COM port includes RS232 and RS485. The pins set up as below,COM1 includes pin 7/8 for RS485 and COM2 includes pin 2/3/5 for RS232.

As for COM3, A is set for RS485+, B RS485-, R is when using built-in 120Ω resistance then to short connection R and A, it will be convenient for long-distance communication.

НМІ	DB9 Male				
	picture	interface	PIN	Pin Definition	
SP112		COM2	1		
	6		2	RS232 RXD	
			3	RS232 TXD	
	9 • • 5		4	—	
				5	GND
		COM1	6	—	
			7	RS485+(A)	
			8	RS485-(B)	
			9	—	

Communication protocol

Function brief

Our HMI support many kinds of communication protocols, such as PPI, MPI, Modbus, smart S7, Mitsubishi, Panasonic, Omron, etc.





Series communication:

COM1 (RS485)

S7-200/smart CPU)

SiemensS7-300 CPU)

All Modbus Devices.

COM2 (RS232)

Mitsubishi (Fx1, Fx2N, Fx3U)

Panasonnic (Fp)

Omron (CP)

MODBUS (MODBUS-RTU MODBUS ASCII)

Ethernet communication:

MODBUS TCP (Server / client)

S7 communication (S7-200 smart)

Remark: Our HMI has set the function buttons for smart running & stop .

Connect with PLC

SP112 — Siemens

SP112	PPI/MPI
7 485+	 3 485+
8 485-	 8 485-

SP112 — Mitsubishi Fx1N/Fx2N (DB9) SP112 — Panasonic Fp

SP112	Fx1N/2N
2 RX	 2 TXD
3 TX	 1 RXD
5 GND	 3 GND



SP112	Fp
2 RX	 2 TXD
3 TX	 3 RXD
5 GND	 1 GND



SP112 — Mitsubishi Fx2N/3U (8 pin circular hole) SP112 — Omron CP

SP112		Fx3U	SF
SG Shield	500Ω	SG Shield	2
2 RX	500Ω	4 TX-	3
3 TX		1 RX-	5
5 GND		2 RX+	
		7 TX+	

SP112	Ср
2 RX	2 TXD
3 TX	3 RXD
5 GND	9 GND
	4 RTS
	5 CTS

Address setting

Function introduction

1. <u>RS485 (Siemens S7-200)</u> [PPI communication] same as S7 communication

Regist	Addre	Input	Remark
er	ss	range	
name	format		
I	dd.o	0.0~4095. 7	bit: input mapping register
Q	dd.o	0.0~4095. 7	bit: output mapping register
М	dd.o	0.0~4095. 7	bit: bit memory
S	dd.o	0.0~4095. 7	bit: Sequence Control Relay
SM	dddd. o	0.0~4095. 7	word: special bit memory, SM0.0~SM4095.7
V	ddddd .o	0.0~10239 .7	bit: the bit of variable memory
IW	dddd	0~4094	word: input mapping register, each word occupies two byte address
QW	dddd	0~4094	word: output mapping register, each word occupies two byte address
MB	dddd	0~4095	byte: bit register, each word occupies one byte address.
MW	dddd	0~4094	word: bit register, each word occupies two bytes address.
MD	dddd	0~4092	double word: bit register, each word occupies four bytes address.



SB	dddd	0~4095	byte: sequence control relay, each word occupies one byte address.	
SW	dddd	0~4094	word: sequence control relay, each word occupies two bytes address.	
SD	dddd	0~4092	double word: sequence control relay, each word occupies four bytes address.	
SMB	dddd	0~4095	vord: special bit memory, SMB0-SMB29 read only, each word ccupies one byte address.	
SMW	dddd	0~4094	word: special bit memory, SMW0-SMW28 read only, each word occupies two bytes address.	
SMD	dddd	0~4092	word: special bit memory, SMD0-SMD26 read only, each word occupies two bytes address.	
VB	ddddd	0~10239	Byte: variable memory	
VW	ddddd	0~10238	vord: variable memory, each word occupies two bytes address.	
VD	ddddd	0~10236	double word: variable memory, each word occupies four bytes address.	
TV	ddd	0~255	word: the current value of the timer.	
CV	ddd	0~255	word: the current value of the counter.	
AIW	dd	0~62	word: analog input, each word occupies two addresses.	
AQW	dd	0~62	word: analog output, each word occupies two addresses.	

2. <u>RS485-Siemens S7-300 (MPI communication)</u>

Registe r Name	Address format	Input range	remark
I	dddd.o	0.0~1023.7	bit: input mapping register
Q	dddd.o	0.0~1023.7	bit: output mapping register
М	dddd.o	0.0~255.7	bit: bit memory
DBX	DDD:dddd.o	1:0.0~99:3276	bit: the bit for the word in DB block storage area. The block no.
		7.7	DDD 0-99. Each block word dddd with range 0-32767 and each
			word's bit is 0-7.
IW	dddd	0~1022	word: input mapping register, each word occupies two byte
			address
QW	dddd	0~1022	word: output mapping register, each word occupies two byte
			address
MW	dddd	0~254	word: bit memory, each word occupies two bytes address.
MD	dddd	0~252	double word: bit memory, each double word occupies four bytes
			address.
DBW	DDD:dddd	0:0~99:32766	word: DB block storage area, block no. DDD 0-99, each block
			word dddd with range 0-32766. each word occupies two bytes
			address.
DBD	DDD:dddd	0:0~99:32764	double word: DB block storage area, block no. DDD 0-99, each
			block word dddd with range 0-32764. each double word occupies
			four bytes address.



PIW	dddd	0~1022	word: process image input area.
PQW	dddd	0~1022	word: process image output area.

3. MODBUS

Register	Address	Input range	remark
Name	format		
0x	ddddd	1~65536	bit: output coil.
1x	ddddd	1~65536	bit: input coil, read only.
3x_bit	ddddd.DD	1.0~65536.15	bit: the bit input register with 16 bit. Read only
4x_bit	ddddd.DD	1.0~65536.15	bit: the bit output register with 16 bit.
3x	ddddd	1~65536	word: the word with 16 bit what be input register. Read only.
4x	ddddd	1~65536	word: the word with 16 bit what be output register.
3x_doub	ddddd	1~65535	Double word: input register, high-low 16bits upside down with
le			3x double word, read only
4x_doub	ddddd	1~65535	Double word: output register, high-low 16bits upside down
le			with 3x double word

Note:

- d: decimal, the input range is 0~9.
- o: octal, and the input range is 0~7.
- DDD: block number, the input range is 0-255.
- DD: hexadecimal, and the input range is 0-15.
- Word: it means that the register can only be used as a word.
- Double word: it indicates that the register must select 32 bits in the configuration
- Bit: it means that the register can only be used as a bit.
- Read only: it means that the register can only read but not be written in.
- The Register Name supported by different device models may be different and the range may vary. Please refer to the related technical documents of the connected devices in detail.

*1 remark: in expanding mode, when input address, using "/" means connection and using "#" means expanding mode.

For example, 2/1#REGxxx means the second connection No. 1 address REGxxx.

4. Mitsubishi FX series

<u>Fx2N</u>

Register name	bit/word	Address format	Max. address	Mini. address
X	bit	000	377	0
Y	bit	000	377	0



М	bit	DDDD	3071	0
S	bit	DDD	999	0
SM	bit	DDDD	8255	8000
т	bit	DDD	255	0
С	bit	DDD	255	0
D	word	DDDD	7999	0
SD	word	DDDD	8255	8000
TV	word	DDD	255	0
CV	word	DDD	199	0
32CV	word	DDD	255	200

Fx3U

Register Name	bit/word	Address format	Max. address	Mini. address
X	bit	000	377	0
Y	bit	000	377	0
М	bit	DDDD	7679	0
S	bit	DDD	4095	0
SM	bit	DDDD	8255	8000
Т	bit	DDD	255	0
С	bit	DDD	255	0
D	word	DDDD	7999	0
SD	word	DDDD	8255	8000
TV	word	DDD	255	0
CV	word	DDD	199	0
32CV	word	DDD	255	200

5. Panasonic Fp series

Register Name	bit/word	Address format	Max. address	Mini. address
X	bit	000	377	0
Y	bit	000	377	0
R	bit	DDDD	7679	0



Т	bit	DDD	4095	0
С	bit	DDDD	8255	8000
L	bit	DDD	255	0
DT	word	DDDDD	99999	0
LD	word	DDDDD	99999	0
FL	word	DDDDD	99999	0
SV	word	DDDD	9999	0
EV	word	DDDD	9999	0
WX	word	DDDD	9999	0
WY	word	DDDD	9999	0
WR	word	DDDD	9999	0
WL	word	DDDD	9999	0
IX	word	D	13	0
IY	word	D	13	0
ID	word	D	32	0

