Integrated EtherCAT bus remote IO module

MODEL：CK-EC5032

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Switching output module

Overview

The CK-EC series module is a new generation of modular data collector based on embedded system. It adopts standard DIN35 rail installation method, which is simple to install on site and flexible to use; it can cope with various field applications. The module is equipped with EtherCAT communication, which can communicate with devices supporting EtherCAT protocol such as PC, PLC, touch screen, etc.

CK-EC5032 switch output data collector can collect and output up to 16 digital signals (NPN type). It is suitable for collecting and controlling various IO signals in industrial sites.

CK-EC5032 adopts photoelectric isolation technology to effectively ensure reliable and safe data collection.

Technical Parameters

◆Embedded real-time operating system
◆Input and output channels: 32 outputs
◆Output type: NPN type
◆Wide power supply range: DC 10-30V
◆Nominal power supply voltage: DC 12/24V
◆Module power consumption: 2W
◆Support EtherCAT protocol
◆ESD protection: ±15KV
◆Isolation withstand voltage: DC 2500V
◆Operating temperature range: -35℃ ~75℃
◆Industrial grade plastic housing, standard DIN35 rail installation

Application

Automation equipment
Remote monitoring and data collection
Intelligent manufacturing/smart factory
Industrial site control
Smart warehousing and monitoring
Medical and industrial control product development
Packaging and material transfer
Electronic product manufacturing

Function Configuration

Model	DI (Optocoupler)	DO (NPN)	DO (Relay)	ETH cascade
CK-EC5162	16	16		support
CK-EC5163	16		12	support
CK-EC5161	16			support
CK-EC5016		16		support
CK-EC5321	32			support
CK-EC5032		32		support

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CK-EC5016 16DO(NPN)
CK-EC5032 32DO(NPN)

Input: EtherCAT
Output Type: NPN

CK-ECseriesmodulesareanewgenerationof modulardataloggersbasedonembeddedsystems.They areinstalledusingstandardDIN35rails,areeasytoinstall onsite,andareflexibletouse.Theycanhandleavarietyof on-siteapplications.Themodulesareequippedwith EtherCATcommunicationandcancommunicatewith devicesthatsupporttheEtherCATprotocol,suchasPCs, PLCs,andtouchscreens.

Switching data acquisition

CK-EC5032 adopts advanced data processing technology to collect various active and passive switch/digital signals in industrial sites. It can meet the industrial sites with high measurement requirements and security, smart buildings, smart homes, power monitoring, process control and other occasions.

Surge protection

The module is equipped with a transient suppression circuit, which can effectively suppress various surge pulses and protect the module to work reliably in harsh environments.

Input and output isolation

The product is designed for industrial applications: through photoelectric isolation technology, the measurement circuit and the main control circuit power supply are isolated; at the same time, the control unit and the signal acquisition unit are electrically isolated by photoelectric isolation technology, which effectively ensures the reliability and safety of data acquisition.

Technical indicators

Switching output

◆Outputtype:NPN

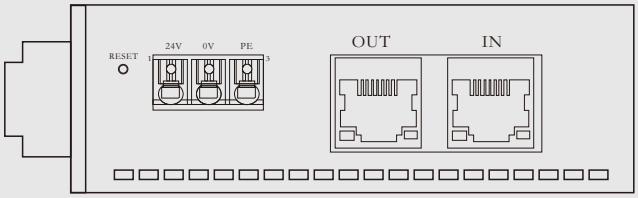
◆LoadCapacity:

◆Load capacity: 0.5A per channel

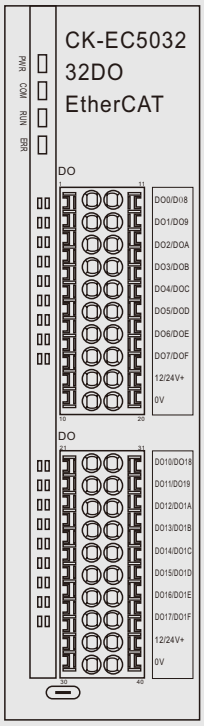
◆Load switching voltage:

