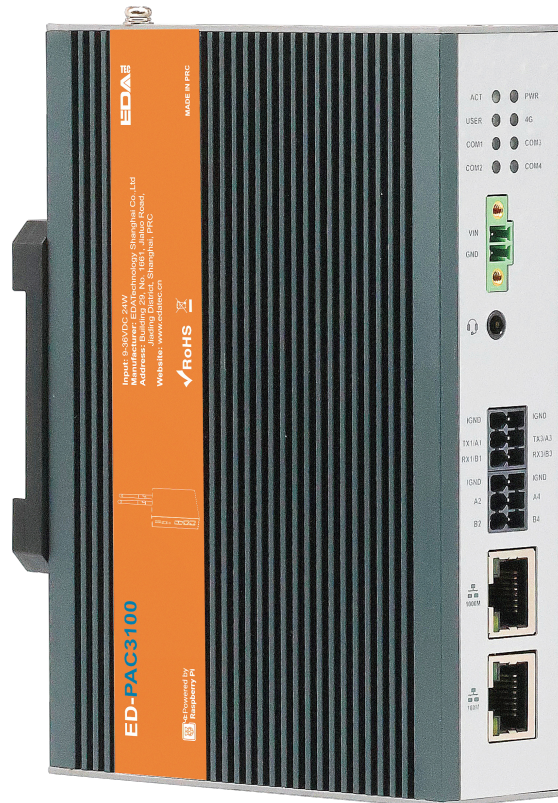




ED-PAC3100

User Manual

by EDA Technology Co., Ltd

built: 2026-05-28

1 Hardware Manual

This chapter introduces the product overview, CODESYS software, networking application, packaging list, appearance, buttons, indicators, interfaces and Supercapacitor.

1.1 Overview

The ED-PAC3100 is a real-time CODESYS programmable automation controller, pre-installed by default with a multi-core CODESYS runtime. Depending on the application scenario and user requirements, it offers programmable logic system configurations with either **2GB DDR + 16GB eMMC** or **8GB DDR + 32GB eMMC**.

WARNING

The ED-PAC3100 device comes pre-installed with a valid CODESYS license by default. Reinstalling the operating system will invalidate the CODESYS license. Do not attempt to install the OS on your own.

The ED-PAC3100 provides common interfaces such as HDMI, USB, Ethernet, RS232 and RS485. It integrates advanced features including a supercapacitor backup power supply, RTC (Real-Time Clock), EEPROM, and an encryption chip, significantly enhancing the product's usability and reliability. It is primarily designed for industrial control applications.

The ED-PAC3100 supports connection to remote EtherCAT-based I/O modules (e.g., couplers, DI, DO, AI, AO) via an EtherCAT network. The device integrates the CODESYS Control Runtime System, supporting IEC 61131-3 programming standards and industrial communication protocols like EtherCAT and Modbus TCP. Users can optionally enable additional functionalities by licensing features such as:

- TargetVisu
- WebVisu
- Softmotion
- CNC + Robotics
- EtherCAT Master
- Modbus TCP Master
- OPC UA Server

Custom configurations are available to meet specific application requirements.



1.2 Introduction to CODESYS Software

CODESYS (Controller Development System) is an open industrial automation software development platform that provides a full-stack solution for programming, debugging, and maintaining programmable logic controllers (PLCs), industrial PCs (IPCs), and embedded control systems. Compliant with the IEC 61131-3 international standard, it supports complex logic control, multi-axis motion control, industrial communication protocol integration, and real-time data processing. It is widely used in smart manufacturing, energy management, logistics automation, and other industrial fields.

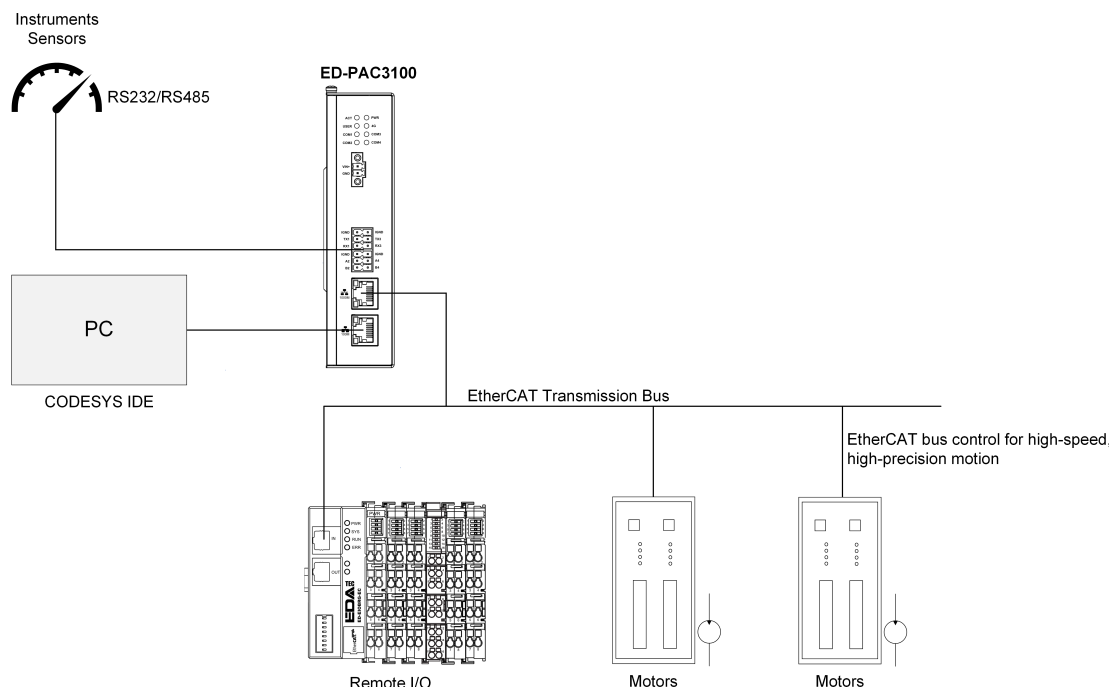
Key Features of CODESYS:

- Standardized Programming Language Support
 - Full compatibility with the IEC 61131-3 programming languages:
 - Ladder Diagram (LD)
 - Function Block Diagram (FBD)
 - Structured Text (ST)
 - Instruction List (IL)
 - Sequential Function Chart (SFC)
 - Supports Object-Oriented Programming (OOP) extensions for large-scale complex projects.
- Cross-Platform Development & Deployment
 - Development Environment: Compatible with Windows and Linux operating systems, offering a unified engineering interface.
 - Target Systems: Deployable on 2,000+ industrial controller hardware platforms, including ARM/X86 architectures.
- Modular Engineering Libraries
 - Prebuilt Libraries: Include industrial protocol stacks (Modbus/TCP, OPC UA, EtherCAT) and advanced control modules (PID control, CNC interpolation algorithms).
 - Custom Libraries: Support encapsulation and reuse of Function Blocks and POU's (Program Organization Units).
- Visual Debugging & Diagnostic Tools
 - Real-time monitoring of variables, I/O mapping, and task execution status with waveform analysis.
 - Advanced debugging tools: breakpoints, step-by-step execution, and cross-referencing for rapid fault diagnosis.
 - Integrated HMI development tools for seamless SCADA system integration.

The ED-PAC3100 supports CODESYS V3.5 SP19 and later versions.

1.3 Networking Application

The ED-PAC3100 features EtherCAT, Ethernet, RS485 and RS232 interfaces, enabling multi-layer network communication to meet diverse application requirements across various scenarios. A typical application topology is illustrated in the figure below:



1.4 Packing List

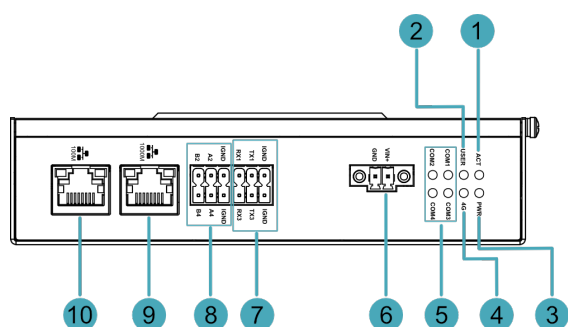
- 1 x ED-PAC3100 Unit

1.5 Appearance

Introducing the functions and definitions of the interfaces on each panel.

1.5.1 Front Panel

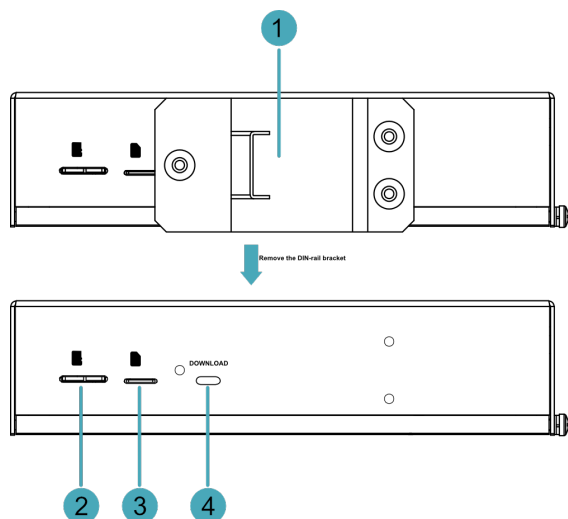
Introducing front panel interface types and definitions.



NO.	Function Definition
1	1 x green system status indicator, which is used to view the status of system read/write operations.
2	1 x green user indicator, user can customize a status according to actual application.
3	1 x red power indicator, which is used to check the status of device power-on and power-off.
4	1 x green 4G indicator, reserving location (currently unused).
5	4 x green UART indicators, which is used to check the communication status of UART port.
6	1 x DC input, 2-Pin 3.5mm pitch phoenix terminals with screw holes. It supports 9V~36V input, the signal is defined as VIN+/GND.
7	2 x RS2325 ports, 6-Pin 3.5mm pitch phoenix terminal, which is used to connect the third-party control equipment.
8	2 x RS485 ports, 6-Pin 3.5mm pitch phoenix terminal, which is used to connect the third-party control equipment.
9	1 x 1000M Ethernet port (RJ45), EtherCAT communication interface for connecting to EtherCAT networks.
10	1 x 10/100M adaptive ethernet port, RJ45 connector, with LED indicator. It can be used to access the network.

1.5.2 Rear Panel

Introducing rear panel interface types and definitions.