6. Omron CP1H

Register Name	bit/word	Address format	Max. address	Mini. address
CIO_bit	bit	dddd.DD	6143.15	0.0
LR_bit	bit	ddd.DD	199.15	0.0
HR_bit	bit	dddd.DD	1535.15	0.0
AR_bit	bit	ddd.DD	959.15	448.0
DM_bit	bit	ddddd.DD	32767.15	0.0
CIO	word	DDDD	6143	0
LR	word	DDD	199	0
HR	word	DDDD	1535	0
AR	word	DDD	959	448
тс	word	DDD	127	0
DM	word	DDDDD	32767	0

7. Fins

Register Name	bit/word	Address format	Max. address	Mini. address
CIO_bit	bit	dddd.DD	6143.15	0.0



WR_bit	bit	ddd.DD	199.15	0.0
HR_bit	bit	dddd.DD	1535.15	0.0
AR_bit	bit	ddd.DD	959.15	448.0
DM_bit	bit	ddddd.DD	32767.15	0.0
CIO	word	DDDD	6143	0
WR	word	DDD	199	0
HR	word	DDDD	1535	0
AR	word	DDD	959	448
тс	word	DDD	127	0
DM	word	DDDDD	32767	0

8. Address searching function

Click the search function of edition or shortcut key crtl+F then the address search menu is popped up which can search the bit or word of the internal address and external connection address, or the current scene and all the scenes, and supports the address replacement at the same time.

Example

1. <u>HMI's communication parameters setting</u>: set communication port--- mode selection--PPI

General Parameters Link ID: 1 Link Name: Link1 Link Interface: COM1 Link Server: MODBUS MODBUS MODBUS_RTU_MASTER HMI Position: Local 32bit Data Conver (ABCD -> CDAB) add the slave station No. for 32 bit data conversion: 0 No. No. No. No. No. 1 Image: Station No. Image: Station No. Image: Station No. Image: Station No.				Co	ommun	icatior	Ports S	Setting			? ×
Link Name: Link1 Link Interface: COM1 ▼ Link Server: MODBUS ▼ MODBUS_RTU_MASTER ▼ HMI Position: Local ▼ 32bit Data Conver (ABCD -> CDAB) add the slave station No. for 32 bit data conversion: 0 ÷ add station No. No. No. No. No. No. No. No. No. No.	Gen	neral	Paramet	ters							
Link Interface: COM1 • Link Server: MODBUS • HMI Position: Local • 32bit Data Conver (ABCD -> CDAB) add the slave station No. for 32 bit data conversion: 0 • No.	Link	ID:		1							
Link Server: MODBUS MODBUS_RTU_MASTER HMI Position: Local • 32bit Data Conver (ABCD -> CDAB) add the slave station No. for 32 bit data conversion: 0 • No. No. No. No. No. No. No. No. No. No. No.	Link	Name:		Link1							
HMI Position: Local 32bit Data Conver (ABCD -> CDAB) add the slave station No. for 32 bit data conversion: 0 No. No. No. No. No. No. No. No. No. No. No.	Link	Interfa	ice:	COM1		•					
32bit Data Conver (ABCD -> CDAB) add the slave station No. for 32 bit data conversion: 0 🔹 add station No. No. No. No. No. No. No.	Link	Server	:	MODB	US	▼ M	ODBUS_R	TU_MAST	ER		•
add the slave station No. for 32 bit data conversion: 0 🔷 add station No.	HMI	I Positio	n:	Local		•					
No. No. <td></td> <td>32bit D</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		32bit D									
No. No. <td></td> <td>525100</td> <td>ata Conv</td> <td>er (Abcu</td> <td>) -> CDAB</td> <td>)</td> <td></td> <td></td> <td></td> <td></td> <td></td>		525100	ata Conv	er (Abcu) -> CDAB)					
		S2DIC 2	Jata Conv	er (ADCL) -> CDAB)					
				-		-	on:		0	add	station
		the slav	e station	No. for 3	2 bit data	conversio		L			station No.
	add t	the slav	e station	No. for 3	2 bit data	conversio		L			
	add t	the slav	e station	No. for 3	2 bit data	conversio		L			
Confirm Cancel Help	add t	the slav	e station	No. for 3	2 bit data	conversio		L			



ord Communicati	on Ports Setting	? ×
General Parameters		
Communication Parameters	Other	
Baud Rate: 9600 🔻	Touch ID:	0
Data Bits: 8 💌	(0-255) PLC ID: (0-255)	1
Check Bit: NONE 🔻	Communication Times: (0-65535)	50 🔹 ms
Stop Bit: 1 💌	Timeout Times: (100-65535)	500 🜩 ms
Restore Default Setting	Retry Numbers:	3
	(0-5) Address Mode:	Standard Mode 🔻
	PLC Address Space: (1-255)	16
	Confirm	Cancel Help

2. PPI communication parameters setting as showing in below chart.

3. Put a few bit buttons onto the screen and setting the written addresses of these bit buttons Q0.0, Q0.1.

and a	Bit Button	? ×
General Label Adva	anced Visibility	
status0	Border Color: Foreground: Background: Pattern: Solid	Functions Set ON macro Set OFF Press down ON Press down OFF Invertal
status 1		
r=	Border Color:	Write Address: Q0.0
ON	Foreground: Background:	Monitor Monitor Address Identical to Write Address
	Pattern: Solid	Monitor Address: Q0.0
		Confirm Cancel Help



Q0. 0 Q0. 1 Q0. 2 Q0. 3 Q0. 4 Q0. 5 Q0. 6 Q0. 7

4. <u>The system block parameter setting interface of S7-200 program software is shown as</u> the following diagram

	- D X
System Block	
Communication Ports Communication Port settings allow communicate to a given PLC.	you to adjust the communication parameters that STEP 7-Micro/WIN will use to
🔁 System Block	Communication Ports
Communication Ports Generative Ranges Password	Defaults
- Output Tables	Port 0 Port 1
	PLC Address: 2 : 2 : (range 1 126)
- 🕞 Background Time	Highest Address: 31 🔆 (range 1 126)
EM Configurations	Baud Rate: 9.6 kbps 💌 9.6 kbps 💌
Increase Memory	Retry Count: 3 : 3 : (range 0 8)
	Gap Update Factor: 10 100 . (range 1 100)
	Configuration parameters must be downloaded before they take effect.
Click for Help	and Suppor OK Cancel Default All



5. <u>Connect the HMI to PLC</u> through 485 communication cable and power them together, then download the corresponding project to HMI. When click the components on the screen, the corresponding PLC output points will be lighten.

6. <u>Address searching</u>: Click the search function of edition or shortcut key ctrl+F to pop up the search interface. You can search bit and word in the current scene or all of the scenes. At the same time, you can replace the selected addresses, double-click the corresponding addresses to pop-up corresponding control option of corresponding scene.

and		Search		?	×
Address Area: Search Address Type:	Internal storage		ess 🔿 Station No.		•
Search Range:	All Scenes and W		 Station No. 		
Search Address:	LB		•		
Replace To					
Replace Address:	LB		•		
Search		Replace	Replace All		
Control Name	Address	Address Type	Sence/Window		
Double Click To Show Cor	ntrol				



Animation design

Function introduction

Picture Display function: To achieve the dynamic display of static pictures through other ways, such as address control, time setting.

GIF picture: To set dynamic GIF pictures. You can set the animation in the library, or user-defined GIF files.

Bar Graph: The value of the corresponding address is displayed by the bar graph.



Flow Block: Flow Block is used to simulate in animated pictures the liquid flow status in pipeline. Whether a flow block is flowing is determined by the status of the trigger, when the trigger is 1, the flow block is flowing, when the trigger is 0, the flow block is static. The flowing speed is specified by user.

Dynamic Rectangle and Dynamic Circle: Their function is similar which changes the position or size of graph according to the value of monitoring address, thus to show real-time change of the monitor address on a dynamic basis.





Example

1. Shining light (controlled by time)

Put a Picture Display on scene, in the general page set the Total Status 2, Status type to auto change with frequency being set 5×0.1 s. In Label page, add an indicator pattern from the Gallery to a status screen, in Visibility page set controlled by bit, When the corresponding bit value to achieve the effective state the indicator pattern will be displayed.

Picture Display	M Picture Display	🔋 💌 Picture Display	? ×
Cerver Labe Vebly:	General Lubel Vability	Image: Controlled by Not intervention Image: Controlled by Not intervention	
Confirm Cancel Help	Confirm Cance	cel Help Confirm Cancel	Help

2. Liquid storage tank.

Put a image of Graphic Components, select a liquid storage tank from Gallery, and drag into a Bar graph of Object components to cover the liquid area of tank.