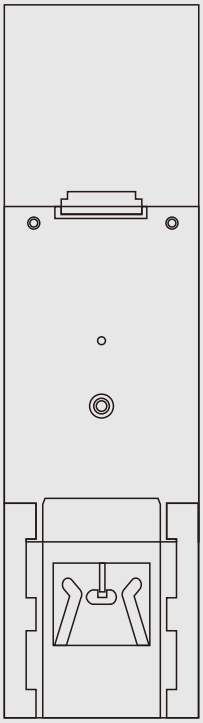
DC10-30V equivalent to DO power supply voltage

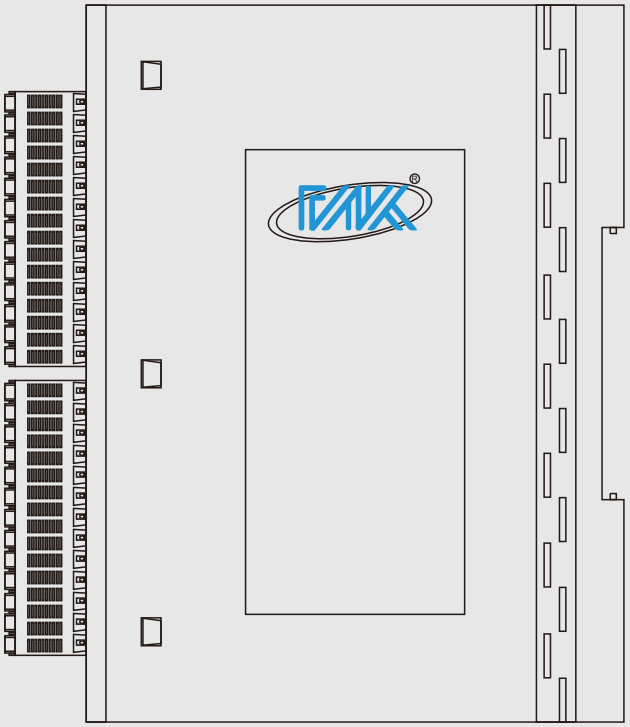
Port Information



Serial Number	Mark	Definition
1	24V	Power input positive
2	0V	Power input negative
3	PE	Ground terminal







CK-EC5032 Port Description

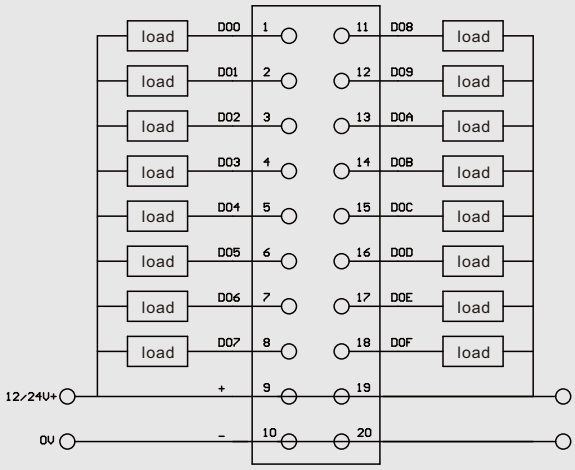
Description	Serial number	Mark	Mark	Serial number	Description
DO output terminal	1	DO0	DO8	11	DO output terminal
	2	DO1	DO9	12	
	3	DO2	DOA	13	
	4	DO3	DOB	14	
	5	DO4	DOC	15	
	6	DO5	DOD	16	
	7	DO6	DOE	17	
	8	DO7	DOF	18	
Power input 24V	9	+		19	Power input 24V
Power input 0V	10	-		20	Power input 0V
DO output terminal	21	DO10	DO18	31	DO output terminal
	22	DO11	DO19	32	
	23	DO12	DO1A	33	
	24	DO13	DO1B	34	
	25	DO14	DO1C	35	
	26	DO15	DO1D	36	
	27	DO16	DO1E	37	
	28	DO17	DO1F	38	
Power input 24V	29	+		39	Power input 24V
Power input 0V	30	-		40	Power input 0V