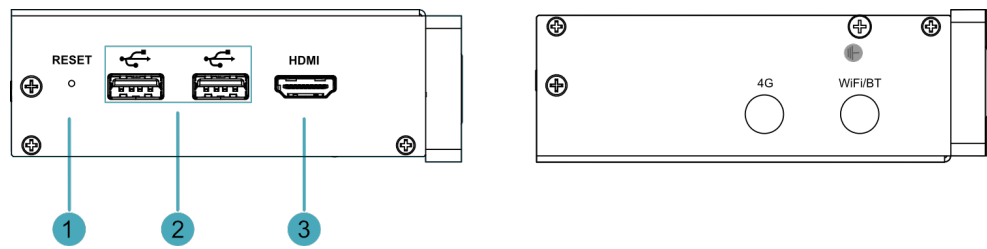


NO.	Function Definition
1	1 x DIN rail mounting bracket, using to mount the ED-PAC3100 unit onto a DIN rail.
2	1 x Micro SD card slot, it supports the installation of Micro SD card for storing user data.
3	1 x Nano SIM card slot, reserving for 4G expansion functionality (currently unused).
4	

NO.	Function Definition
	1 x Micro USB port, it supports to flash to eMMC for the system. Note: The ED-PAC3630 device comes pre-installed with a valid CODESYS license by default. Reinstalling the operating system will invalidate the CODESYS license. Do not attempt to install the OS on your own.

1.5.3 Side Panel

Introducing side panel interface types and definitions.



NO.	Function Definition
1	1 x RESET button, hidden button, press the button to restart the device.
2	2 x USB 2.0 ports, type A connector, each channel supports up to 480Mbps transmission rate.
3	1 x HDMI port, type A connector, which is compatibles with HDMI 2.0 standard and supports 4K 60Hz. It supports to connect a displayer.

1.6 Button

ED-PAC3100 device includes a RESET button, which is a hidden button, and the silkscreen on the case is "RESET". Pressing the RESET button will reset the device.

1.7 Indicator

This section explains the status and meanings of the indicators integrated into the ED-PAC3100 device.

Indicator	Status	Description
PWR	On	The device has been powered on.
	Blink	Power supply of the device is abnormal, please stop the power supply immediately.
	Off	The device is not powered on.
ACT	Blink	The system started successfully and is reading and writing data.
	Off	

Indicator	Status	Description
		The device is not powered on or does not read and write data.
USER	On	User can customize a status according to actual application.
	Off	The device is not powered on or not defined by the user, and the default status is off.
Yellow indicator of Ethernet port (100M)	On	The Ethernet connection is in the normal state.
	Blink	The Ethernet connection is abnormal.
	Off	The Ethernet connection is not set up.
Green indicator of Ethernet port (100M)	On	The data transmission is abnormal.
	Blink	Data is being transmitted over the Ethernet port.
	Off	The Ethernet connection is not set up.
Yellow indicator of Ethernet port (1000M)	On	The data transmission is abnormal.
	Blink	Data is being transmitted over the Ethernet port.
	Off	The Ethernet connection is not set up.
Green indicator of Ethernet port (1000M)	On	The Ethernet connection is in the normal state.
	Blink	The Ethernet connection is abnormal.
	Off	The Ethernet connection is not set up.
COM1~COM4	On/Blink	Data is being transmitted
	Off	The device is not powered on or there is no data transmission.

1.8 Interface

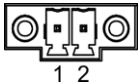
Introducing the definitions and functions of each interface in the ED-PAC3100.

1.8.1 SD Card Slot

The ED-PAC3100 device includes one Micro SD card slot, labeled as "", supporting installing a Micro SD card for user data storage.

1.8.2 Power Interface

The ED-PAC3100 device includes one power input, 2-Pin 3.5mm pitch phoenix terminals with screw holes. The silkscreen of port is "VIN+/GND", and the pins are defined as follows.

	Pin ID	Pin Name
	1	GND
	2	9V~36V

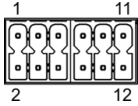
1.8.3 RS485/RS232 Interface

The ED-PAC3100 device includes 2 x RS485 interfaces and 2 x RS232 interfaces.

- Each RS485 interface is labeled "IGND/A/B".
- Each RS232 interface is labeled "IGND/TX/RX".
- Terminal pitch: 3.5mm.

Pin Definition

Terminal pins are defined as follows:

	Pin ID	Pin Name
	1	RS485-2_B
	2	RS485-4_B
	3	RS485-2_A
	4	RS485-4_A
	5	GND
	6	GND
	7	RS232-1_RX
	8	RS232-3_RX
	9	RS232-1_TX
	10	RS232-3_TX
	11	GND
	12	GND

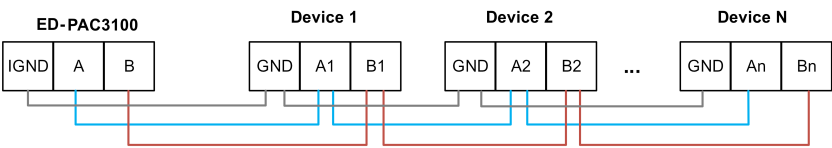
The pin names of the RS485 and RS232 ports corresponding to CM5 are as follows:

Signal	CM5 GPIO Name	CM5 Pin Out
RS485-2_B	GPIO13	UART5_RXD
RS485-4_B	GPIO9	UART4_RXD
RS485-2_A	GPIO12	UART5_TXD
RS485-4_A	GPIO8	UART4_TXD

Signal	CM5 GPIO Name	CM5 Pin Out
RS232-1_RX	GPIO5	UART3_RXD
RS232-3_RX	GPIO1	UART2_RXD
RS232-1_TX	GPIO4	UART3_TXD
RS232-3_TX	GPIO0	UART2_TXD

Connecting Cables

The RS485 wiring schematic is as follows:



The RS232 wiring schematic is as follows:



RS485 Terminating Resistor Configuration

The ED-PAC3100 includes 2 RS485 channels. A 120Ω terminating resistor is pre-installed between the A and B lines of each RS485 channel. Inserting a jumper cap enables this terminating resistor. By default, the jumper cap is not inserted, rendering the 120Ω terminating resistor function disabled.

The locations of the 120Ω terminating resistors on the PCBA (Printed Circuit Board Assembly) and their corresponding COM ports are detailed in the table below.

Location on PCBA	Corresponding COM Port	Physical Position of COM Port
J24	COM4	
J22	COM2	

TIP

The device housing needs to be opened to locate the position of the 120Ω terminating resistor.

1.8.4 1000M Ethernet Interface (EtherCAT)

The ED-PAC3100 device includes 1 auto-sensing 10/100/1000M Ethernet port, labeled as "1000M" .

- Connector type: RJ45.
- Default configuration: EtherCAT communication interface, supporting connection to EtherCAT networks.
- Recommended cable: Category 6 (Cat6) or higher Ethernet cables for optimal performance.

1.8.5 100M Ethernet Interface

The ED-PAC3100 device includes 1 auto-sensing 10/100M Ethernet port, labeled as "100M" .

- Connector type: RJ45.
- Recommended cable: Category 6 (Cat6) or higher Ethernet cables for optimal performance.

1.8.6 HDMI Interface

The ED-PAC3100 device includes 1 HDMI port, labeled as "HDMI", which is a standard Type-A connector. It supports connecting to HDMI displays and delivers video output up to 4K resolution at 60Hz (4K@60Hz).

1.8.7 USB 2.0 Interface

The ED-PAC3100 device includes 2 USB 2.0 ports, labeled as "USB" , which are standard Type-A connectors. They support to connect USB 2.0 peripherals, the maximum transfer rate is 480Mbps.

1.8.8 Micro USB Interface

The ED-PAC3100 devices include one Micro USB port, labeled as "PROGRAMMING". It is used to connect to a PC for programming the device's eMMC storage.

WARNING

The ED-PAC3100 device comes pre-installed with a valid CODESYS license by default. Reinstalling the operating system will invalidate the CODESYS license. Do not attempt to install the OS on your own.

1.9 Supercapacitor

The ED-PAC3100 supports a supercapacitor backup power module, featuring a comprehensive safe shutdown protection mechanism.

- In the event of an unexpected power failure when the supercapacitor is fully charged, the system can automatically switch to supercapacitor power supply, allowing the device to continue normal operation until the capacitor's charge is depleted. It then automatically shuts down safely, effectively preventing operational interruptions and data loss.

- The device provides user-customizable emergency scripts, supporting pre-configuration of critical data saving, backup, or other emergency procedures. At the moment of power loss, the system will automatically execute the preset scripts to ensure critical operations are completed, allowing for a composed response to sudden power outages.

TIP

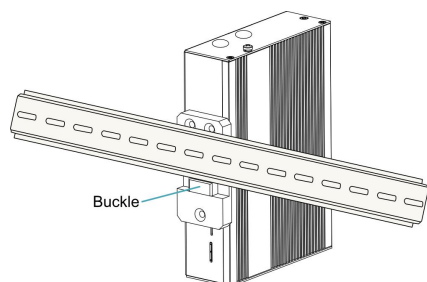
- For specific operations on customizing supercapacitor-related parameters, please refer to [AN18 Supercapacitor Usage Guide](#).
- The supercapacitor requires the device to be powered on for at least 5 minutes to fully charge, and normal functionality is only guaranteed when it is fully charged.

2 Installing The Device

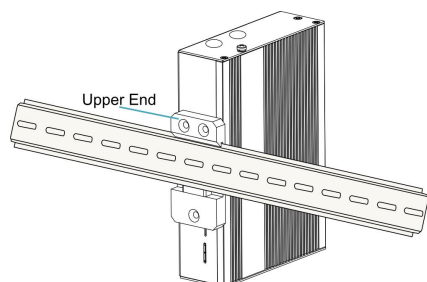
The ED-PAC3100 supports DIN rail installation. The DIN rail bracket is pre-installed and provided as standard. The following steps describe how to mount the device on a DIN rail.

Steps:

1. Face the side of the device with the rail bracket toward the DIN rail, and hook the retractable buckle of the bracket onto the lower edge of the DIN rail from bottom to top.



2. Hold the device with your hand, press the buckle firmly upward, and ensure the top of the bracket fully snaps onto the upper edge of the DIN rail.



3 Booting The Device

This chapter details the specific procedures for connecting cables and powering on the device.