3. Rotation motor

First put a picture and set as display when bit control value being 0, put a similar GIF component and set as display when bit control value being 1. These two components must be set the same size and same position(Use alignment function). Or put a picture to be displayed when its bit control value being 0 and put a Picture Display,



set to automatically switch 0.1s, Then select two motor pictures with same shape but different angle in the Gallery, set to display them when the bit control value being 1.

	Image	ed GIF Display	GIF Display
Ince Open	Image Visbilty Visbilty Bit Controlled by bit Bit Controlled Sy user Controlled by word Controlled by user level	Off Deploy Vability Pcture: Galery Open	GIF Display Visibility Controlled by bit Bit Control Address: LB: 0 0 1 Controlled by word Controlled by word Controlled by user level
Confirm Cancel Help	Confirm Cancel Help	Confirm Cancel Help	Confirm Cancel Help

4. Flow block

Add expand flow block at advanced components and set the corresponding address for it.



5. Dynamic rectangle, Dynamic circle

In the Object components, add dynamic rectangle or dynamic circle and set the corresponding address.

Dynamic rectangle, for example, the data type is 16-bit integer, and the address is Dynamic circle, for example, the data type is 16-bit integer, and the address is set as LW1. Then the value of LW1 is the X coordinate of the center of the circle. The value of LW2 is the Y coordinate of the center of the circle, and the value of LW3 is the radius of the circle.







Recipe Function

Function introduction

In manufacturing field, recipe describes proportion relation of different recipes, it's the gather of some variables corresponding parameters setting value during production process.

For example, a bread factory produces bread, there will be a basic ingredient recipe, this recipe will list all ingredient lists that used for producing bread (for example water,flour, sugar, egg, sesame oil etc.)Besides, also list all choosable ingredient lists (for example fruits, kernel, chocolate chips etc.) These choosable ingredient can be added to basic recipe to produce various breads. For example,sweet cake will use more sugars,while low sugar cake will use less sugar. Here, we call the ingredient proportion relation as recipe.

In ATSEL recipe editor function, one group recipe is one proportion relation. In the table of editor, customers can match proportion relation among ingredients visually. Click "Recipe Setting" of tool menu, then you can see recipe configuration dialog box, please check as below:

- 1. Create a recipe group and name as bread.
- 2. Add the ingredients number of bread that is recipe length is 5.
- 3. Modify ingredients name and matched variable address.
- 4. Click save recipe and exit.

			Recipe m	anager			? >
Add RCP group	Delete RCP group Cha	ange group name	Save RCP	Import RCP	Export RCP	Help	Quit
0: 0	Group name: 0		Length of RC	P: 3 ♣ Nu	umber of RCP: 0		
	Name	Variables	Data type	String Length			
	1 WATER	LW0	16-bit unsigned	NULL			Add row
	2 FLOUR	LW1	16-bit unsigned	NULL			Insert row
	3 EGG	LW2	16-bit unsigned	NULL			
							Delete row
							Add column
							Inser column
							Inser column
							Delete column
	Notice when write	RCP finish					
	Group index: LW608	202	RCP index:	W60902	Perister of	RCP: RWI0-RWI2	

Example

1. Project target

Realize the adjustment of different kinds of coffee ingredients, so that can complete the coffee modulation by one key operation.



2. How to achieve

Click recipe control **b**, add a new recipe group and set ingredients number of recipe, each recipe contains different ingredients proportion, and then save the recipe.

0: COFFEE	Group name: COFF	ΈE	Length of RC	P: 8	Number of RCP: 8	3		
	Name	Variables	Data type	RCP0	RCP1	RCP2		
	1 WATER	LW0	16-bit unsigned	2	1	8	1	Add row
	2 SUGAR	LW0	16-bit unsigned	4	2	7	0	Insert row
	3 MILK	LW0	16-bit unsigned	6	3	6	0	
	4 COFFEE BEAN	LW0	16-bit unsigned	8	4	5	0	Delete row
	5 SALT	LW0	16-bit unsigned	0	5	4	0	
	6 GREEN TEA	LW0	16-bit unsigned	10	6	3	0	Add column
	7 MATCHA	LW0	16-bit unsigned	0	7	2	0	
	8 PRICE	LW0	16-bit unsigned	80	100	100	0	Inser column
								Delete colum
	•						Þ	Delete column
	Notice when write	RCP finish						

Add the corresponding components and set corresponding variables to project scene, and group index is modify Internal Register LW60802 can achieve switch-over of recipe group, If recipe index is Modify Internal Register LW60803 can achieve recipe switch-over of recipe group.

Numerical input and display address of recipe ingredients is using the internal recipe register address. Such as the above recipe, there are 8 ingredients, the system internal address is RWI0-RWI7 from top to bottom if connects corresponding PLC address just needs to input the corresponding variables, such as VW0, VW2, VW4 etc. Recipe's uploading, downloading or saving can be achieved in the function button.

Data transmission

Function introduction

Data Transmission is used for the data exchange between external device and HMI or between device and device.

Click Data Transmission in Project Manager to pop up the data transmission list as below.



rsil	Dat	ta Transmission		?	×
Source Address	Destination Address	Trggered	Address Type	Address Length	
Add	Delete	Modify	Close	Help	

1. Click "Add", you can add data transmission. At present, maximum number entries is 100. Triggered type is interval trigger and minimum time unit is 200ms, the data types which can be transferred is bit, word, double word, and the maximum transmission data size by each trigger is 100(bit, word, double word)

- a) Interval: 1~100 (* 20ms)
- b) Address type: bit, word, double word

c) Address length: 1~100, the data size of each transmission, unit is the type chosen at "address type"

d $\,)\,$ Source address/ Destination address: the transmission direction is from source address to destination address, this type of chosen register must be same as the address set in "Address type".

2. After setting, click "confirm", add this set entry into the list.

Add 🛛 🖓 💌]	nd Data Transmission				~?	×
Attribute		Source Address	Destination Address	Trggered	Address Type	Address Length	
		LBO	LBO	1*20ms	Bit	1	
Associate:							
Address Type: Bit 💌							
Address Length: 1							
Address							
Source Address: LB0							
Destination Address: LB0							
Confirm Cancel		Add	Delete	Modify	Close	Help	

3.After adding, click close button exit, after downloading the configuration you can do data exchange according to the set transmission type.

<u>Alarm</u>

Function Introduction

When triggering some events that should not be triggered during the operation of the device, the system will make warning and record the time and content of the



corresponding events. The alarm is used to set the alarm information. Only the alarm is configured, the alarm control and the dynamic alarm bar can be used normally.

1. Set the alarm information, firstly set the trigger condition



2. Record the real-time alarm: to show the real-time alarm data, alarm scroll bar

	Time	Date	Message	^
1				
2				1
3				1
4				1
5				$\mathbf{\vee}$
<			>	•
		Sample Message		

3. System alarm setting: to set the display mode of overall pages alarm.

Model Setting Alarm Setting Screen Model: SP112-GT70-ET Display Mode: Horizontal User exit time: 1 splash Screen: Scene000 Guard Times: 1	: 10 (x0. 1second
User exit time: 1 🔄 min 🔽 Use System / Start Setting Splash Screen: Scene000 🔹	larm
	Text color:
Touch Voice: Have Sound Tips	10 💌
Set the screen saver scene Alarm Display ty and Alarm Display ty and Alarm Display ty and Alarm Position:	
Load Logo Screen	Bottom
Other setting	



4. Clear alarm voice: the alarm sound can be set on/off by the function button

and Function Button		current recipe write	
		current recipe read	
General Label Adva	anced Visibility	current recipe save	
		touch voice ON/OFF	
	Border Color:	alarm voice ON/OFF	
r	Border Color:	setting screensaver time(minute)	E
	Foreground:	setting system time and date	
F		setting current language	
	Background:	Siemens S7-200 Smart Run	
LJ		Siemens S7-200 Smart Stop	
	Pattern:	Export historical data to USB disk	
		Export alarm data to USB disk	
		Find historical data	
		Display alarm data	
		Reboot the HMI	Ŧ
Function:		current recipe write	-
			_
macro			
		Confirm Cancel	Help
			ΠCIP