*:A power supply needs to be connected to 9,19 and 10,20;29,30 and 39,40。

Wiring Diagram

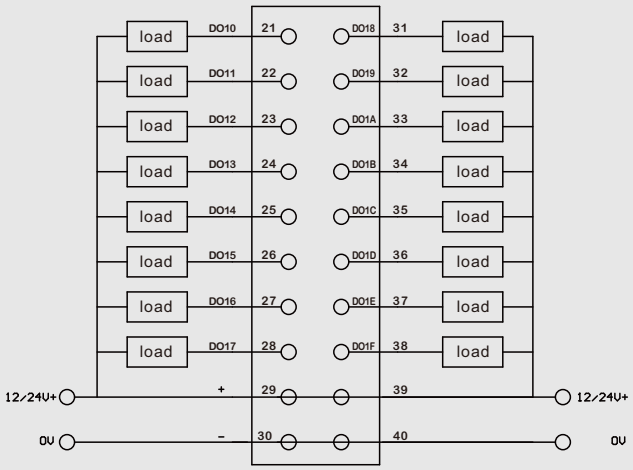
CK-EC5032 Wiring Diagram

1~16-CH NPN TYPE DO OUTPUT



Terminals 9 and 19 are internally connected
Terminals 10 and 20 are internally connected
Terminals 9, 19, 10, and 20 need to be connected to power supply

17~32-CH NPN TYPE DO OUTPUT



Terminals 29 and 39 are internally connected
Terminals 30 and 40 are internally connected
Terminals 29, 39 and 30, 40 need to be connected to a power supply

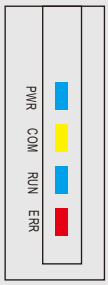
Indicator Lights

Users can use the LED status indicator to determine the module's operating and communication status, as well as the status of the DIO channel.

The module can communicate normally only after entering the OP state.

Module status indicator

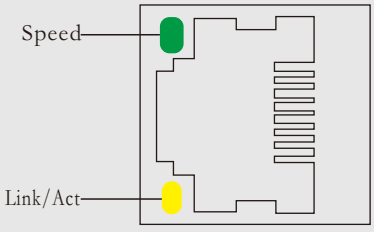
Light logo	Color	Explanation
PWR	Blue	On: The module is powered on.
COM	Yellow	On:The module EtherCAT has entered the OP state Off:The module EtherCAT is not connected to the upper-level device Flashing:The module is hand shaking with theupper-level device
RUN	Blue	Flashing:Thedeviceprogramisrunning
ERR	Red	On:Themoduledetectsanerror



EtherCAT network port indicator

The module contains 2 network ports, IN is the EtherCAT input port, which is used to connect to a computer, PLC or the upper level module. OUT is the EtherCAT output port, which is used to connect to the lower level module.

Light logo	color	Explanation
Speed	Green	Link speed indicator light: On: 100M Off: 10M
Link/Act	Yellow	Link status indicator Steady on:Physical link connected,no communication Blinking:Communicating Off:Link not connected



Electrical parameters

Unless otherwise specified, the electrical parameters of the CK-EC5032 data acquisition module are the values when Tamb=25℃.

Module parameters

Entry	Parameter	Entry	Parameter
Power supply	10-30VDC (nominal 24VDC)	Rated output current	Single channel maximum 500mA
Power consumption	2W	DO output protection	Over temperature, over current, short circuit
Communication Protocol	EtherCAT	Turn off leakage current	Max 50uA
Network Interface	2*RJ45	On-resistance	Typical value: 0.5Ω
Connection rate	10/100Mbps	Output Type	NPN type/leakage type Open output 0V, Close output high impedance
Number of DO input channels	32		
Operating temperature	-35-75℃	wiring	I/Owiring:Maximum 1mm^2
Protection level	IP20	Ambient humidity	5%-95% (no condensation)

