

EtherNet/IP C2S-EI Series Valve Terminal User Manual



Nanjing Solidot Electronic Technology

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Product Overview

1.1 Product Introduction

The C2S-EI series valve terminal is a control module integrating valve terminal technology and EtherNet/IP bus technology. It can realize centralized and distributed control, optimize system design, facilitate construction, and simplify debugging, performance testing & diagnostic maintenance of complex systems in the industrial field. The product adopts a modular structure and occupies little space with the addition of pluggable terminals, leading to fast wiring. Moreover, it has easy configuration and supports most of the mainstream EtherNet/IP master stations, so it can be widely used in industrial control systems.



1.2 Product Features

- Support EtherNet/IP industrial Ethernet protocol
- Support cascade communication with M12 bus interface
- Support up to 24 double solenoid valves
- Modular structure and small footprint
- Simple wiring, fast construction and easy maintenance
- Support mainstream solenoid valves and customization, providing easy and fast choices
- Support remote diagnosis, which reduces troubleshooting difficulties

2 Designation Rules

2.1 Designation Rules

$\frac{C2S}{(1)} - \frac{EI}{(2)} - \frac{24}{(3)} \frac{B}{(4)} - \frac{F01}{(5)}$

Item	Value	Description of the values						
(1)	Product line	C2S						
(2)	Bus type	EI: EtherNet/IP						
(3)	Valve positions	08: 8	12: 12	16: 16	20: 20	24: 24		
(4)	Valve Type	Type B: Double solenoid (Single solenoid supported)						
(5)	Solenoid valves	See below Sole	enoid Valve Mode	el Code Table				
(3)	model number	<u></u>						

Solenoid Valve M	lodel Code Table	
------------------	------------------	--

Brand	Code	Valve Distance	Seires	Supported Solenoid Valve Models
	A01	19	4V1	4V110/ 4V120/ 4V130
	A02	23	4V2	4V210/ 4V220/ 4V230
	A04	10.5	7V0	7V0510/ 7V0520/ 7V0530
AirTAC	A05	16	7V1	7V110/ 7V120/ 7V130
	A06	19	7V2	7V210/ 7V220/ 7V230
	A07	19	5V1	5V110/ 5V120/ 5V130
	A08	23	5V2	5V210/ 5V220/ 5V230
				vuvg-lk10-t32/ vuvg-lk10-m52
EESTO	F01	10.5	VUVG-LKTU	vuvg-lk10-B52/ vuvg-lk10-p52
	FUI	10.5	VUVG-L10	vuvg-l10-t32/ vuvg-l10-m52
				vuvg-l10-B52/ vuvg-l10-p52
FESIO	F02	16	VUVG-LK14	vuvg-lk14-t32/ vuvg-lk14-m52
				vuvg-lk14-B52/ vuvg-lk14-p52
		10		vuvg-l14-t32/ vuvg-l14-m52
			0000-214	vuvg-l14-B52/ vuvg-l14-p52
	S01	10.5	SV3	SY3120/ SY3220/ SY3320
	301	10.5	313	SY3420/ SY3520
SMC	502	16	SVE	SY5120/ SY5220/ SY5320
SIVIC	302	10	313	SY5420/ SY5520
	503	10	<u>ev7</u>	SY7120/ SY7220/ SY7320/
	303	19	317	SY7420/ SY7520
	C01	10.5	40.04	4gd119r/ 4gd129r/ 4gd139r
СКР	001	10.5	4001	4GD149R/ 4GD159R
UND	C02	16	4602	4gd219r/ 4gd229r/ 4gd239r
	C02	02 16	4GD2	4GD249R/ 4GD259R

Note: Valve spacing (K value) in mm.

2.2 Model List

Model Number	Product Description
C2S-EI-08B-()	Valve terminal with 8 valve positions (double solenoid valves)
C2S-EI-12B-()	Valve terminal with 12 valve positions (double solenoid valves)
C2S-EI-16B-()	Valve terminal with 16 valve positions (double solenoid valves)
C2S-EI-20B-()	Valve terminal with 20 valve positions (double solenoid valves)
C2S-EI-24B-()	Valve terminal with 24 valve positions (double solenoid valves)

Note: "()" represent solenoid valve model code, support customization.

3 Product Parameters

3.1 General Parameters

Interface Parameter	
Bus protocol	EtherNet/IP
Data transmission medium	CAT5e: UTP or STP (STP recommended)
Transmission distance	≤100 m (distance between stations)
Transmission rate	100 Mbps
Bus interface	2xM12, 4Pin, D-code, female
Technical Parameters	
System power supply	18~36 VDC
Rated current consumption	30 mA
Electrical isolation	500 V
Load power	24 VDC (±25%)
Number of outputs	0~48
Single channel current	Max: 250 mA
Power interface	M12, 5Pin, A-code, male
Power interface surge protection	YES
Power interface reverse connection protection	YES
Channel short circuit protection	YES
Channel open-circuit diagnostics	YES
Channel short-circuit diagnostics	YES
Weight	Depand on different models
Size	Depand on different models (See <u>5.1 Outline Dimensional</u>
	Drawing)
Working temperature	-5~+50℃
Storage temperature	-20~+75℃
Relative humidity	95%, non-condensing
Protection degree	IP20

4 Panel

4.1 Product Structure

Name and function description of each parts of the product



Code	Name	Description
1	Solenoid valves	See "Solenoid Valve Model Code Table"
2	LED indicator	Power ID, operation and bus status
3	Bus interface	2×M12, 4Pin, D-code, female
4)	Power interface	1×M12, 5Pin, A-code, male
5	Exhaust port	G1/4
6	Intake port	G1/4
7	Communication unit	Valve terminal communication and controller
8	Solenoid valve wiring socket	4Pin
9	Manifold base	Main structure, silk screened with "A" and "B" on both ends
(10)	Rotary switch	Set IP address, reset settings

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4.2 Indicator Function

Name	ID	Color	Status	Status description
System power	US	Green	ON	Normal status of working power supply
indicator			OFF	Unpowered or abnormal power supply
Load power	UL	Green	ON	Normal status of working power supply
indicator			OFF	Unpowered or abnormal power supply
Network indicator	L/A0	Green	Flashing	Network connection established with data interaction
IN			OFF	No data interaction or abnormal connection
Network indicator	L/A1	Green	Flashing	Network connection established with data interaction
OUT			OFF	No data interaction or abnormal connection
Operation status	RUN	Green	ON	Network connection established
indicator			Flashing	1Hz: The device has not established a connection, but
				an IP address was obtained; the IP address is
				duplicated; the device is undergoing a power-up test
			OFF	The device has not been given an IP address or is in an
				unpowered state
Alarm indicator	ERR	Red	ON	The valve is shorted/over-tempered or is being restored
				to factory settings
			OFF	Normal system operation or power off

4.3 Rotary Switch

IP address setting

A rotary switch can be used to specify the setting method of the module IP address.



Set value (decimal)	IP address setting method					
001 to 254	Set IP address low 1Byte. Set the IP address in the range of 1 to 254 with "x100" for					
	the hundredth digit, "x10" for the tenth digit, and "x1" for the single digit.					
	IP Address High 3Byte continues the value previously set via the host computer.					
	When the IP address is set to a value other than 000 by rotary switch in the factory					
	factory state, the high 3Byte is 192.168.0.					
000, 255-998	When the rotary switch is set to 255 or above, after the module is powered up, start					
	in the same way as the previous startup and parameters.					
999	Reset Settings.					

The factory rotary switch is set to "000".

Remarks:

1、 Tool selection

Screwdriver specifications: 2 mm opening.

2. The rotary switch IP must be set in the event of a power off. If the IP address needs to be changed during communication, the new setting must be re-powered to take effect.

Reset function

Restoration of factory settings can be executed by special operation of the rotary switch. For details on how to do this, see: <u>7.4 Restoring Factory Settings</u>.

5 Installation

5.1 Outline Dimensional Drawing



L size											
Position	4	6	8	10	12	14	16	18	20	22	24
K=10.5	59.5	80.5	101.5	122.5	143.5	164.5	185.5	206.5	227.5	248.5	269.5
K=16	76	108	140	172	204	236	268	300	332	364	396
K=19	88	126	164	202	240	278	316	354	392	430	468
K=23	103	149	195	241	287	333	379	425	471	517	563
					P si	ze					
Position	4	6	8	10	12	14	16	18	20	22	24
K=10.5	136.5	157.5	178.5	199.5	220.5	241.5	262.5	283.5	304.5	325.5	346.5
K=16	153	185	217	249	281	313	345	377	409	441	473
K=19	165	203	241	279	317	355	393	431	469	507	545
K=23	180	226	272	318	364	410	456	502	548	594	640

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5.2 Solenoid Valve Assembly Sequence

• Supported solenoid valve for valve terminal For details, see <u>Solenoid Valve Model Code Table</u>

• Solenoid valve assembly sequence

The solenoid valves are installed in order from the communication unit end.

Assembly sequence for double solenoid valves: Starting from the communication unit end, install valves from the 1st to the Nth position in sequence, as is shown in the figure below.

Assembly sequence for single solenoid valves: Starting from the communication unit end, install valves from the 1st to the Nth positio on the A side, as is shown in the figure below.



6 Wiring

6.1 Solenoid Valve Wiring

Terminal Connectors Distribution

Terminal connectors are distributed on both sides of the valve terminal manifold base, A-side and B-side respectively. A and B side can be distinguished according to the silkscreen on the end of the manifold base. Take C2S-EI-24B-F02 as an example, the distribution of A-side and B-side terminal connectors is shown in the figure below.



Wiring Terminals						
Torminal	Number of poles	4P				
remina	Wire gauge	22~17 AWG 0.3~1.0 mm ²				

6 Wiring

Wiring Tool Requirements

As the terminals are based on a screw-free design, cable installation and removal can be realized with a slotted screwdriver (size: ≤ 2 mm).

Stripping length requirements

Recommended stripping length: 10 mm

Wiring Method

For a single-strand hard wire, after stripping a required length, press the button while inserting the single-strand wire

For a multi-strand flexible wire, after stripping a required length, directly connect it or use a compatible cold-pressed terminal (tubular insulated terminal, as shown in the table below). Press the button whiling inserting the wire.



• Solenoid valve wiring

The number of 4-pin sockets, which are installed on both side of the manifold base, based on the number of valve positions of different valve terminal models. A pair of "+" and "-" can drive a solenoid valve coil. As shown in the figure below, A1 and A2 can drive a solenoid valve coil respectively.



• Valve terminal wiring

Starting from the communication unit end, the solenoid valve coils on the A side of the manifold base correspond to B side, and the correspondence between the channels and the solenoid valve coils is shown in the figure below.



Solenoid valve wiring principles:

- Install the solenoid valve in accordance with "<u>5.2 Solenoid Valve Assembly Sequence</u>".
- AX and BX can be connected to a double solenoid valve, and AX can be connected to a single solenoid valve. For wiring, please strictly follow the table below, otherwise the solenoid valve will not work or misoperate. "X" means no wiring.

Double solenoid valve wiring (all valves are double solenoid valves)										
Terminals A1 B1 A2 B2 A3 B3 A4 B4 ····										
Solenoid valve number1234····										

Terminals	 A22	B22	A23	B23	A24	B24
Solenoid valve number	 2	2	2	3	2	4

Note: C2S-EI-24B-() valve terminal and 24 solenoid valves were taken as an example. Wirings are different

considering different specifications of the valve terminal.

Double solenoid valve wiring (all valves are single solenoid valves)										
Ferminals A1 B1 A2 B2 A3 B3 A4 B4										
Solenoid valve number1 \times 2 \times 3 \times 4 \times										

Terminals	 A22	B22	A23	B23	A24	B24
Solenoid valve number	 22	×	23	\times	24	\times

Note: C2S-EI-24B-() valve terminal and single solenoid valve were taken as an example. Wirings are different considering different specifications of the valve terminal.

6.2 Power Wiring



The power supply wiring is shown below:



Precautions

- The module system-side power supply and the field-side power supply are configured and used separately, so do not mix them.
 - PE needs to be reliably grounded.

6.3 Bus Wiring

Fieldbus Interface, M12, D-code	Fieldbus Interface, M12, D-code									
	Pin	Function								
	1	TD+, Transmit Data+								
1701072	2	RD+, Receive Data+								
4 - 10 05 3	3	TD-, Transmit Data-								
	4	RD-, Receive Data-								
	-	Housing, Shielded/Protected Ground								

Precautions

• Double shielded cables of category 5 or higher (braided mesh + aluminum foil) like STP cables are recommended.

• The length of the cables between the devices must not exceed 100 m.

7 Operation

7.1 Control Method

Solenoid valves installed on the valve terminal are controled by bytes and one byte control 4 valves. They can also be controlled by bits, in which 8 bits in a group, controlling 1 to 8 channels. The channel value of 1 means solenoid valve is open, the channel value of 0 means solenoid valve is closed. 24 duoble solenoid valves have 6 groups of control positions and control 48 channels. Take 24-position double solenoid valve as an example to introduce the output control function of the valve terminal, the control mode is shown in the table below.