Example

A. Set the real-time alarm

1. Double click Alarm icon to open Alarm Setting in software window.

Project Window × Atsel	🗖 Alarm S	Settings				8 💌
 Test for ATSEL user man Ecommunication 	No	Туре	Address type	Address	Trigger conditions	Event content
Link1	1	0	Bit	LB1	ON	1 HELLO
▲ 亞 Setting 哭 Parameter Set	2	0	Bit	LB2	ON	2 HELLO
User Password Clock Setting	3	0	Bit	LB3	ON	3 HELLO
File Protection Deadline Prot	4	0	Bit	LB4	ON	4 HELLO
C Language Sett	5	0	Bit	LB5	ON	5 HELLO
Historical Data	6	0	Bit	LB6	ON	6 HELLO
Power Down Mai	7	0	Bit	LB9	ON	9 HELLO
▲ ╠ጃ Ladder 때 Ladder Edit	8	0	Bit	LB8	ON	8 HELLO
달 Ladder Addre ▲ 塗 Scenes	9	0	Bit	LB7	ON	7 HELLO
000:Scene000 Window 100:password in		Add	Insert	Delete	Editor	Copy Paste
101:password edit ᆇ Template ३३ macro						Confirm Cancel Help



2. Add the matched alarm event in the alarm setting and change the trigger condition.

and Alarm Modify	
General	
Address type	
Group ID: 0	
Scan time(s): 1	
Address type: Bit	
Address: LB0	
Alarm Text:	
Trigger: ON 🔻	
V Use	
Confirm Cancel	

3. Add an alarm control, and change the corresponding display parameters.

usd		Alarm Control			?	х
General Mark Visi	bility Title Language: Font Size: Font: BG Color: Text Color: Time: Date: Message:	Language 1 16 Arial Time Date Message	Text Font Size: Text Color: Rows: ✔ Time Display ✔ Date Display Select Alarm Grou 0 ♀	up ID Range:	255 🔹	
			Confirm	Cancel	Help	



4. When the corresponding alarm event is triggered, the Alarm Control will display the alarm time, date and content, etc.

	Date	Time	Message	$\mathbf{\wedge}$
1	19/01/2019	12:07	1 HELLO	
2	19/01/2019	12:07	2 HELLO	
3	19/01/2019	12:07	3 HELLO	
4	19/01/2019	12:07	4 HELLO	
5	19/01/2019	12:07	5 HELLO	
6	19/01/2019 12:07 6 HELLO			
7	19/01/2019	12:07	7 HELLO	
8	19/01/2019	12:07	8 HELLO	
9	19/01/2019	12:07	9 HELLO	$\mathbf{\vee}$
<			>	
ON	1 ON 2 ON 3	ON 4 ON 5 ON	6 ON 7 ON 8	ON 9

5. Add a dynamic alarm bar at the scene and trigger the corresponding event, the triggered time will scrolling display on the scene.

9 HELLO 8 HELLO 7 HELLO 6 HELLO 5 HELLO 4 HELLO 3 HELLO

6. When setting the overall alarm, the alarm information will be displayed at the corresponding position of all pages.

2017-1-19 2017-1-19	11:25	1 HELLO	
2017-1-19		THELEO	
	11:25	2 HELLO	
			$\mathbf{\vee}$
	Sample Message	2	
al alarm temperature is too high	Liquid level alarm value	Alarm sound switch	
anual alarm level is too high			
		al alarm temperature is too high	al alarm temperature is too high

B. Historical alarm setting

1. Query historical alarm. Query the historical record, triggered time, faulty information and fault clearance time etc.

Insert a function button which set to display alarm data. Then well done.



M Function Button	Function Button
General Label Advanced Visibility	General Label Advanced Visibility
Foreground: Background: Pattern: Solid	F Border Color: Foreground: Background: Background: Background: Pattern: Solid
Function: Display alarm data 💌	Function: Export alarm data to USB disk
macro	macro
Confirm Cancel Help	Confirm Cancel Help

Remark: Query historical alarm data can not be done at off-line. Just operate on the touch screen.

Download the historical alarm data. You Can download the historical data to the U disk by the function button. Select the Download History Alarm Data in the function button.

Multilingual

Function introduction

The function realizes the multilingual setting. Double click "language settings" and pop up the following dialog,

0.r	rent Language:	Language1 💌	Language Count:	[1	•
No		Item Description	Language1		-
3	Scenes/Scene000/Alarn	n Control0/title_column/Title_Message_Text	Message		
4	Scenes/Scene000/Alarm	n Control0/title_column/Title_Time_Text	Time		
5	Scenes/Scene000/Func	tion Button0/text	F		ſ
6	AlarmLogin/alarm0001	/alarmText	1 HELLO		
7	AlarmLogin/alarm0002	/alarmText	2 HELLO		
8	AlarmLogin/alarm0003	/alarmText	3 HELLO		
9	AlarmLogin/alarm0004	/alarmText	4 HELLO		
10	AlarmLogin/alarm0005	/alarmText	5 HELLO		
11	AlarmLogin/alarm0006	/alarmText	6 HELLO		
12	AlarmLogin/alarm0007	/alarmText	9 HELLO		
13	AlarmLogin/alarm0008	/alarmText	8 HELLO		
14	AlarmLogin/alarm0009	/alarmText	9 HELLO		l.



- Current language: the current language used for text.
- Language quantity: 8 languages in total
- Component description: describe the text information of the control in the current scene.

Example

1. Project target Download program to HMI, set two buttons to switch Hindi & English.

2、Project setting. Create a new project, put the corresponding controls at scene and set the relevant alarm, make these all be displayed in Hindi. Then add two function buttons at the scene and set one for Hindi and another for English. As follows:



Click the language setting in the left project window, select 2 of the language, and translate for Language1. After the translation is completed, click confirm.





Click the function button Hindi matched and Select Setting Current Language at Function and Language 1. English matched one Select Setting Current Language at Function and choose Language 2

^{and} Function Button	? 🔀	🛋 Function Button	2 ×
General Label Advanced Visibility		General Label Advanced	Visibility
F Border Calor:		F Backgro Pattern	und:
Function: settin	ng aurrent language 🔹	Function:	setting current language 👻
Language:	Jagel 🔹	Language:	Language2 🔹
	Confirm Cancel Help		Confirm Cancel Help

Then the function is set up and press Hindi button then display Hindi and English button for English.

Simulation Window	Simulation Window
100 100 100 100 100 100 100 100 100 100	OFF
NTT	

Historical data record

Function introduction

Records the data that the address variable appears during working, forms the corresponding historical data record table and draws the historical curve trend map to the data. Data can also be downloaded to the U disk and we can read the data of the U disk through the computer or other devices. (historical data records can not show changes in data records by off-line simulation, it is necessary to download to the touch screen to view the related records data).

"Historical data" is used in conjunction with the "historical data display" on Advanced components. "Historical data" is mainly used for the setting of parameters, "historical data display" displays the historical data. If you haven't create a new "historical



data collector", you can double click the Historical Data and pop up the following window. (Need to save file before a historical data collector is formed)

Notice : It can add Max.10 historical data collectors each time.

Click "add" in the pop-up menu to create a new historical data collector. Pop-up window as below,

rsd			Historica	l Data				? ×
storical data collect	Read Address	Sample Length	Number of Sample	Sampling Method	Data Type	Display Type	1	Fotal Digits
collector0	LW0	1	100	interval:1s	16-Bit Unsigne	16-Bit Unsigne	5	
<								>
Add	Delete	modify	Save	e Clear	data	Help	Close	2

Name: user can change the name displayed in project manager accordingly. (only for letters or numbers)

Read address: to read the starting address of the data

Sampling length: the number of data to read from memory at most is 16.

The total number of sampling is the number of data extracted, which supports 100000 articles at most.

Sampling mode: timing sampling, and reading data according to the time interval set.

<u>Trigger sampling</u>: to record the data according to the set of bit status or edge trigger.

<u>Regular sampling</u>: setting several specific time points for sampling.



Example

1. Double-click to open the historical data function at the directory of software project manager.

asal	Atsel	? ×
General Data	Item	
Name: collecto	Number of Sample: 100	*
Sampling Addre	35	
Read Address:	LW0 Read Length: 1	-
Data Type:	16-Bit Unsigned Integer	-
Total Digits:	5 Decimal Digits: 0	•
Add Sampling Ad		
Sampling Metho	Interval: 0 🗘 H 0 🗘 M 1.00 🗘 S	
🔿 Trigger	Trigger Address: OFF->ON 🔻	
🔿 timing samp	ling whole time: 0 🗘 time: 00:00 a	add time
	Confirm	Cancel

2. It controls the suspension sampling or clear historical data by address variables. Set the corresponding control address the corresponding state of the address variable is triggered the relevant function.

and	Clear Data	?	×
Clear historicalData	OFF->ON	•	
Pause sampling	ON	v	
Display trend chart Enable: Address Type: Address Length:	Word 0	▼	
Data type: Source Address:	16-Bit Unsigned Integer	•	
confirm	cance		



3. Adding the address variables that need to record the historical data and the way of data sampling, the number of individual historical data variables is up to 8, supporting the discrete address variables. There are three ways of sampling historical data, including time sampling, trigger sampling, and timing sampling; each historical data collector has a maximum of 100 thousand samples, and the data record will be automatically stored in the Flash, and more than 100 thousand will automatically cover the previous data item.