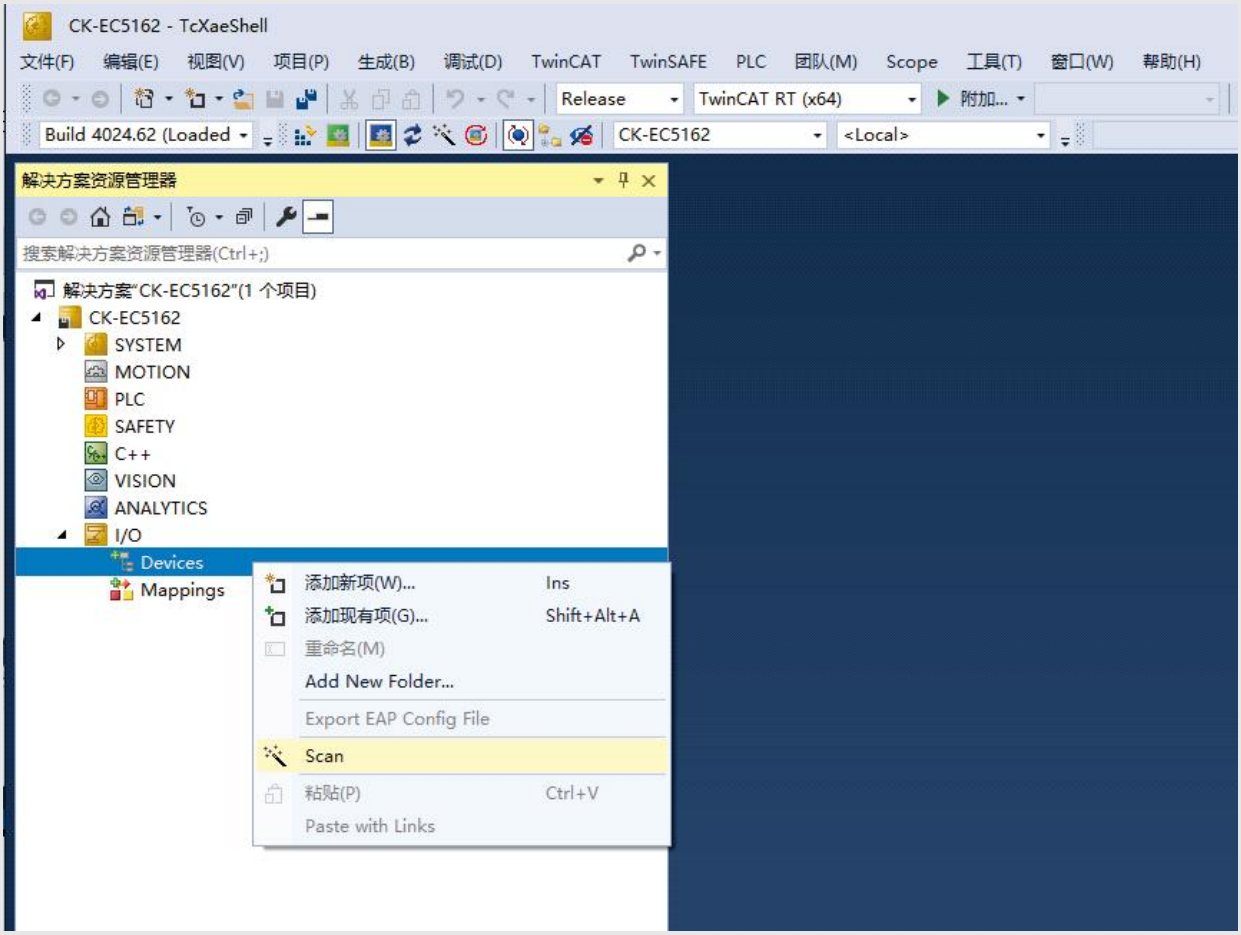
Communication Example

CK-EC5032 Tested with TwinCAT

0. Before testing, install the TwinCAT XAE Shell software and the network port driver.
Use a network cable to connect the computer's network port to the CK-EC5032 module IN port, and connect the module to a 24V power supply.