Control Method				valve	e[14]			
Channel Address	valve [14]							
Channel Address	[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Coils	A1	B1	A2	B2	A3	B3	A4	B4
Solenoid Valve		1		0		2		1
Number		I	2		3		4	

Control Method		valve[58]									
Channel Address	valve [58]										
Channel Address	[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]			
Coils	A5	B5	A6	B6	A7	B7	A8	B8			
Solenoid Valve		F		2	_	,		0			
Number	:	5		D			ŏ				

Control Method				valve	[912]				
	valve [912]								
Channel Address	[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	
Coils	A9	B9	A10	B10	A11	B11	A12	B12	
Solenoid Valve		0		0	4	4		10	
Number		9	1	10		11		12	

Control Method		valve [1316]									
Channel Address	Valve [1316] [0]	Valve [1316] [1]	Valve [1316] [2]	Valve [1316] [3]	Valve [1316] [4]	Valve [1316] [5]	Valve [1316] [6]	valve [1316] [7]			
Coils	A13	B13	A14	B14	A15	B15	A16	B16			
Solenoid Valve Number		13 14 15 16									

Control Method				valve	[1720]				
Channel Address	valve [1720] [0]	valve [1720] [1]	Valve [1720] [2]	valve [1720] [3]	valve [1720] [4]	valve [1720] [5]	valve [1720] [6]	valve [1720] [7]	
Coils	A17	B17	A18	B18	A19	B19	A20	B20	
Solenoid Valve Number		17 18 19 20							

Control Method		valve [2124]									
Channel	valve	valve [2124]									
Address	[2124] [0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]			
Coils	A21	B21	A22	B22	A23	B23	A24	B24			
Solenoid Valve											
Number		21	2	2	2	5	2	4			

7.2 Diagnostic Function

The C2S-EI valve terminal has an open load, a short-circuit and over temperature detection. An open load can only be monitored if the valve is closed and a short circuit can only be monitored if the valve is open.

The diagnostic function works the same as the control method as it sends diagnostic information in byte or bit. Under the condition that the valve is closed, the value 0 means normal status and 1 means the valve is in opencircuit condition. Under the condition that the valve is opened, the value 0 means normal status and 1 means the valve is in short-circuit or over temperature condition.

The channel diagnostic information of open load, short-circuit and over temperature corresponds the solenoid valve coils. Taking open-circuit diagnosis as an example, the correspondence is shown in the table below.

Diagnostic Function				Open loa	ad[07]				
Channel	Open [07]	Open[07]	Open [07]	Open [07]	Open [07]	Open [07]	Open[07]	Open[07]	
Address	[0]	[1] [2] [3] [4] [5] [6]							
Coils	A1	B1	A2	B2	A3	B3	A4	B4	
Solenoid									
Valve Number		I	2			5		+	

Note: Open load is abbreviated as Open in the table, same as all below tables.

Diagnostic Function	Open load[815]									
Channel	Open [815]	Open [815]	Open [815]	Open [815]	Open [815]	Open [815]	Open [815]	Open [815]		
Address	[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]		
Coils	A5	B5	A6	B6	A7	B7	A8	B8		
Solenoid Valve		- -				I				
Number	;	D	e	0	7		8			
Diagnostic				Open le	od[16_22]					
Function				Openilo	au[1023]					
Channel	Open [1623]	Open [1623]	Open [1623]	Open [1623]	Open [1623]	Open [1623]	Open [1623]	Open [1623]		
Address	[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]		
Coils	A9	B9	A10	B10	A11	B11	A12	B12		
Solenoid Valve Number	(9	10		11		12			

Diagnostic Function	Open load[2431]								
Channel	Open [2431]	Open [2431]	Open [2431]	Open [2431]	Open [2431]	Open [2431]	Open [2431]	Open [2431]	
Address	[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	
Coils	A13	B13	A14	B14	A15	B15	A16	B16	
Solenoid Valve	10		44		45		40		
Number		3	1	4	1	5		0	

Diagnostic		Open load [3239]									
Function											
Channel	Open [3239]	Open [3239]	Open [3239]	Open [3239]	Open [3239]	Open [3239]	Open [3239]	Open [3239]			
Address	[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]			
Coils	A17	B17	A18	B18	A19	B19	A20	B20			
Solenoid	47		40		10		00				
Valve Number		1		0		3	2	.0			

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Diagnostic Function	Open load[4047]									
Channel	Open [4047]	Open [4047]	Open [4047]	Open [4047]	Open [4047]	Open [4047]	Open [4047]	Open [4047]		
Address	[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]		
Coils	A21	B21	A22	B22	A23	B23	A24	B24		
Solenoid Valve	01		00		22		24			
Number	2	. I	2	2	2	3	24			

7.3 IP Settings and Modifications

7.3.1 Setting the IP Address by Rotary Switch

> Set the IP address with the rotary switch in the factory state

IP address is 192.168.0.XXX (XXX is the setting value of the rotary switch, range 1~254).

Set the IP address with the rotary switch in a state where the IP address has already been set by the host computer

The IP address follows the high 3byte and the low 1byte of the IP address set via the host computer as the setting value of the rotary switch.

For example, when changing the setting of the rotary switch after setting it to 172.10.0.12 via the upper unit, the IP address is 172.10.0.XXX (XXX is the setting value of the rotary switch (1 to 254).

Precautions

For the description and operation of the rotary switch, see "<u>4.3 Rotary Switch</u>".

- When the module is shipped from the factory, the rotary switch is set to "000" and the IP address defaults to 192.168.0.120.
- After the modification by the host computer is completed, the module modifies the startup method to fixed IP startup and restarts automatically. The module starts with the IP address consisting of the rotary switch setting value and the assigned network segment.
- Abnormal rotary switch setting: When the rotary switch is set to 255 or 255 or more, the module starts with the previous startup parameters and method after powering up.

7.3.2 Setting the IP Address via the Host Computer Software

This section introduces how to change the IP address with the KEYENCE KV-8000 and the upper computer KV STUDIO Ver.10G as examples.

a. After finding the device, click the <u>"IP address"</u> to modify it, and select <u>"Fixed IP start"</u> as the IP address setting method. Click the "OK" button after the modification is completed, as shown in the figure below.

📕 EtherNet/IP settings					>	<
File(F) Edit(E) Settings(S) View(V) Conv	vert(C) EDS file(D) Communic	ation(N) Tool(T)	Help(H)			
- 🐗 🕦 🚉 🖓 🖏 🛍 💼 🐘 📑 🖋 😪	5 🙉 🔍 😿 ኬ 🖬 🕐					
KV-8000[0] : 192.168.0.10			EtherNet	/IP unit		ņ
			Unit list((<u>1</u>) Unit setting(<u>2</u>)	Search unit(<u>3</u>)	
				🛱 Display all	~	
			Uni	it name I	Paddress MAC a.	•••
			2 c2:	S-EI-24B <u>192.</u>	<u>168.0.120</u> 0:08	
	IP address settings		×	1		
	IP address setting method(S)	Fixed IP start	~			
	IP address(I)	192 . 168 . (0.120			
	Advanced settings(A)	ОК	Cancel			
			C2S-EI Nanjine When po EDS fil	I-24B[1.1] g Solidot Electri ower on next time le for C2S EI	r Technology Co.,Ltd. :Fixed IP start	
Output						ą
🗈 💼 🗰 ङ 陸 🗛 🏨						
N Node name IP	address Conne	ction	RPI[IN] RPI (ms) ((ms) Time out	Refresh priority	
II I I Message Verify Setup list		<			>	_
			Editor	ОК	Cancel Apply	

Precautions

 If you use BOOTP to modify the IP address, you need to set the request acceptance time during scanning and the timeout time during IP address setting to 60s or more, and you need to set the module as fixed IP start after the modification is completed, otherwise the assigned IP address will be lost after power off.

7.3.3 Setting the IP Address with IP Setting Tool

After the device is powered on, wait for 15s and the device will complete the network service startup. After that, the first scan will be performed by IP Setting Tool to set the IP address.

1. Open the IP Setting Tool and click the <u>"Scan EtherNet/IP devices"</u> button.



2. Set the IP segment and click OK.

📲 IP Setting Tool				- 🗆 ×
File(F) Communication(C) Se	etup(S) Language(L) Help(H)			
State MAC addr.	Device name	IP addr. ▼	Next power on	œrg Setup
	Scan EtherNet/I	devices	×	IP addr.(<u>l</u>)
	IP addr. start(T)	192 . 168 .	D . 1	Scan EtherNet/IP devices(<u>A</u>)
	IP addr. end(E)	192 . 168 .	0.254	
		ОК	Cancel	
Display detailed information(D)			Exit(X)

The scanned device is shown in the figure below.

🟭 IP	Setting Tool								_		\times
File(F)	Communication(C)	Setup(S)	Language(L)	Help(H)							
State	MAC addr. 00:08:DC:00:20:50	C2S-EI-24	Device nam 4B(EtherNet/IP)	e	IP addr. 192.168.0.120	▼)	Next powe Start with fixed IP	er on	Pace Seture IP ac	p Idr.([) EtherNe ces(<u>A</u>)	et/IP
Dis	play detailed informati	on(D)							E	Exit(X)	

3. Double-click the device and set the IP address in the "Setup IP addr." pop-up window, as shown below.

🏭 IP Setting Tool					$ \Box$ \times
File(F) Communication(C)	Setup(S)	Setup IP addr.		×	
State MAC addr.		Please set the IP address.			📭 Setup
00:08:DC:00:20:50	C2S-EI-24	MAC addr.	00:08:DC:00:20:50		6 IP addr.(l)
		Device name	C2S-EI-24B(EtherNet/IP)		Scan EtherNet/IP devices(A)
		IP addr. (required)(I)	192 . 168 . 0 . 120]	
		Host name (optional)(H)	C2S-EI-24B		
		IP addr. setting at next power on(N)	Start with fixed IP ~		
Display detailed informati	on(D)	Search available IP address	es(F) OK Cancel		Exit(X)

7.4 Restore Factory Settings

If the IP address is forgotten, lost or other abnormalities occur during use, the module can be reset by the IP address reset function. The module can restore factory settings through the special operation of the rotary switch as follows:

Scenario 1: The device performs a factory reset while it's powered on and in use.

1) Set the rotary switch to 999 and wait for 2s, then the ERR indicator lights up and the module will automatically resotre factory settings;

2) After the module is restored to factory settings, the IP address is cleared and the startup method is BOOTP;

3) ① Set the rotary switch to 000, 255 or 255 or more (except 999), and the IP address will be restored to the factory address(192.168.0.120), after re-powering up.

② Set the rotary switch to 001~254, and after re-powering up, the IP address is 192.168.0.XXX (XXX is the setting value of the rotary switch, range 1~254).

Scenario 2: The device performs a factory reset while it's powered off.

1) Set the rotary switch to 999 and power up the module, the module will automatically restore factory settings;

 After the module is restored to factory settings, the IP address is cleared and the startup method is BOOTP;

3) ① Set the rotary switch to 000, 255 or 255 or more (except 999), and the IP address will be restored to the factory address (192.168.0.120) after re-powering up.

② Set the rotary switch to 001~254, and the IP address is 192.168.0.XXX after re-powering up (XXX is the setting value of the rotary switch, range 1~254).

7.5 Parameter Description

7.5.1 Output Signal Clear/Hold Function

The output signal of the valve terminal has clear/hold functio, and it can configure the output action of the valve terminal in the abnormal state of the bus.

Clear Output: When communication is disconnected, the output channel automatically clears the output signals.

Hold Output: When communication is disconnected, the output channel keeps on outputting.

The function supports all-channel setting, single-channel setting and 8-channel batch setting according to the driver chip grouping, which can better meet the actual use requirements.

This manual takes KV STUDIO Ver.10G as an example to introduce the parameter configuration method, the specific steps are detailed in <u>7.6.1 Parameter Setting</u>.

7.6 Configuration Applications

7.6.1 Application In KV STUDIO Software Environment

1. Preparations

- Hardware Environment
 - > Valve terminal model C2S-EI-24B
 - > A computer with KV STUDIO Ver.10G software
 - > Shielded cables for valve terminals
 - > One KEYENCE PLC, KV-8000 is used as an example
 - > One switching power supply
 - > Device configuration files
 - Configuration file access: https://www.solidotech.com/documents/configfile
 - **Note:** Valve terminal configuration files of a high number of valve positions are compatible with valve terminals with a lower number of valve positions, e.g., a C2S-EI-20B valve island can use a C2S-EI-24B file.
- Hardware Configuration and Wiring Please follow "<u>5 Installation</u>" and "<u>6 Wiring</u>".

2. New project

- a. Open the KV STUDIO software, select "File" -> "New Project".
- b. In the pop-up box, fill in the <u>"Project name"</u>, select <u>"PLC model"</u>, <u>"Position"</u>, as shown in the figure below.

KV S	TUDIO					
File(F)	View(V)	Monitor/Simulator(N)	Operation recorder/Replay(R) Tool	(T) Window(W) He	elp(H)	
i 🗅 👩		🖻 🛍 🗟 🖶 🗞 🕐 🗄	🖬 Ethernet 🔹 🗄 📾 🖬	? 📲 🔂 🔬 🐝		F5 SF5 F4 SF4 F7 SF7 F8 SF8 F8 SF8
12 =	:= 2	8 H 4 5 6 6		V H > O U B	F 🕐 💷 🗄	· Comments
					_	
			New project		×	
			Project name(N)	PLC model	(К)	
			C2S-EI	KV-8000	~	
			Position(P)			
			D:\workspace\kv_space		Refer(S)	
			Comment(C)			
					^	
					~	
			A\&\ display comments\\\\\\\			
			KVS PROJECT			
			Register special device cmnts(M) ОК	Cancel	

- Project name: Customized
- PLC model: View the PLC and select the model, e.g., KV-8000.

c. The <u>"Confirm unit setting information"</u> window pops up, and you can select <u>"Yes"</u>, <u>"No"</u> or <u>"Read unit</u> setting". In this example, select "No" to ccontinue the operation, as shown in the figure below.