3.1 Connecting Cables

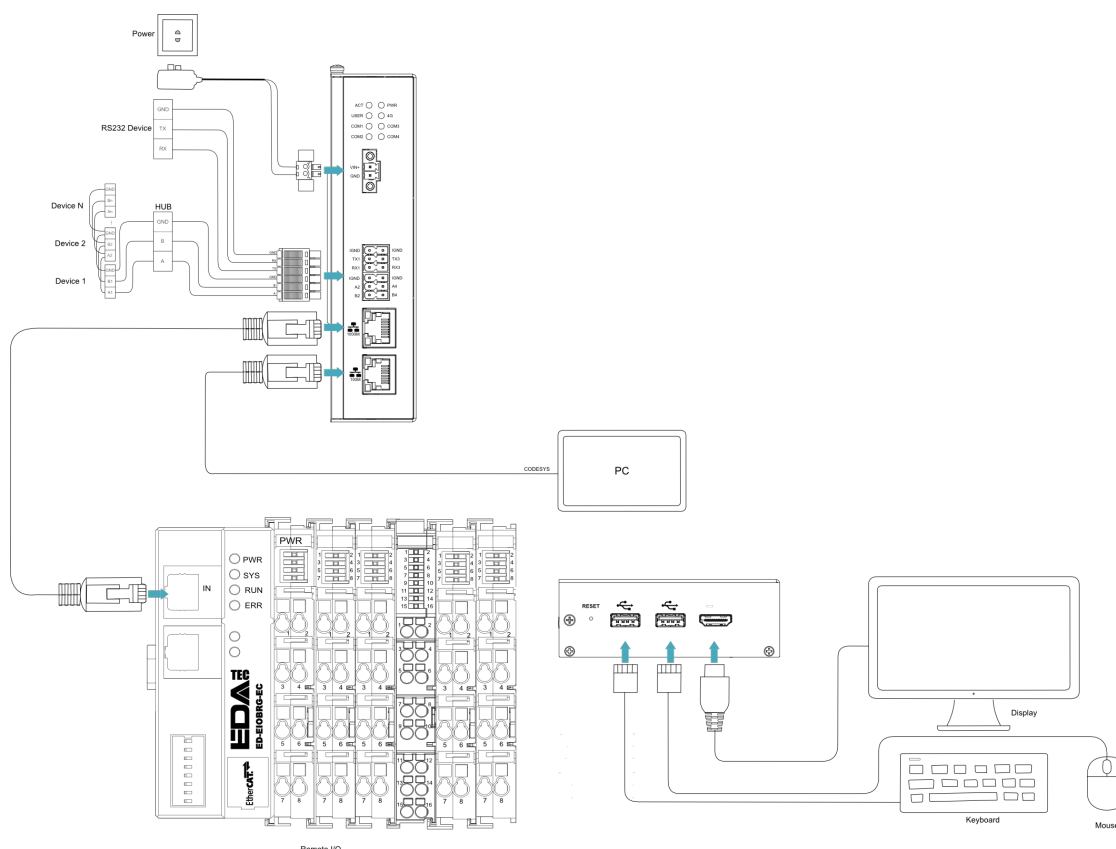
This section describes the procedures for connecting cables to the device.

Preparation:

- Available functional accessories: Monitor, mouse, keyboard, I/O expansion module, and power adapter.
- Available functional network connection.
- Available functional cables: HDMI cable and Ethernet cable.

Schematic diagram of connecting cables:

Please refer to [1.8 Interface](#) for the pin definition of each interface and the specific method of wiring.



3.2 Booting The System For The First Time

The ED-PAC3100 has no power switch. When connected to power, the system will begin booting.

- Red PWR indicator: Lights up to indicate the device is receiving power.

- Green ACT indicator: Blinks to signal normal system startup. The Raspberry Pi logo will then appear in the upper-left corner of the screen.

TIP

Default username is `pi` , default password is `raspberrypi` .

3.2.1 Raspberry Pi OS (Desktop)

If the device is factory-installed with the Desktop OS, it will boot directly into the desktop interface upon startup, as shown in the figure below.



3.2.2 Raspberry Pi OS (Lite)

If the device is factory-installed with the Lite OS, it will automatically log in using the default credentials after startup. The figure below indicates that the system has booted successfully.

```

Debian GNU/Linux 12: raspberrypi tty1
Pi IP address is 192.168.0.254 (eth0::a5a6:343e:723e:7a78)
raspberrypi login: pi (automatic login)
Linux raspberrypi 6.6.51-rpi-v8 812 SMP PREEMPT Tue Nov 10 13:52:07 CST 2025 aarch64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.

SSH is enabled and the default password for the 'pi' user has not been changed.
This is a security risk - please login as the 'pi' user and type 'passwd' to set a new password.

Wi-Fi is currently blocked by rfkill.
Use 'rfkill unblock wifi' to unblock the device before use.
pi@raspberrypi:~$ sudo raspi-config
[info] [base-manager] couldn't check support for device "/sys/devices/platform/soc/40000000.ethernet": not supported by any plugin
[info] [base-manager] couldn't check support for device "/sys/devices/platform/soc/40000000.sdhci/sdhci-1-1-1-1": not supported by any plugin
[info] [base-manager] couldn't check support for device "/sys/devices/platform/soc/40000000.sdhci/sdhci-1-1-1-1": not supported by any plugin
pi@raspberrypi:~$

```

4 CODESYS Programming

This chapter details the specific operations involved in using CODESYS.

WARNING

The ED-PAC3100 device comes pre-installed with a valid CODESYS license by default. Reinstalling the operating system will invalidate the CODESYS license. Do not attempt to install the OS on your own.

4.1 CODESYS Software Download and Installation

TIP

The installed CODESYS IDE version must be 3.5.19 or higher, and the PC operating system must be Windows 10 or Windows 11 (64-bit recommended).

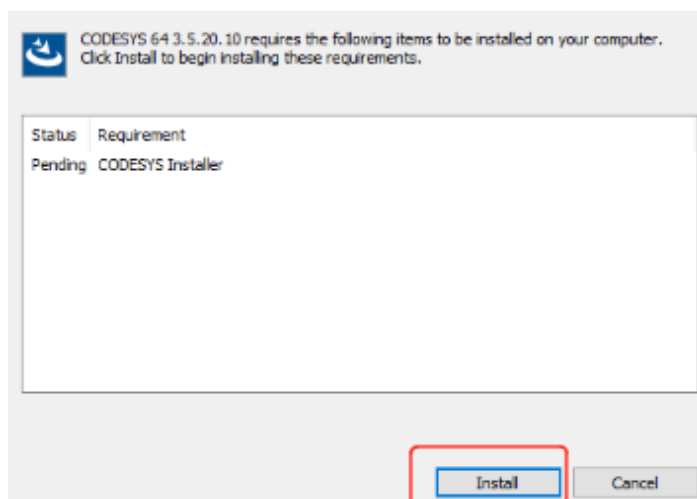
1. Download the installation package from the official CODESYS website. The download URL is <https://store.codesys.com/de/> (<https://store.codesys.com/de/>) .

TIP

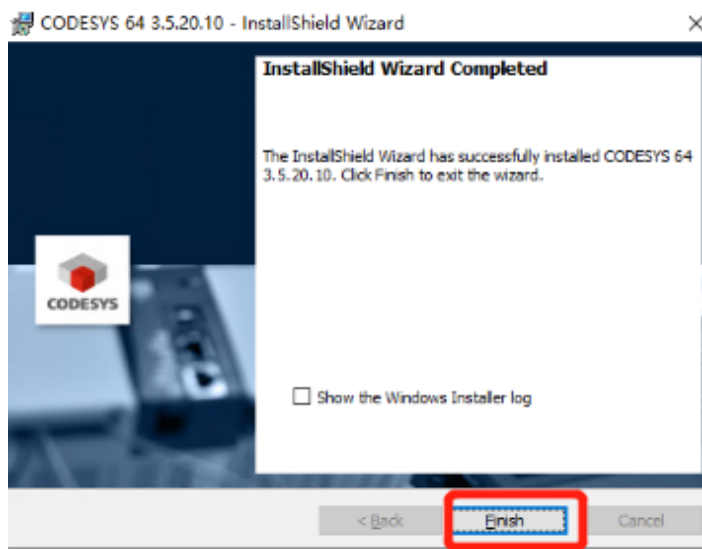
When downloading from the CODESYS official website for the first time, you must first register and log in to your account.

2. Right-click the downloaded installer and select "Run as administrator" from the context menu.
3. Click "Install" in the opened installation interface, and keep the default configuration during the installation process.

CODESYS 64 3.5.20.10 - InstallShield Wizard



4. After the installation is complete, click "Finish" to close the installation interface.



4.2 Obtaining and Installing Device Description File

Before connecting to the device via CODESYS, you need to download and install the device description file first.

4.2.1 Obtaining Device Description File

TIP

The default IP addresses for the device are:

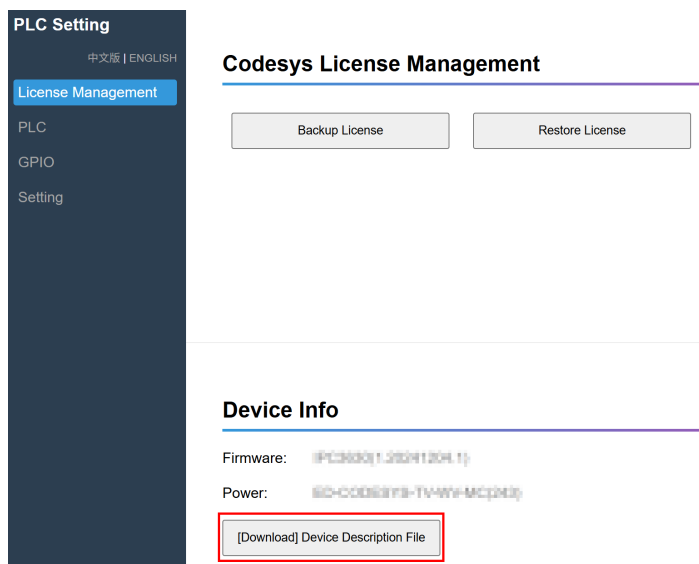
- 100M Ethernet port: 192.168.1.100
- 100M Ethernet port (EtherCAT port): 192.168.0.100 If you need to modify these settings, refer to [Configuring Ethernet IP](#).

Preparation:

- A CODESYS-authorized ED-PAC3100 is available.
- A functional Ethernet cable is available.
- A Windows PC is prepared, with its IP address configured to the same subnet as the device. For example, if the device's IP (1000M Ethernet port) is `192.168.0.100`, set the PC's IP to `192.168.0.99`.

Steps:

1. Connect the device's 1000M Ethernet port to the PC via an Ethernet cable, then power on the device.
2. Enter `http://192.168.0.100:8100` in the PC's web browser to access the "PLC Setting" interface.
3. In the "Device Info" section, click the "[Download] Device Description File" button to download the corresponding ".xml" format device description file.



TIP

The device files are available for download within the documentation. Different CODESYS licenses correspond to different device files. For specific descriptions and download paths, please refer to [Device File and Function Correspondence Table](#).