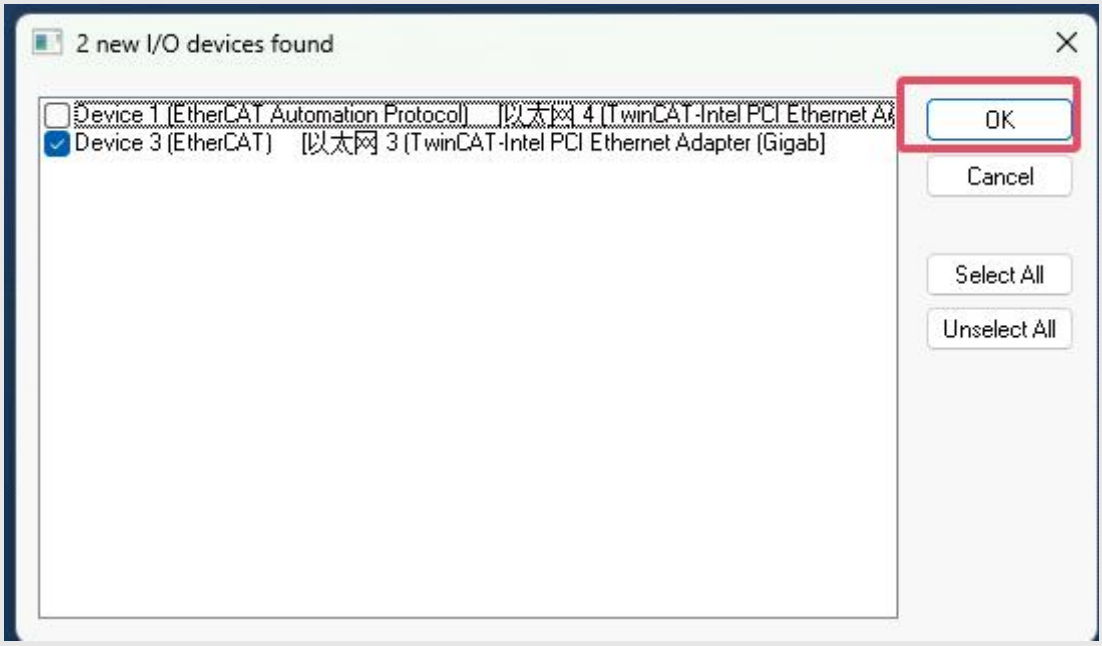
1. Open the TwinCAT XAE Shell software, click "File" - "New" - "Project" in the upper left corner, and create a new TwinCATx project. The project name and save location can be customized.

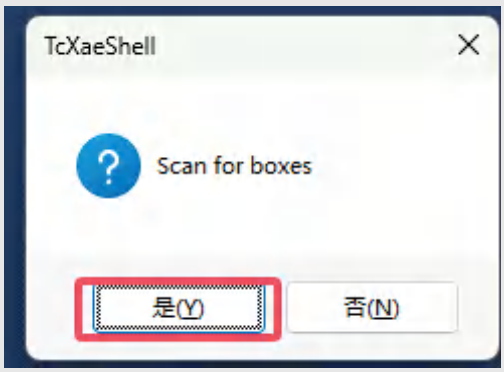
2. In the project solution explorer, expand "I/O", right-click "Devices", and click "Scan" to start scanning the device.