3、 Communication settings

Select the communication method, if the PLC and the host computer software are connected through a network cable, select "Ethernet", if connected through USB, select "USB".

"Ethernet" Operations



Click the button on the menu bar to display the <u>"Comm settings"</u> window as shown below.

PC comm port		
PC comm port		
USB(U)	O Serial(S)	
O Ethernet(E)	O Bluetooth(H)	O Modem(M)
UCD as the set		
USB settings		
No settings.		
Routing setting(R)		
Routing setting(R) PC comm port : USB		
Routing setting(R) PC comm port : USB via VT/DT : No		
Routing setting(R) PC comm port : USB via VT/0T : No via network : No Connected model :		
PC comm port : USB via VT/DT : No via network : No Connected model :		Datai(A)
Routing setting(R) PC comm port : USB via VT/DT : No via network : No Connected model :		Detail(A)
PC comm port : USB via VT/DT : No via network : No Connected model :	OK	Detail(A)

Select <u>"Ethernet"</u>, click <u>"Destinations"</u>, select <u>"1 sample"</u>, configure the IP address, and click <u>"Search dest.(F)"</u>, as shown in the following figure, the IP address is configured in the <u>"192.168.0"</u> network segment.

Comm settings		>
PC comm port		
O USB(U)	O Serial(S)	
Ethernet(E)	O Bluetooth(H)	O Modem(M)
Ethernet settings		
IP address(I)	192 . 168 . 0 . 10	Search dest.(F)
Port No.(P)	8500	Conn. test(T)
Routing setting PC comm port : U: via VT/DT : No	(R) SB	
Routing setting PC comm port : U: via VT/DT : No via network : No Connected model	(R) SB :	Detail(A)
PC comm port : U: via VT/DT : No via network : No Connected model	(R) 58 : : OK	Detail(A) Cancel
PC comm port : U: via VT/DT : No via network : No Connected model Destinations(L) Add to des	(R) SB : tinations list(A)	Detai(A) Cancel

c. In the <u>"Search destination</u>" pop-up window, select the network card and click <u>"Execute(S)</u>", as shown in the following figure.

Search destination				×
Select network card				
Network card (N) Realte	ek PCIe GbE Family Controlle	r		\sim
IP address 192.	168.0.252			
Subnet mask 255.2	255.255.0			
Port No.(P) 8500	Execute(S) Stop(B)		
Elect Etherent with where he			_	
*Network load may increa	oadcast packets reach. (K) use according to the numbe	v only) r of connected units.		
Desuit				
Result	Constant Units and	ID a dalara a	Project come	
MAC address	Connected Unit type	IP address	Project name	
1				
-				
			Select	Cancel
L	1			

d. Select the found PLC and click "Select" as shown in the following figure.

Search destination				Х						
Select network card										
Network card (N)	Realtek PCIe GbE Family Contro	ller	~							
IP address	192.168.0.252									
Subnet mask 255.255.255.0										
Port No.(P) 850	00 Execute(S) Stop(B)								
Find Ethernet unit whe *Network load may i	ere broadcast packets reach. (I increase according to the numb	KV only) er of connected units								
Result										
MAC address	Connected Unit type	IP address	Project name							
00-01-FC-ED-53-73	KV-8000	192.168.0.10	E阀岛重复上下电点亮通…							
-										
			Select Cancel							

e. Click the "OK" button on the Communication Settings window.

"USB" Operations

Select <u>"USB"</u> on the "Comm settings" screen.

4、 EtherNet/IP settings

a. Double click <u>"Unit Configuration -> KV-8000"</u> in the left navigation tree to bring up the <u>"EtherNet/IP</u> settings" window. Select <u>"Manual"</u> or <u>"Auto Configuration"</u> based on needs. Select <u>"Manual"</u> to continue the operation as shown in the figure below. When the setting is completed, click <u>"OK"</u> to close the window.

Rich Edit Werdy Programment Scripts Scripts Convertel Monitor/Simulator(N) Debug) Operation recorder/Replet(N) Convertel Window(N) Held(H) Provide Converted A H N N H N H N H N H N H N H N H N H N	KV STUDIO -[Editor: KV-8000] - [C2S-E	1 *]						
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Image: Second	Function Block					Unit list(1) Unit se	tting(2) Search unit	.(3)
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					Ed	itor	OK Cancel	Apply

5. Installation of EDS files

a. Right-click on the <u>"KV-8000"</u> in the <u>"Unit Editor"</u> window and select <u>"EtherNet/IP setting"</u> to enter the



b. Click <u>"EDS file"</u> in the menu bar of the <u>"EtherNet/IP settings"</u> screen, and then click <u>"Reg"</u> as shown in the following figure.

KV STUDIO -[Editor: KV-8000] - [C2S-EI *	1						
File(F) Edit(E) View(V) Program(M) S	Script(S) Convert(A) Monitor/Simulator(I	N) Debug(D) (Operation recorder/Re	eplay(R) Tool(T)	Window(W) Help(H)		
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Project	9 × Main ×						
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🚍 🚔 Program: C2S-EI	File(F) Edit(F) Convert(0) View(V) Onti	on(O) Window(M)	Holo(H)		_	
Every-scan execution	LtherNet/IP settings					-	
Initialize module	File(F) Edit(E) Settings(S) View(V)	Convert(C) EDS	file(D) Communicat	tion(N) Tool(T) H	lelp(H)		
		/ s. @ @	Reg(I)				
Fixed-period module			Delete(D)		EtherNet/IR unit		
Inter-unit sync module	KV-8000[0] : 192.168.0.10		Search(S)		contraction for the set	m la la ha	*
a B Macro			Edit comments(E)		Unit list() Unit settin	g(<u>z</u>) search unit(2
- 🛃 Subroutine macro			Add to scan list(A)				
- Self-hold macro			Display all EDS files(V	o	Unit name	Rev. El	os fil ^
E Pile register setting			0		RV-5500	1.1 8	-5500
- 0:Memory card			Property(P)		kv-7500	1.1 KV	-7500
1:CPU memory					KV-8000	1.1 KV	-8000
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					RV-N16ER	1.1 16	-poin
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					KV-N8ET*	1.1 8-	point
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	Output						ā
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	N Node name	IP address	Connec	tion	RPI[IN] RPI[OUT] (ms) (ms) Ti	me out Re pri	efresh iority
	H • • H Message Verify Setup list			<			>
	Read EDS file, and register to the unit list.			Edito	r (OK Cancel	Apply

c. In the folder where the EDS file is placed, select the EDS file of the corresponding model and click "OK", the configuration file installation is completed, as shown in the following figure.

high high hith (onverti	A) Wew(M) (Jot		1)							
🛼 EtherNet/IP settings							-	(×
File(F) Edit(E) Settings(S) View(V)	Convert(C) EDS	file(D) Communication(N)	Tool(T)	Help(H)						
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				EtherNet	/IP unit					д
KV-8000[0] : 192.168.0.10				Unit list((1) Unit cetti	ag(2) Sear	ch uni	+(3)		
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				<u>a</u>	C2P-EI-24B		1.1 F	EDS f	Eil	
					C2S-EI-08B		1.1 F	EDS f	Eil	•
				<u>.</u>	C2S-EI-16B		1.1 F	EDS f	Eil	•
				E05 (C2S-EI-24B	-	1.1 H	EDS f	Eil	•
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H + + H Message Verify Setup list		<								>
			Edi	tor		ок с	ancel		Apply	
							-			

6, Topological configuration

Topology configuration can be "manually added" and "auto-configurated". In this configuration manual configuration is used.

a. Enter the <u>"EtherNet/IP settings"</u> page and switch to the <u>"Search unit"</u> tab, as shown in the following figure.

LtherNet/IP settings							_		×
File(F) Edit(E) Settings(S) View(V)	Convert(C) EDS	file(D) Communication(N)	Tool(T)	Help(H)					
📕 🕼 🖹 🖏 🕹 👘 🐘 🔤 🐔	/ 🗟 🛱 🖗 🗹	la li 🕜							
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				Unit list(<u>1</u>) Unit s	etting(2)	Search unit(<u>3</u>)		
					🐴 Display	/all		\sim	
				Uni	it name	IP	address	MAC	a
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Output									
	1				1	1			
N Node name	IP address	Connection		RPI[IN] (ms)	RPI[OUT] (ms)	Time out	Refi	resh	
				(and)	(110)		prio		
H 4 + H Message Verify Setup list									>
			Edi	tor		ОК	Cancel	Appl	y 🛛

b. Click and the USB connection method is shown in the following figure.

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📕 Ethe	erNet/IP settings	1 VION(VI LIDTA								×
File(F)	Edit(E) Settings(S) View(V)	Convert(C) EDS	file(D) Communication(N)	Tool(T) H	elp(H)					
📲 🕦	👫 🗞 💊 👘 🔚 🖬 🖋	🗟 🛱 🖗 😿	io, itt 🕜							
	₩-8000[0] : 192.168.0.10				EtherNet,	/IP unit				ą
T					Unit list(1) Unit se	etting(<u>2</u>) Se	arch unit(<u>3</u>)		
						🗳 Display	all		\sim	
					Uni	t name	IP a	ddress	MAC	a
		Select c	ommunication path		×					
		Ethe	rnet port of EtherNet/IP unit via P	PLC(P)						
		OPCE	Ethernet port direct link(D)							
										>
			ок	Can	cel					
Output										
• •	# 57 1 🕏 🛼 1 🏬									
N	Node name	IP address	Connection	1	RPI[IN] (ms)	RPI[OUT] (ms)	Time out	Ref	resh rity	
H 4 F	H Message Verify Setup list		<							>
				Edito	r		ОК	Cancel	Apply	

c. "PC Ethernet port direct link" as the connection method is shown in the following figure.

📕 EtherNet/IP settings						_		<
File(F) Edit(E) Settings(S) View(V)	Convert(C) EDS	file(D) Communication(N) Too	ol(T) Help(H)					
📲 🕼 🐕 🖧 🖕 👘 🕌 📾 🤗	6 🔍 🔍 🗹	to ti 🕐						
KV-8000[0] : 192.168.0.10			EtherNet	t/IP unit				ņ
			Unit list	(<u>1</u>) Unit se	etting(2) Se	arch unit(<u>3</u>)		
			• ••••	🐴 Display	all		~	
			Un	it name	IP a	ddress	MAC a	••
	Select of	communication path	×					
	OEthe	ernet port of EtherNet/IP unit via PLC	(P)					
	● PC	Ethernet port direct link(D)						
								>
		ОК	Cancel					
Output								ņ
<u>b b # 5 2 5 </u>								
N Node name	IP address	Connection	RPI[IN] (ms)	RPI[OUT] (ms)	Time out	Ref: prio:	resh rity	
H ← → → Message Verify Setup list		<					>	_
			Editor		ОК	Cancel	Apply	

d. Select <u>"PC Ethernet port direct link"</u> to bring up the <u>"Select network card"</u> window, and set the local NIC and IP address, as shown in the following figure.

🙀 EtherNet/IP settings								-		×
File(F) Edit(E) Settings(S)	View(V) Convert(C) EDS file(D) C	Communication(N) To	ool(T) He	elp(H)					
📲 🕼 🗱 🖏 👗 👘 👘	1. In 19 19 19 19 19 19 19 19 19 19 19 19 19	🔍 🗹 🛛 🖬 🛛	0							
KV-8000[0] : 192.10	58.0.10				EtherNet/	(IP unit				ņ
					Unit list(L) Unit s	etting(2)	Search unit(<u>3</u>)	<u> </u>	
						🐴 Displa	y all		\sim	
					Uni	t name	IP	address	MAC	a
	Select network card						×			
	Network card(N)	Realtek PCIe GbE	Family Controller				~			
	IP address	192.168.0.252								
	Subnet mask	255.255.255.0								
	Gubilet mask			_						
					OK	Ca	ncel			>
Output										д
<u> </u> •10 # <i>₽</i> 880 ∰										
N Node name	E IP add	ress	Connection	F	RPI[IN]	RPI [OUT]	Time ou	It Ref	resh	
					(ms)	(105)		prio	rity	
H → → → Message (Verify)	Setup list		<							>
				Editor	-		ОК	Cancel	Apply	

e. Click to search for devices in the network. Set the IP address segment for searching, and click

<u>"Search"</u> as shown in the following figure.

EtherNet/IP settings	- C X
File(F) Edit(E) Settings(S) View(V) Conve	(C) EDS file(D) Communication(N) Tool(T) Help(H)
📲 🕼 👬 🖏 👗 🖿 👘 🕌 🚳 🕼) 🔍 📧 📴 😮
KV-8000[0] : 192.168.0.10	EtherNet/IP unit
	Unit list(1) Unit setting(2) Search unit(3)
	📲 🎇 🖓 Display all 🗸 🗸
	Unit name IP address MAC a
	Search unit settings X
	Search start address(T) 192 . 168 . 0 . 0
	Search end address(E) 192 . 168 . 0 . 255
	Search unit without IP address(11)
	Request accentance time(0) 15 S
	Search(F) Cancel
Output	1
🖻 💼 🗰 ङ 🔀 騒 🏪	
N Node name IP a	dress Connection RPI[N] RPI[OUT] Time out Refresh
	(ms) (ms) priority
H • • H Message Verify Setup list	
	Editor OK Cancel Apply

f. When the search is complete, the display is shown below.