4. When the historical data collecting address is set up, you need to add the corresponding historical data display components in the software advanced options, including historical data displays and historical trends, add historical data displays to the software scene, and set up historical data items to display.

Historical Data Display		Date	Time	Nan	ie0
Historical Data: collector0 👻	1				
Name Show Name0	2				
	3				
	4				
	5				
Confirm Cancel Help	Hom	e Previous	_	Next	Last

After the device operating, on HMI it will display the change of the corresponding component address variable value, and data will be saved when power off .

5. When adding historical trend picture at scene, set the corresponding attribute of the XY axis interface, including the time setting of the X axis, the numerical range setting of the Y axis, etc.

X Axis		Y Axis		
Show Ticks	Tick Color:	Show Ticks	Tick Color:	
Show Axis Grid	1	Show Axis Grid		
Major Scale:	6	Major Scale:	6	
Sub Scale:	3	Sub Scale:	3	
Display Time		Show Marks		
Time Range		Tick		
Date:	09-Jan-19 -	Font Size:	10	-
Hour:	0		10	
Minute:	10	Min:	0	
Second:	0	Max:	1000	
Format:	hh:mm:ss 👻			
Font Size:	10 🔻	Fractional Digits:	0	-

In the process of setting the time range, if the following errors appear, please check the time setting of historical data collection time and historical trend map and make reasonable changes to the corresponding time range or sampling time.



Ok

In Time Range(Hours*3600+Minutes*60+Second)/Interval Time Must be Less Than 1000

	PARAMETE	RSE	1000					
Vo	ltage : 112	A CONTRACTOR OF	800		\wedge			
Power: 119.6 W R G G Current: 1.12 A Y P								
Power Factor: 0.95 G R Energy: 0.04 KWh A P								
Fre	quency : 60	Hz H	18:13:10 18:13:12	18:13:14 18:13:16	18:13:18 18:13:20			
	Date	Time	Active	Apparent	Reactive			
1	07/05/2020	06:36:04	0.01	0.01	0.01			
2	07/05/2020	06:36:05	0.24	0.24	0.24			
3	07/05/2020	06:36:06	0.25	0.25	0.25			
4	07/05/2020	06:36:07	0.30	0.30	0.30			
5	07/05/2020	06:36:08	0.31	0.31	0.31			
Home	Previous	D	ATA LOG TABLE		Next Last			

2. Historical data query. We can query historical data and record information according time. Just pull a function button and select the query history data on the function button.

3. Download the historical data. Download the collected historical data to the USB disk in CSV file format. It can be opened directly by Excel. Just pull a function button and select the query history data on the function button.

Function Button	Function Button
General Label Advanced Visibility Border Color: Foreground: Foreground:	General Label Advanced Visibility Border Color: Foreground:
Pattern: Solid	F Background:
Function: Find historical data	Function: Export historical data to USB disk
macro	macro
Confirm Cancel Help	Confirm Cancel Help



User encryption

Function introduction

asd			U	lser Pa	asswo	rd					?	×
	User	Account	Password	A	в	С	D	E	F	G	н	
	New Add	Delete	Default User	: [NULL	•						
	upreme Authority Can Upload						issword Upload					
	Authority Oper	ation] Uploa	d Input	Passwo	ord			
						C	Confirm		Cance	el	Hel	p

The function of user encryption is mainly to protect user's permission. It can add and delete users, and set user permission level.

Project initial user setting:

When the system has not set the user encryption, the default user is NULL, namely can touch all components.

This function coordinates components' user level which is in advanced pages to use. For example, the user level control in the advanced page setting the bit button is D, the D level of the Uni001 user in the user password setting is N, and the D level of the Uni002 user is Y, then the Uni001 user can not touch the use button, and the Uni002 user can touch the use button.

Users can set up the upload password here. When setting up the password, you need to enter the correct password to upload the configuration of HMI to PC.

The highest permission: the user uses this password can open all hierarchical controls.



Note: when a user has multiple levels of authority (for example, A/B/D), as long as it is unlocked in one of the controls, the corresponding all permissions are unlocked (when the A is opened, B and D are open at the same time, before logon the login, no more password is required).

Log out: in the screen button, you can set log out and quit the current user. If you do not click log out, then at the screensaver time and log out automatically.

The setting for the advanced components user

User login : This function is mainly used for user login. The user click this control to log in.

Show User Show user: :This function is used to display the current login user name. Drag this control into the scene. When any user login, it displays the current user name. When no user login, it shows that the user does not exist as NULL.

Add user : This function is used to add users, set up their passwords and corresponding permissions, and its authority is only owned by administrator. Clicking this control to add a user, enter a new user name in the account, enter his password, and enter the highest permission password of the administrator (the password is set in the user password in the project window, the password is the highest permission operations), corresponding A-H is the user level, clicking one means having the authority, click confirm then finish this operation.

Delete User : This function is used to delete unnecessary users, and authority are only owned by administrator. Clicking this control can delete users, select the users who need to be deleted in the account, enter the administrator password, click the confirmation to delete the user.

Modify the password : This function is used to modify the user's password.

Any login user can modify his password. Using this control, click to modify the password of the current login user, enter the old password, and then enter the new password to click confirm. If the old password is incorrect, the new password can not be entered.

Modify the level : This function is used to modify the user's level permissions, and the authority is only owned by the administrator. Using this control, you can modify the right of the current users and re-assign the corresponding permissions after entering the administrator password.



Note: the administrator's password can be logged in any valid account.

Example

1. Create the relevant user name, user password and the corresponding user rights, can set the highest authority, the highest authority can open all functional rights, when the password is allowed to upload, in the upload process need to input the corresponding upload password to upload the project of HMI.

	User	Account	Password	Α	В	С	D	Е	F	G	н
L	ATSEL001	ATSEL001	ATSEL001	γ	Ν	Ν	Ν	Ν	Ν	Ν	N
2	ATSEL002	ATSEL002	ATSEL002	Ν	Y	Ν	Ν	Ν	N	N	Ν
}	ATSEL003	ATSEL003	ATSEL003	Ν	N	Y	Ν	Ν	N	N	N
ł	ATSEL004	ATSEL004	ATSEL004	N	N	N	Y	N	N	N	N
5	ATSEL005	ATSEL005	ATSEL005	N	N	N	N	Y	N	N	N
5	ATSEL006	ATSEL006	ATSEL006	N	N	N	Ν	Ν	Y	N	N
,	ATSEL007	ATSEL007	ATSEL007	N	N	N	N	Ν	N	-	N
	ew Add preme Authorit Can Upload Authority Ope		Default Use	r:		▼ Ipload P ▼ Allow	asswor	đ	vord		

2. To encrypt a control, at "advanced" select controlled by user level, set the corresponding level, if setting level is B, then the user with the B level can use it. Display element invalid logo has an invalid touch on the current control.



and	Word Button	? ×
General Label Advanced	Visibility	
Touch Setting		
Controlled by bit		
Controlled by user level		
Touch Level: D 🔻		
 Display element invalid logo 		
Notice		
Notice Bit		
Notice Word		
	Confirm Cancel I	Help

3. A control is encrypted Visibility, that is the user who has the relevant right can log in and touch.

word Button ? ×
General Label Advanced Visibility
Controlled by bit
Controlled by word Controlled by user level
Touch Level:
Confirm Cancel Help

4. The Supreme Authority Operation is that the task user enters the corresponding password and then can operate on all controls.



	User	Account	Password	Α	в	C	D	E	F	G	н
L	ATSEL001	ATSEL001	ATSEL001	γ	N	N	N	N	N	N	Ν
2	ATSEL002	ATSEL002	ATSEL002	N	Y	N	N	Ν	Ν	Ν	N
3	ATSEL003	ATSEL003	ATSEL003	N	N	γ	N	N	N	N	N
4	ATSEL004	ATSEL004	ATSEL004	N	Ν	N	Y	N	N	Ν	N
5	ATSEL005	ATSEL005	ATSEL005	N	Ν	N	N	Y	N	Ν	N
6	ATSEL006	ATSEL006	ATSEL006	N	Ν	N	N	Ν	Y	Ν	N
7	ATSEL007	ATSEL007	ATSEL007	N	N	N	N	N	N	Y	N
N	ew Add	Delete	Default User	r:	NULL	•	1				
	oreme Authorit Can Upload Authority Ope ssword: 12	·				Ipload P Allow	/ Uploa		vord		

5. Logout user that is after an operator has finished the operation, click logout to exit the current user login. The relevant setting is in the screen button, choose to logout user.