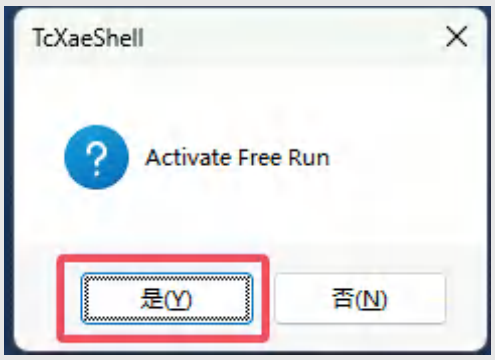


Communication Example

3. Click on the icons one by one to discover the device.

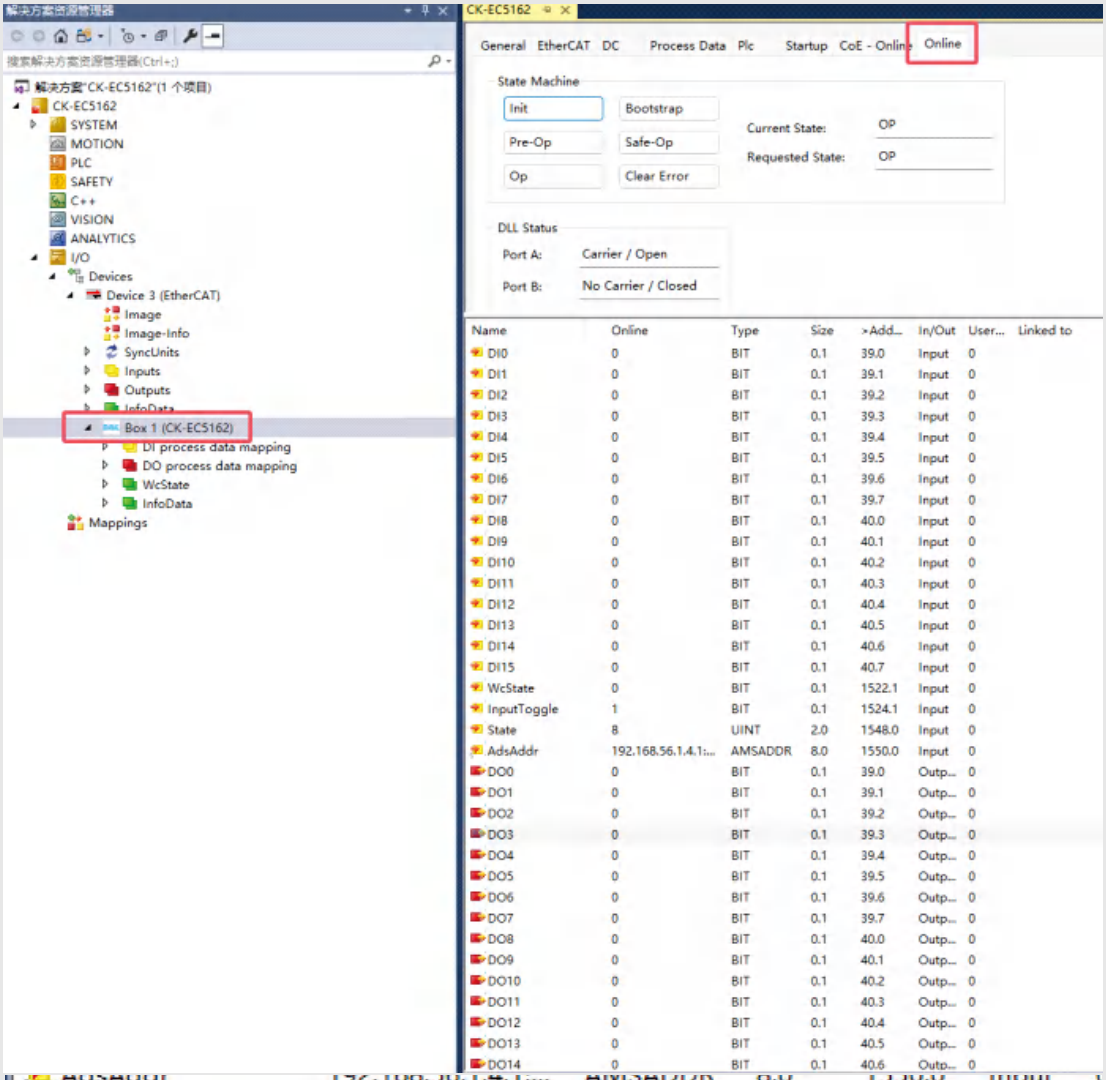


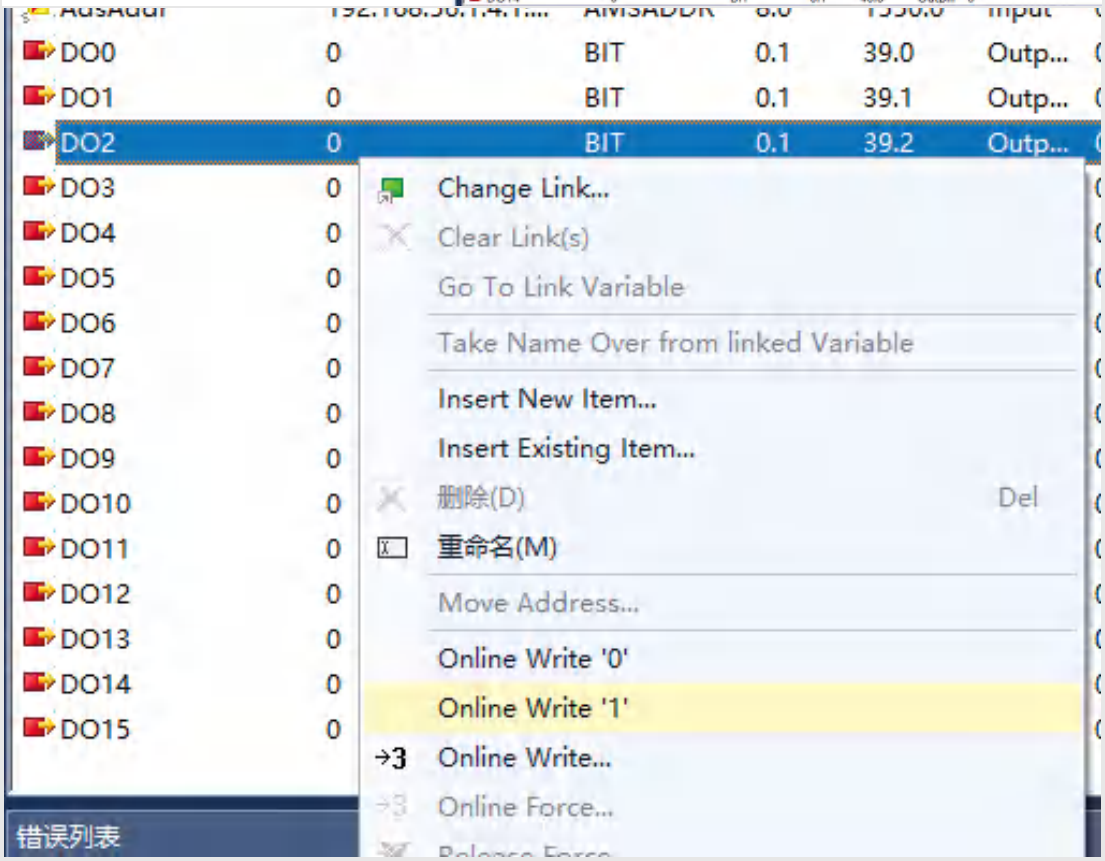




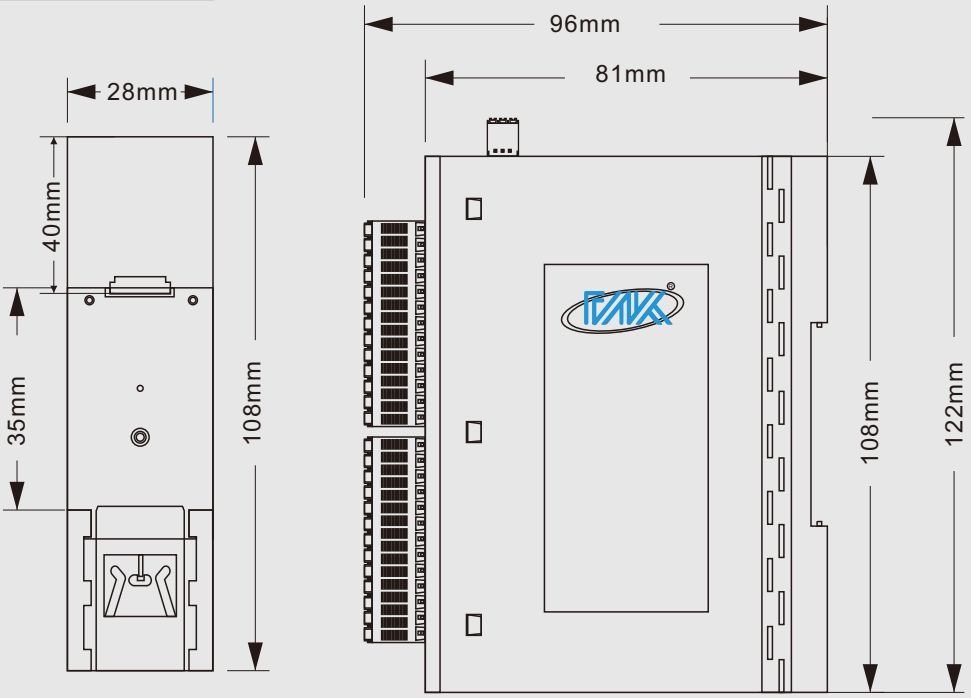
4. Double-click the searched device "Box 1 (CK-EC5032)" to expand the relevant information of this module. Click "Online" to check that "Current State" is OP, which means the device is operating normally. The DI state in the window displays the current input state of the DI port in real