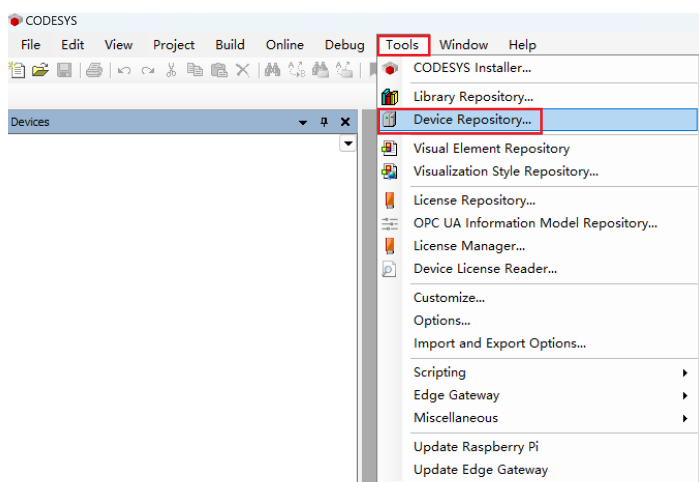
4.2.2 Installing Device Description File

Preparation:

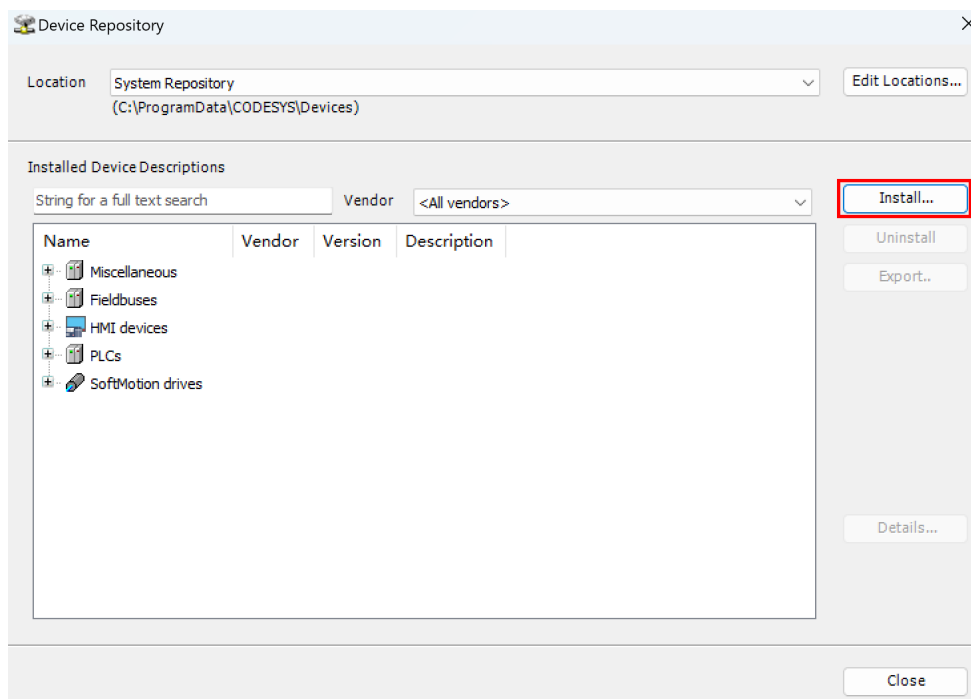
- A PC installed with CODESYS software version V3.5 SP19 (64-bit).
- An ED-PAC3100 device with a valid CODESYS license and its corresponding device description file.
- Connect both the PC and ED-PAC3100 to the network, ensuring their IP addresses are within the same subnet.

Steps:

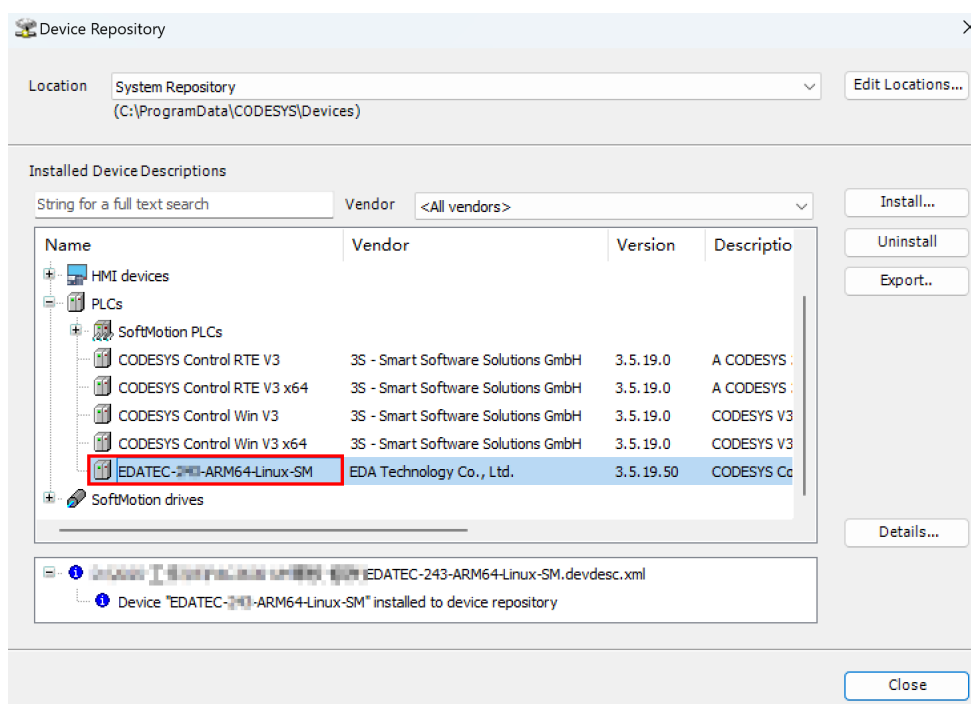
1. Double-click the CODESYS icon on the PC desktop to open the CODESYS software. From the menu bar, select "Tools" → "Device Repository".



2. In the opened "Device Repository" pane, click "Install".



3. In the pop-up "Install Device Description" pane, select the device description file to be installed and click "Open" to proceed with the installation.
4. After successful installation, you can verify in the "Device Repository" that the device description file have been added successfully.



4.2.3 Installing GPIO Description File

TIP

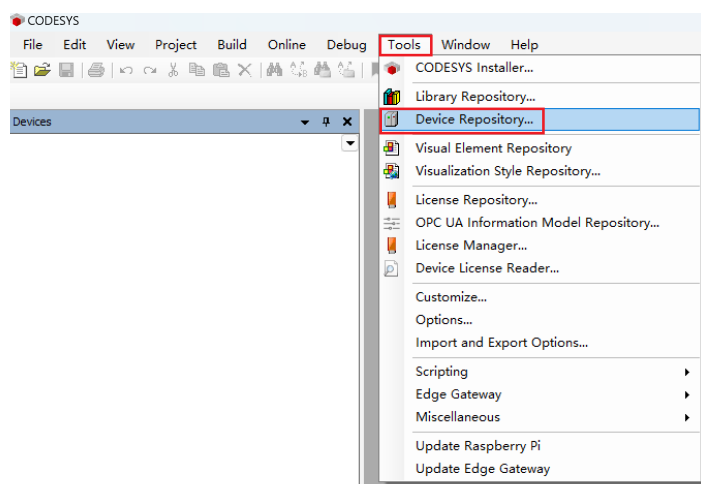
If the you need to control DI, DO, or other GPIOs on the device via CODESYS, it is recommended to install the GPIO description file.

Preparation:

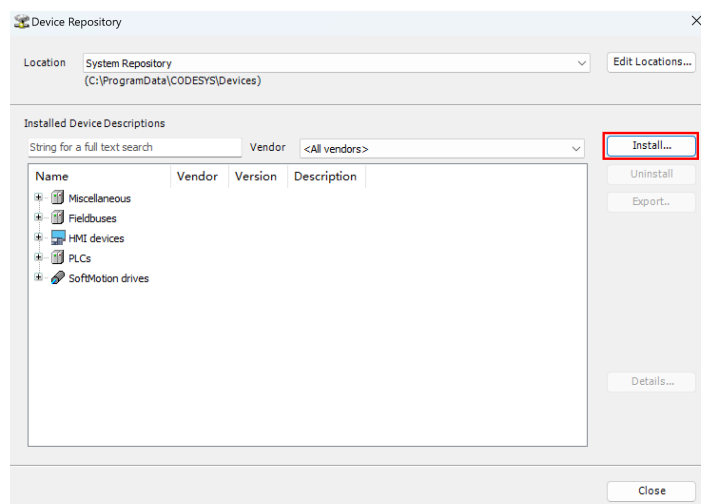
- A PC installed with CODESYS software version V3.5 SP19 (64-bit).
- A CODESYS-authorized ED-PAC3100 device available.
- GPIO description file obtained, with the download link: [GPIO Description File \(https://vip.123pan.cn/1826505135/17966990\)](https://vip.123pan.cn/1826505135/17966990).
- Connect both the PC and ED-PAC3100 to the network, ensuring their IP addresses are within the same subnet.

Steps:

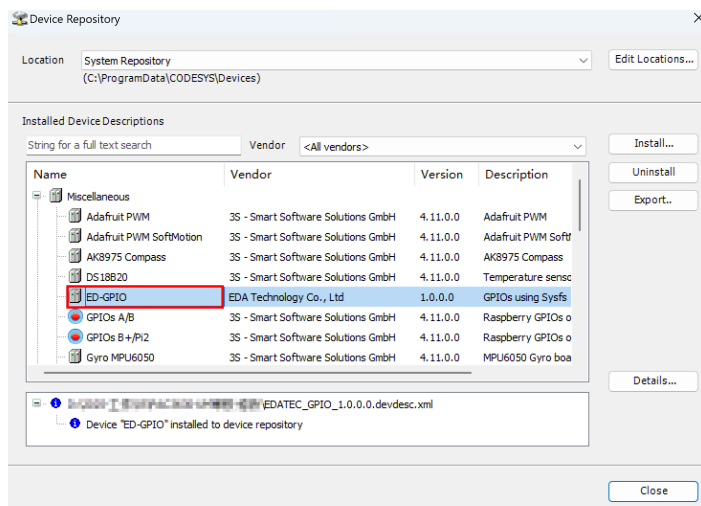
1. Double-click the CODESYS icon on the PC desktop to open the CODESYS software. From the menu bar, select “Tools” → “Device Repository”.



2. In the opened "Device Repository" pane, click "Install".



3. In the pop-up "Install Device Description" pane, select the GPIO description file to be installed and click "Open" to proceed with the installation.
4. After successful installation, you can verify in the "Device Repository" that the GPIO description file have been added successfully.