6. The file protection function under project window can protect users' rights, opening the file need password.

Project Window ×	and File Protection
 Atsel ATSEL HMI TESTING Communication Link1 Setting Parameter Set User Password Ock Setting File Protection Deadline Prot Language Sett Historical Data Data Transmission Power Down Mai Ladder Edit Ladder Edit Ladder Edit Ladder Edit Ladder Edit Scenes 000:Scene000 Window 	File Protection Image: Confirm Password: Confirm Password: Attention After setting the password, you need password to open the file, please remember your password, and passwords are case sensitive.
000:Scene000	Confirm Cancel Help

7. It supports show user, add user, delete user, modify password, modify level. In the advanced components, drag into the new user, the related interface is automatically generated, where the rights of the corresponding user can be added, the administrator password is the highest authority password, such as the above figure (step 4) the max. password is 123.


	User:	ATSEL008
	Account:	ATSEL008
	Password:	ATSEL008
	Admin Password:	
	A B C D E	F G H
er	Confirm	Cancel

Update program by U DISK

Function

Using USB disk can update HMI's program and firmware version, at the same time, it can also download the historical data of HMI.

Example

1. Click the tool to pop the drop-down menu and select U disk update.

Setting(S)	Tool(T) Help(H)	_
j 🔲	Compile	F7
ດ H	😾 Off_Line_Simulation	F8 (
-	VNC	F9
	Ownload Configuration	F10
3	Upload Configuration	
	— 뒍 Recipe Manager	
	S Compression/Uncompression	
	📰 Internet Upload Log	
	🌮 UdiskUpgrade	

2. Pop up the U disk update window to update the configuration and firmware of the current project, and update the three files to the U disk. Mode of operation: choose the firmware and click the "..." on the right, select save path and store it in the U disk. Click confirm. Check the configuration again, click on the right "..." select save path and store it in the U disk. Click confirm.



und UdiskUpgrade	? ×
✓ firmware	
Save Path	
component	
Save Path	
please input File name:	
configuration file	
Save Path	
ok	Cancel Help

Note: firmware is the version of the upper computer software. It is recommended to save it into the U disk to ensure that the version matches the configuration. U disk max. supports up to 8 different configuration projects. A project needs to modify the engineering name if it needs multiple configurations and adjust it in the "file name please" during updating by U disk. The configuration file is required to be placed in the U disk.

3. After the storage is finished, there are three files in the U disk:

💼 bootconfig	17-Jan-19 9:33 AM	Configuration sett	1 KB
component.uupf	17-Jan-19 9:33 AM	UUPF File	102 KB
📄 firmware.uupf	17-Jan-19 9:31 AM	UUPF File	23,827 KB

4. Insert the U disk which loaded the files onto the touchscreen and restart the touch screen.

5. After power on, the touch screen enters the system setting interface.



after 56 seconds enter calibration mode	
set(IP/Time/BlackLight)	version: 1.40.05.04371
Touch screen calibration	Product model: UH310E
Checkself	Resolution: 1024 X 600
upgrade	

6. Click on the bottom button upgrade to enter the USB update interface.

7. The top 8 are configurations, and the following is the firmware. Click the firmware and the two red buttons that need to be updated, and then click Upgrade to start updating program and firmware. After the update, pop-up Update all success.

You can update firm	ware or component !	You can u	update firmware or c	omponent !
component.uupf	workl.uupf	component.u	upf	workl.uupf
		Componen		Emponent4
Component5		Componen	Update all success.	mponent6
Component7	Component8	Componen		mponent8
Firmwore	Upgrade	Flam	in in the second se	arade
UniN	IAT			

8. Pull out the U disk and restart the touch screen to complete the U disk update.

QR Code

Function

In application, some information needs to be converted to QR code on the touch screen. In ATSEL, we can achieve this function through QR code display. The method of setting a QR code display is listed as below:

Click the two-dimensional code display under the menu of advanced components, move the mouse to the screen area, the mouse displays the cross, click the left mouse button and drag the mouse to add a control. Double click the control to pop up a dialog box, which is the dialog box that set the properties of the two-dimensional code.

- Start address: the information used to generate the two-dimensional code is stored in the memory address of the touch screen. The starting address is the first address read by the two-dimensional code display.
- Address length: the length of address read by the two-dimensional code display.



- Check box: (two-dimensional code generates the following information): if checked, when the project starts running, the contents of the edit box are written to the address to be read by the two-dimensional code display.
- Edit box: input information that you want to write to the specified address to edit box when the check box is checked.

Note: the two-dimensional code generator only displays the default two-dimensional code in the offline simulation and online simulation, and does not generate a new twodimensional code. It generates a new two-dimensional code on the screen only.

Example

1. Two dimensional code is the fixed information.

Select two-dimensional code in the advanced component, select the suitable size and position in the scene, select the "two-dimensional code generated with the following information" in the two-dimensional code properties, input the two-dimensional code information and click confirm.

and Two-dimensional Code Di	Two-dimensional Code Display		
General Visibility			
	Start Address: LW 0 Address Size: 128 Address range: LW0-LW127 enerated with the following information		
https://www.selec.com			
	Confirm Cancel	Help	

2. Two-dimensional code is controlled by address variable

Create a two-dimensional code control, set the length of the two -dimensional code address and address length, pull into a ASCII input display control, and set the address to start address. Download the project to the touch screen, editing the contents of the ASCII to change the contents of the two-dimensional code, and the corresponding information can be displayed by scanning the changed two-dimensional code.



Internet Upload Log

Function introduction

Internet Upload log is used to transfer the Historical data and Alarm data directly to the PC through Ethernet port.

Note: Please keep in mind that this function is only applicable with Ethernet compatible models and not with "-S" Models.

How to Upload the log?

- 1. Create Historical data first.
- 2. Take a function button from Button components and opt for "Upload Log" Task.

usid	Function Button	?	×
General Label Ad	dvanced Visibility		
F	Border Color: Foreground: Background: Pattern: Solid		
Function:	current recipe write Siemens S7-200 Smart Stop Export historical data to USB di	-k	✓
macro	Export alarm data to USB disk Find historical data Display alarm data	36	
	Reboot the HMI Shield ID switch language Open Log		E
	Close Log NULL Open debug window Modify curve point Modify Recipe		



- **□ .** Download the project to the respective HMI.



Select the path where we need to save the transferred data & open the server

and	Atsel	? ×
	Internet upload setting	
Log path:	C:/Users/SM 088/Desktop/Upload Log	Browse
	open server dose server cancel	

Please make sure that it says, "Open Success".

arsal	title	×
i	open suc	cess
	ОК	

7.From HMI Screen, Click on Upload log Function button. It will ask IP address of the master & the type of data which need to be transferred.



One panel connects with multi-devices

Function introduction

One screen multi-devices (extension mode): HMI as a master device, communicates with multiple slaves, when using the extended mode, the configuration address of HMI needs to be distinguished the slave number by # (Slave1: 1#, slave2: 2#).

Minimum communication combination

- 1. HMI (master) +PLC (slave1) +PLC (slave2)
- 2. HMI (master) +PLC (slave1) +HMI (slave2)
- 3. HMI (master) +HMI (slave1) +HMI (slave2)

Communication protocol which extension mode supported: PPI, MPI, MODBUS.

Parameter settings at extension mode: baud rate, slave number, data bits, parity bits and other system parameters.

Master HMI number is not recommended to be broadcast address or same as the slave number, which cause the communication failure.

Example

One panel with multi-devices (PPI):

On ATSEL double-click to open communication port settings of Link1, and change the address mode at extended mode and save it in parameter interface.