EtherNet/IP settings		Mindow/Mil Boin/F					-		×
File(F) Edit(E) Settings(S) View(V) Conve	t(C) EDS file(D)	Communication(N)	Tool(T)	Help(H)					
📕 🕼 🖹 💫 👗 🛍 👘 🕌 🚳 👘	段 🔍 🗹 📘	1 🕢							
KV-8000[0] : 192.168.0.10			EtherNe	t/IP unit					ņ
			Unit list	(<u>1</u>) Unit s	setting(2)	Search unit(<u>3</u>)			
			4 %	A Displa	y all		~		
			Un	it name	102.14	address	MAC	addres	s . 50
				.5 61 246	192.10	0.0.120	100.00.00		
			C28-7	T_24B[1]					
			Nanjin	g Solidot	Electric	Technology (Co.,Ltd.		
			When p EDS fi	ower on ne le for C2:	ext time:F S EI	ixed IP sta:	rt		
Output			·						ņ
• • • • • • • • • • • • • • • • • • •									
				RPTITNI	RPT (OUT)		Refi	resh	
N Node name IP a	ddress	Connection		(ms)	(ms)	Time out	prior	ity	
H A N Message Varify Setup Fort		Π							
Verily Setup list			E	diter		OK	Canaal	Anal	
			E	uitor		UK	Carlcel	Арріу	

g. Double-click the found device to add it to the configuration, as shown below.

LtherNet/IP settings	- 🗆 ×
File(F) Edit(E) Settings(S) View(V) Convert(C) EDS file(D) Communication(N)	Tool(T) Help(H)
📲 🕼 🐕 🐁 🕹 🗈 🐁 🛤 🌌 🌮 🚳 🚳 🧖 😿 🛍 😭 🥝	
KV-8000[0] : 192.168.0.10	EtherNet/IP unit 📮
	Unit list(1) Unit setting(2) Search unit(3)
	👫 🏪 👬 Display all 🗸
1: C2S-EI-24B : 192.168.0.120	Unit name IP address MAC address
EXClusive Owner	C2S-EI-24B 192.168.0.120 00:08:DC:00:20:50
	C2S-EI-24B[1.1]
	Nanjing Solidot Electric Technology Co., Ltd. When power on next time: Fixed IP start
	EDS file for C2S EI
Output	4
🖻 💼 🗰 🌮 🐱 🗛 🏨	
N Node name ID address Connection	RPI[IN] RPI[OUT] Time out Refresh
And the second s	(ms) (ms) rime out priority
I ■ C25-E1-24B 192.168 MP Exclusive Owner [I	N_100 20.0 20.0 RP1*16 Normal
II II ↓ ↓ H Message/Verify Setup list / [] <	>
	Editor OK Cancel Apply

7、 Setting the IP address

In the interface of the found device, double-click the IP address column and configure the IP address in the pop-up box. The default address network segment is 192.168.0.

Description:

-The timeout for setting the IP address needs to be configured to 60s.

-If the dip switch has been configured with an IP address, it takes precedence.

In this example, the default IP address of C2S-EI-24B is 192.168.0.120.

8、 Parameter setting

a. Click the Switch Mode option in the menu bar to switch to "Editor" mode, as shown in the following figure.

KV STUDIO -[Editor: KV-8000] - [C2S-EI *]							
File(F) Edit(E) View(V) Program(M) Script(S) Convert(A)	Moni	itor/Simulator(N) Debu	ig(D) Operation	n recorder/Replay(R) Tool(T) Window(W) Help(H)	
i 🗅 📂 🗔 📾 🖻 焓 🗟 🖶 🗋 🞝 🕗 i 🛍 Ett	nernet	•	i 🗈 💕 📲 🔂 🖻	1 🐝 🏛 😂 📼	EV : F5 SF5 F4 SF4 F7 5	F7 F8 SF8 <u>F9 SF9</u> 2- I : <u></u>	
1 🖉 🗄 🗄 🌌 🐼 🎬 🖷 🏷 🗞 🛼 🔘 (A H	$ H H \blacksquare H > \bigcirc$	- 5 0 0	Editor	Comments Comment 1	-
Project 🕴 🗸	Main 🗙				Editor		
 Unit configuration [0] XV-3000 [0] Duit configuration switching Device comment [1] Label [2] Operation recorder setting [2] CFU system setting [3] Program: C2S-EI [3] Program: C2S-EI [4] Dvic 	00001		1	2	Monitor Online edit Simulator Simulator edit Replay	4	5
 Intrialize module Standby module Standby module Fixed-period module Inter-unit sync module Function Block Macro Subroutine macro 	00002						
 Bell-hold macro Define default File register setting 0:Memory card 1:CFU memory User document 	00003						
	00004						

b. Enter the <u>"EtherNet/IP settings"</u> screen and click <u>"Exclusive Owner"</u> to bring up the <u>"Connection settings"</u> window. In the window, click "Setup parameter" as shown below.

EtherNet/IP settings	Viewi	() ()ntion(()) Window(W	Halp(H)			- 🗆 X
File(F) Edit(E) Settings(S) View(V) C	onvert	Connection settings - 1:C2S	-EI-24B	?	X	
	G. (5	Connection list(L)			- 1	
		No Connec	tion	Application type		
KV-8000[0] : 192.168.0.10		1 Exclusive Owner [IN	100,OUT_150]	exclusive owner	- H	4
					(2)) Search unit(<u>3</u>)
1: C2S-EI-24B : 192.168.0	.120					^
Exclusive Owner						1
		Add(A) Delete(E)			192.168.0.120
		Connection name(C)	Exclusive Owner		~	C2S-E1-24B
		oonnoolon nanio(o)	Exclusive Owner		-	Nanjing Solidot E
		Time out(T)	RPI*16 ~ (IN:320	0ms / OUT:320.0ms)		1.1
		Refresh priority(F)	Normal		~ s	<setting></setting>
		Г	Satur parameter/P) Assign device(D)			<setting></setting>
		- IN (input from adapter)	Getup parameter(i).	Assign device(D)		No
		Connection type	Point-to-point ~		~	onit error
		Connection type				No
		Connection point	IN_100		~	No
		Data size	6 Word		k	
		Send trigger	Cyclic		\sim	~
		RPI (communication cycle)	20.0 ms (2.0	to 50.0ms)		
		Production inhibit time	ms		- 1	
		OUT (output to adapter)				
Output		Connection type	Point-to-point		~	
		Connection point	OUT_150		~	
N Node name	IP ad	Data size	3 Word		ου	nt Refresh
1 C2S-EI-24B 1	92.16	RPI (communication cycle)	20.0 ms (2.0	(to 50 0ms)	6	Normal
				th INI		
H A > H Message Verify Setup list			Markeep consistent wi			>
				OK Cance	l c	Cancel Apply
	_					

c. In the "Setup parameter" window, you can configure the parameters of the valve terminal. The clear/hold function of the output signals in the valve terminal C2S-EI series is shown in the following figure.

EtherNet/IP settings					_	X
File(E) Edit(E) Settings(S) View(V) Convert	onnection settings -	1:C2S-EI-24B		7 X		
	onnection list(L)					
	No. C	onnection	Application typ	e	-	
KV-8000[0] : 192.168.0.10	1 Exclusive Owne	r [IN_100,OUT_150]	exclusive owner			+
	Setup paramete			×	2	Search unit(3)
	Setup paramete					
1: C2S-EI-24B : 192.168.0.120	Parameter(P)	C2S-EI-	24B	\sim		A .
Exclusive Owner	No F	Parameter	Set value Attribu	te	H	192.168.0.120
	/ 0001 BusFa	ult Clear/Hold 1:Ho	Id R/W			C2S-EI-24B
	onr 0020 Clear/H	lold[07] 0	R/W	\sim		C2S-EI-24B
	0021 Clear/H	lold[815] 0	R/W			Nanjing Solidot E
	0022 Clear/H	lold[1623] 0	R/W			1.1
	efre 0023 Clear/H	lold[2431] 0	R/W	\sim	s	<setting></setting>
	0024 Clear/H	lold[3239] 0	R/W		••	<setting></setting>
	0025 Clear/F	lold[4047] 0	R/W			No
				~	••	Unit error
	Con			- i		No
	Con			\sim		No
	Data				k	
	Sen Description	New Help String		~		~
	RPI Bange	I fito 2				
	Current set	1				
	Proc Value Romarko					
-	OU				-	
Output	Con			\sim		
🖻 💼 🛤 🍠 🔀 🎭 🔛	0					
						Refresh
N Node name IP ad	Data Restore to defai	ult(D)	OK Cance		out	priority
1 C2S-EI-24B 192.1	DPI (communication of	volo) 20.0 mo	(2.0 to 50.0mc)		6	Normal
	Arr (communication o		(2.0 to 50.0115)			
H + + H Message Verify Setup list		Keep consiste	ent with IN			>
			OK	Cancel		Cancel Apply
				0.0.001	-	Apply

d. For Output signal's clear/hold function, double click the set value of parameter <u>"BusFault Clear/Hold"</u> to change values, **0** means clear and **1** means hold. When set value is **2**, it means single-channel setup or group setup and the following 0020~0025 parameters are valid, as shown in the figure below. Click <u>"OK"</u> to save the parameter, click <u>"Apply"</u> in the <u>"EtherNet/IP settings"</u> window and download it to the controller to make the parameter take effect.

LetherNet/IP settings								- 🗆 ×
File(F) Edit(E) Settings(S) View(V) Convert	Conne	ction settings - 1:C2S-EI-	24B		?	\times		
📲 🕦 🐕 🖌 🗈 🗈 📕 📑 🔗 🚳 🕼	Conn	ection list(L)						
	No.	Connection		Арр	lication type			
KV-8000[0] : 192.168.0.10		Exclusive Owner [IN_100,	OUT_150]	🚯 exclusive	owner		(2)	le trait
		Setup parameter			×	1	(2)	Search unit(3)
1: C2S-EI-24B : 192.168.0.120 Exclusive Owner		Parameter(P)	C2S-EI-2	24B			P	1
		No. Parameter		Set value	Attribute			192.168.0.120
	1	0001 BusFault_Clear/	Hold 1 : Hol	d	R/W			C2S-EI-24B
	Conr	0020 Clear/Hold[07]	0		R/W	\sim		C2S-EI-24B
	Time	0021 Clear/Hold[815]	0		R/W			Nanjing Solidot E
	Time	0022 Clear/Hold[1623	8] 0		R/W			1.1
	Refre	0023 Clear/Hold[2431	0		R/W	\sim	s	<setting></setting>
		0024 Clear/Hold[3239	0 [0		R/W		• •	<setting></setting>
		0025 Clear/Hold[4047	'] 0		R/W	-		No
	- 1151 ()						•••	Unit error
	Con					\sim		
	Con					\sim	••	No
								No
	Data						k	
	Sen	Description New Help	String			~		
		Default value 1	oame					~
	RPI	Range 0 to 2						
		Current set 1						
	Proc	Remarks						
	OU						-	
Output	Con					\sim		
🖻 💼 🛤 🍠 🖻 🎭 🐘	0							
N Node name IP ad	Data	Restore to default(D)		ОК	Cancel		out	Refresh priority
1 C2S-EI-24B 192.1(DP	(assessmentian analys) 20	0	(0.0 to 50.0-			6	Normal
_	RPI	(communication cycle) 20.	• ms	(2.0 to 50.0h	ns)			
H A N Message Verify Setup list		✓ H	(eep consiste	nt with IN			-	>
terry Scup ist								
				OK	Can	cel	C	Cancel Apply

e. For output signal's clear/hold function, if <u>0001 "BusFault Clear/Hold"</u> is set to **2**, double-click on the set value of the grouping parameter of 0020~0025 below, you can set clear/hold per single channel, as shown in the figure below. Click <u>"OK"</u> to save the parameter, and then click <u>"Apply"</u> in the <u>"EtherNet/IP Settings"</u> window and download it to the controller to make the parameter take effect.

EtherNet/IP settings		- 🗆 X
File(E) Edit(E) Settings(S) View(M)	onnection settings = 1:023=EI=24B	
	Connection list(L)	
📲 🕼 🎬 🖏 💑 🖨 🕞 🐘 🗳 🖓	No. Connection Application type	
MT-9000101 - 192 169 0 10	1 Exclusive Owner [IN_100,OUT_150] 🛛 🛣 exclusive owner	à
KV-8000[0] : 192.168.0.10	Setup parameter X it set	tting(2) Search unit(<u>3</u>)
1. COC-RT-04R . 100 100	Parameter(P) C2S-EI-24B	
Exclusive Owner	No. Parameter Set value Attribute s	1
	0001 BusFault Clear/Hold 2: Set by channel R/W	192.168.0.120
	Conr 0020 Clear/Hold[07] 0 R/W	C2S-EI-24B
	0021 Clear/Hold[8.,15] 0 R/W	C2S-EI-24B
	Time 0022 Clear/Hold[16.23] 0 R/W	Nanjing Solidot E
	Refre 0023 Clear/Hold[2431] 0 R/W	1.1
	0024 Clear/Hold[3239] 0 R/W sett	tings <setting></setting>
	0025 Clear/Hold[4047] 0 R/W n ad	dap <setting></setting>
	IN (er No
	Con v mes	ssa Unit error
	icat	tion
		set No
	Data tor	No
	ty c	check
	Sen Description New Help String	
	Default value 0 RPL D	~
	Current set 0	
	Pro(value	
	Remarks	
Output	Con	а
	Con	
N Node name	Data Restore to default(D) OK Cancel	me out Refresh
1 C2S-E1-24B	RPI (communication cycle) 20.0 ms (2.0 to 50.0ms)	T*16 Normal
	Keep consistent with IN	i io noimi
H + + H Message Verify Setup list	OK Cancel	>
		OK Cancel Apply

- f. When the configuration is complete, click the <u>"OK"</u> button in the <u>"Setup parameter"</u> window.
- g. In the <u>"Connection settings"</u> window, click the <u>"OK"</u> button.
- h. In the <u>"EtherNet/IP settings"</u> window, click the "<u>Apply</u>" button and click the <u>"OK"</u> button.
- i. In the <u>"Unit Editor"</u> window, click the <u>"Apply"</u> button and click the <u>"OK"</u> button.