time; to operate the DO port, you can select the DO channel and right-click to call out the menu, select Online Write to write a new DO state. After writing 1, the DO indicator on the corresponding module is on, and writing 0, the DO indicator on the corresponding module is off.

Communication Example



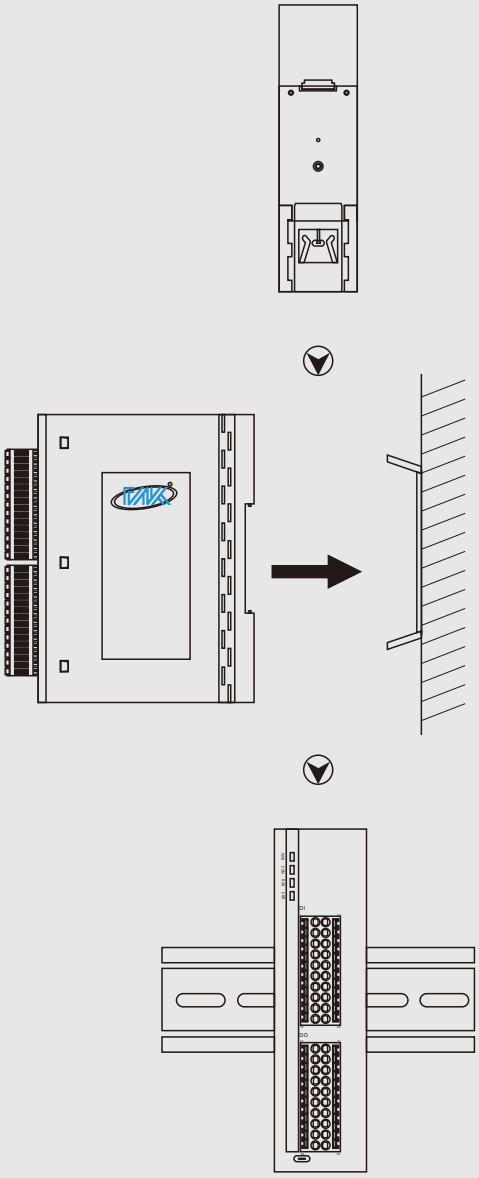


Mechanical specifications



Installation Method

CK-EC5032 supports DIN35 rail installation. Users can easily install or remove the module on the rail, providing assistance for industrial site application and installation.



Three guarantees and maintenance instructions

Within two years from the date of sale, if the product is damaged or the product quality is lower than the technical indicators under the conditions of storage, transportation and use, the user can return it to the factory for free repair. If the damage is caused by violation of operating regulations and requirements, the device fee and repair fee shall be paid.

Disclaimer

copyright

Product display picture

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