Communication Ports Setting		~~ 🔁
General Parameters Communication Parameters Baud Rate: 9600 Data Bits: 8 Check Bit: NONE Stop Bit: 1 Restore Default Setting	Other Touch ID: (0-255) PLC ID: (0-255) Communication Times: (100-65535) Timeout Times: (100-65535) Address Mode: PLC Address Space: (1-255)	0 0 1 0 20 0 ms 200 0 ms 3 0 Expanded Mode • 32 0
	Confirm	ancel Help

Add corresponding components of two PLC slave address at screen,1# is PLC Slave1, 2# is PLC slave2



One panel with multi-devices (MODBUS) :

On Atsel double-click to open communication port settings of Link1, and change the address mode at extended mode and save it in parameter interface.

and Communication Ports Setting	? 🔀
General Parameters	
Communication Parameters Baud Rate: 9600 V Data Bits: 8 V Check Bit: NONE V Stop Bit: 1 V Restore Default Setting	Other Touch ID: 0 * (0-255) PLC ID: 1 * (0-5535) Timeout Times: 20 * ms (0-65535) Timeout Times: 2000 * ms (100-65535) Retry Numbers: 3 * (0-55) PLC Address Space: 32 * (1-255)
	Confirm Cancel Help

Add corresponding components of two PLC slave address at screen,1# is PLC

Slave1, 2# is PLC slave2 plc program as below,





Time set up

Function introduction

The clock setting function can be divided into three functions: downloading system time to HMI, writing time to PLC and synchronizing with PLC.

and Clock
Download the System Clock to the HMI
Vrite Time/Data to PLC
Synchronize Time with PLC
Data Type: 16-Bit BCD 🔻
Length: 7
Write Address: VW100
Start Method
Timed Interval 1 s
© Trigger
Confirm Cancel Help

☐ I Download system time to HMI

■ <</l>If write time to PLC

- Trigger: when the trigger address is 1, write the system time information to the corresponding PLC address. The data type and length are defaults. The default value of data type is 16 bit BCD, and the default value of length is 7.
- Write address: write the system time to the corresponding PLC address.
- The start-up model
- ☆ Time interval: set the time interval as a time unit and write the system time information to the corresponding PLC address circularly.
- ♦ Trigger: when the trigger address is 1, write the system time information to the corresponding PLC address.

■ ✓ Time synchronization with PLC

- Data type and length are defaults. The default value of data type is 16 bit BCD, and the default value of length is 7.
- Read the address: read the address information in the PLC
- The start-up model
- ☆ Time interval: set the time interval as the time unit, and read circularly the information in the corresponding PLC address.
- Trigger: when the trigger address is 1, read the information in the corresponding PLC address.



Note: the range of the input year is (1970 - 2037) .

Example

1. Set the system time on the touch screen

Achieve by the function button to set system time function, or to enter the touch screen system setting interface for system time settings.

Function Button			? 💌
General Label Adva	anced Visibility		
F	Border Color: Foreground: Background: Pattern:	Solid	
Function:		setting current language	-
macro		current recipe write current recipe read current recipe save	Â
Language:		touch voice ON/OFF alarm voice ON/OFF	
		setting screensaver time(minute) setting system time and date	=
		setting current language	
		Siemens S7-200 Smart Run	
		Siemens S7-200 Smart Stop	

2. Download system time to HMI

In the project window, select the clock settings, click the download system time to HMI, you can update the time in the upper to HMI.

3. Write time to PLC

OPLC without real time clock

A, new clock settings, select write time to PLC, set the clock address, such as VW100. The starting time interval is 1s, that is, write PLC once per second.

Project Window X	and Clock
 Atsel ATSEL HMI TESTING 	☑ Download the System Clock to the HMI
Link1 4 亞 Setting 汊 Parameter Set	Write Time/Data to PLC Synchronize Time with PLC
User Password Clock Setting	Data Type: 16-Bit BCD
♥ File Protection ☞ Deadline Prot ♡ Language Sett	Write Address: LW0
I Alarm ☐ Historical Data Data Transmission	Start Method Timed Interval 60 * s
😭 Power Down Mai 4 대 Ladder	Trigger
[1] Ladder Edit 당 Ladder Addre 2 초, Scenes 000:Scene000	Confirm Cancel Help



Clock
Download the System Clock to the HMI
Write Time/Data to PLC
Synchronize Time with PLC
Data Type: 16-Bit BCD 🔻
Length: 7 🔻
Write Address: VW 100
Start Method
Timed Interval 1 s
Trigger
Confirm Cancel Help

B. Set 7 numeric display or numeric input display in the screen and set their address as VW100 to VW112 respectively, which as year, month, day, time, minute, second, week correspondingly.

C. Monitor corresponding VM100 to VM112 address at PLC, and adjust the

	YEAR	MONTH	DAY	HOUR	MINUTE	SEC	WEEK
PLC	9999	9999	9999	9999	9999	9999	9999

corresponding format to hexadecimal to display the time.

[©]PLC has a real time clock and updates the clock through one bit.



A. Add clock addresses of PLC, such as the VB0

B. Add 8 numerical inputs in ATSEL as PLC time display, the data type is 16 bit BCD code, address is VB0~VB7.



C. Add 8 numerical inputs in ATSEL as PLC time setting address, the data type is 16 bit BCD code, address is VB10~VB17.

D. Add a bit button, the address is M0.0, set it as the trigger switch of the clock.

PLC CLK SETTING	9999	DC	9999	DC	9999	9999		9999)(9999) (9999)(9999	D
							[CONF	IRM						
PLC CLK DISPLAY	9999		9999		9999	9999		9999		9999)(9999		9999)

Pay at installments

Function introduction

The installment function is: the user is able to use HMI within a certain period, if the time exceeds the time limit, then HMI will jump to the specified screen of the user, so that the HMI cannot continue to use it. If you want to reuse the HMI, the user has to unlock it through the deadline protection control and enters the correct unlock password.

Deadline Prote				8
Use Deadline				
Password Leve	d: 1 🔻			
Parameter Set	ting			
Passwore	d Level Limit Date	Lin	Date:	2019-01-11 👻
1 1	2019-01-11	09:28:5	Time:	09:28:52
			Scene:	password input
			Password:	0
			use super password	
			Prompt to expire	
			Close password screen trigger	Trigger Address: LB0
		4	open password screen trigger	Trigger Address: LB0
	protection function, you need		sword to remove protection, and use d	leadline unlock to cancel the password.
				Confirm Cancel Help

1. Call Deadline protection

In the project window, the deadline protection settings is optional, and the default is not chosen. If you want to use, you can make the deadline protection settings.

2.Set deadline protection

Password level: up to 12 levels, pop-up password numbers according to actual needs.

Date: the date of expiration prompt under the current selected password level.

Time: the time of expiration prompt under the current selected password level.

Scene: the scene with expiration prompt under current password level. (multilevel password level can share a deadline protection screen).



Password: password required to be completed at the current password level.

When the date and time of the corresponding password level arrive, automatically pop-up deadline unlock screen, after input the password then withdraw from the time frame and return to the original picture. Otherwise, continue to stay in the current deadline screen.

1. Super Password

Set up super password. It's aim to use the super password to unlock all deadline protections.

2. Prompt to expire

When click prompt to expire, when the expiry date is 1 day, 2 days and 3 days, then will pop-up the days to the expiry date, the detail time is same as upper time. The pop-up window can be closed directly.

3. Screen trigger address

When you click close password screen trigger and open password screen trigger, you can set the notification trigger address with the PLC or HMI address.

<u>Remarks: modifying the system time will not affect the expiration date. The</u> <u>expiration date is based on the download time of the project. That is, there is still 1 days</u> <u>before the expiration date, if modify time at this moment, will still be triggered on the</u> <u>second day.</u>

4. User expiration pop-up.

When create a new deadline protection, there will be two blanks in the screen, password input is the expiration pop-up window. When the deadline reaches, the window is popped up automatically, and the password of the response is required to exit the window. The window screen can be edited and input user-defined information.

This is the 88888 maintenance period
Please Input Maintenance Password
Enter Maintenance Password To Use If you have any questions, please contact the manufacturer.



5. Deadline management window

Password edit, another window that automatically pop-up, is the deadline management window, using the screen button to click out the window, in which the expiration date of the corresponding level and password can be set on the touch screen.

Settlement times: 88888 Start Times Settings: 88888
Super password: AAAAAAAA
Current settings:The 88888 times
Staging password: AAAAAAAA
Stage time: 999999 year 999999 month 999999 day
Previous page Next page Save Quit

Example

1. Project target

A project can have three levels password, respectively, at three different time pop-up deadline screen to remind the client trial time has arrived and should pay the related equipment. When a part of the money is paid, the next level password is provided until the next deadline is reached to pop-up again. When the customer provides all the payment, give the highest password permissions and unlock all renewals.

2. Sample operation

A. In the left side of the project window, click the deadline protection, pop-up deadline protection settings window. Check use deadline protection, select 3 in the password level, select the corresponding date and password respectively. When the setting is completed, click OK.