9, Configuration download

After module configuration and parameter setting are completed, download to PLC to operate.

a. Click <u>"Monitor/Simulator (N) -> Transfer to PLC -> Monitor mode (C)</u>" in the menu bar as shown below.



 The Transfer Program window pops up, check <u>"Clear program in PLC"</u>, click <u>"Select all"</u>, click <u>"Execute"</u> to download the program to the PLC, as shown in the following figure.



c. A prompt box pops up "Change to PROGRAM mode and overwrite? Contnue?" Click to select <u>"Yes"</u> as shown below.



d. After overwrite is completed, a pop-up box will appear, "Change to RUN mode", click and select "Yes", as shown in the figure below, to enter the monitoring mode.

KV STUDIO	×
Change to R	UN mode?
是(Y)	否(N)

e. After the configuration is downloaded, it is shown in the following figure.



10, Data monitoring

a. In monitor mode, double click <u>"C2S-EI-24B"</u> icon to open the monitor table, you can monitor the module as shown in the following figure.



W00~W02 are the monitoring values for the open load detection function of the valve terminal. W03~W05 are the monitoring values for the short circuit or over temperature detection function of the

valve terminal.

W06~W08 are output control function of the valve terminal

b. To turn on any of the solenoid valve coil outputs of the valve island, take the first channel as an example, you can double-click on the current value of W06 and enter 1 to turn on the first solenoid coil channel, as shown below.



c. If you need to control a group of solenoid valve coil outputs, take the first group of channels as an example, you can double-click the current value of W06 to enter **255** to turn on the first group of solenoid valve coil channels, as shown in the following figure.



7.6.2 Application In CODESYS V3.5 Software Environment

1, Preparations

- Hardware Environment
 - > Valve terminal model C2S-EI-24B
 - > One computer pre-installed with CODESYS V3.5 software
 - > Shielded cable for valve terminal
 - > One switching power supply
 - > Device configuration files

Configuration file access: https://www.solidotech.com/documents/configfile

Note: Valve terminal configuration files of a high number of valve positions are compatible with valve terminals with a lower number of valve positions, e.g., a C2S-EI-20B valve island can use a C2S-EI-24B file.

Hardware Configuration and Wiring
 Please follow "<u>5 Installation</u>" and "<u>6 Wiring</u>".

2. Installation configuration files

- a. Open CODESYS software and select <u>"Tools -> Device Repository"</u> to install the EhterNet/IP EDS device descriptions file.
- b. The Device Repository window pops up, click <u>"Install"</u>, select the relevant EDS file to install. Successful installation shows that the device "xxxx" installed to the device repository, as shown in the following figure.

	II REPERTIN				COPEDIC
Device	Repository				
ocation	Sustem Deperitory			~	Edit Locations
ocation	(C:\ProgramData\CODESYS\	Devices)		· ·	Luit Locations.
nstalled d	levice descriptions			r	
String for	a fulltext search	Vendor: <all td="" ve<=""><td>endors></td><td>~</td><td>Install</td></all>	endors>	~	Install
Name		Vendor		^	Uninstall
	- 🗍 C2P-EI-24B	Nanjing Solid	dot Electric Techno	ology Co.,	Export
	C2S-EI-08B	Nanjing Solid	dot Electric Techno	ology Co.,	
	C2S-EI-16B	Nanjing Solid	dot Electric Techno	ology Co.,	
	C2S-EI-24B	Nanjing Solid	dot Electric Techno	ology Co., ∀	
•					
🖃 - 🚺 D	:\项目测试\C2S-EI阀岛\配置文 -	(件\EDS\EDS v1.4.0\C2	S-EI_24B_v1.4.0.6	eds	
· (Device "C2S-EI-24B" installed	to device repository.			
					Details
				_	
					Close
					0,000

3. New project

a. Click <u>"File"</u>, select <u>"New Project"</u>, enter the project name, click <u>"OK"</u>, as shown below.

🖹 New Pr	oject					×
Categories		Templates				
professional Lib	raries ojects	Empty project	HMI project	Standard project	Standard project w	
A project co	ontaining one device, one app	lication, and an e	empty implement	tation for PLC	PRG	7
Name	Untitled4					
Location	D:\workspace\codesys_space	ce \ EI			~	
				OK	Cancel	

4、 Add "Ethernet"

- a. Start the PLC with "CODESYS Control Win V3 x64 SysTray".
- b. Double-click "Device (CODESYS Control Win V3 X64)" in the left navigation tree and click "Scan Networks".
- c. Select devices, scan for networks, and networks are active, as shown in the following figure.

Device X			
Communication Settings	Scan Network Gateway - Device -		
Applications			
Backup and Restore			
Files			····
Log	Gateway-1	Gateway	[0000.9001.6A1F] (active)
PLC Settings	IP-Address: localhost		Device Name: DESKTOP-8EEUM2N
PLC Shell	Port:		Device Address:
Users and Groups	1217		Target ID:
Access Rights			0000 0004 Target Type:
Symbol Rights			4096
IEC Objects			3S - Smart Software Solutions GmbH
Task Deployment			Target Version: 3,5,15,10
Status			
Information			
	_		

d. Right click on "Device(CODESYS Control Win V3 X84)" in the left navigation tree and select "Add Device".

e. The Add Device window pops up, select <u>"EtherNet/IP -> Ethernet Adapter -> Ethernet</u>", click <u>"Add</u> <u>Device</u>", as shown in the following figure.

Name Ethernet Action Action Append device Insert device	O Plug device O Upo	date device		
String for a fulltext search Name Fieldbuses Fieldbuses Fieldbuses Fieldbuses Fieldbuses Fieldbuse Fieldbuse Fiel	Vendor	Vers	ion Descriptio	n
Ethernet Adapter Ethernet Adapter Ethernet Ethernet/IP Scanner Adapter Modbus Porfibus Group by category Display all y	3S - Smart Software S ersions(for experts only	olutions GmbH 3.5.1	5.0 Ethernet Link	с. •
Name: Ethernet Vendor: 3S - Smart Software So Categories: Ethernet Adapter, Automation Version: 3.5. 15.0 Order Number: -	lutions GmbH Ethernet Adapter, Ethern	net Adapter, Home&Build	ng v	R
Append selected device as last child Device (You can select another target no	d of de in the navigator whil	e this window is open.)	Add Device	Close

- f. Right-click "Ethernet (Ethernet)" in the left navigation tree and select "Add Device".
- g. Select <u>"EthernetIP -> Ethernet/IP Scanner -> Ethernet/IP Scanner"</u> and click <u>"Add Device"</u> as shown below.

Devices 👻 👎	Device X	
Untitled33 Untitled33 Device (CODESYS Control Win V3 x64)	Communication Settings Scan Network Gateway - Device -	
🖹 🗐 PLC Logic	Applications	
🖹 💮 Application		
📶 Library Manager	Add Device	× _
PLC_PRG (PRG)	Name EtherNet IP Scapper	
Task Configuration	Action	
🖃 🍪 MainTask (IEC-Tasks)	Action	
PLC_PRG	Append device O Insert device O Plug device O Opdate device	00
Ethernet (Ethernet)	String for a fulltext search Vendor <all vendors=""></all>	~ vi
	Name Vendor Version Descriptio	on
	E- fill Fieldbuses	00
	= EtherNet/IP	ra la
	🖳 🕂 👄 EtherNet/IP Local Adapter	po
	🖹 😑 👄 EtherNet/IP Scanner	rg
	EtherNet/IP Scanner 3S - Smart Software Solutions GmbH 3.5.15.10 EtherNet/IP	Scanner 96
	🛞 - 💵 Modbus	rg
	🛞 - 🏧 Profinet IO	
		19
	c	>
	Group by category Display all versions (for experts only) Display outdated versions	
	Name: EtherNat/ID Scanner	
	Vendor: 3S - Smart Software Solutions GmbH	
	Categories: EtherNet/IP Scanner	
	Version: 3.5.15.10	
	Order Number: 1 Description: EtherNet/IP Scapper	
	Append selected device as last child of	
	(Tou can select another target node in the navigator while this window is open.)	
	Add Device	Close

5, Configure "Ethernet/IP"

- a. Double-click on <u>"Ethernet (Ethernet)"</u> in the left navigation tree to open the configuration window.
- b. In the General tab, click on the right side of the Interface, select <u>"Network Adapters"</u>, and finally click <u>"OK"</u>, as shown in the following figure.

ices 🗸 🕂 🗙	Device 🛛 🕤 Ethernet	×			
ies 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Oevice Of Oevice Of Oevice Of Oevice Of Oevice Of Oevice Of Oevice Oevice	× Interface IP address Subnet mask 255. Default gateway Adjust operating system : Network Adapters Inter face 以太阿 リ太阿 リ太阿 1 蓋河戸路這種。1 王子 和始章像。1 IF address Subnet mask 152.165 Subnet mask 152.165 Subn	168 0 1 125 .255 .0 0 0 .0 ettings Bascription Realter FCI 60E Family Controller States FCI 60E Family Controller States FCI 60E Family Controller Interform Controller Interform Controller Interform Controller States FCI 60E Family Controller States FCI 60E Fami	IP address 169.054.100.31 179.169.052 0.0.0.0 172.27.06.1 172.28.00 0.0.0 0.0.0 172.27.06.1 172.27.06.1 172.27.06.1 172.27.06.1 172.100.00 172.27.06.1 172.100.00 172.27.06.1 172.100.00 172.27.06.1 172.100.00 172.27.06.1 172.100.00 172.100.00 172.27.06.1 172.100.00 172.1000 172.1000 172.1000 172.1000 172.1000 172.10000	×

6、 Add Device

- a. Click 🥵 to log in to the device.
- b. Right-click on <u>"EtherNet IP Scanner (EtherNet/IP Scanner)"</u> in the left navigation tree **and** select <u>"Scan</u> Devices".
- c. After scanning, select "C2S-EI-24B" and click <u>"Copy to project"</u> as shown in the following figure.

	Device 📑 Ethernet 🕽	۹			
Derived Connected (COCESTS Control Win V3 x-64) Derived (Concests Control Win V3 x-64) Derived Concests Derived Configuration D	General Log Status Ethemet Device I/O Mapping Ethemet Device IEC Objects Information	Interface (以太陽:1 IP address Subnet mark Default gateway Adjust operating Scan Devices Seanned Bovice: Device name CCS_TIT_SAB	192 - 168 - 0 - 252 235 - 255 - 255 - 0 0 - 0 - 0 - 0 system settrgs 2 Device type C25-HI-64D(Hajor Rerizion=1681, Minor Rerizion = 1681)	IP Address 192. 168. 0. 120	Serial Number 3860995792 (168EC022050)

d. The device has been added, as shown below.

File	Edit	View	Project	Build	Online	Debug
1		6	~ X 🖻	₿×	1 🏘 🖓 i	1 12
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Devices					-	д X
B	Untitled3	3				•
÷(👔 Devic	e (CODES	SYS Control V	Vin V3 x64)	
	🖶 🗐 P	LC Logic				
	= (🕽 Appli	cation			
		👘 Lik	orary Manage	er		
		PL	C_PRG (PRG)		
		🖹 🧾 Та	sk Configura	tion		
		-	ENIPScann	erIOTask	(IEC-Tasks)	
			EtherN	let_IP_Sca	nner.IOCyc	de
		= *	ENIPScann	erService	Task (IEC-Ta	asks)
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	E	thernet (Ethernet)	an (milian)		
	<u>ا</u> ا	Ethern	vet_IP_Scanr	ner (Etheri	vet/IP Scani	ner)
		🛄 C.	25_E1_248 (C	.25-E1-248	v	

7、 Parameter settings

The parameter setting function is used to configure the clear/hold function of the valve terminal.

a. Double-click the device to open the <u>"Device Configuration"</u> window, switch to the <u>"Connections"</u> page, as shown below.