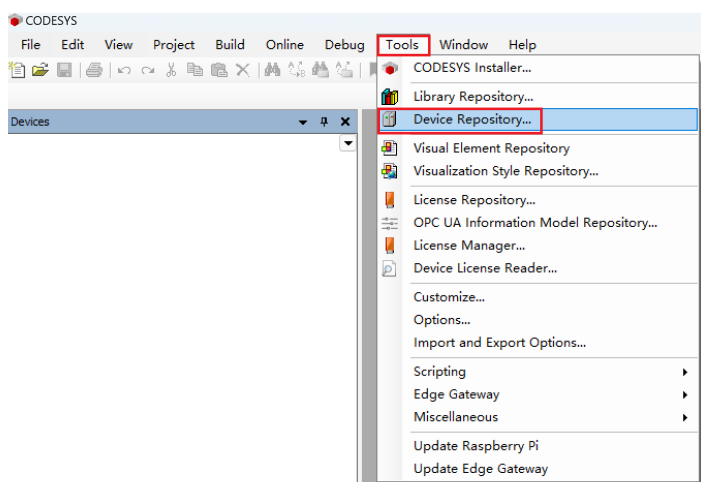
4.2.4 Installing Remote I/O Device Description File

Preparation:

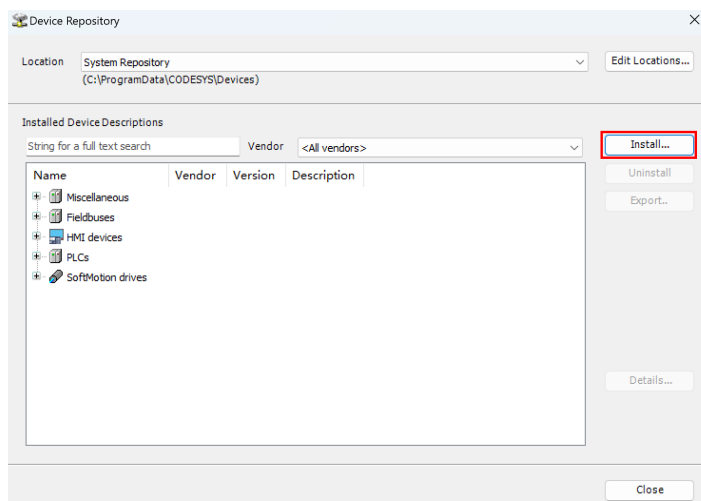
- A PC installed with CODESYS software version V3.5 SP19 (64-bit).
- A CODESYS-authorized ED-PAC3100 device available.
- Remote I/O device description file obtained, with the download link: [Remote I/O Description File \(https://1826505135.v.123pan.cn/1826505135/35175339\)](https://1826505135.v.123pan.cn/1826505135/35175339).
- Connect both the PC and ED-PAC3100 to the network, ensuring their IP addresses are within the same subnet.

Steps:

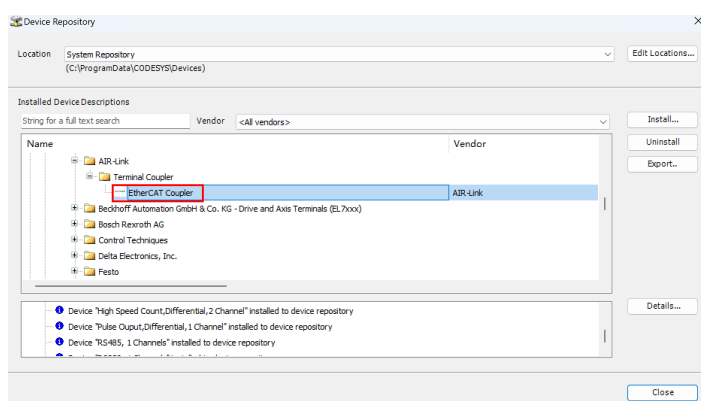
1. Double-click the CODESYS icon on the PC desktop to open the CODESYS software. From the menu bar, select "Tools" → "Device Repository".



2. In the opened "Device Repository" pane, click "Install".



3. In the pop-up "Install Device Description" pane, select the I/O device description file to be installed and click "Open" to proceed with the installation.
4. After successful installation, you can verify in the "Device Repository" that the I/O device description file have been added successfully.



4.3 Hardware Configuration

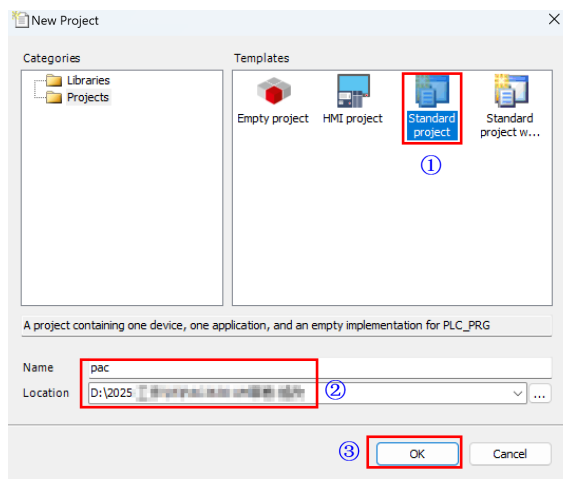
Preparation:

- A PC installed with CODESYS software version V3.5 SP19 (64-bit).
- Device description file, remote I/O device description file, and GPIO description file have been installed.
- The remote I/O modules have been connected to the ED-PAC3100's EtherCAT port (Gigabit Ethernet port) via network cable. Configure the IP addresses of the PC, ED-PAC3100, and remote I/O within the same subnet.

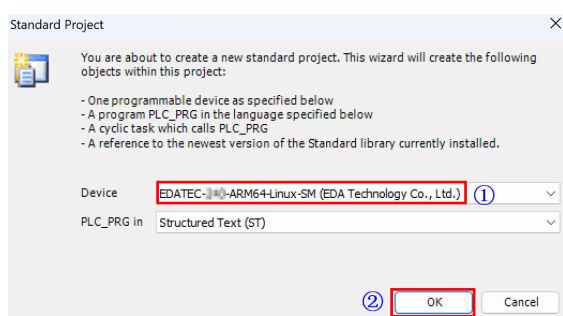
4.3.1 Create a New Project and Connect to the Device

Steps:

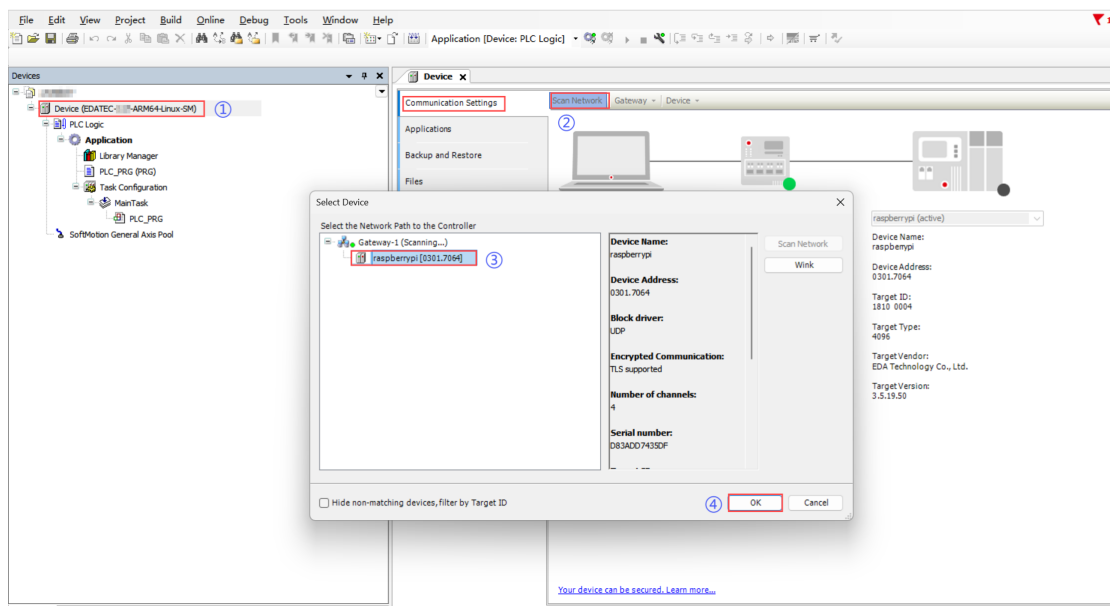
1. Power on the ED-PAC3100 and the remote I/O modules. Open the CODESYS software on the PC, select "File" → "New Project" in the menu bar to open the "New Project" pane, and create a standard project.



2. Select the installed device description file and click "OK".



3. Double-click the device, select "Scan Network" on the right, then choose the detected device from the scan results, and click "OK" to confirm.

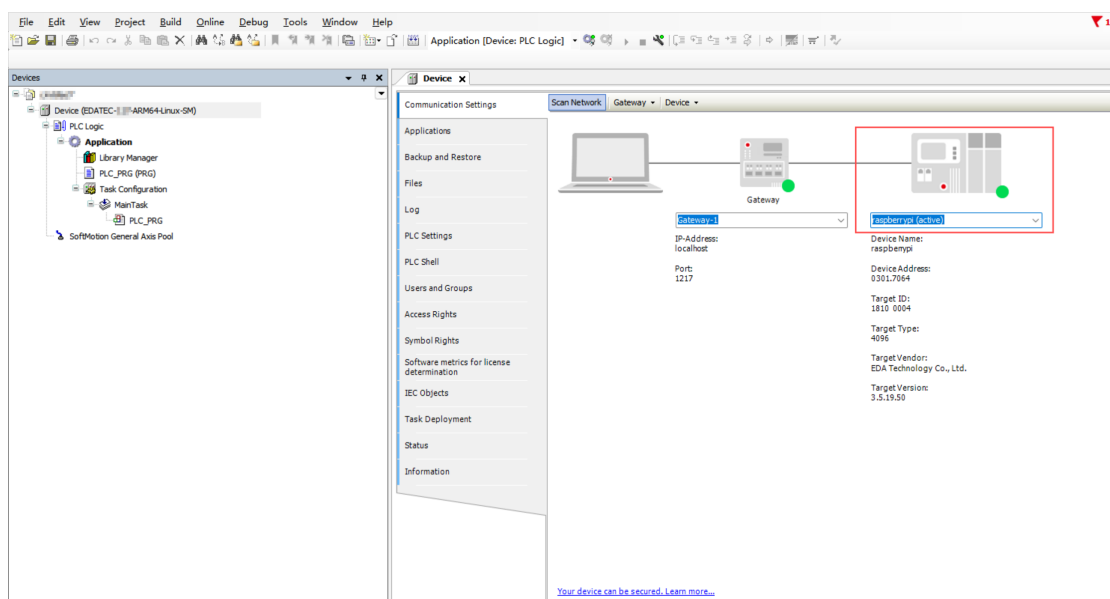


TIP

- If the device cannot be detected during scanning, manually enter the IP address in the target device settings to connect.

- If a device login prompt appears, log in with your credentials (username and password) or follow the instructions to register a new account.