/ ४ ८ ४ ००० () 🗭 A 🎟 💱 🕅	II 🖿 🕀 🛈	☐ 125 ⁴	% ▼		ᅟ == == ∩ ∩ ┣ ⊞	555
Project Window X	M Deadline Protection					?	
Atsel							
 test sw queries 	Use Deadline Protection	n					
4 로 Communication							
Link1	Password Level: 3	•					
🔺 🍄 Setting							
🏋 Parameter Set	Parameter Setting						
User Password	Password Level	Limit Date	Lin	Date:	2019-01-15	•	
Clock Setting File Protection	11	2019-01-15	10:13:0		2019-01-15		
Deadline Prot	11	2019-01-15	10:15:0	Time:	10:13:03	▲ ▼	
Canguage Sett	2 2	2019-01-15	10:13:0	Scene:	password input	•]
Alarm	3 3	2019-01-15	10:13:0	Password:	0		
🗟 Historical Data				use super password			
Data Transmission							J
Power Down Mai				Prompt to expire			
▲ I¤ Ladder 圖 Ladder Edit 댦 Ladder Addre				Close password screen tri	igger Trigger Address: LB	0	
4 🏝 Scenes				open password screen tric	gger Trigger Address: LB	0	
001:Scene000	< III		•				
002:Scene001							
100:password in	After setting the protection	on function, you nee	d this pass	word to remove protection, and	d use deadline unlock to cance	the password.	
101:password in							
Template					Confi	irm Cancel Help	
Ma macro							

B. Click on the password input window, set the corresponding manufacturer and contact information, and put the corresponding payment two-dimensional code. The image of this window screen can be user-defined edited.

т	his is the 88888 maintenance period
	Please Input Maintenance Password
	Enter Maintenance Password To Use If you have any questions, please contact the manufacturer.

C. To save the above two steps then complete the set up of installment payment.

Ladder chart

Function introduction

Support for ladder logic control in ATSEL software. The associated external or internal address is corresponding to the address dedicated to the ladder diagram, and is programmed by the special address of the ladder diagram. The instruction contains the



standard instruction of the IEC61131/1 international ladder diagram. The editing mode is similar to that of Japanese PLC.

Ladder address mapping: you can add bit address, word address, double word address. The register is the address type, number is the ladder address number, and can write the address actual meaning information. For example, LQD0 is the register LQD+ number 0, the relevant address VD100, VD100=LQD0. You can import and export addresses, which can be repeated in other projects.

	register	number	relevance address	note
BIT Address				
BIT Address1	LI 💌	0 🗄	LBO	
WORD Address				
WORD Address1	LIW 💌	0 🕂	LWO	
DWORD Address				
DWORD Address1	LID	0 +	LWO	

Ladder diagram editing: the left is a ladder diagram instruction set, in the ladder diagram editing screen, if click the instruction position which should be placed, click the corresponding instructions, input address information, then the editing screen shows the corresponding ladder diagram instructions. The editing method is basically same as PLC. And, there are common instructions on the ladder menu, which can be directly clicked. Image: insert line, into insert structure vertical line, image: delete structure vertical line, image: clearing (delete), image: on / off the relevant address, image: import ladder diagram, image: clearing diagram. After editing, it will automatically detect the editing correct or not. If not, it will remind the ladder diagram transfer failure. Click confirm automatically saving the ladder diagram project.

Note: timer instruction, timer base is 10ms.

Example

1. Project target

Design a three-person responder, when anyone of them in the first to press, the corresponding seat lights on, the other players press then invalid, the screen shows the name of the first player. The presenter button can turn off all the lights.





2. Project design

A. Establish corresponding table of the address. Establish the address separately, and relevant the ladder diagram address according to the actual address. The project contains 7 switch addresses (4 inputs, 3 outputs) and 1 multi-state display (word address). Add notices of the address name.

<u>Remarks: The address of the ladder diagram can be numbered arbitrary not relevant</u> with bit, word or double word. Register LI and LQ no need to attention actual input and <u>output. For example, V0.0 can be relevant LQ10.</u>

	regi	ster	number	relevance address	note
BIT Address					
BIT Address 1	LI	•	0 +	LBO	
WORD Address					
WORD Address1	LIW	•	0 +	LWO	
DWORD Address					
DWORD Address1	LID	•	0 +	LWO	

B. Ladder diagram Programming is based on ladder address. During programming, click 🚳 to display the relevant address for easy writing.





C. After editing the ladder diagram, the relevant controls can be placed in the screen, and the relevant logic is already operation.

System setup

Function instruction

During starting up the HMI, a progress bar will appear, click the bar to enter the starting property interface. The hmi system can be set up, and the system storage information can be viewed.

Start Prop	erty Settings X	Start Property Settings		
System Infomation Storage Infomation		System Infomation Storage Infomation		
System Version:	2. 02. 01. 00013_ATSEL1	Physical Storage Space:	246.38M	
Product Model:	SP112-GT70-ET	Storage Space Already Used:	84.77M	
Resolution;	800 X 480	Available storage space:	161. 61M	
	000 x 400	Available memory space:	88.68 M	
Enter Project	System Setting	Enter Project	System Setting	
Restore Factory	Restart System	Restore Factory	Restart System	
U disk update		U disk update	Maller	

System settings, in the system settings, you can view the current system information, including the current application software version number, version type, and the IP address of the machine (if no Ethernet shows no support); can adjust the back-light brightness through a scroll bar; in calibration, the touch screen can be calibrated; IP The address can set the IP of the Ethernet HMI.



system Setting ×	system Sotting
SystemInfo BackLight Calibration IP Address System Info System Version: 2.02.01.00014_ATSEL Version Type: Official version IP Address: 192.168.1.100	SystemInfo BackLight Calibration IP Address BackLight Adjust the brightness of the backlight by scroll Setting
system Setting X	system Setting
SystemInfo BackLight Calibration IP Address	SystemInfo BackLight Calibration IP Address
Calibration	Set The IP Address
	IP Address: 192. 168. 1, 100
Re calibration of user touch screen	Subnet Mask:
Calibration	Default Gateway:

U disk update, in the interface, plug in the U disk in the interface can identify the corresponding project files and firmware, click the corresponding update file to click the update, after the update is completed, click restart and pull out the U disk to complete the U disk update.

	U disk update ×				
You can update firmware or component 1					
component.uupf Gemponent2					
Component3	. Component 4				
Component 5	Component6				
Component7 Component8					
Firmware Restart	update updateKer exportLog				

Printer Settings for Thermal Printers

Function introduction

This specific function is used to configure printing of historical as well as alarm data. Currently, we support only Thermal type of printers.

 $\bigcirc \checkmark \checkmark$ Go to settings & Preferences settings >>Printer.



ars	i.	Scr	een Paramet	er Setting		?	×
,	HMI Parameters Setting	Display Setting	Download and	Storage Setting	Printer		
	Open the print Option	I	Printer:	RS232	•		
				Print port setting	s		
				Printer port:	COM2	•	
				Baud rate:	19200	-	
				Data bit:	8	•	
				Parity check: Stop bit:	None 1	• •	
				Stop Dit.	1	•	
							_
				Confirm	Cancel	He	р

2. Open the functions according to your requirement.and match Printer port settings with your printer's settings & click on Confirm.

asd	Scr	een Paramet	er Setting	? ×
HMI Parameters Setting	Display Setting	Download and	Storage Setting	Printer
Open the print Option	ı	Printer:	RS232	~
Print properties		Print port setting	gs	
 Open printing of hi 			Printer port:	COM2 -
✓ Print time	 Print date 		Baud rate:	19200 👻
Open alarm autom	atic printing		Data bit: Parity check:	8
			Stop bit:	1 •
align: 🔘 left	⊖ center	🔿 rignt		
date: DD/MM/YY	-			
time: HH:MM-12HR	L -			
			Confirm	Cancel Help

3. After printer settings have been matched, take a function button and give a task as "Find Historical data".



4. Click on the respective Function button and after finding data, select print history button to give command

Internal register of the system

Function introduction

The internal registers of the system mainly display and control some special functions by the system address, which is convenient for users to trigger relevant system operation.

Bit Register	Bit Register	Bit Register	Bit Register
Address	escription	Dead/write	Address
LB60104	COM1 communicatio n state, if ON communicatio n abnormal, OFF ok	R	LB60104
LB60105	COM2 communicatio n state, if ON communicatio n abnormal but OFF ok		LB60105
LB60106	Network communicatio n state, ON communicatio n not normal, OFF ok		LB60106
LB60107	Communicati on abnormal window, when set ON, abnormal window is not	W/R	LB60107



	allowed to		
	pop out, but		
	set OFF then		
	allowed.		
LB60112	Download	W/R	LB60112
	recipe. set		
	ON download		
	recipe to		
	device and		
	reset		
	automatically.		
LB60113		W/R	LB60113
	upload. set		
	ON upload		
	recipe to HMI		
	and reset		
	automatically.		
LB60114	Save recipe,	W/R	LB60114
	set ON to		
	save recipe to		
	flash & reset		
	automatically.		