Connectio	n Name RPI	ms) O>	T Size (Bytes)	T>O Size	e (Bytes)	Proxy Config	Size (Bytes)	Target Config Size (Bytes)	Connection Path
1. Exdu	sive Owner 10	6		12				8	20 04 24 97 2C 96 2C 64
arameters									
Mapping									
Objects									
Add Conr	ection Delet	e Connection	Edit Con	nection					
Add Conr Configuratio	n Data Ita values 🖌 Show P	e Connection	Edit Con	nection					
Add Com Configuratio Raw da Parametta	n Data In Data Ita values 🗹 Show P Prs	e Connection arameter Grou Value	Edit Con Ips Unit	nection Data Type	Minimum	Maximum	Default I	Help String	
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Add Conr Configuratio Paramete Exclus = Taclas	n Data In Data ta values I Show F rs sive Owner rget Config data BusFault, Clear/Hold	e Connection arameter Grou Value Hold	Edit Con	Data Type	Minimum	Maximum 2	Default 1	Help String	
Add Com Configuratic Paramett ₩ Exclan = T	n Data n Data ta values 🗹 Show P rrs ive Owner rget Config data Busfaut, Clear/Hold Clear/Hold[07]	e Connection arameter Groo Value Hold 0	Edit Con	Data Type JSINT	Minimum 0	Maximum 2 255	Default 1	Help String wer Help String wer Help String	
Add Conn Configurate Paramete © Excelar	ection Delet n Data ta values S Show P rrs sive Owner rget Config data BusFault, Clear/Hold Clear/Hold[07]	e Connection arameter Grow Value Hold 0 0	Edit Con	Data Type JSINT JSINT JSINT	Minimum 0 0 0	Maximum 2 255 255	Default I 1 P 0 P	Help String Ken Heb String Ken Heb String	
Add Conr Confyunitic Paramete ≅ Exclar ■ Ta	ection Delet n Data ta values ☑ Show P ors wice Owner rget Config data BusFault_Clear/Hold Clear/Hold[07] Clear/Hold[1.623]	e Connection arameter Grow Value Hold 0 0 0	Edit Con	Data Type JSINT JSINT JSINT JSINT	Minimum 0 0 0 0	Maximum 2 255 255 255	Default 1 1 8 0 8 0 8	Help String wen Help String wen Help String wen Help String wen Help String	
Add Con Configuratic Paramete Stackar	ection Delet n Data ta values ✓ Show F rrs sive Owner rget Config data BusFaut, Clear/Hold[07] Clear/Hold[07] Clear/Hold[015] Clear/Hold[2431]	e Connection arameter Groot Value Hold 0 0 0 0	Edit Con	Data Type JSINT JSINT JSINT JSINT JSINT JSINT	Minimum 0 0 0 0 0	Maximum 2 2555 255 255 255	Default 1 1 P 0 P 0 P 0 P	Help String Wen Help String Wen Help String Wen Help String Wen Help String	
Add Configuration	ection Delet n Data ta values S Show F ors wice Owner Test Config data BusFautz, Clear/Hold Clear/Hold[16.15] Clear/Hold[1615] Clear/Hold[243] Clear/Hold[2339]	e Connection arameter Grou Value Hold 0 0 0 0 0 0	Edit Con	Data Type JSINT JSINT JSINT JSINT JSINT JSINT	Minimum 0 0 0 0 0 0	Maximum 2 255 255 255 255 255 255	Default 1 1 8 0 8 0 8 0 8 0 8 0 8	Help String ken Help String ken Help String ken Help String ken Help String ken Help String	

b.Output signal clear/hold parameter function, click the value of the parameter "BusFault Clear/Hold", you can select "Clear", "Hold", or "Set by channel". When you select "Set by channel", the Clear/Hold[0..7] ~ Clear/Hold[40..47] parameters are valid, as shown in the figure below.

Co	nnection Name	RPI (ms)	O>T Size (Bytes) T>O Size	(Bytes) Pro	oxy Config Siz	e (Bytes)	Target Config Size (Bytes)	Connection Path
	1. Exclusive Owner	10	6	12		, ,		8	20 04 24 97 2C 96 2C 64
d Parameters									
I/O Mapping									
IEC Objects									
A	dd Connection	Delete Conn	ection E	dit Connection					
	dd Connection nfguration Data Raw data values ☑ arameters Exclusive Owner	Delete Conn Show Paramete Va	er Groups alue [dit Connection Jnit Data Type	Minimum	Maximum	Default	Help String	
	dd Connection nfguration Data Raw data values ☑ arameters Exclusive Owner ➡ Target Config	Delete Conn Show Paramete Va data	er Groups alue I	dit Connection Jnit Data Type	Minimum	Maximum	Default	Help String	
	dd Connection nfguration Data Raw data values ☑ arameters Exclusive Øwner ■ Target Config BusFault Ole	Delete Conn Show Paramete Va data ear/Hold Hol	er Groups alue (dit Connection Jnit Data Type USINT	Minimum	Maximum 2	Default 1	Help String	
	dd Connection nfguration Data Raw data values ⊡ arameters Exclusive Owner ⊜ Target Config BusFault_Cle Clear,Hoid(0	Delete Conn Show Paramete data ear/Hold Hol 7] Ce	er Groups alue U	Jit Connection Jnit Data Type USINT USINT	Minimum 0 0	Maximum 2 255	Default 1 0	Help String New Help String New Help String	
	dd Connection nfguration Data Raw data values 🗹 arameters Exclusive Owner Target Config BasFault off Clear/hold(8	Delete Conn Show Paramete data Va ar/Hold Hol 7] Cle 	er Groups alue U Idd ~ G	dit Connection Jnit Data Type USINT USINT USINT	Minimum 0 0 0	Maximum 2 255 255	Default 1 0 0	Help String New Help String New Help String New Help String	
	dd Connection hfguration Data Raw data values Exclusive Owner Target Config BusFault_Cle Clear,Hold[0 Clear,Hold[0	Delete Conn Show Parametr Va data ear/Hold Hol 1.5] Set 623]	er Groups alue I id ~ id tby channel	dit Connection Jnit Data Type USINT USINT USINT	Minimum 0 0 0 0 0	Maximum 2 255 255 255	Default 1 0 0 0	Help String New Help String New Help String New Help String New Help String	
	dd Connection figuration Data Raw data values IV arameters Exclusive Gwner Target Config BusFait-Ge Clear/hold[0 - Clear/hold[0 -	Delete Conn Show Parameter ar/Hold Holo 15] Set 623] 0 431] 0	er Groups er Groups alue I alue I alue I thy channel	dit Connection Juit Data Type USINT USINT USINT USINT USINT	Minimum 0 0 0 0 0 0	Maximum 2 255 255 255 255	Default 1 0 0 0 0	Help String New Help String New Help String New Help String New Help String	
	dd Connection nfguration Data Raw data values S arameters Exclusive Owner S Target Config Data Rod(0) Clear Hold(1) Clear Hold(2) Clear Hold(2) Clear Hold(2) Clear Hold(2)	Delete Conn Show Parametr data Va ear/Hold Hol 7] Ge 623] 0 239] 0	er Groups er Groups alue I idd ~~ idd ~~ idd ~~ t by channel	dit Connection Jnit Data Type USINT USINT USINT USINT USINT USINT USINT	Minimum 0 0 0 0 0 0 0	Maximum 2 255 255 255 255 255	Default 1 0 0 0 0 0 0 0	Help String New Help String New Help String New Help String New Help String New Help String	

c. Under "Set by channel", double-click the value of Clear/Hold [0..7], you can set the value by channel, as shown in the figure below.

Conne	ction Name	RPI (ms)	O>T Size (By	tes) T-	->O Size (Bytes)	Proxy Co	onfig Size (By	tes) Targ	get Config Size (Bytes)	Connection Path
···· 1. E	xdusive Owner	10	6	12				8		20 04 24 97 2C 96 2C 64
neters										
oping										
iects										
Add (Connection	Delete Co	onnection Edit	Connectio	on					
Add (Connection	Delete Co	onnection Edit	Connectio	on					
Add Configu	Connection	Delete Co	onnection Edit	Connectio	on					
Add C Configu	Connection ration Data w data values 🗹	Delete Co Show Param	onnection Edit	Connectio	on					
Add (Configu Paran	Connection ration Data w data values 🗹 neters	Delete Co Show Param	neter Groups Value	Connectio	on Data Type	Minimum	Maximum	Default	Help String	
Add (Configu Raan Paran B Ex	Connection	Delete Co Show Param	nnection Edit neter Groups Value	Connectio Unit	Data Type	Minimum	Maximum	Default	Help String	
Add (Configu Rat Bart E Ex	Connection	Delete Co Show Param	onnection Edit neter Groups Value	Connectio Unit	Data Type	Minimum	Maximum	Default	Help String	
Add C Configu Base Ex Ex Ex	Connection ration Data w data values inters colusive Owner Target Config BusFault_Cle	Delete Co Show Paran data ar/Hold	nnection Edit neter Groups Value Set by channel	Connectio Unit	Data Type USINT	Minimum	Maximum 2	Default	Help String New Help String	
Add (Configu Paran Be Ex	Connection ration Data w data values cdusive Owner Target Config BusFault_Cle Clear/Hold[0	Delete Co Show Param data ar/Hold 7]	Edit neter Groups Value Set by channel 255	Connectio	Data Type Data Type USINT USINT	Minimum 0 0	Maximum 2 255	Default 1 0	Help String New Help String New Help String	
Add (Configu Ra Paran E fr	Connection ration Data w data values 🗹 neters cdusive Owner Target Config BusFault_Cle Clear/Hold[0 Clear/Hold[8	Delete Co Show Param data ar/Hold 7]	nnection Edit neter Groups Value Set by channel 255 0	Connectio	Data Type	Minimum 0 0 0	Maximum 2 255 255	Default 1 0 0	Help String New Help String New Help String New Help String	
Add t Configu Bas Paran Be Ex	Connection ration Data w data values inters colusive Owner Target Config BusFault_de Clear/Hold[1 Clear/Hold[1	Delete Co Show Paran data ar/Hold 7] 15] 623]	Set by channel 255 0 0	Unit	Data Type USINT USINT USINT USINT	Minimum 0 0 0 0	Maximum 2 255 255 255	Default 1 0 0 0	Help String New Help String New Help String New Help String New Help String	
Add (Configu Paran B Ex S	Connection ration Data w data values cusive Owner Target Config BusFault_Cle Gear/Hold[0 Glear/Hold[1 Glear/Hold[1 Glear/Hold[2 Gle	Delete Co Show Paran data ar/Hold 7] 15] 623] 431]	Numerical Content of C	Unit	Data Type Data Type USINT USINT USINT USINT	Minimum 0 0 0 0 0	Maximum 2 255 255 255 255	Default 1 0 0 0 0	Help String New Help String New Help String New Help String New Help String New Help String	
Add (Configu Paran # Ex	Tration Data ration Data w data values Cusive Owner Target Config Buraut Carloid Gear/hold[0 Gear/hol	Delete Co Show Paran ar/Hold 7] 15] 623] 431] 239]	Edit neter Groups Value Set by channel 255 0 0 0 0 0	Unit	Data Type USINT USINT USINT USINT USINT USINT USINT	Minimum 0 0 0 0 0 0 0	Maximum 2 255 255 255 255 255	Default 1 0 0 0 0 0	Help String New Help String New Help String New Help String New Help String New Help String	

d. Click <u>"Online -> Multi-Download..."</u> in the menu bar, as shown below.



e. Multiple Download window will pop up, select <u>"Always perform a full download"</u>, click <u>"OK"</u>, as shown in the figure below.

lultiple Download	\times
Please select the items to be downloaded	
✿ Move Up ♣ Move Down	
Device: Application	
Omme change options If the application in the project differs from the application already present on the PLC, then behave as follows:	
○ Try to perform an online change. If this is not possible, perform a full download	d.
\bigcirc Force an online change. If this is not possible, cancel the operation	
Always perform a full download	
If an application is not yet present on the PLC, a full download is always performe	d.
Additional operations	
Delete all applications on the PLC which are not part of the project.	
Start all applications after download or online change.	
Do not release forced variables.	

f. Once the download is complete, click 🥰 and the system is online as shown below.

s • 9	K Device 🗑 C25_E	_248 X								
Unoted33	* General	Find	-	Filter Show all	1	Add 1	FB for IO Channel	Go to Instar	ice .	
Device [connected] (CODESYS Control Win V3 x64) Device [connected] (CODESYS Control Win V3 x64)	Connections	Variable	Mapping	Channel	Address	Туре	Current Value	Prepared Value	Unit	Description
1 Library Manager	Assemblies	8-39		Open Load[07]	%IB0	USINT				
PLC_PRG (PRG)		* **		Open Load[815]	%IB1	USINT				
🖹 🎉 Task Configuration	User-Defined Parameters	*-* >		Open load[1623]	%IB2	USINT				New Help String
😑 😳 🎲 ENIPScanner10Task (IEC-Tasks)	Log	* *		Open load[2431]	%IB3	USINT				New Help String
B EtherNet_IP_Scanner.IOCycle		* *		Open load[3239]	%IB4	USINT				New Help String
🖮 😳 🎲 ENIPScannerServiceTask (IEC-Tasks)	EtherNet/IP I/O Mapping	* **		Open load[4047]	%IB5	USINT				New Help String
EtherNet_IP_Scanner.ServiceCycle		* *		Short drcuit or overtemperature[07]	%IB6	USINT	0			New Help String
🖮 😏 🍪 MainTask (IEC-Tasks)	Etherwet/IP IEC Objects	+ **		Short circuit or overtemperature[815]	%IB7	USINT	0			New Help String
- D PLC_PRG	Status	* *		Short drout or overtemperature[1623]	%IB8	USINT	0			New Help String
🗧 🥵 🗊 Ethernet (Ethernet)		* *		Short circuit or overtemperature[2431]	%189	USINT	0			New Help String
🚊 🤹 📆 EtherNet_IP_Scanner (EtherNet/IP Scanner)	Information	H-79		Short circuit or overtemperature[3239]	%IB10	USINT	0			New Help String
-1 (C2S_EI_248 (C2S-EI-248)		* *		Short drout or overtemperature[4047]	%IB11	USINT	0			New Help String
		* *		valve[14]	%QB0	USINT				
		* *		valve[58]	%Q81	USINT				
		* *		valve[912]	%QB2	USINT				
		* **		valve[1316]	%QB3	USINT				
		* **		valve[1720]	%QB4	USINT				
		± *o		valve[2124]	%QB5	USINT				
		New Help String						Reset	Mapping	Always update va
		🍫 = Create new variable	🍾 – Ma	p to existing variable						
	Watch *									
							III - Constanting		_	

8、 Data monitoring

- Click the button to log out and switch to the <u>"EtherNet/IP I/O Mapping"</u> tab. a.
- b. Select <u>"Enable 1"</u> mode from the drop-down list in the lower right corner, as shown below.