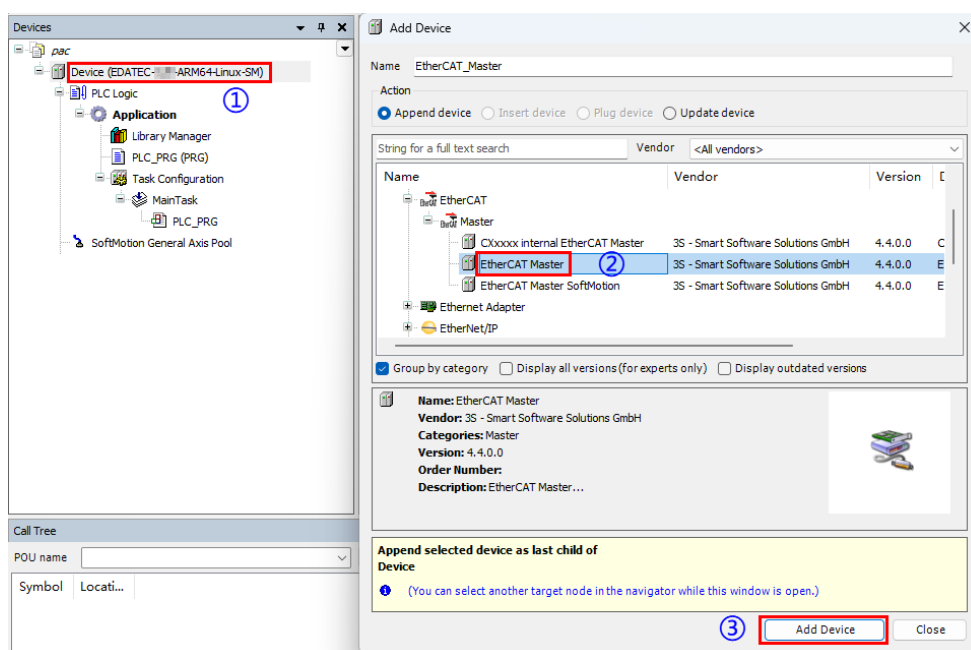
4. As shown in the figure below, this indicates the device is successfully connected.



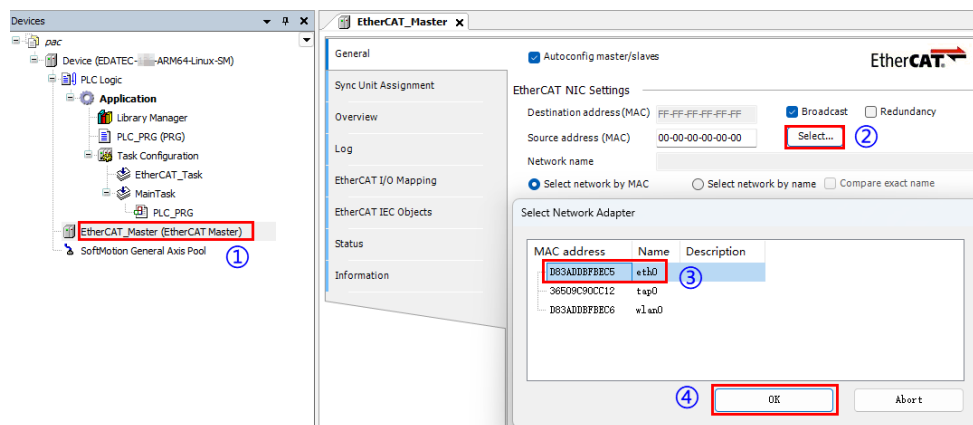
4.3.2 Adding Remote I/O Modules

Steps:

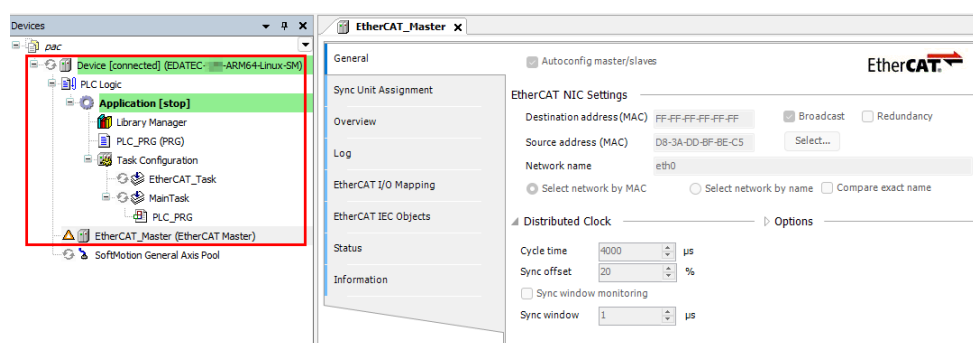
1. Right-click "Device" and select "Add Device" in the menu to add the EtherCAT Master.



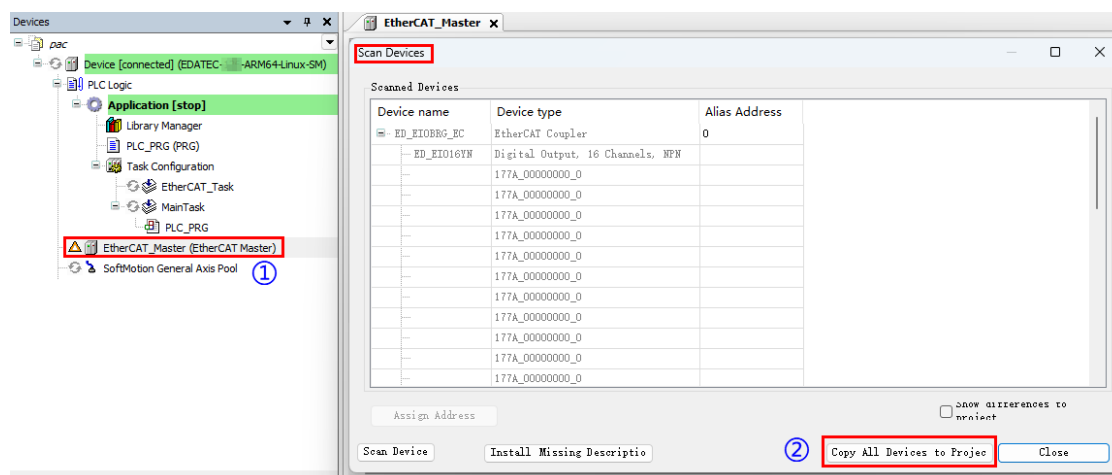
2. Double-click on the EtherCAT Master device to set the source address (Select the EtherCAT port, which corresponds to the device's eth0 port).



3. Click the  button to log in to the device. A successful login is shown in the figure below.

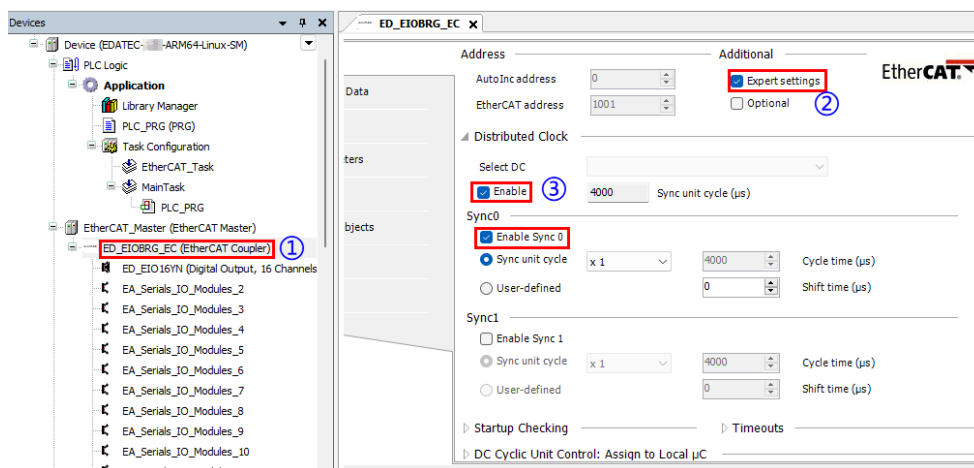


4. Click on the EtherCAT Master device, select “Scan for Devices” in the right-click menu, and copy all devices to the project after scanning is completed.

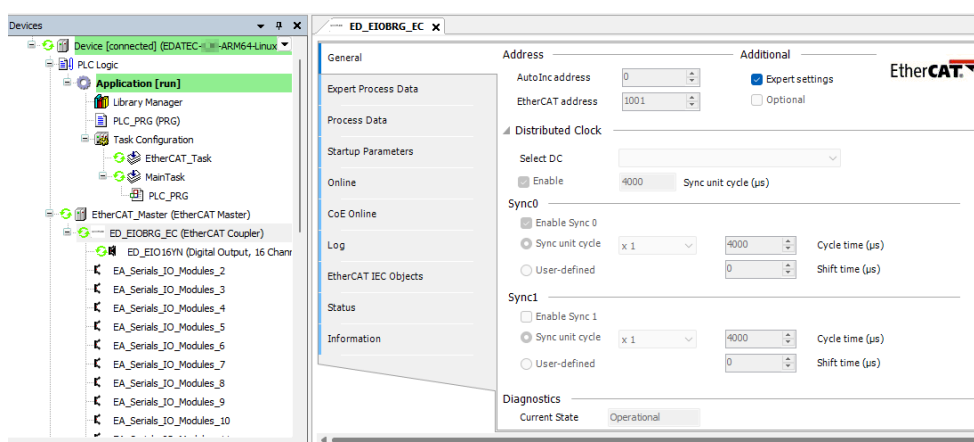


5. Click the  button to log out of the device.

6. Double-click the slave device, configure the relevant parameters in the right-hand interface, enable "Expert settings", select "Enable" under Select DC section, and select "Enable Sync0".

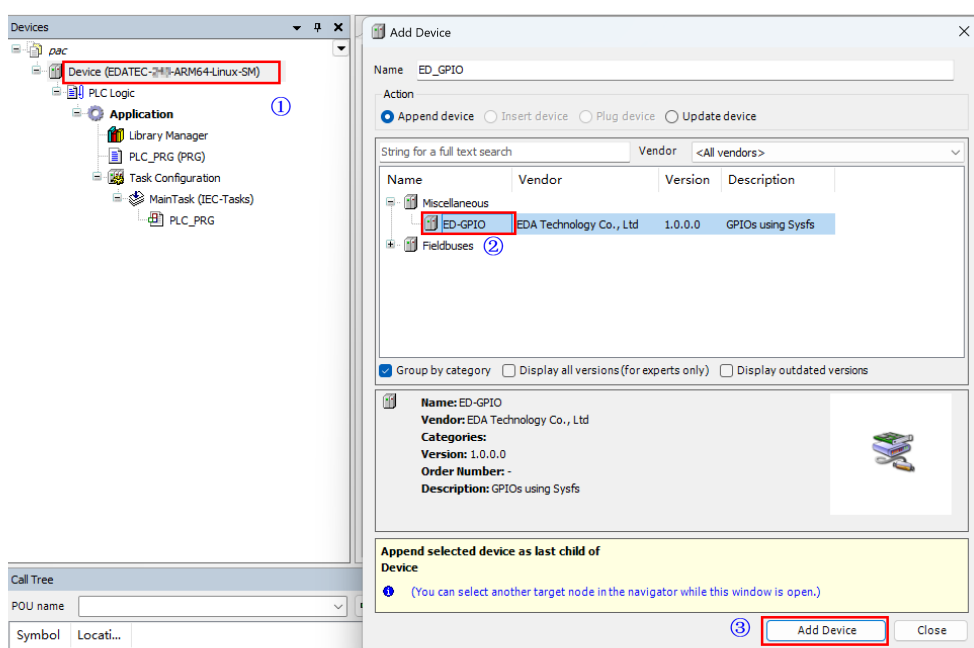


7. Click the button to download the program to the device, then click the button to run it. As shown in the figure below, this indicates a successful operation.