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Constitute C	Variab ● </th <th>Mapping Generation, 12 Generation, 12 Generation, 12 Generation, 12 Generation, 12 Generation, 12 Generation, 12 Bert out and eventmentanch, 12 Berto</th> <th>Address %280 %281 %281 %283 %283 %284 %285 %285 %285 %285 %285 %285 %285 %285</th> <th>Type USDIT USDIT USDIT USDIT USDIT USDIT USDIT USDIT USDIT USDIT USDIT USDIT USDIT</th> <th>Linit Desc New H New H New H New H New H New H New H</th> <th>ziption kilp Sting kilp Sting kilp Sting kilp Sting kilp Sting kilp Sting kilp Sting kilp Sting kilp Sting kilp Sting</th>	Mapping Generation, 12 Generation, 12 Generation, 12 Generation, 12 Generation, 12 Generation, 12 Generation, 12 Bert out and eventmentanch, 12 Berto	Address %280 %281 %281 %283 %283 %284 %285 %285 %285 %285 %285 %285 %285 %285	Type USDIT USDIT USDIT USDIT USDIT USDIT USDIT USDIT USDIT USDIT USDIT USDIT USDIT	Linit Desc New H New H New H New H New H New H New H	ziption kilp Sting kilp Sting kilp Sting kilp Sting kilp Sting kilp Sting kilp Sting kilp Sting kilp Sting kilp Sting
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Extension	· ·	Que Late[], 7] Que Late[], 7] Que Late[], 12] Que Late[, 12] Que Late[, 12] Que Late[, 12] Due to all to contravor Arte[], 7] But or all to contravor Arte[], 7] But o	%480 %481 %482 %483 %484 %485 %486 %487 %488 %489 %489 %489 %489 %489 %489 %489 %489 %489 %489 %489 %489 %489 %489 %489 %489 %481 %489 %481	USDY USDY USDY USDY USDY USDY USDY USDY	Nam P New P New P New P New P	telp Stima telp Stima telp Stima telp Stima telp Stima telp Stima telp Stima telp Stima telp Stima telp Stima
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Entra Configuration C	· • • • • • • • • • • • • • • • • • • •	Gen kal(1, 2) Gen kal(2, 3) Gen kal(2, 3) Gen kal(2, 3) Ber da dit e ortingen attel[3, 7] Ber da dit e ortingen attel[3, 1] Ber da dit e ortingen attel[3, 1] Ber da dit e ortingen attel[3, 1] Ber da dit e ortingen attel[3, 4] Ber da dit e ortingen attel[3, 4] dit [3, 4] wide[1, 5] wide[1, 3]	%482 %483 %484 %485 %486 %487 %488 %489 %4810 %4811 %480 %4812 %4813 %4814 %4812 %4813 %4814 %4812 %4813	UBNT UBNT UBNT UBNT UBNT UBNT UBNT UBNT	New P	kilp Stiring kilp Stiring kilp Stiring kilp Stiring kilp Stiring kilp Stiring kilp Stiring kilp Stiring kilp Stiring
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		Port Grait or overtreperature[3, 7] Port Grait or overtreperature[3, 12] Port Grait or overtreperature[3, 22] Port Grait or overtreperature[3, 22] Port Grait or overtreperature[2, 22] Port Grait or overtreperature[2, 22] Wort Grait or overtreperature[2, 22] Wort Grait or overtreperature[2, 22] Wort[3, 22] Wort[3, 22] Wort[1, 22] Wort[1, 22]	%286 %287 %288 %289 %2810 %2811 %2811 %281 %281 %281 %283	USDAT USDAT USDAT USDAT USDAT USDAT USDAT USDAT	New P	telp String telp String telp String telp String telp String
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③ (there (3) we'd)		Det foult eventmeentur(24.10) Shet coult overtmeentur(22.39) Shet coult overtmeentur(20.39) value[1.4] value[5.1] value[5.1] value[5.2] value[1.2]	%299 %2810 %2811 %Q80 %Q81 %Q81 %Q83	USINT USINT USINT USINT USINT USINT	New P	kelp String kelp String kelp String
 IDelect J.Save (Ren40 Save) CLUD # CR404 	+ 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0	Short deal or overtemperature[32, 39] Short deal or overtemperature[40, 47] value[1,-4] value[5, 8] value[5, 13] value[12, 36] value[17, 20]	%38.10 %38.11 %Q80 %Q81 %Q82 %Q83	USINT USINT USINT USINT USINT	New H	kelp String Kelp String
े व्य ाग, भारत १३ ११	+ 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0	Short deals or overtemperature[40, 47] value[1, 4] value[5, 8] value[9, 12] value[13, 36] value[17, 20]	%811 %Q80 %Q81 %Q82 %Q83	USINT USINT USINT USINT	NewF	kelp String
		valve[L.4] valve[S.8] valve[9.12] valve[13.36] valve[17.30]	%Q80 %Q81 %Q82 %Q83	USINT USINT USINT		
	- 10 - 10 - 10 - 10 - 10 - 10	valve[5.8] valve[9.12] valve[13.16] valve[17.20]	NQ81 NQ82 NQ83	USINT		
	- 0 - 0 - 0 - 0	valve[912] valve[1316] valve[1720]	%Q82 %Q83	USINT		
		valve[1316] valve[1720]	%Q83	LIGINT		
	13	valve[1720]				
	a 19		%Q84	USINT		
		valve[2124]	%Q85	USINT		
		vite(21.24	%Q84 %Q85	USHT USHT		

c. Click $\stackrel{\bigcirc}{\longrightarrow}$ to log in and monitor the page as shown below.

• •	X Device G C25_ET_	248 x								
Childred 33	General	Find		Filter Show all		• 🛧 Add	FB for IO Channel *	Go to Instance		
Device (contexted) (codes is context with 5 x04) Device (contextext) (codes is context with 5 x04) Device (contextext) (codes is context with 5 x04) Device (contextext) (codes is context with 5 x04)	Connections	Variable	Mapping	Channel	Address	Туре	Current Value	Prepared Value Ur	it Description	
- 💕 Library Manager	Assemblies	8-10		Open Load[07]	%800	USINT	3			
PLC_PRG (PRG)		8-39		Open Load[815]	%881	USINT	0			
Task Configuration	User-Defined Parameters	8-19		Open load[1623]	%82	USINT	0		New Help String	
= 😏 🕸 ENIPScannerIOTask (IEC-Tasks)	Log	8-39		Open load[2431]	%83	USINT	0		New Help String	
EtherNet_IP_Scanner.IOCycle		8-70		Open load[3239]	%284	USINT	0		New Help String	
🗟 😏 🚱 ENIPScannerServiceTask (IEC-Tasks)	EtherNet/IP I/O Mapping	8-19		Open load[4047]	%385	USINT	0		New Help String	
EtherNet_IP_Scanner.ServiceCycle		8-10		Short dircuit or overtemperature[07]	%286	USINT	0		New Help String	
🗏 🧐 🍪 MainTask (IEC-Tasks)	EtherNet/IP IEC Objects	8-10		Short dircuit or overtemperature[815]	%187	USINT	0		New Help String	
B PLC_PRG	Status	8-19		Short circuit or overtemperature[1623]	%288	USINT	0		New Help String	
= 🥵 🗊 Ethernet (Ethernet)		8-10		Short dircuit or overtemperature[2431]	%289	USINT	0		New Help String	
🖻 🥵 🗃 EtherNet_IP_Scanner (EtherNet/IP Scanner)	Information	÷-*		Short circuit or overtemperature[3239]	%2810	USINT	0		New Help String	
C2S_EL_248 (C2S-EL-248)		8-30		Short circuit or overtemperature[4047]	%8811	USINT	0		New Help String	
		8-10		valve[14]	%Q80	USINT	0			
		* *		valve[58]	%Q81	USINT	0			
		* *		valve[912]	%Q82	USINT	0			
		8-50		valve[1316]	%Q83	USINT	0			
		* *		valve[1720]	%Q84	USINT	0			
		8-50		valve[2124]	%Q85	USINT	0			

Open Load Detection

Open load[0..7], Open load[8..15], Open load[16..23], Open load[24..31], Open load[32..39], Open load[40..47], in total 48 channels can be diagnosed independently.

Short Circuit/Over Temperature Detection

Short circuit or overtemperature[0..7], Short circuit or overtemperature[8..15], Short circuit or overtemperature[16..23], Short circuit or overtemperature[24..31], Short circuit or overtemperature[32..39], Short circuit or overtemperature[40..47], in total 48 channels can be diagnosed independently.

Valve Terminal Output Control Function

24 double solenoid valve are grouped into 6 groups of channels according to the driver chip types, which are valve[1..4], valve[5..8], valve[9..12], valve[13..16], valve[17..20], valve[21..24]. Each group has 8 channels, so there is a total of 48 channels output control.

d. Open load detection

The diagnostic value is valid when the channel solenoid coil output is off (value is 0).

In the "Current Value" of channel Open load[0..7], you can view the solenoid valve open load diagnostic value of each group of channels of the valve terminal. A group of channels with normal status of solenoid valve coils is **0**, and an open circuit status is not **0**.

Click "+" to expand Open load [0..7], you can view the open load diagnostic value of each channel's solenoid valve, the value **1** means the open load status, the value **0** means normal status, as shown in the figure below.

Seneral	Find		Filter Show all		- 🗣 Add	FB for IO Channel	→ Go to Instance			
Connections	Variable	Mapping	Channel	Address	Туре	Current Val	ue Prepared Value	Unit	Description	
	Exclusive Owner									
Assemblies	8.9		Open Load[07]	%IB0	USINT	3				
Iner-Defined Parameters	- 19		BitO	%EX0.0	BOOL	TRUE				
all bernied Fordinetera	- *		Bit1	%IX0.1	BOOL	TRUE				
.00	-*		Bit2	%IX0.2	BOOL	FALSE				
	- **		Bit3	%DX0.3	BOOL	FALSE				
therNet/IP I/O Mapping	- *0		Bit4	%IX0.4	BOOL	FALSE				
	-*		Bit5	%IX0.5	BOOL	FALSE				
therNet/IP IEC Objects	- **		Bit6	%DX0.6	BOOL	FALSE				
tatue	- **		Bit7	%IX0.7	BOOL	FALSE				
(0105	B- 🍫		Open Load[815]	%IB1	USINT	0				
information	· · · · · ·		Open load[1623]	%IB2	USINT	0			New Help String	
	😟 - 🍫		Open load[2431]	%IB3	USINT	0			New Help String	
	B- 🍫		Open load[3239]	%IB4	USINT	0			New Help String	
	8-39		Open load[4047]	%IB5	USINT	0			New Help String	
	8-10		Short circuit or overtemperature[07]	%IB6	USINT	0			New Help String	
	8-10		Short circuit or overtemperature[8., 15]	%IB7	USINT	0			New Help String	
	8. 10		Short circuit or overtemperature[1623]	%IB8	USINT	0			New Help String	
	· · · ·		Short circuit or overtemperature[2431]	%189	USINT	0			New Help String	
	· · · ·		Short circuit or overtemperature[3239]	%IB10	USINT	0			New Help String	
			al 1	000000	Linner				N	
	New Help String						Reset Mar	nina	Alwaye undate variables	Enabled 1 (use but cude the



e. Short circuit or overtemperature detection

The diagnostic value is valid when the channel solenoid coil output is on (the value is 1). In the "Current Value" of channel Open load[0..7], you can view the solenoid valve short circuit/overtempertaure diagnostic value of each group of channels of the valve terminal. A group of channels with normal status of solenoid valve coils is **0**, and a short circuit/overtempertaure status is not **0**.

Click "+" to expand short circuit/overtempertaure [0..7], you can view the short circuit/overtempertaure diagnostic value of each channel's solenoid valve, the value **1** means the short circuit/overtempertaure status, the value **0** means normal status, as shown in the figure below.