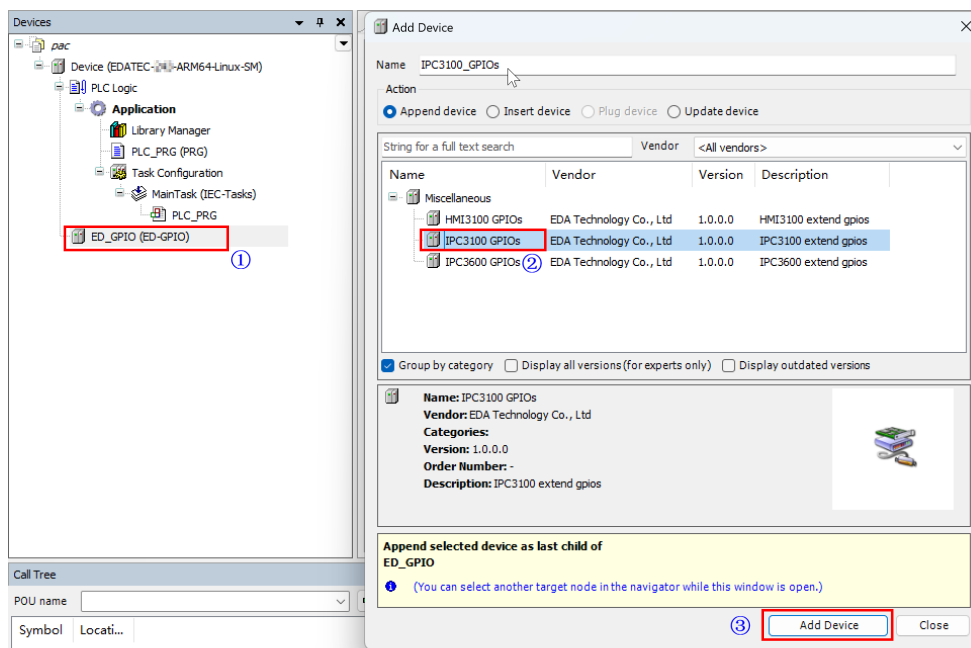


4.3.3 Adding GPIO Module

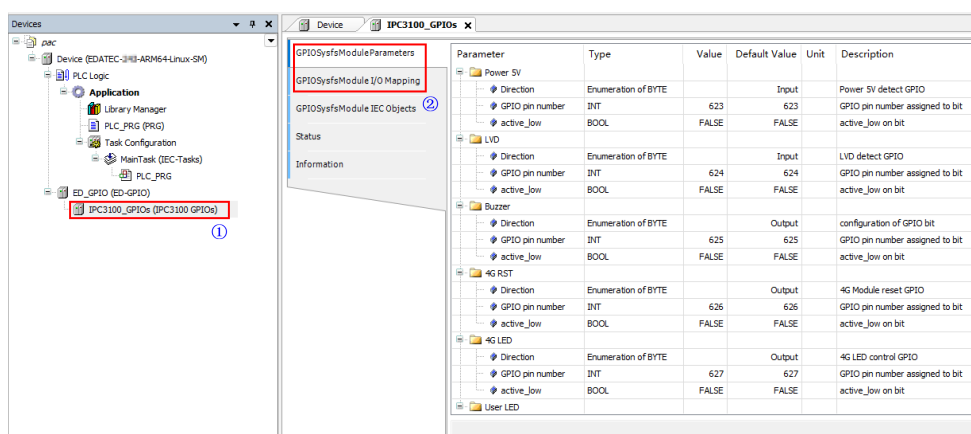
1. Right-click "Device" and select "Add Device" in the menu to add ED-GPIO.



2. Right-click "ED_GPIO", select "Add Device" from the menu, and choose the device to be added.



3. The appearance of the corresponding device under the ED_GPIO device directory indicates a successful addition.
4. Double-click the GPIO device to view and control the GPIO in the right-hand interface.



TIP

The GPIO numbering may vary between devices. It is recommended to access the "PLC Setting" interface (<http://192.168.0.100:8100>) to view the device-specific GPIO numbering.

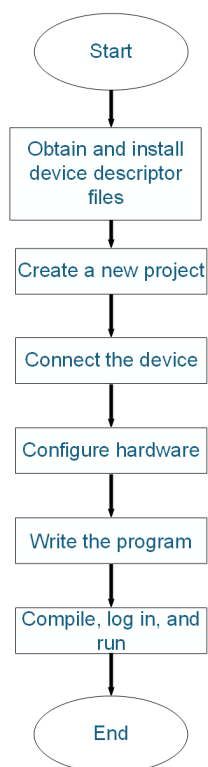
PLC Setting		
License Management		
PLC		
GPIO		
Setting		

Expand GPIO		
GPIOCHIP	Label	GPIO
gpiochip15	5V_GOOD	639
	LVD	640
	BUZZER_EN	641
	4G_RST	642
	4G_LED	643
	USER_LED	644

4.4 Programming

The following example demonstrates practical programming using a specific coding scenario.

4.4.1 Programming Process



4.4.2 Programming Example

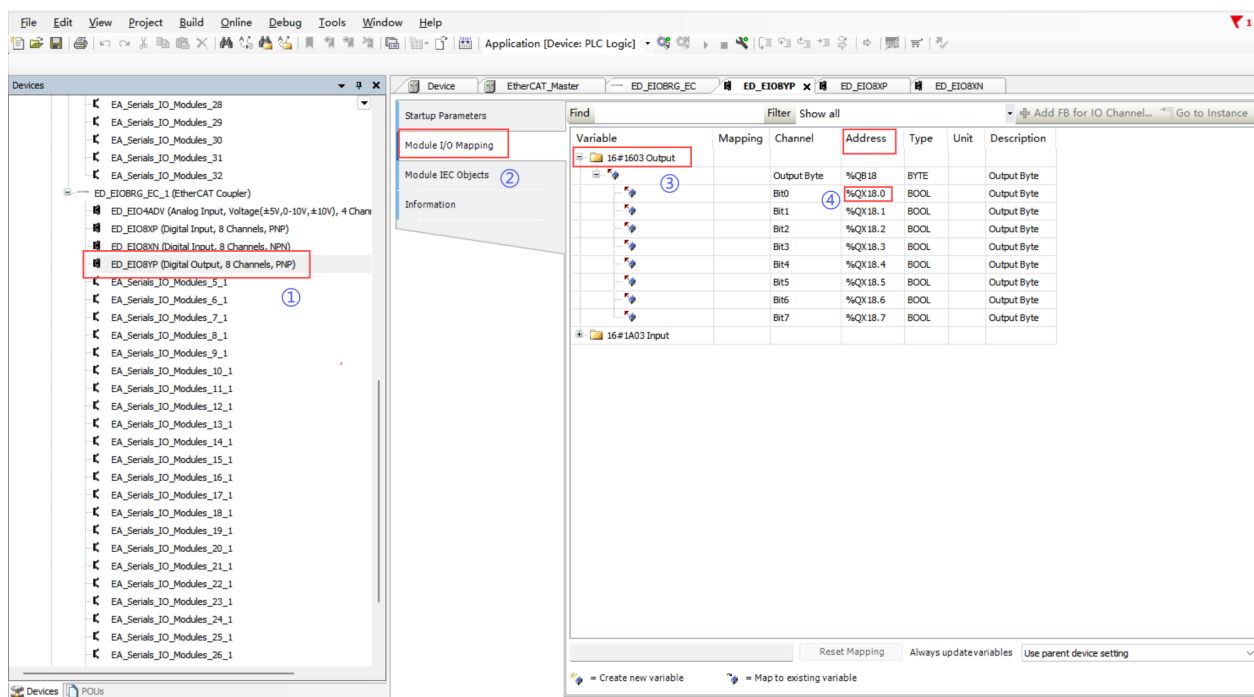
Complete the development and debugging of a program for a timed blinking LED using a PNP-type 8-channel digital output (DO) module.

Preparation:

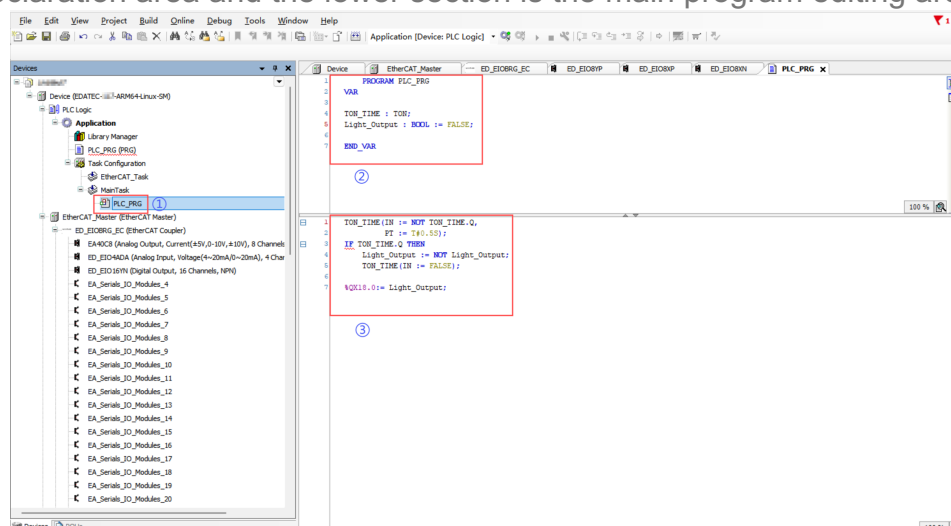
- A standard project has been created.
- Hardware configuration has been completed.
- A 24V compact LED lamp has been connected to the first output port of the remote DO (Digital Output) module.

Steps:

1. Double-click the DO module, select "Module I/O Mapping" → "Output" in the right-hand interface, and view the addresses of all output ports. As illustrated below, the first output port's address is `%QX18.0`.



2. Click "PLC_PLG" to open the programming interface, where the upper section is the variable declaration area and the lower section is the main program editing area.