Connections Variable Mapping Channel Address Type Current Value Prepared Value Unit Description Assembles • • • Open Ladg(0,7] Wall Ustr) 3.1 3.1 3.1 3.1 3.1 User-Defined Parameters • • • Open Ladg(0,7] Wall Ustr) 0.1 0.1 New Heb String User-Defined Parameters • • • Open Ladg(0,7] Wall Ustr) 0.1 0.1 New Heb String User • • Open Ladg(0,7] Wall Ustr) 0.1 New Heb String 1.0 • • Open Ladg(0,7] Wall Ustr) 0.1 New Heb String 1.0 Open Ladg(0,7) Wall Ustr) 0.1 New Heb String 1.0 Open Ladg(0,7) Wall Ustr) 0.1 New Heb String 1.0 Open Ladg(0,7) Wall Ustr) 0.1 New Heb String 1.0 String out out or or cettemperature[0,7] Wall 0.00 FLB 0.0 1.0 String out out or or cettemperature[0,7] Wall 0.00 FLB 0.0 1.0 String out out or or cettemperature[0,7] Wall 0.00 FLB 0.0<	General	Find		Filter Show all		- 🖶 Add	FB for IO Channel →	Go to Instance			
Asembles	Connections	Variable	Mapping	Channel	Address	Туре	Current Value	Prepared Value	Unit	Description	
Subscription 0 <t< td=""><td>Assemblies</td><td>B- 🍫</td><td></td><td>Open Load[07]</td><td>%IB0</td><td>USINT</td><td>3</td><td></td><td></td><td></td><td></td></t<>	Assemblies	B- 🍫		Open Load[07]	%IB0	USINT	3				
User-Ordinal Parameters # * Copen bad(53) WEZ USER 0 New Heb Strag Log * * Copen bad(53) WEZ USER New Heb Strag Log Copen bad(53) WEZ USER New Heb Strag Extended/P UE Objects * * Copen bad(53) WEZ USER New Heb Strag Extended/P UE Objects * * Copen bad(53) WEZ USER New Heb Strag Stratus Copen bad(53) WEZ USER New Heb Strag Extended/P UE Objects * Stratus USER NEW New Heb Strag Stratus Dis WEZ USER USER Dis New Heb Strag Stratus Dis Stratus Bio Stratus Dis NEW Dis Stratus Dis Stratus Bio Stratus Dis Dis Stratus Dis Stratus Bio Stratus Dis New Heb Stratus Dis Stratus </td <td></td> <td>ii. 🍫</td> <td></td> <td>Open Load[815]</td> <td>%IB1</td> <td>USINT</td> <td>0</td> <td></td> <td></td> <td></td> <td></td>		ii. 🍫		Open Load[815]	%IB1	USINT	0				
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norm norm <th< td=""><td>Log</td><td>iii - 🏘</td><td></td><td>Open load[2431]</td><td>%IB3</td><td>USINT</td><td>0</td><td></td><td></td><td>New Help String</td><td></td></th<>	Log	iii - 🏘		Open load[2431]	%IB3	USINT	0			New Help String	
Bin Help/19/10 Mapping # * * Conc Inded(-0.7) Wats US/N 0 New Heb Strop Bin Help/19/EC Objects * * * Open Inded(-0.7) Wats US/N 0 New Heb Strop Bin Help/19/EC Objects * * * Open Inded(-0.7) Wats US/N 0 New Heb Strop Strus * * * Open Inded(-0.7) Wats US/N 0 New Heb Strop Information * * * Open Inded(-0.7) Wats US/N 0 New Heb Strop Information * * * Open Inded(-0.7) Wats US/N 0 0 New Heb Strop Information * * * Open Inded(-0.7) Wats US/N 0 0 0 Information * * * Open Inded(-0.7) Wats US/N 0 0 0 Information * * * Open Information Wats US/N No.8 0 1 0 0 Information * * * * * * * * * * Strot Tout or vertempera		B- 🍫		Open load[3239]	%I84	USINT	0			New Help String	
P Sout could o overtexpendance(0) Name U New Help Strag Status Impaired Impaired Status Impaired Impaired Status Impaired Impaired Status Impaired	EtherNet/IP I/O Mapping	🕮 - 🍫		Open load[4047]	%IB5	USINT	0			New Help String	
cathware and and mode mode <thmode< th=""> mode mode <t< td=""><td>51</td><td>🖶 🐐</td><td></td><td>Short circuit or overtemperature[07]</td><td>%IB6</td><td>USINT</td><td>0</td><td></td><td></td><td>New Help String</td><td></td></t<></thmode<>	51	🖶 🐐		Short circuit or overtemperature[07]	%IB6	USINT	0			New Help String	
Status Image: Status </td <td>etnerivet/iP iEC Objects</td> <td>- *9</td> <td></td> <td>Bit0</td> <td>%DX6.0</td> <td>BOOL</td> <td>FALSE</td> <td></td> <td></td> <td></td> <td></td>	etnerivet/iP iEC Objects	- *9		Bit0	%DX6.0	BOOL	FALSE				
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Information B13 W005.3 B00.4 RLss Example *** B13 W005.4 B00.4 W005.4 B00.4 FLss Example *** B15 W005.5 B00.4 FLss Example Example *** B15 W005.6 B00.4 FLss Example Example *** B16 W005.7 B00.4 FLss Example Example *** B16 B17 Stort croats or writemperstare[14.3] W00.5 B00.4 FLss Example *** Short croats or writemperstare[14.3] W00.5 B00.4 FLss Example Example *** Short croats or writemperstare[12.3] W00.5 B00.4 Example Example Example *** Short croats or writemperstare[12.3] W00.5 B00.4 Example Example Example *** Short croats or writemperstare[12.3] W00.5 B00.4 Example Example Example *** Short croat		*•		Bit2	%DX6.2	BOOL	FALSE				
/ Bet W00.6.4 BOD. FAUSE End */* BSS W00.6.4 BOD. FAUSE End */* BSS W00.6.6 BOD. FAUSE End */* BSS M00.6.7 BOD. FAUSE End */* BST dract or overtemperature[0.15] W03.8 USDNT 0 New Heb String */* Strat dract or overtemperature[0.2.3] W03.8 USDNT 0 New Heb String */* Strat dract or overtemperature[0.2.3] W03.9 USDNT 0 New Heb String */* Strat dract or overtemperature[0.2.3] W03.9 USDNT 0 New Heb String */* Strat dract or overtemperature[2.3.3] W03.9 USDNT 0 New Heb String */* Strat dract or overtemperature[2.3.3] W03.9 USDNT 0 New Heb String */* Strat dract or overtemperature[2.3.3] W03.9 USDNT 0 New Heb String	Information	- *>		Bit3	%DX6.3	BOOL	FALSE				
No.05 BOLS MUXES BOLS MUXES BOLS No.05 BOLS MUXES MUXES BOLS MUXES MUX		**		Bit4	%IX6.4	BOOL	FALSE				
Phy Bits Watts 6 BOLK PLANS PLANS *** Bit7 Watts 7 BOLK PLANS PLANS PLANS *** Short drout or overtemperature[615] Mall 7 USINT 0 New Help String *** Short drout or overtemperature[615] Mall 7 USINT 0 New Help String *** Short drout or overtemperature[615] Mall 70 USINT 0 New Help String *** Short drout or overtemperature[233] Mall 70 USINT 0 New Help String *** Short drout or overtemperature[233] Mall 70 USINT 0 New Help String *** Short drout or overtemperature[239] Mall 70 USINT 0 New Help String *** Short drout or overtemperature[239] Mall 70 USINT 0 New Help String *** Short drout or overtemperature[239] Mall 70 USINT 0 New Help String *** Short drout or overtemperature[239] Mall 70		- *>		Bit5	%DX6.5	BOOL	FALSE				
Image: Constraint of the section of the sec		🍫		Bit6	%DX6.6	BOOL	FALSE				
# * Stort dract or vertemperature[8.13] %107 USD 7 0 Nem Heb String # * Stort dract or vertemperature[8.13] %28 USD 7 0 Nem Heb String # * Stort dract or vertemperature[8.13] %28 USD 7 0 Nem Heb String # * Stort dract or vertemperature[8.13] %28 USD 7 0 Nem Heb String # * Stort dract or vertemperature[2.43] %28 USD 7 0 Nem Heb String * Stort dract or vertemperature[2.43] %28 USD 7 0 Nem Heb String * * Stort dract or vertemperature[2.43] %28 USD 7 0 Nem Heb String * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * <		* >		Bit7	%DX6.7	BOOL	FALSE				
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Rev Short draut or overtemperature[32,39] %EB 10 USDIT 0 New Help String Max If a contract or overtemperature[32,39] %EB 10 USDIT 0 New Help String Mew Help String If a contract or overtemperature[32,39] Max 30 If a contract or overtemperature[32,39] Max 30 New Help String If a contract or overtemperature[32,39] Max 30 If a contract or overtemperature[32,39] Max 30 New Help String If a contract or overtemperature[32,39] Max 30 If a contract or overtemperature[32,39] Max 30 New Help String If a contract or overtemperature[32,39] Max 30 If a contract or overtemperature[32,39] Max 30 New Help String If a contract or overtemperature[32,39] Max 30 If a contract or overtemperature[32,39] New 30 New Help String If a contract or overtemperature[32,39] New Help String If a contract or overtemperature[32,39] If a contract or overtemperature[32,39] If a contract or overtemperature[32,39] If a contract or overtemperature[32,39] If a contract or overtemperature[32,39] If a c		H- 🏘		Short circuit or overtemperature[2431]	%IB9	USINT	0			New Help String	
New Help Strag Reset Mapping Always updatevanibles Enabled 1 (see bus cycle task front used in am Vg - Create new variable *g - Map to existing variable		B- *		Short circuit or overtemperature[3239]	%IB 10	USINT	0			New Help String	
Not control to the second seco		New Help String		Las a la se se sentencia de la serie de				Reset Map	oina	Always undate variables Enabled 1 (use hus curle task)	f not used in an
		* Create new variable	* ∳ = Ma	p to existing variable						chaked I (use bus cycle labk)	

f. Channel output control

If any solenoid valve coil of the valve terminal need to start the output, take the first channel as an example, you can click "+" to expand the valve[1...4], write "1" in <u>"prepared value"</u> of channel Bit0, press "Ctrl+F7" to enter, then the first solenoid valve coil channel should open, as shown below. To open other channels output, follow the above steps.

	Find	Fi	Iter Show all	•	🗣 Add	FB for IO Channel →	Go to Instance			
00	Variable	Mapping	Channel	Address	Туре	Current Value	Prepared Value	Unit	Description	
115	8-10		Open load[1623]	%IB2	USINT	0			New Help String	
5	8-10		Open load[2431]	%IB3	USINT	0			New Help String	
	8-19		Open load[3239]	%IB4	USINT	0			New Help String	
ned Parameters	B- *9		Open load[4047]	%IB5	USINT	0			New Help String	
	8-19	:	Short circuit or overtemperature[07]	%IB6	USINT	0			New Help String	
	B- 10		Short circuit or overtemperature[815]	%IB7	USINT	0			New Help String	
IP I/O Mapping	8-19	:	Short circuit or overtemperature[1623]	%IB8	USINT	0			New Help String	
	÷-*		Short circuit or overtemperature[2431]	%I89	USINT	0			New Help String	
IP IEC Objects	iii - 🎭	1	Short circuit or overtemperature[3239]	%IB10	USINT	0			New Help String	
	÷-*•	1	Short circuit or overtemperature[4047]	%IB11	USINT	0			New Help String	
	÷-**		valve[14]	%Q80	USINT	0				
on	🍫		BitO	%QX0.0	BOOL	FALSE	TRUE			
	- **		Bit1	%QX0.1	BOOL	FALSE	TRUE			
	**		Bit2	%QX0.2	BOOL	FALSE	TRUE			
	- 54		Bit3	%QX0.3	BOOL	FALSE	TRUE			
	* •		Bit4	%QX0.4	BOOL	FALSE	TRUE			
	59		Bit5	%QX0.5	BOOL	FALSE	TRUE			
	-*		Bit6	%QX0.6	BOOL	FALSE	TRUE			
	* •		Bit7	%QX0.7	BOOL	FALSE	TRUE			
			valve[58]	%Q81	USINT	0				
	10 Ka		1 fo 403	21.000	1.000.00	^				

8 FAQ

8.1 Inability of Scanning Modules

1. Check network cable connections

Use windows command to the IP address of the ping module, if ping is on, then check the status of the indicator, if not, then check the network cable connection. If the network cable connection is normal, set the request acceptance time to 60s in the device scanning and then rescan the module. If an unknown device was found, then this module's IP has not been assigned, re-assign the IP aaddress. If you still can not scan for the module, then check the status of the indicator.

2. Check indicator status

If the RUN light flashes, the IP address exists. The IP of the controller and module may not be in the same network segment, restore the module to factory settings and then reset the IP address. RUN light flashing may also means the module detects duplicate IP address in the network, it is recommended to troubleshoot duplicate IP devices and deal with them.

8.2 Abnormal IP Address Assignment

1. Unable to scan the device under factory settings

Modify the request acceptance time to 60s.

2. Using BOOTP to assign timeout for IP address

Click Advanced Settings in IP Address Settings and set the timeout time to 60s. If the timeout time has already been set to 60s, check whether the IP addresses of the controller and allocated module are in the same network segment.

3. Loss of assigned IP address after power failure

This is caused by not setting the module with a fixed IP after using BOOTP to assign an IP address.

4. Unable to use rotary switc to change IP address

The IP address setting is out of the regulated range or the IP address setting is 0. Verify that if the rotary switch settings are as expected.

8.3 Inability of Scanning Devices with IP Setting Tool

When the device cannot be scanned using the IP Setting Tool tool, you can try the following methods.

- First, use the cmd command route print to view all the network segments of the routing table, and use the host computer software to set the IP address of the valve terminal so that the IP address is inconsistent with all the network segments of the routing table.
- After an interval of five minutes, re-power on the device, power on 15s, and then scan. Try few times more if the device cannot be found.