3. Write the program code as follows:

```

PROGRAM PLC_PRG
VAR
TON_TIME : TON;
Light_Output : BOOL := FALSE;

END_VAR

```

```

TON_TIME(IN := NOT TON_TIME.Q,
PT := T#0.5S);
IF TON_TIME.Q THEN
Light_Output := NOT Light_Output;

```

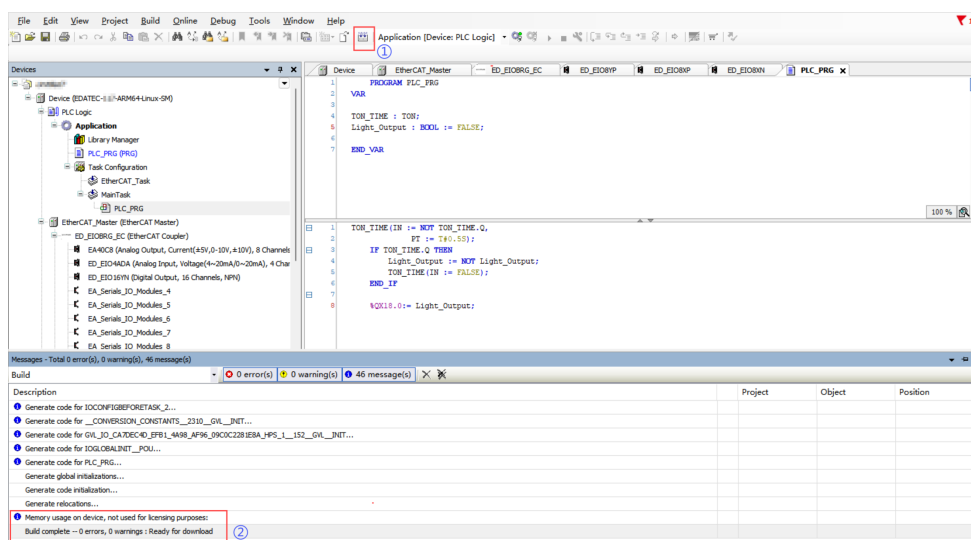
```

TON_TIME(IN := FALSE);
END_IF

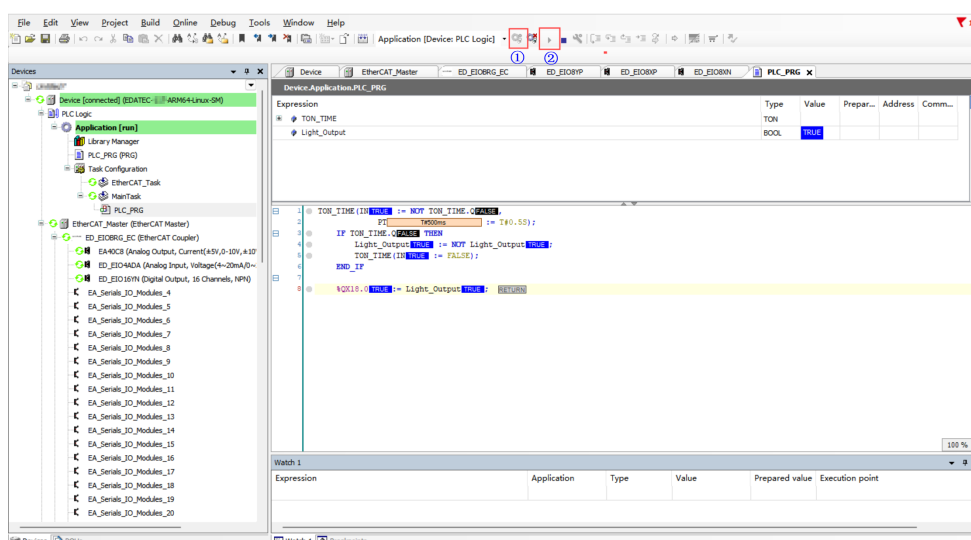
%QX18.0:= Light_Output;

```

4. After completing the program, click " to compile it and ensure there are no errors.



5. Click Login to download the program to the device, then click Run to observe the LED blinking every 0.5 seconds.



4.5 Operation and Maintenance

After downloading the program to the device, you can perform the Run and Stop operations.

Status	Operations
Run Program	In the main menu of the software interface, click the Login  button.
Stop Program	In the main menu of the software interface, click the stop  button.

5 Configuring System

This chapter introduces how to configure system.

WARNING

The ED-PAC3100 device comes pre-installed with a valid CODESYS license by default. Reinstalling the operating system will invalidate the CODESYS license. Do not attempt to install the OS on your own.

5.1 Finding Device IP

Finding Device IP

5.2 Remote Login

Remote Login

5.3 Configuring Storage Devices

Configuring Storage Devices

5.4 Configuring Ethernet IP

Configuring Ethernet IP

5.5 Configuring Buzzer

Configuring Buzzer

5.6 Configuring RTC

Configuring RTC

5.7 Configuring USER Indicator

Configuring USER Indicator

5.8 Configuring Serial Port

This chapter introduces the configuration method of RS232 and RS485.

5.8.1 Installing Picocom Tool

In the Linux environment, you can use the picocom tool to debug the serial ports RS232 and RS485.

Execute the following command to install the picocom tool.

```
sudo apt-get install picocom
```

sh

5.8.2 Configuring RS232

ED-PAC3100 includes 2 RS232 ports with corresponding COM ports and device files, as shown in the table below:

Number of RS232 Ports	Corresponding COM Port	Corresponding Device File
2	COM1, COM3	/dev/com1, /dev/com3

Preparation:

The RS232 ports of ED-PAC3100 has been connected with external device.

Steps:

1. Execute the following command to open the serial port com1, and configure the serial port baud rate to 115200.

```
picocom -b 115200 /dev/com1
```

sh

2. Input commands as needed to control external device.

5.8.3 Configuring RS485

ED-PAC3100 includes 2 RS485 ports with their corresponding COM ports and device files, as shown in the table below:

Number of RS485 Ports	Corresponding COM Port	Corresponding Device File
2	COM2, COM4	/dev/com2, /dev/com4

Preparation:

The RS485 ports of ED-PAC3100 has been connected with external device.

Steps:

1. Execute the following command to open the serial port com4, and configure the serial port baud rate to 115200.

```
picocom -b 115200 /dev/com4
```

sh

2. Input commands as needed to control external device.

5.9 CODESYS License Management

The ED-PAC3100 device comes pre-installed with a CODESYS license by default. You can back up and restore the license by accessing the "PLC Setting" interface.

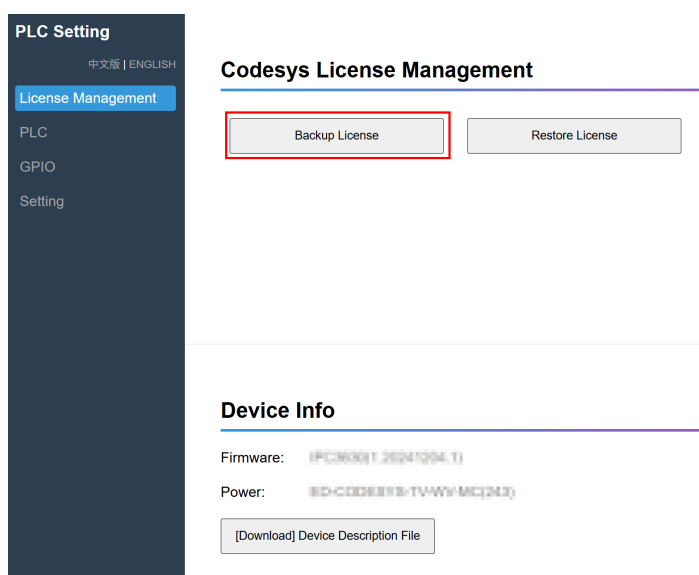
5.9.1 License Backup

Preparation:

- A Windows PC has been set up with an IP address in the same subnet as the device. For example, if the device's IP (1000M Ethernet port) is `192.168.0.100`, set the PC's IP to `192.168.0.99`.
- A functioning Ethernet cable has been prepared.

Steps:

1. Connect the device's 1000M Ethernet port to the PC via an Ethernet cable, then power on the device.
2. Enter `http://192.168.0.100:8100` in the PC's web browser to access the "PLC Setting" interface.
3. In the "Codesys License Management" interface, click "Backup License" to download the license file and save it locally.



TIP

The backed-up license file can only be restored on the same device.

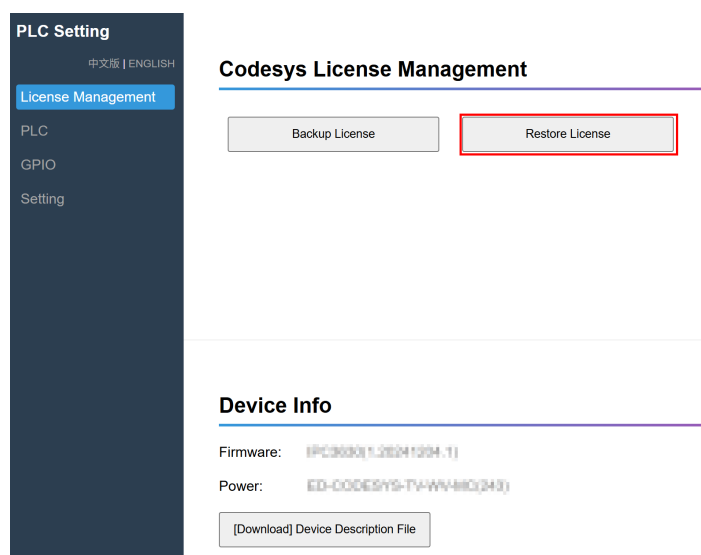
5.9.2 License Restore

Preparation:

- A Windows PC has been set up with an IP address in the same subnet as the device. For example, if the device's IP (1000M Ethernet port) is `192.168.0.100`, set the PC's IP to `192.168.0.99`.
- A functioning Ethernet cable has been prepared.
- The backed-up license file has been obtained.

Steps:

1. Connect the device's 1000M Ethernet port to the PC via an Ethernet cable, then power on the device.
2. Enter `http://192.168.0.100:8100` in the PC's web browser to access the "PLC Setting" interface.
3. In the "Codesys License Management" interface, click "Restore License".



4. As prompted, select the obtained license file under a custom path.
5. After a successful License Restore, a 100% progress bar will be displayed in the right-hand panel.

PLC Setting

中文版 | ENGLISH

License Management

PLC

GPIO

Setting

Codesys License Management

Backup License

Restore License

100%

Device Info

Firmware: IPC3100(1.204.1)

Power: ED-CODESYS-TR-PPV-MC(p10)

[Download] Device Description File

6. Open the device’s terminal command pane, execute the following command, and restart the device.

sudo reboot

sh